# PRESERVATION ASSESSMENT OF CITY CEMETERY, SOUTH BEND, INDIANA

**Chicora Research Contribution 512**

# PRESERVATION ASSESSMENT OF CITY CEMETERY, SOUTH BEND, INDIANA

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**CHICORA RESEARCH CONTRIBUTION 512**

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# MANAGEMENT SUMMARY

This study examines what is called the City Cemetery in South Bend, Indiana. We initially visited this cemetery in November 2007 in order to provide an informal assessment for the Historic Preservation Commission of South Bend. The organization's Assistant Director, Ms. Amy B. Minnick accompanied us during the survey, taking notes and asking questions. Since that time there has been an effort to fund a more thorough study that would transform many of the informal comments and observations into a more permanent record. This study is the result of that effort and its goal is to provide long-term preservation recommendations to improve care of the cemetery.

The study did not include any detailed historical research. What is offered here consists of very limited research in an effort to present what is readily known, place the cemetery into a broader context, and suggest avenues for future research. Like many burial grounds, the City Cemetery can be seen as gradually evolving from a very formal, gridded city/town cemetery into what appears to be a designed lawn park landscape. Thus, one very significant research goal would be to identify the architect and original plan for the City Cemetery.

Many of the problems seen at City Cemetery are the result of deferred maintenance – doing too little over too long a period of time. The problem with this approach is that eventually the historic fabric can no longer sustain further maintenance cuts without a significant and noticeable degradation of the historic fabric. The South Bend City Cemetery is at that point.

There is significant damage to a broad range of the stones in the cemetery and one of our primary recommendations is for a stone-by-stone conservation assessment. This is necessary in order to determine what stones need critical repairs and the cost of that work.

The landscape has received far too little attention as a result of an inadequately staffed Parks Department. A cemetery cannot be operated like a park or recreational facility – cemeteries are unique blends of sacred sites, artistic sites, archives, and scenic landscapes. They are social, historic, architectural, and archaeological artifacts. As such they require very special – and specialized care. For proper care of the cemetery landscape it is essential that it have a full-time crew of six – four technicians and two supervisors. This is critical.

Changes need to be made to ensure that the cemetery is mowed with only 21-inch walk behind mowers, light gauge trimmer line is used, soil tests are periodically conducted, trees receive necessary pruning, shrubbery is no longer sheared, and the turf is better managed.

There is much infrastructure or hardscape that requires attention. Top on this list is the historic boundary fence. This fence has received very poor care over its history, consisting of entirely unacceptable welding repairs and inadequate painting. At this stage it is critical that all old welds be removed and a competent craftsman make the required repairs. After that is accomplished the fence should be cleaned to near white metal, primed, and repainted.

The sexton's cottage is another aspect of the cemetery that has been ignored. We recommend a condition assessment so the historic fabric can be preserved and sensitive repairs made in a timely fashion.

We also recommend a new, comprehensive program to reduce the vandalism we observed in the cemetery. This program combines increased police patrols, neighborhood participation, a friends group, more vigilant staff, and more careful record keeping.

The city must make administrative changes in the way the cemetery is operated and the ordinances that govern the property. City 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, their funding requirements only increase with age.

Indiana's lawmakers were progressive and saw this need, enacting legislation that would allow county commissioners to appoint a cemetery commission with the power to raise money for the maintenance of cemeteries through taxation. This is critical step in the long-term preservation of City Cemetery.

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 during this fiscal or calendar year.

- Those issues that, while significant and reflecting on-going deterioration and concerns, can be spread over the next 2 to 3 years. 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 to five years. 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.

Since the original assessment was conducted two years ago we have not sought to identify line item costs, except for the necessary additional conservation assessments – all of which are identified as Priority One needs.

The stone-by-stone assessment will cost $8,200 and will provide the information necessary to determine the long-range conservation costs. This work will identify those stones that need repair, assess the damage, and develop treatment proposals outlining what should be done and the associated cost.

The assessment of the two mausoleums in the cemetery will cost $3,400. These are massive structures – midway between a house and a monument. They face the same sorts of problems we typically associate with structures – leaking roofs and foundation collapse. Thus, their assessment is another critical element in the budgeting process.

Finally, the assessment of the sexton's cottage will cost $4,600. This structure is a entrance focal point for the cemetery and it is critical that the city ensure that the structure is sound.

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# INTRODUCTION

**The Project**

In early August 2007 Ms. Amy B. Minnick with the South Bend Historic Preservation Commission contacted Chicora Foundation to arrange an assessment of the community's historic cemetery, known as City Cemetery. Arrangements were made to conduct the cemetery assessment on Tuesday and Wednesday, November 13 and 14, 2007.

Figure 1. South Bend in a regional context.

South Bend is the fourth largest city in Indiana and the county seat of St. Joseph County. It describes itself as the economic and cultural hub of "Michiana," a seven county region of northwestern Indiana and southwestern Michigan. It is, however, probably best known as the home to the University of Notre Dame. The city takes its name from its location at the southern most turn in the St. Joseph River, which flows from the east end of the city turning north near the city center. South Bend is situated in northwestern Indiana, about 25 miles east-southeast of the Lake Michigan shore.

South Bend's downtown area is located in the north central part of the city along the St. Joseph River, with Notre Dame (and its 1,250 acre campus) directly adjacent to the north. To the east of South Bend is Mishawaka, while to the west the city has extended northward.

City Cemetery is situated immediately west of the city's downtown core, just northwest of what is known as the West Washington neighborhood. A plan for the West Washington-Chapin neighborhood (Anonymous 2007) indicates that the area was one of the earliest additions to South Bend's original 1831 layout and that it became the home of the community's early industrialists. The Studebakers, Olivers, O'Briens, and Birdsells all built large homes in this area during the late nineteenth century. Commercial districts were also established along West Washington.

By the middle of twentieth century, however, the neighborhood began to see a steady decline, as crime and neglect increased. Upper and middle income residents deserted the city core, creating a predominantly low income neighborhood.

At the core of the neighborhood is the West Washington National Register District, added to the National Register in 1975. The district contains 977 acres and 330 buildings. It does not, however, extend to City Cemetery.

The cemetery, created in 1832, would have been outside the original city limits, typical for the time period. Today it accounts for 21.36 acres and is shown as two parcels. The southern parcel is identified as 18-1031-999999, while the

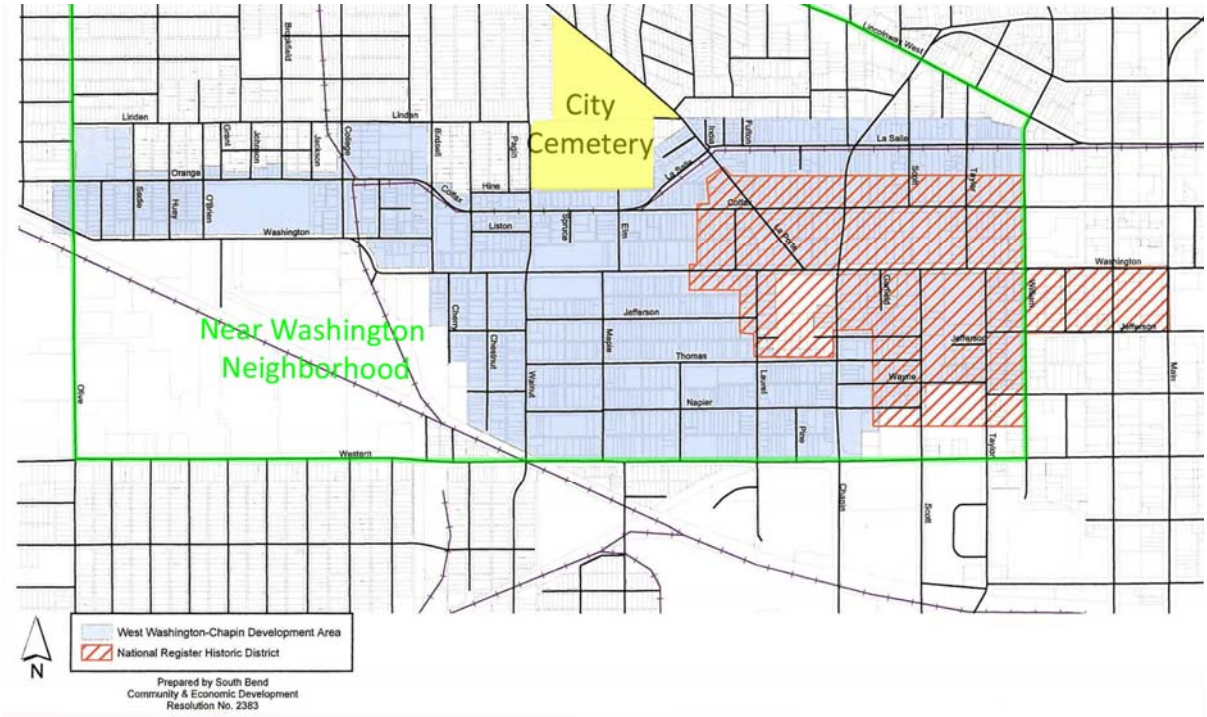



Figure 2. Location of City Cemetery in relationship to the Near Washington Neighborhood, the West Washington-Chapin Development Area (in blue), and the Washington Street Historic District (cross hatched red).

northern is identified as 18-1031-1380. It is reported that the cemetery contains 14,772 interments (as of 2007) and 14,790 monuments.

Although City Cemetery is not listed on the National Register our brief inspection suggests that it is eligible, minimally, under Criterion C, distinctive characteristics. There are a number of very influential and prominent citizens buried in the cemetery. Thus, the cemetery may also be eligible under Criterion B, association with the lives of significant persons, although it would be necessary to satisfy Criteria Consideration C. For the purpose of these discussions we will assume the cemetery is eligible; we urge the City to place the cemetery on the National Register of Historic Places.

The project was coordinated locally by Ms. Amy B. Minnick, Assistant Director of the Historic Preservation Commission of South Bend. During the visit we met with Mr. Steve Nemeth of the South Bend Parks and Recreation Department, who maintains the cemetery. We were also able to meet with a variety of interested parties or stakeholders, including Ms. Carol Nichols, DAR and Ms. Carolyn Strutner Regent, DAR.

The project originally involved a field review with no provision for a written report on the visit. Funding was subsequently identified to allow this brief report to be prepared since the Commission believes that having a written document will help the long-range preservation efforts of the cemetery.

Thus, while it has been nearly a year and a half since our visit, this document has been assembled to help the Commission and the City of South Bend develop long-range preservation goals and plans for the cemetery, focusing not only on the landscape maintenance needs of the cemetery, but also on conservation work necessary to stabilize or forestall additional deterioration of the cemetery's stone

and ironwork. Although some conditions may have changed since our original visit, we believe that the observations and recommendations remain valid and useful.

## 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 City Cemetery should be intimately familiar with the eight critical issues it outlines.

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.

For example, all other factors being equal, a cemetery should be used as a cemetery – not to walk dogs, not as a playground, and not as a park. And 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?" Perhaps it is the landscape, the old and stately trees, the large boxwoods, or the magnificent arborvitae. Perhaps it is the very large proportion of complex monuments, or the exceptional slate markers. It may simply be that it is a unique representation of a cemetery type rarely seen in a rapidly developing urban setting. 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. 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.

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 brick pathways, they would be failing as good stewards if they allowed concrete pathways – especially if the only justification was because concrete was less expensive.

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 City Cemetery. Modifications at the cemetery have taken place with no documentation, leaving caregivers guessing as to the nature of the work, the reason it was done, how it was conducted, and even who did the work. Original fabric has deteriorated from lack of care. Even the landscape has 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 South Bend Parks and Recreation Department, 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.

**The Cemetery, Its Setting, and Context**

The cemetery is Block 2006 in Census Tract 19 of South Bend's Portage Township. La Porte Avenue runs along the northeast cemetery boundary to Linden Avenue. From Linden southward to W. LaSalle Avenue there are a series of private residences backing up on the cemetery property. To the south are lots, today largely vacant, bordering W. Colfax Avenue. The main entrance to the cemetery is off Colfax by way of Elm Street. To the west is N. Walnut Street. This street forms the southwestern boundary, while an alley in the rear yards of houses on the northern portion of Walnut forms the remaining boundary to La Port. Thus, the cemetery is bounded not only by streets, but also by a number of rear yards.

As previously mentioned, the cemetery was originally developed at the edge of South Bend. Today the cemetery is surrounded by primarily residential development with a number of neighborhood schools. While there are a few mixed use areas in close proximity, the density of these increase to the south, along Western, and to the north, along Lincoln. There is considerable light industrial and general industrial development, but this is found almost exclusively west and south of the cemetery, beyond the railroad lines.

The topography is level and the cemetery is about a mile southwest of the St. Joseph River. The river has a very narrow floodway through much of South Bend, and the cemetery is found in Zone X, an area that has a 0.2% annual chance of flooding. Elevations in the area are just above 700 feet above mean sea level (AMSL).

The entire area is classified as Urban land-Tyner Complex, with 0-1% slopes. These soils are typically found on outwash plains on side slopes and the parent material is sandy outwash. The soils are excessively drained and the water table is 80 inches or more below the surface. Soils are loamy sands grading into sands at about 2 feet.

The cemetery is situated in a relatively poor area of the city. The median household income in the 2000 census was only $22,716, compared to the city-wide average of $32,439 and a county average of $40,420. City-wide about 17% of the residents are below the poverty level, while in the cemetery area over 31% of the residents are below the poverty limits. City-wide the home ownership rate is about 67%. In the study area it is only 38%. As would be expected, the area is heavily renter-occupied (58%) compared to a city-wide average of 27%. Nevertheless, about 59% of the neighborhood occupants have resided at the same location for 5 years or more, compared to a city-wide average of 60%.

While the city as a whole is about 56% white and 35% African American, the census tract around the cemetery is predominately African American (53%) and a relatively large number of Hispanics (11%). About two-thirds of the residents in the census tract have graduated from high school. City-wide about 78% of the residents have a high school education.

This level of poverty likely has some effect on South Bend's crime rate. The overall South Bend 2006 crime index is 7,753.9 per 100,000, compared to a national average of 4,479.3. The violent crime rate is 759.7 per 100,000, nearly 140% that nationwide. The property crime rate is 6,994.2 per 100,000 – nearly double the national average.

Between July 1 and October 31, 2007, there were 1,610 reported crimes within 1 mile of the cemetery. This includes 67 burglaries without force, 297 larcenies, and 174 acts of vandalism. These are all crimes of special concern to cemeteries since they indicate the potential for cemetery-related thefts. However, the range of violent crimes should not ignored considering the city has over 20 acres of largely

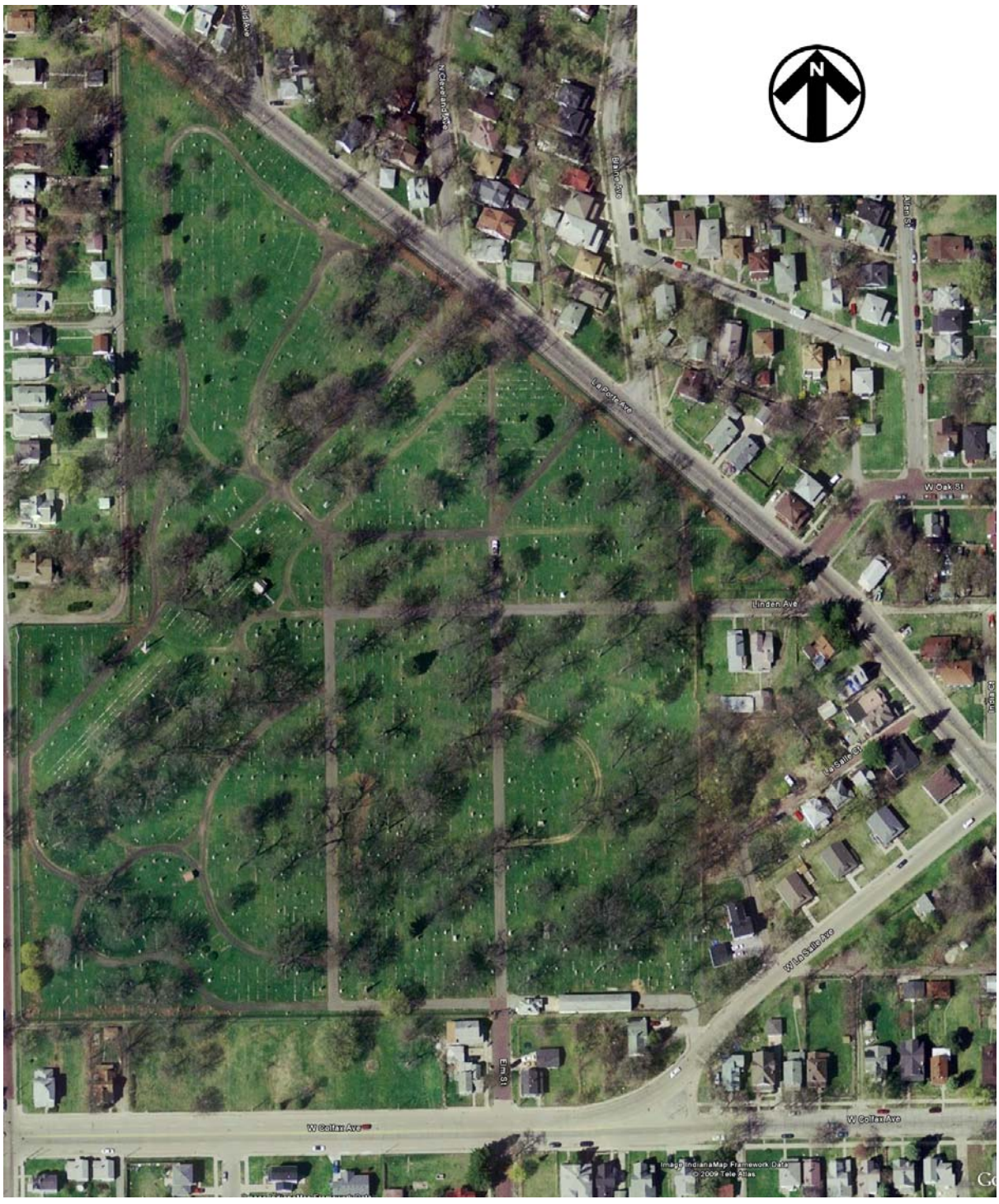



Figure 3. Aerial view of the cemetery showing the landscape, roads, and some of the surrounding neighborhoods.

unpatrolled property within the cemetery boundaries.

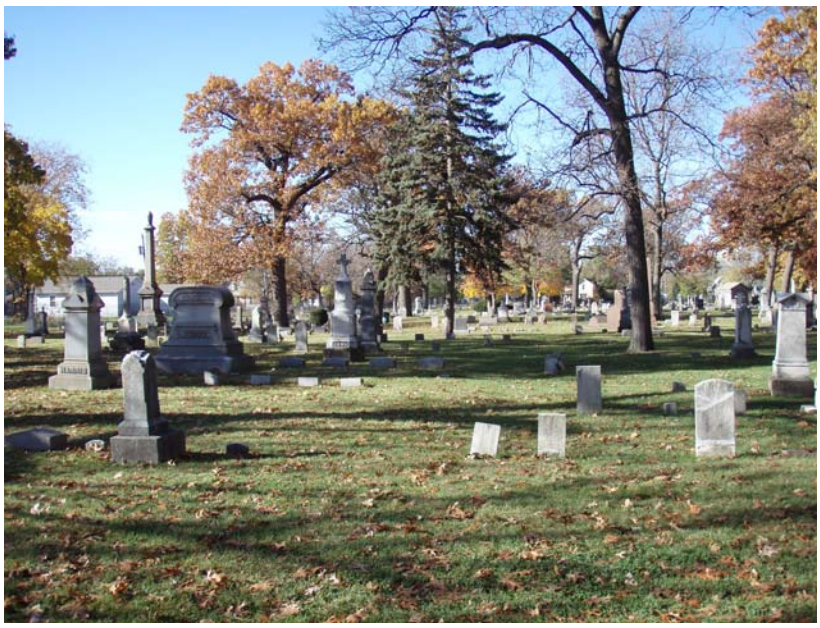


Figure 4. Typical City Cemetery landscape, combining a variety of three-dimensional stone types, as well as a wide variety of tree species. Although there is little topographic variation, the cemetery provides a variety of changing vistas.

We suspect that most visitors arrive at the cemetery from the South Bend business area by taking either Colfax Avenue or Washington Avenue. Both routes run through the West Washington National Register District. The main entrance to the cemetery is at the end of Elm Street. Many of the houses bordering Colfax have been razed and this opens a unique opportunity for the city to improve the cemetery vista, making the entrance more attractive and visible.

There is at least one other entrance, from Linden Avenue off LaPorte Avenue, but this entrance is closed to traffic, allowing only one entrance and exit from the cemetery.

The cemetery is an idyllic location within South Bend. The roads are laid out in a meandering pattern typical of lawn park cemeteries. There are numerous trees. As illustrated in Figure 4, although the grounds have an almost monotonously level topography, the original designers created roadways that provide a changing vista, with a variety of three-dimensional monuments that attract and retain your attention. Although there is little ironwork remaining, the cemetery is the home to a wide variety of zinc (also known as white bronze) memorials.

The grounds offer an exceptional opportunity for a range of educational programming that could make far better use of the cemetery. As will be discussed in following sections, there is little use made of the cemetery today. The investment in signage, maps, brochures, and curriculum guides could be easily paid back in the improved quality of life, additional opportunities for the citizens, and outstanding educational programs.

**Factors Affecting the Landscape Character**

South Bend is situated in the Northern Moraine and Lake Region of Indiana, an area of varied topography. The flat areas tend to be lacustrine plains, outwash plains, or valley trains. South Bend is dominated by outwash plains. These are areas in the front (or snout) of glaciers where meltwater has carried and deposited sediment away from the glacier, forming broad plains. This is why the soils in the vicinity of the cemetery consist exclusively of sands. It also helps explain the very level topography of the cemetery.

More specifically, this is the Kankakee outwash and lacustrine plain. Much of the area is underlain by thin drift over a nearly flat

bedrock surface. This bedrock, known as the Dekalb Lowland, is formed on Upper Devonian and Lower Mississippian shales.

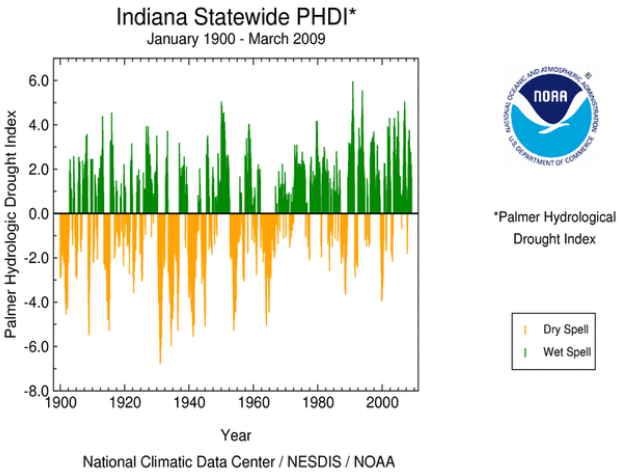



Figure 5. Drought index for Indiana.

Although this part of Indiana originally had an oak-hickory forest, the urban setting is today the determinant factor in local vegetation. South Bend is recognized by the Department of Natural Resources Division of Forestry as one of Indiana's 64 Tree Cities USA, a program sponsored by the National Arbor Day Foundation and the National Association of State Foresters.

South Bend has a humid continental climate, characterized by a zone of conflict between polar and tropical air masses, variable weather patterns, and a large seasonal temperature variance. Lake Michigan, about 20 miles away, has a large effect on the climate of South Bend, including lake effect snow in winter and moderating temperatures year round. June through August are the warmest months, with average temperatures above 80°F. December through February are the coldest winter months, with average low temperatures of 16 to 22°F. The winters are marked by considerable cloudiness, high humidity, and frequent periods of snow. The area receives an average of nearly 71 inches of snow per year, with January getting the heaviest snowfall. Spring and fall are often mild and overcast.

The average yearly precipitation is about 39 inches, with most rainfall occurring in June. As illustrated by Figure 5, South Bend has been in a period of relatively heavy rainfall over the past several years. The last prolonged drought was from about 1962 through 1967.

High winds, usually associated with strong low pressure systems moving across the Great Lakes or up the Ohio River Valley, exceed 50 mph once or twice a year. Tornadoes are not common and when they occur they tend to produce only F0 to F1 damage.

The average growing season for South Bend is 169 days. Figure 6 shows that South Bend is situated in Plant Hardiness Zone 5b, where the minimum temperatures are expected to be between -10 and -15°F. This is also an area where cool season grasses, such as zoysia, are typically successful.

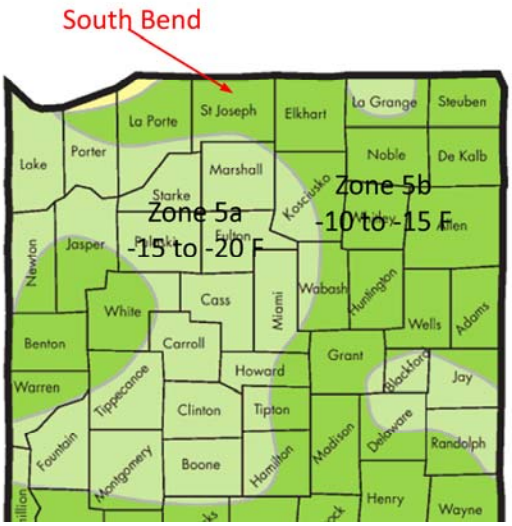



Figure 6. Plant hardiness zones for northern Indiana.

A factor not only affecting the landscape but also stone preservation, is the level of pollutants. Based on monitoring in St. Joseph County, the annual mean of $NO_2$ is 0.01 ppm and the annual mean of $SO_2$ is 0.002 ppm. These levels result in significant levels of acid rain (see Figure 7) and deterioration of marble and many sandstones.

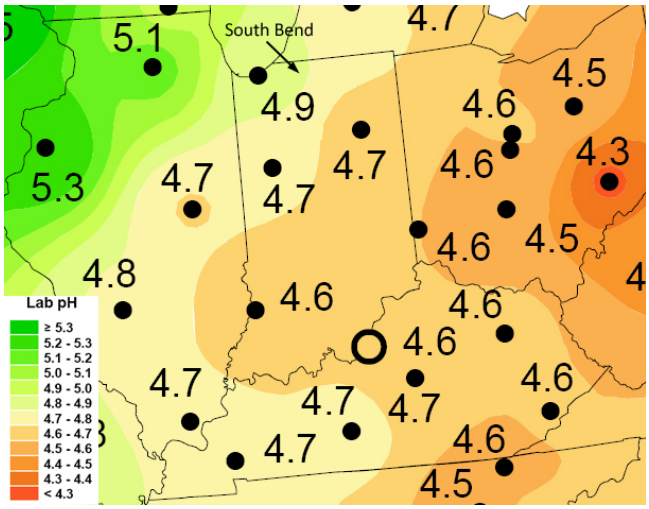


Figure 7. pH levels of rainfall in the South Bend area (pH of 7.0 is neutral, 6.9 and lower is acidic).

## Administrative and Legal Issues

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

Article 12 of South Bend's Municipal Code is entitled "Public Cemeteries" and it specifies that the Board of Public Works will have control over all city cemeteries. It also establishes a perpetual care fund for the cemetery.

Of greatest importance, this ordinance sets out some basic rules of conduct for the cemetery, allowing the Sexton to expel anyone who violates the rules. The ordinance prohibits driving faster than 15 mph, removing vegetation, damaging monuments, discharging firearms, trespassing upon private lots, use of the cemetery for any purpose other than as a burying ground, and committing any nuisance.

Unfortunately, this ordinance has been effectively modified by the South Bend City Council in 1976, when the position of sexton was eliminated and the Bureau of Cemeteries was "consolidated" with the park department (*South Bend Tribune*, September 9, 1976).

There are additional city ordinances that likely apply to the cemetery, although we recommend that the city attorney be consulted on applicability. For example, Section 19-59 prohibits animals off leash in public parks. Section 19-39 prohibits damaging vegetation. Section 19-40 lists a variety of prohibited acts, including littering, spitting, and dumping. Section 19-42 lists a wide range of activities lumped under disorderly conduct, many of which might reasonably be an issue in a cemetery setting. Section 19-61 makes it unlawful to consume or possess alcoholic beverages in a city park.

We do recommend some modification to the existing ordinances. First, it is critical to determine whether those laws that were intended to apply to parks extend to City Cemetery. If there is any question, we recommend that the cited ordinances be amended to include the cemetery.

Then, assuming that the issues covered under the generic term park do apply, we recommend some specific additions. These include:

- updating the ordinance to allow representatives of the Parks and Recreation Department to "expel" violators,

- limitations regarding installation of markers without prior approval (in order to maintain the historic appearance and integrity of the cemetery);

- hours open (typically set hours, such as 8am to 5pm); and
- an appropriate violation section establishing punishment, and
- a prohibition against gravestone rubbings.

Finally, we recommend that the town adopt a flower policy that will minimize maintenance problems.

First, we believe that all flowers or arrangements should be removed by the town 10 days after holidays *or* when the arrangements become unsightly. This will allow staff to remove faded flowers, such as Christmas decorations after the holidays. Floral policies are common at cemeteries and what we propose is actually relatively simple and liberal.

Second, we recommend that only cut or live flowers be allowed. The most significant benefit of this approach is that such flowers can be readily mulched into the landscape, thereby significantly reducing the level of maintenance effort. Natural flowers are also far more appropriate and in-keeping with the historic nature of the cemeteries. In contrast, plastic and fabric flowers, if accidentally mowed, create significant debris that will not decompose.

Indiana is very fortunate to have had a forward thinking, progressive legislature that recognized the long term needs of the state's cemeteries. As a result they enacted the Care of Cemeteries by Counties provision (Title 23, Article 14, Chapter 67 of the Indiana Code) that allows County Commissions to establish a Cemetery Commission. This commission then has the authority to enact a tax for the specific purpose of cemetery maintenance and repair.

This is an especially fair and progressive means of dealing with the burial places that otherwise show continuing deterioration and decay. As this assessment reveals, City Cemetery has a variety of very critical preservation needs. These needs require adequate, long-term funding. Without this funding the cemetery condition will continue to decline and an exceptional resource will be lost to future generations.

**<u>Recommendations</u>**

**All decisions regarding modifications, alterations, additions, or other actions affecting City 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.**

**The city should determine if the provisions outlined in the municipal code for their parks also apply to City Cemetery.**

**The city should modify its existing code to include specific provisions including limiting the placement of markers without permission, establishing the hours the cemetery grounds are open, and establishing penalty provisions. The city should also establish a decoration policy specifying how long flowers and other decorations may be placed on graves and limiting the types of decorations.**

**We recommend the setting of a Cemetery Commission as a means of securing the necessary long-term funding for the preservation of City Cemetery.**

# HISTORIC SYNOPSIS

This assessment was not tasked with conducting historic research on City Cemetery, so this very brief account relies on a few secondary sources to assist in placing the cemetery in a broader historical context. It is also intended to develop areas where additional historical research is necessary in order to better interpret the cemetery.

We are told that the only history of the cemetery is a one-page brochure developed by a previous sexton some years ago. That brochure indicates 11 "significant sites," including the sexton's lodge, the Colfax memorial, the Birdsell monument, and the burial place of Revolutionary War soldiers.

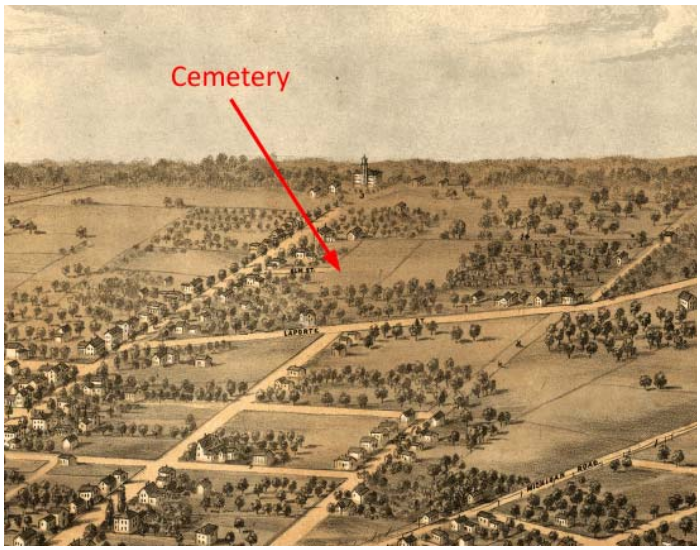


Figure 8. 1866 *Bird's Eye View of South Bend* showing the City Cemetery area.

The brochure contains relatively little history of the cemetery, noting only that the land was "donated in 1831 by South Bend co-founders Alexis Coquillard and Lathrop Taylor," with the cemetery founded the following year. The entrance gates were moved to their present Elm Street location in 1899, although nothing is said concerning their original location. The sexton's house was constructed that same year.

One of the earliest graphics showing the cemetery we identified (although we suspect there are other, earlier maps) is the 1866 *Bird's Eye View of South Bend* (Figure 8). We see the cemetery area, north of Elm and south of LaPorte Avenue as largely open, although there are some woods along the edges of the tract. The drawing doesn't identify the tract and it doesn't appear different from any of the other surrounding farm land shown on the horizon. We do see, however, that houses were found along what is today Colfax, as well as LaPorte.

An 1875 plan of South Bend, however, provides far more detail, showing the cemetery confined to a relatively small area in the southeast corner of the tract (Figure 9). It is laid out in a formal gridded pattern, very typical of early to mid-nineteenth century town and city cemeteries. The design, often directed by engineers, took on a forced formality, although the process did allow limited land to be maximized for burial purposes. There were rarely any paths or landscaping since these, too, would take up valuable burial space.

The plan reveals 1st, 2nd, and 3rd Avenues running north-south, bisected by an unnamed east-west road. Surrounding the rectangle there were narrow roads or paths. The cemetery runs from private property along the eastern edge of the cemetery westward to Walnut Street, the western cemetery boundary even today. There is no hint of the lawn park

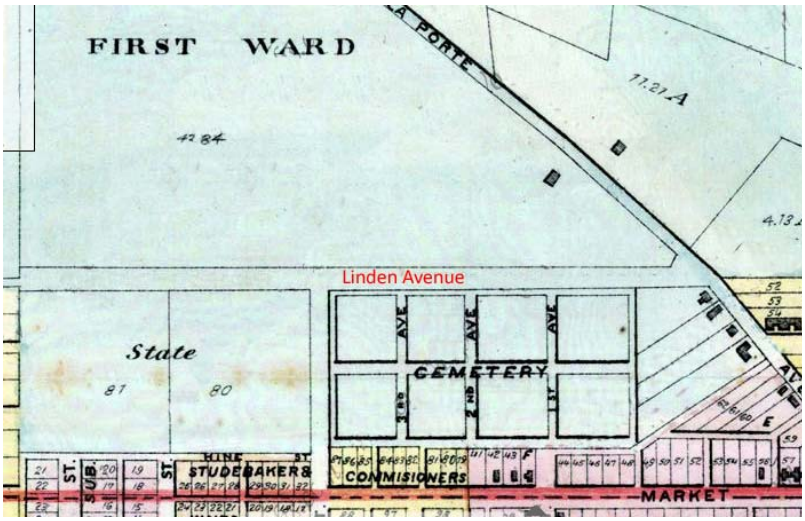


Figure 9. *St. Joseph County Atlas* showing South Bend in 1875.

design that we see today, nor of the houses that today border Walnut and reduce the northwestern boundary of the cemetery. The lots fronting the cemetery along Colfax (originally Market) were, however, laid out although only sparsely occupied. Linden Avenue ran along the north side of the cemetery from LaPorte west to a narrow alleyway. This view remains unaltered in the 1876 A.T. Andreas *Plan of South Bend*.

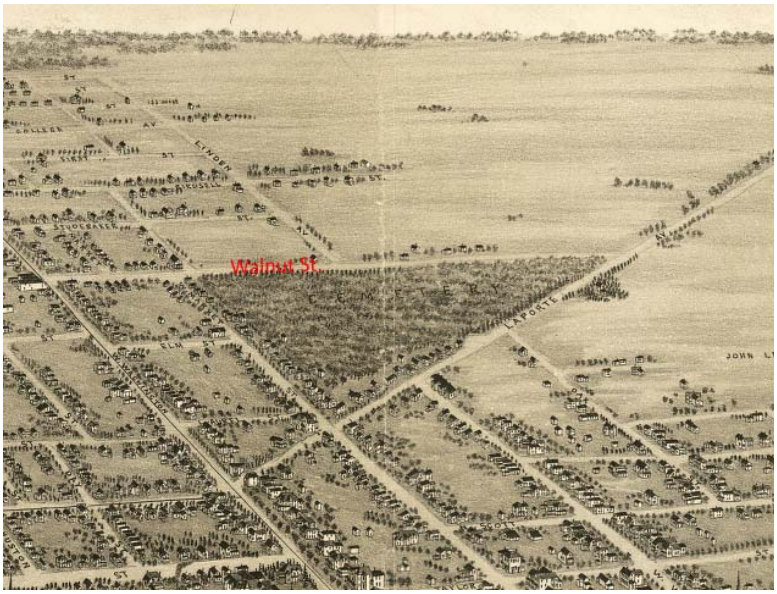


Figure 10. 1890 *Bird's Eye View of South Bend*.

By 1890 a second Bird's Eye View of South Bend was produced (Figure 10). This shows the cemetery taking up the entire area it occupies today, although the entire plot appears heavily wooded. In addition, Linden Avenue is no longer shown running east-west through the cemetery. Houses are shown running along the west side of LaPorte, even where Linden had been.

The 1895 St. Joseph County Atlas shows the cemetery essentially the same as the 1890 view. Linden not only does not run through the cemetery, but there is no indication of the houses on those lots to the northwest of Colfax (Market) and LaPorte. This is likely an error (or omission) on the part of the draftsman. No entrances are shown and, most regrettably, the map fails to show any internal road network.

The 1911 St. Joseph County Atlas (Figure 11) still shows the cemetery only in outline form, although it does show the remnant of the Linden Avenue running off LaPorte. It also now shows a gate at the end of Elm. We suspect this coincides with the report that the entrance gate was moved to this location in 1899. It also suggests that it may have been moved from where Linden terminates along the eastern boundary of the cemetery. This map, however, does not show any of the road system within the cemetery.

The present design, however, is very characteristic of the lawn park movement of the late nineteenth century. It would make sense

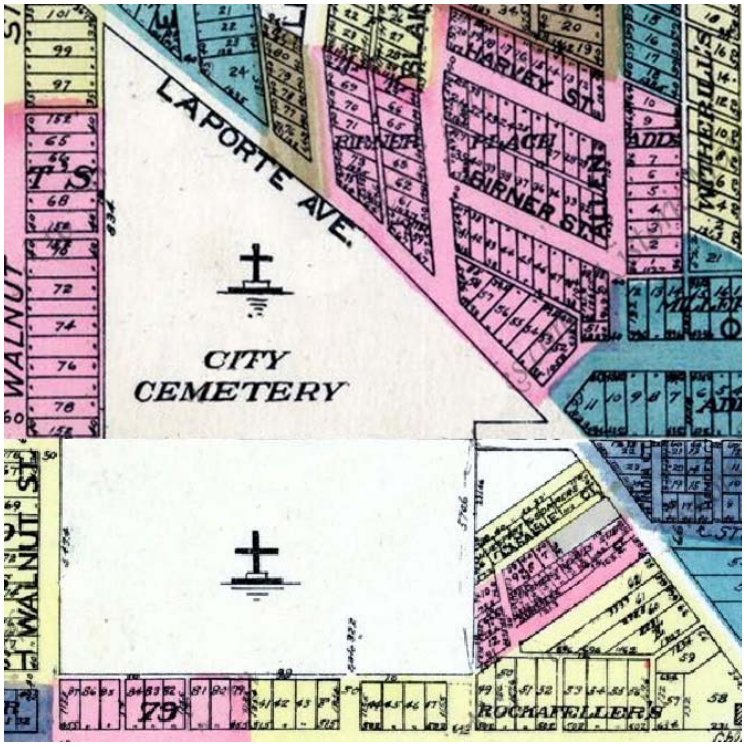


Figure 11. *St. Joseph County Atlas*, showing the cemetery in 1911.

that the road network was constructed with the expansion of the cemetery – the date for which is apparently unknown. It may, however, have been in 1899 when the gate was moved and the Sexton's House was constructed.

The modifications, as well as the design (even the incorporation of the stone bridge, today known as Coquillard's Folly) all are strongly suggestive of formal architectural involvement, likely by an individual with at least some previous cemetery experience.

The last map we examined is the 1938 Soil Survey of St. Joseph County (Figure 12). This map no longer shows Linden Avenue in the cemetery grounds, but it does show what appears to be LaSalle Ct., with houses on both sides. The northwestern end of this street is today within the cemetery, suggesting that the map may be incorrect, or that there may be some additional parcel purchases. Regardless, this map fails to show the internal road network.

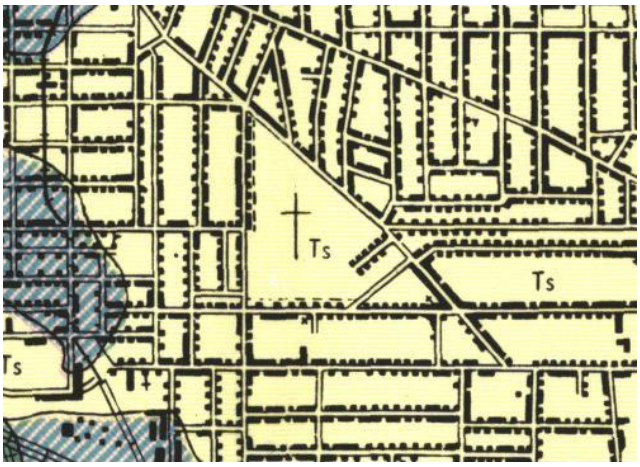


Figure 12. 1938 *Soil Survey of St. Joseph County* showing the cemetery property.

The aerial images, available for St. Joseph County beginning in 1938, are another very useful historical source. Unfortunately, we did not have access to these during this report production, but they have the ability to provide information on cemetery use and, especially, the evolution of the cemetery's tree cover.

This brief overview, using only minimal sources, is sufficient to illustrate several points of critical historical research. Specifically, we recommend the following areas be further examined:

- identification of the original deed and subsequent land transactions for City Cemetery;
- information on how plots were originally sold (fee simple, for example) with evidence of deeds or other legal documentation;
- evidence of any early cemetery plot maps;

- additional research on the expansion of the cemetery and its conversion from a town/city cemetery landscape to a lawn park landscape, with special effort to identify the architect and any original drawings or plans for the cemetery;

- information on the development of ordinances relating to the cemetery, such as the establishment of the sexton, his duties, and any city records that may still exist;

- a search of the South Bend Tribune to identify articles concerning the cemetery and activities associated with its history (for example, it is very likely that the redesign of the cemetery was major news);

- a search for period photographs (including postcards) of the cemetery showing its landscape and appearance, including evidence of mortuary activities; and

- further research into the cemetery's African American burials, as well as the background explaining why the cemetery was not segregated.

There are no doubt additional topics worthy of research and knowledge of local repositories may suggest other lines of productive research. For example one on-line source claims that the Jewish Rose Hill Cemetery is a portion of City Cemetery (www.state.in.us/dnr/historic/files/stjoseph_jewish.pdf).

Regardless, this provides a tentative framework. This research is critical for all future efforts to promote the cemetery, as well as to develop a National Register nomination for the property.

We caution the caregivers that it is critical to take a broad view of this historic research. While individuals important to the history of South Bend, or the nation, should not be ignored, the cemetery has much more to offer. It would be shortsighted to view the necessary historical research as focusing on what some call "old dead white guys." The research should be broadened to include the development of the property, its evolutionary changes, the role played by the African American community, as well as the variety of other topics often associated with cemetery research, such as mortuary practices and mourning rituals.

**Recommendations**

**There remain a very large number of questions surrounding the cemetery. The current historic research has barely scratched the surface. Additional research should begin to place the cemeteries in a more secure historical context. This research could be tied into the development of mortuary practices in South Bend and the study of the African Americans who lived in the city.**

**All of the historic research can be used to generate better interpretative information for the city's web site, and tourist brochures. It is also critical in order to evaluate the National Register potential of the cemetery or its contribution to the expansion of the existing historic district.**

# ROADS AND PEDESTRIAN ISSUES

**Access and Circulation**

Today access into the cemetery is by way of Elm Street, north off Colfax Avenue. Visitors go down a short length of road with private houses on both sides to the entrance gates. The road outside the cemetery entrance is laid in paving brick set at a 45° angle to the concrete curb and is 24 feet in width. This brick paving extends into the cemetery grounds about 25 feet.

Private residences border this approach and while they are generally well tended to, they lack architectural merit and detract from the statement that the entrance could make. We recommend that the city gradually obtain these properties as they become available, the structures be demolished, and the approach planted in heirloom plantings typical of the Victorian period (we select this period since it would have been about this time when the gate was erected and the cemetery layout modified).

Figure 13. Entrance to the cemetery. This could be greatly improved by removing the existing structures and replacing them with period appropriate landscaping. The brick pavement should be carefully retained.

With the acquisition of this property it would also be possible to create a parking area, screened from the approach and cemetery. This would help promote pedestrian tours of the cemetery.

The date of this brick road is not known, although many were constructed in the late 1890s and early 1900s (Marder 2006:56). The original brick road should be carefully maintained by the city and any eventual repairs needed should be performed in kind.

The gate will be discussed in more detail in a following section, but it is important to note that the 24 foot roadway narrows to a 16 foot wide gate flanked by two pedestrian gates, each 5 feet in width. While this gate is centered on the cemetery road within, it is slightly off-center to the public road beyond.

Once in the cemetery there are two different kinds of roads. What have been classified as the "primary paths" are paved with asphalt and these are 16 feet in width. The entrance road continues straight for approximately 640 feet before the paving stops. The paved road also extends about 220 feet along the fence to the west of the entrance, then an additional 550 feet to the north, parallel to the main entrance road. An additional 510 feet of paved road connects the two north-south roads, terminating at the now closed gate to Linden Avenue. Thus, the cemetery contains about 0.36 mile (or 1920 linear feet) of paved roadway.

Although we have no information on when these roads

Figure 14. Roadways in the cemetery. Clockwise from top left: condition of paved road, termination of paved road and extension of grassed road, gravel road with heavy use and a large mud hole, lost curbing at the cemetery entrance, another area of damaged curb, gravel road with minimal use.

were last paved, the depth of the base coat or the depth of the wear coat, they all appear to be in good condition. However, the Parks and Recreation Department undoubtedly realizes that asphalt has an expected life of about 10-15 years. Consequently, the city must remain vigilant in repair, while budgeting for the eventual resurfacing of the cemetery roads.

The great majority of roads within the cemetery are gravel in various states of repair. Most are satisfactory, although several exhibited extensive mud holes at the time of our visit and several others apparently receive so little traffic that the grass is beginning to overtake them. There are about 5,250 linear feet of gravel roads (or 0.99 mile).


Figure 15. One possible example of how the roads in City Cemetery could be modified to improve traffic flow if visitation increases.

In addition, we found several roads that appear to be relatively often used, but which are neither paved nor graveled. They are essentially two-rut grassed roads and they account for an additional 700 linear feet or 0.13 mile.

Thus, we found approximately 1.48 miles (or 7,870 feet) of roadway in the cemetery.

While the gravel and grass roads are likely serviceable during the summer, we would expect them to remain largely impassible during the winter months. This may prove very inconvenient to both visitors and service vehicles. There may be good reason to pave these gravel roads and doing so would not negatively affect the appearance of the cemetery as long the 8 foot width was maintained. Late nineteenth and early twentieth century cemetery roads in larger cities were commonly paved using asphalt (or some proprietary mixture) or macadam. Rarely were roads allowed to remain only graveled because of the increased level of maintenance this created.

Only a very few sections of the paved road have curbing. Where present it is concrete, suggesting that it may be a late addition. It is also possible that what appears to be curbing is actually heavily damage plot coping. In either event, part of cemetery maintenance is ensuring that this coping (or curbing) is clean, level, and fully exposed. Where damaged, an effort should be made to make appropriate repairs.

Because of the curving roads that often loop back on themselves, navigation in the cemetery can be difficult. In addition, the narrow widths can make driving difficult, especially for larger vehicles. There is also no parking anywhere in the cemetery and there is only room to pull over in very limited areas of the main entrance road (see Figure 14).

These are problems, however, found in all turn-of-the-century cemeteries. They were designed for different, and lighter, vehicles. As long as traffic is not heavier than we observed during the assessment these should not be problems.

If cemetery use increases, consideration should be given to closing all but a few principal

roads to vehicular traffic using lockable bollards and posting the remaining roads as one-way. One possible design is shown in Figure 15. This would serve to simplify a driver's choices and encourage greater pedestrian use of the facility. The bollards, however, could be removed for service vehicles as necessary.

Figure 16. Improperly set gate on the east side of the cemetery at Linden Avenue. This requires immediate attention to eliminate the pedestrian passageway.

There is a second entrance to the cemetery, off Linden at the eastern side of the cemetery. This entrance is used by service vehicles and we understand the gates are kept locked. The posts, however, have been incorrectly set so that the double gate overlaps itself and there is a 3 foot gap in the fence, allowing easy pedestrian access. This gate requires immediate maintenance with the post being reset so as to close this pedestrian access point.

A third entrance is found at the maintenance building, providing access to LaSalle Connector. The fence in this area is also chain link and there is a chain link gate in good condition. We understand that this gate also remains locked.

**Pedestrian Access, Sidewalks and Pathways**

As mentioned above, there is pedestrian access from a damaged gate on the east side of the cemetery. An additional pedestrian gate exists on the west side of the cemetery. This provides a direct cut-through. We strongly recommend that this gate be kept locked at all times, minimizing inappropriate use of the cemetery.

There appears to be little pedestrian use of the cemetery at present. There are likely a variety of reasons, but some certainly include the lack of security at the cemetery, the lack of convenient parking, and a lack of promotion. The cemetery has no sidewalks and they are not needed, given the limited traffic. Although a city ordinance limits the speed to 15 mph, there is no signage to notify the public and, beyond that, no means of enforcement (we discuss signage, as well as security in following sections).

There are no pathways in the cemetery. This is also not considered a significant problem. Cemetery use is light enough at present that this is not currently a problem. It is unlikely that paths would have been part of the original formal, or gridded, layout of the cemetery. Such designs tend to maximize available plots and there was little thought given to pedestrian movement since cemetery visitation was limited to burials.

It is possible, however, that pathways were incorporated into the expansion of the cemetery. It is not uncommon for pathways to be abandoned, being sold to adjacent plot owners for expansion of their burial spaces. Additional research is necessary to determine if paths were part of the original design.

Although the streets surrounding the cemetery often have sidewalks, we observed relatively little use. In addition, their condition is variable. Sidewalks are present on both sides of Washington Street, but are intermittent on Elm Street between Washington and Colfax. Sidewalks are again found on both sides of Colfax, but are present on only the west side of Walnut and even there are intermittent.

Looking at the South Bend City Plan we note that the cemetery is on the Bendix/Ardmore bus route, but there currently are no bicycle routes in the vicinity of the cemetery.

**Universal Access**

There are few limiting factors for ADA compliance or universal access at the cemetery. Ramping would be necessary to allow access to the Sexton's Cottage and the graveled drives are difficult for wheelchair access. While extensive modifications would be out of character, the cemetery already is largely available to individuals with various challenges. At the present level of use we are not convinced that there is a demand adequate to justify either the expense or the damage to the historic fabric.

In addition, the ADA or the Rehabilitation Act of 1973 is generally not interpreted to apply to cemeteries by the Department of Justice. Nevertheless, we are an aging population and it would be appropriate for the city to establish a protocol that would allow staff to assist wheelchair patrons or other disabled reach specific gravesites in the cemetery. Some cemeteries have achieved this goal by training their staff in the correct means of assisting the disabled[1] and by providing golf carts to help ferry individuals to grave locations. This should be a long-term goal of the city for the cemetery.

Another low impact approach suitable for tourism is to ensure that there are interpretative plaques and exhibits at the entrance – allowing disabled visitors to experience and learn about the cemeteries.

**Recommendations**

**We recommend that the residences on Elm at the entrance to the cemetery be acquired by the city and removed. The available corridor should be landscaped using period appropriate plantings with a parking area dedicated to the cemetery. The brick paving should be carefully maintained by the city since it is part of the historic fabric and sets the character of the cemetery.**

**The city should develop a maintenance plan for the paved roads within the cemetery. Although in good condition currently, asphalt has a life of 10-15 years, so the city should be budgeting for increased maintenance costs.**

**The gravel roads pose problems in maintenance, as well as providing convenient pedestrian access. Consideration should be given to maintaining this current width (about 8 feet), but gradually paving them.**

**Curbing should be evaluated and, where damaged, should be repaired in kind (same profile, same material, and same color). This is a routine part of cemetery maintenance and should not be ignored.**

[1] Sites for establishing such protocols include http://www.apparelyzed.com/etiquette.html, http://www.afb.org/Section.asp?SectionID=36&TopicID=163&DocumentID=2104, and http://www.aheadweb.org/wiki/DeafEtiquette.

**Driving in the cemetery can be difficult given the narrow roads. As use of the cemetery increases, it would be appropriate to direct traffic using signage and also closing many of the roads to vehicular traffic using lockable bollards.**

**The pedestrian gate on the west side of the cemetery should be kept locked. The service gate on the east side, at Linden, should be correctly set to close the unintended pedestrian passageway. This will help minimize inappropriate uses of the cemetery.**

**The city should establish a protocol for assisting disabled clients and visitors. This should include appropriate training of staff and a means to provide access to remote graves.**

# LIGHTING AND SECURITY ISSUES

**Vandalism**

At the time of our assessment, the city reported that vandalism has occurred as recently as Summer 2007. The Parks and Recreation Department reported that they had no formalized mechanism for reporting vandalism and that no formal reports were prepared, although the police were called. There was no information concerning the outcome of that call (although we suspect that only a report was taken).

Figure 17. Recently vandalized monuments immediately adjacent to one of the cemetery's main roads.

During our assessment we found multiple examples of either recent or old vandalism – evidenced by recently broken stones (the marble still being crisply white) and toppled stones (too heavy to have fallen accidentally). Unfortunately, without a uniform and written reporting mechanism, it is impossible to determine when vandalism has occurred, how frequently, and what part(s) of the cemetery is at greatest risk.

We know from the previous discussion that the cemetery is situated in an area where property crimes are high. We know also that the Parks and Recreation Department does not have 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 cemetery is fenced, but the protection offered is imperfect. In particular, we have previously recommended – and do so again – that the eastern gate be correctly hung to eliminate the pedestrian passage at this point and that the western pedestrian gate be locked. These two steps would make it more difficult for the cemetery to be used as a cut through.

At the present time there is no systematic inspection process – either by the city or by a caregiver group. The city reports that maintenance workers are to report vandalism to their supervisor, but with a depleted and impermanent staff, we question if this is a viable mechanism. It seems unlikely that the staff 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.

As will be discussed more fully in a following section, we recommend a stone-by-stone assessment for the cemetery, documenting

all stones requiring conservation treatments. With this photo documentation in hand it will be possible for the City to not only begin budgeting for the necessary repairs, but also recognize new damages when they occur.

We recommend that the staff of the cemetery be trained to recognize vandalism, as well as being periodically reminded to be on alert for evidence of vandalism.

We also recommend that the city create a friends group that could begin "patrols" of the cemetery. The goal is not to have these groups confront vandals, but to be eyes and ears, providing a public presence in the cemetery and immediately reporting any suspicious activities. There are a number of people interested in cemeteries and cemetery preservation. We do not believe it would be difficult to organize such a group to help protect such a valuable city resource.

Another approach we recommend is for representatives of Parks and Recreation to contact the residents immediately adjacent to the cemetery and enlist their assistance in the protection of the resource. They should be specifically asked to call if they see any suspicious activities in the cemetery. They should also be asked to be especially vigilant during weekends and holidays.

These steps will help maximize the attention that the cemetery receives. Coupled with other recommendations offered by this study, it will further reduce the risk of significant vandalism.

We recommend that Parks and Recreation 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.

It is critical that the city report each and every case of vandalism, regardless of extent, to the police. The police must be educated concerning the historical value of these stones and the financial cost of the damage to ensure that damage and vandalism is taken seriously. If the damage is recent, the police should be expected to assign crime scene investigators to collect evidence. This evidence may include shoe prints in soil or on stones, discarded beverage containers with finger prints, collection of evidence such as cigarettes, and collection of any eye witness accounts. The police should be expected to assign an investigator and this individual should be expected to treat this as a real crime deserving of real investigatory efforts.

It is also essential that vandalized stones be repaired. Simply allowing broken stones to

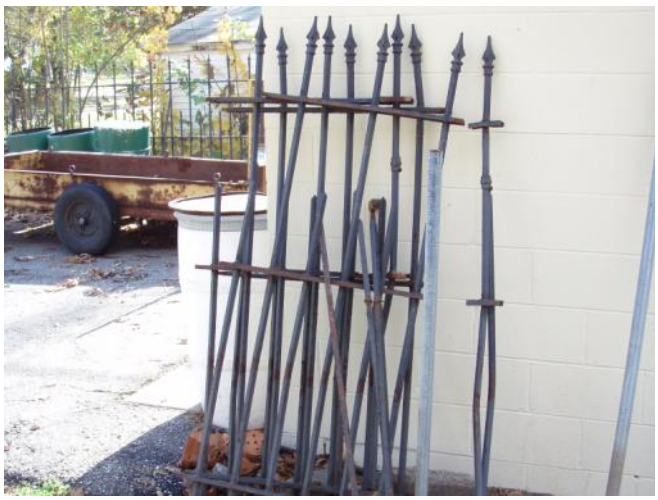



Figure 18. Examples of unattached ironwork or zinc monuments that could be easily stolen.

remain were they fell is not only disrespectful, but it gives the entire cemetery a run-down and uncared for appearance. We know of no city that would allow park benches or picnic tables to remain in a park in a vandalized condition – they would be immediately repaired or replaced. Likewise, it is critical that vandalized stones be repaired by a stone conservator.

Nothing suggested here, however, is intended to take the place of routine police patrols. A police presence can be a major deterrent to cemetery-related crimes and is a critical element in cemetery crime prevention. It should be relatively easy to ensure that City Council directs the Police to make routine (not occasional) patrols through the cemetery during open hours. The more difficult issue is whether the entrance gate should be locked.

Locking the gate may deter some inappropriate activities – but it will also deter after hours police patrols. We have found that police officers will not exit their cruisers, unlock gates, make drive-throughs, and then relock gates. Thus, for a night time police presence, a decision must be made concerning the cost and benefit of locking the entrance gates. We do not have adequate information to offer a recommendation.

Regardless, we can state that patrols are important at night – and especially on long weekends and holidays when alcohol consumption increases. Halloween is a particularly common time for cemetery vandalism.

**Cemetery Lighting**

There are a number of street lamps around the exterior of the cemetery. All are standard single arm steel brackets with cobra head luminaires mounted on existing utility poles. A typical example is found

immediately before the entrance to the cemetery on Elm Street (see Figure 13). We are told that the only lighting in the cemetery is the night light mounted on the maintenance building at the cemetery entrance.

Lighting is sometimes seen as reducing vandalism. There are two problems with this approach. The first is that cemeteries were not lighted historically. Thus, the introduction of lighting detracts from the historical integrity of the properties, changing the historic fabric. The second problem 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 City Cemetery.

We do not recommend that any additional lighting be installed.

**Hardening Targets**

Thefts in cemeteries nationwide have dramatically increased. The reasons for this are two-fold. First, there is an increasing market for gates, urns, ironwork, and statuary – created by an increase in upscale garden design and individuals willing to pay large sums for original artwork. Second, there is less attention being paid to cemetery fixtures, largely the result of decreased maintenance budgets and fewer police patrols.

The cemetery contains little ironwork, although we did note a number of fence panels simply leaning against the maintenance building wall. These would make a very convenient target and would require no more than 5 minutes to be loaded in a pickup and stolen.

In addition, there are a number of very beautiful stones and a very large selection of zinc (sometimes called white bonze) monuments. The latter are an especially attractive target. Not only are such monuments generally uncommon, but we found a significant number at City Cemetery that were no longer attached, making them easy targets for theft.

It is a simple maintenance step to use woven stainless steel wire to secure ironwork and other types of monuments. The cost is less than $20 and the time involved is about 15 minutes. This is something that the City's Park and Recreation staff can easily accomplish or that would be an excellent community project. See the NPS article, http://crm.cr.nps.gov/archive/25-02/25-2-15 .pdf for additional information.

Fragmentary stones will be discussed in greater detail in a following section, but it is important that damage be repaired to prevent loose items from being readily available to thieves or souvenir seekers.

**Recommendations**

**We recommend that a multifaceted approach against vandalism be taken:**

- **The western pedestrian gate should be locked.**
- **The eastern service gate should be reset and locked to eliminate the pedestrian passageway.**
- **A stone-by-stone assessment should be conducted to document all damaged or broken stones.**
- **Staff should be periodically reminded to be alert to evidence of vandalism.**
- **A friends group should be created to assist in patrolling the cemetery.**
- **Residents adjacent to the cemetery should be contacted and asked to report suspicious activities in the cemetery.**

- **The City should develop a form specifically for cemetery-related vandalism.**

- **All vandalism should be immediately reported to the police and should be thoroughly investigated.**

- **All vandalism should be repaired as soon as possible.**

- **Police patrols should be increased and made a regular, daily occurrence.**

**Loose ironwork, zinc monuments, and stones should be secured using woven stainless steel wire or collected and safely stored until repair is funded.**

# CEMETERY FIXTURES AND FURNISHINGS

## Cemetery Buildings

Two buildings are present at City Cemetery – what is called a sexton's cottage and an adjacent maintenance building.

It is reported that the sexton's cottage was used for records storage. While this is its use today, it was far more common for these structures to be constructed with the intent of having an on-cemetery caretaker. Additional historical research may be able to resolve this question. Likewise, additional research into the 1899 renovations (when the cottage was reported to have been constructed) may assist in clarifying the issue.

The cottage is found immediately inside the Elm Street gate to the east. The cottage measures about 30 by 20 feet. This assessment was not tasked with preparing a condition assessment of this structure, but we did note that the building evidences considerable cracking of the brick foundation. This is sufficient to recommend that an assessment of the structure be conducted as soon as possible. The building is a very important aspect of the cemetery and it requires careful attention. This should begin with an assessment, identification of critical repairs, and the development of a detailed maintenance plan.

Behind the cottage is a modern maintenance building measuring about 98 by 20 feet with roll-up doors at each end. While we understand the need for a maintenance building, its location and proximity to the sexton's house detracts from the overall appearance of the entrance.

The best choice would be to relocate this structure to a more remote and less obvious location. A less costly option would be to screen the building and its associated concrete pad work area from the cemetery, the entrance, and from the sexton's house.

It is good practice to screen utilitarian work areas from public view in order to maintain the appearance of the cemetery and relations with clients (Klupar 1962:175). Klupar also notes that the cemetery buildings "set the tone for the entire cemetery [and are] the focal point for visitors" (Klupar 1962:207). Weed, a landscape architect, also explained, "all service buildings should be readily accessible, but hidden from the general grounds by proper landscape planting" (Weed 1912:112).

These same views are echoed by the Department of Veteran Affairs' design standards for service yards today. They state that, "The Service Yard and adjacent buildings should be screened from public view" (http://www.cem.va.gov/cem/scg/sgm_service_yard.asp).

The utilitarian nature of the cemetery's buildings could be easily misconstrued by families. Operation or maintenance of equipment can disrupt family grief and moments of solitude.

## The Boundary Fence

While the cemetery is devoid of ironwork on plots, there is an exceptional boundary fence, found along all sides of the cemetery except a few areas behind residences at LaSalle Court and Linden Avenue, where chain link has been used.

The fence is a simple picket design on three rails, with the pickets alternating height. The taller pickets have spear finials, the shorter pickets have milled points. We estimate that

Figure 19. Buildings at City Cemetery. Top photo shows the sexton's cottage, west (or front) façade. The middle photo is an example of the foundation damage evident at the cottage. The bottom photo shows the modern maintenance building and its proximity to the cottage and the plots.

there are approximately 3,700 feet of iron fencing. This fence is an integral part of the cemetery landscape and the city should be very proud – and protective – of this extraordinary resource.

We find it odd, therefore, that the fence is receiving such uniformly poor maintenance. These practices are causing extensive damage to the fence and require immediate changes in maintenance practices, as well as immediate repairs and modifications.

- Paint on all sections of the fence is failing or has failed some time ago, resulting in some areas of extensive corrosion. The fence should be repainted, following instructions provided below. There are a number of areas where caulking with an elastomeric product is required (silicone caulks should not be used).

- There are several areas where the fence has become buried in the soil. This is exacerbating the corrosion problem and requires immediate attention. The ground should be sculpted back to expose the fence and the graded area should be resodded to prevent erosion.

- There are numerous areas where broken fabric has been repaired by welding. Welding, if performed using continuous (not spot) welds that are ground smooth, is acceptable where little or no expansion or contraction of the iron is anticipated. Where there were originally slip joints, however, welding is inappropriate since it will create stresses that can cause additional damage. For these areas it is necessary to infill the fabric and recreate slip joints that allow movement.

- Welding throughout is of the poorest workmanship and is entirely inappropriate for historic fabric. All

Figure 20. Problems with the City Cemetery boundary fence. Upper left shows an example of extensive corrosion and failing paint. Upper right is an example of failing paint. The middle row shows two examples of the very poor workmanship used in fence repairs. This quality of work must not be allowed on historic fabric and all such repairs must be removed. Lower left shows the bottom rail buried in soil. The lower right shows a loose part lying on the ground and a line support completely corroded through.

existing welds – including those where welding may be appropriate – must be removed, the metal cleaned, and the work repeated. Only skilled craftsmen should be allowed to work on the fence and all such work must be under the direct supervision of a qualified conservator.

- Historic parts are found lying on the ground in numerous locations. All such parts should be collected and stored for possible repair, replacement, or replication. They should not be ignored and allowed to be stolen or destroyed.

- There are several areas where the fence has been damaged, probably by an automobile, and the fence has never been appropriately repaired. Damages must be immediately assessed and repaired within a reasonable time (no more than a year from the occurrence).

- Many of the brace supports attached to line posts are damaged or missing. Others are improperly attached. This affects the structural integrity of the fence and requires repair.

Given the significance of the fence, the City should place its repair and maintenance as a very high priority. We understand that it may be necessary to spread the work over several years.

We understand that volunteers have already begun painting the fence. If the work follows the specifications offered below, and the city recognizes that areas of repair will need to be repainted, the work may continue. However, it is of considerable importance that the work meet the specifications offered in this document.

**The Cemetery Gate**

The importance of not simply painting to hide or camouflage problems is well illustrated by the main entrance gate to the cemetery off Elm Street.

This is a particularly beautiful example of a double gate with two walk gates and an arch integral to the cast posts.

At the time of our visit this gate had been recently painted. It is of considerable importance that ironwork be painted and this effort is an excellent preservation start. There were, however, other issues that require attention:

- Throughout the gate there are areas where original fabric is broken, missing, and poorly repaired. While replication of the original fabric is possible, for long term preservation it is minimally necessary that large openings be carefully covered in a manner that will prevent water intrusion, while allowing easy removal in the future (i.e., they should not be welded). Where metal cover plates are fabricated, they should be constructed, minimally, of corrosion resistant steel. Carbon content in this steel is restricted to 0.18%, manganese is absent, silicon is 0.45% and the percentage of corrosion resistant elements such as chromium is as high as 1.5%.

- Smaller openings should be carefully caulked with an elastomeric caulk, such as Sikaflex 1a. Silicone caulks should not be used because of the difficulty in their removal.

Like the boundary fence, this gate is of such special importance to the cemetery and its character, special attention should be paid to its preservation.

**Painting Specifications**

Absent historic documentation that suggests otherwise, flat or semi-gloss black is


Figure 21. Gate problems. The top photo shows the entrance gate from within the cemetery looking toward Colfax Avenue. Below from left to right, an example of missing fabric (above is part of a cover plate that has been broken), a joint in the post that requires careful caulking prior to painting, and damaged decorative design and old weld that has broken apart (repair will require disassembly of the column, although water can be repelled by careful caulking until the repair can be afforded).

Figure 22. The Miller Mausoleum should receive a more detailed assessment, but initial observations indicate that the structure requires repointing and cleaning of atmospheric pollutants. The wooden door should also be removed and, if necessary, replaced with a fitted iron grill.

typically an appropriate fence color. Gloss paint should be avoided since the glossing agents reduce the lifespan of the coating.

If there are situations where the original paint has entirely failed, one very successful approach is minimal wire brushing to release obvious scale and corrosion, then the use of a rust converter as a primer. Of the three that were successfully tested by the Canadian Conservation Institute, Rust-Oleum's Rust Reformer is the least expensive and most readily available (it is available, for example, from Grainger's Industrial Supply for about $80/gallon). We recommend one coat of the Rust Reformer. This can be applied over stable corrosion and the product does an excellent job of converting the corrosion into a stable base for a top coat of alkyd paint.

Following the Rust Reformer we recommend a first coat of flat white. If coverage is not complete, the Rust Reformer will show through this white paint, providing a visual indicator that additional work is necessary.

Next should be the top coat of flat or semi-gloss black. The white undercoat will immediately reveal any area where the black top coat has failed to provide adequate coverage. The use of these alternating colors helps ensure thorough coverage. The paint coatings should not be applied thickly, as thick coats hide detail, cure poorly, and will often prematurely fail.

Generally painting should be by brush – if sprayers are used all nearby monuments and shrubbery must be carefully wrapped in tarps to prevent overspray.

For those fences with failing coatings the use of Rust Reformer is not possible (it must be applied over stable corrosion). In these cases consideration should be given to the use of abrasive cleaning using 30-80 mesh garnet grit. The abrasive cleaning should be taken to clean grey metal, at least equivalent to a Near White Blast as defined by SSPC Specification SP 10 or NACE 2. No more should be cleaned in a single day than can painted that same day, using one coat of primer and two top coats.



Figure 23. Examples of damaged limestone coping in the cemetery.

Corrosion does not occur solely on visible surfaces; it will also occur in hidden areas, especially joints where moisture is drawn in through capillary action. As a result, all fences should be carefully caulked with a paintable elastomeric caulk. An example of one such product (as previously mentioned) is Sikaflex 1a.

**Mausoleums**

Although mausoleums are technically monuments, they are discussed here since there are only two in the cemetery and they do require a different preservation approach. In addition, only one of the two was given a cursory inspection – both require a careful assessment in conjunction with the recommended stone-by-stone assessment.

Mausoleums suffer many of the same problems found in masonry buildings – poor foundations, settling, splaying walls, roof leaks, iron jacking, and so forth. They require constant maintenance just as any structure. They also pose a liability to the City far in excess of typical monuments.

The Miller Mausoleum (Figure 22) is a classical revival style of granite and limestone. The monument reveals multiple joint failures indicating the need to repoint the entire building. The wood door detracts from the beauty of the monument and it should be removed, either allowing access to the now empty vault or it should be replaced with a simple iron gate.

The second mausoleum is of simple limestone construction with a peaked roof consisting of large stone slabs. The door here is also missing. Again, there is evidence of failing mortar joints, indicating a need to repoint the structure in order to maintain watertight conditions.

**Other Lot Amenities**

We did not observe lot amenities such as iron benches, trellises, or urns (although some may exist). In fact, we noticed remarkable few examples of plot copings – a feature which is typically quite common in cemeteries of this type and age.

The few copings observed include cast concrete, marble or limestone, and granite. Although most were to some degree either sunken or covered by grass, they otherwise appeared in satisfactory condition. The limestone copings, however, were uniformly in poor condition.

**Recommendations**

**While moving the maintenance building is likely prohibitively costly, the city should seek to screen the building and its concrete work pad from the rest of the cemetery.**

**The sexton's cottage should receive a detailed conditions assessment, with particular attention to the obvious foundation cracking observed during this assessment.**

**The boundary fence is a particularly important defining feature of the cemetery and deserves very careful preservation. Over the years it has received very poor repairs. These need to be removed and correct repairs instituted. Once the repairs are complete, it should be carefully cleaned of adhering paint and repainted.**

**The cemetery entrance gate, while recently repainted, exhibits a variety of problems that will continue to contribute to the deterioration of the ironwork. The gate should receive immediate intervention to prevent water from entering the ironwork.**

**The mausoleums in the cemetery require more detailed assessments, but will likely require, at a minimum, repointing.**

**There are relatively few copings in the cemetery, but those present should be uncovered and leveled. Some are evidencing spalling and these require additional conservation intervention.**

# LANDSCAPE MAINTENANCE

**Staffing**

Prior to 1976, City Cemetery was maintained by a sexton and five cemetery workers, composing the Cemetery Bureau. In September 1976 the sexton position was abolished and the cemeteries were placed under what was called the Park Department, today known as Parks and Recreation.

Today the Parks and Recreation Department is responsible for 75 local parks and facilities ranging from Coveleski Stadium, the home of the South Bend Silverhawks; the Potawatomi Zoo, the oldest accredited zoo in the state of Indiana; and the East Race Waterway, the first and only man-made white water rapids facility. The diversity of the facilities under the control of this department is impressive, but it is also this diversity that has contributed to the gradual decline in the overall condition of the City Cemetery.

There is no permanent staffing at the City Cemetery – it is simply one of the 75 facilities that the department is forced to rotate crews to during the course of any given year. The website for the Parks and Recreation Department (http://www.sbpark.org/) mentions the cemetery only on its map and list of facilities. There are no photographs, no rules and regulations, or genealogical or historical information.

It is often a mistake to place cemeteries under the control of parks and recreation 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 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 South Bend'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 20 acres of the City Cemetery, we would recommend a full-time staff of six people – far more than the attention currently devoted to the 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 would also help minimize vandalism and inappropriate activities in the cemetery.

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). The importance of maintenance was clearly stated by West, "one thing is certain, the cemetery must be maintained in a proper manner or public confidence will suffer" (West 1917:26).

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 City Cemetery. It is important that these employees be assigned exclusively to the cemetery, allowing them to develop a sense of ownership and continuity.

In addition to these maintenance efforts, efficient cemetery operation also depends on management activities that Llewellyn describes as ranging from "land use (master planning), road maintenance, utility operation (backbone utilities like water), budget balancing (sales to cover expenses), long-term financial concerns, community relations, enforcement of rules and regulations, and so on" (Llewellyn 1998:206). In fact, he spends an entire chapter on administrative responsibilities of the cemetery manager.

Consequently, the city must provide a staffing level that will maintain the beauty, dignity, and historical significance of this 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.

Given the large number of trees on the cemetery, the importance of these trees to the vistas and historic landscape, and the potential damage that improper tree care can create, at least one of the supervisory level staff should be an International Society of Arboriculture (ISA) Certified Arborist.

Certified arborists have a minimum of three years experience in some aspect of tree care and have passed an exam developed by an international panel of experts. The exam extensively covers every aspect of tree care and the individuals must have an acceptable level of knowledge in all areas of arboriculture.

The city retains three certified arborists – Timothy Badders, Anthony Grundy, and Brent Thompson. Mr. Thompson is also a Certified Tree Worker/Climber Specialist. These individuals, however, are responsible for tree issues throughout the city and we expect they spend very little time in the cemetery.

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 Indiana Nursery and Landscape Association offers a certification program, Indiana Accredited Horticulturist and Indiana Master Horticulturist, as well as Certified Landscape Technician.

Unfortunately, no one in the Parks and Recreation Department is a member of either the local association or PLANET.

We imagine that much of the focus has traditionally been on the turfgrass at athletic facilities or public parks. Parks and Recreation 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).

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 the South Bend cemetery require that the technicians are well supervised and are held accountable for their performance. It is especially important, therefore, that the two supervisory positions we recommend be carefully defined. The selected individuals must not only be well trained and knowledgeable, but also possess demonstrated supervisory experience. The supervisors 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 such as cedar 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.

Ideally the trees selected should be historically appropriate. In the case of a planned cemetery, which City Cemetery appears to have been, the ideal would be to use those trees selected by the original designers – respecting their original intent and interpretation. However, we have not identified any information concerning the original plan. It is also possible that many of the plantings were native and already present on the site.

All other issues being equal – plantings should focus on those tree species that are known to have been used. While diversification may be acceptable, it should not dilute the original design or intent. Therefore, we urge care in selecting additional plantings, focusing on a small number of historically appropriate trees to maintain the historical integrity of the cemetery.

Some trees, whether historically appropriate or not, should probably be avoided since they pose significant maintenance issues. These include trees that produce dense shade (causing problems with the turfgrass); trees that exhibit suckers or surface roots (also causing turfgrass problems, e.g., beech, honeylocust, linden, poplar, and willow); trees that drop large quantities of leaves, seeds, or sap (such as ash, black cherry, catalpa, ginko, horsechestnut, mulberry, and sweetgum); and trees that are especially weak or vulnerable to wind or ice damage (such as ash, black cherry, pine, poplar, red maple, silver maple, tuliptree, willow, and white ash).

Obviously, there is no such thing as a perfect tree. Many of the historically appropriate species have significant problems. At least some of these problems, however, can be overcome through judicious placement and appropriate planning.

The city, using a certified arborist, should assess the health and condition of the existing trees and develop a long-term tree plan. As mentioned, there are three employed by the City of South Bend, but if their schedule prohibits this level of attention to the cemetery, then an outside contractor (who is also a ISA Certified Arborist) should be retained.

Trees should be replanted as older ones are removed and a general effort should be made to plan for future tree replacement, perhaps using a mix of fast-growing but short-lived trees intermixed with slow-growing but long-lived trees to create a planned appearance. It is also appropriate to plant replacement trees in anticipation of their need, allowing them an opportunity to become established before the diseased or damaged tree is removed.

**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 older mature trees, 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 the City Cemetery. Staff should be closely supervised to prevent over mulching of vegetation.

All replacement trees should be of at least 1-inch caliper and meet the minimum requirements of the American Nursery and Landscape Association's American Standard for Nursery Stock (ANSI Z60.1-2004).

**Maintenance Issues**

Maintenance involves at least four basic issues: watering, fertilization, pruning, and pest control.

The city does not, on a routine basis, water trees in the cemetery, relying instead on rainfall (the exception are newly planted trees, which are watered their first three years). While this is typically acceptable, the landscape plan should include provisions 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 not only be used during severe drought, but also during

extended periods of dry weather during the winter (as long as the temperatures are above freezing).

The staff reports that no tree fertilization is conducted because of the funds required. The trees in the City Cemetery are vital components of the landscape. They represent part of the historic fabric and steps must be taken to protect that aspect of the landscape and vista.

We understand that the last time soils in the cemetery were tested was 1996 – 13 years ago. Consequently the results, if they could be located, are today meaningless. We recommend soil testing in the cemetery every three to five years.

Indiana does not provide free soil testing, but there are a variety of commercial labs that offer this service (see www.agry.purdue.edu/ext/soiltest.html). One test facility, A&L Great Lakes Laboratories, offers basic testing for $15 a sample (see www.algreatlakes.com/lab_hom_law.asp). This is certainly affordable since the lab costs for a series of 10 samples (one every 2 acres) would be only $150.

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.

Based on the recommendations of a certified arborist, the city should then anticipate periodic fertilization (possibly including adjustment of pH through liming and the addition of soil amendments). Fertilization should be conducted on the basis of need and excess fertilization can damage trees; nevertheless, the ISA position is that, "tree fertilization should be done in accordance with ANSI A300 standards" (Lilly 2001:47). These ANSI A300 (Part 2)-1998 standards represent the standard of care of the industry. This is why more proactive involvement by certified arborists in cemetery maintenance will be useful.

Fertilization is typically accomplished through deep root fertilization – an approach 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. In Indiana 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.

In a cemetery setting organic fertilizers should be the primary choice. These materials, such as cottonseed meal and bone meal, have much lower salt indices than inorganic fertilizers – resulting in reduced salt uptake by monuments. This is important since salts cause staining, spalling, and deterioration of marbles, sandstones, brick, and even granites. In addition, organic fertilizers have a slower release rate and are easy on the root systems.

During our assessment we observed several damaged or diseased trees, as well as trees that required pruning to remove deadwood.

Since the Parks and Recreation Department indicates that tree inspections are conducted twice a year and that the Parks Department routinely prunes for dead wood and raising crowns, the examples found in the cemetery suggest a lack of adequate staff to thoroughly conduct the inspections and perform

Figure 24. Examples of diseased or damaged trees. Note also damaged branches and crossed branches that require pruning.

the prescribed treatments in a timely manner. Another possibility is that those performing the work simply do not realize the importance of these trees in the cemetery landscape and that the cemetery trees are dealt with as staff are available.

Regardless, there is much work to be done at the cemetery and this work requires the city's immediate attention since the issues we observed have long-term ramifications on the beauty and health of the cemetery vegetation. If the Parks and Recreation Department staff cannot devote the manpower needed, then we recommend that a contract be awarded to conduct the necessary work.

There are a number of trees that require pruning for 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 branch and lead to disease. All pruning within the cemetery should be performed by an ISA Certified Arborist, preferably one who is also an ISA Certified Tree Worker/Climber Specialist. The ISA Certified Tree Worker/Climber Specialist has knowledge in the major aspects involved in tree care


Figure 25. Examples of trash trees that require removal. Upper left shows a junk tree that has been allowed to grow and endanger an obelisk. Upper right shows a sucker from a removed stump. Middle left shows suckers displacing a bronze marker. Middle right shows junk vegetation between two lawn markers. Lower left shows vegetation that has been cut by a nylon trimmer, but not removed. Lower right shows another junk tree growing up adjacent to a marker.

including pruning, removal, cabling and safety. These are critical skills when working among historic monuments.

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. Plywood shelters or timber cribbing should be used as necessary to protect stones and monuments during the pruning process. Rigging and/or a crane must be used 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.

There are some situations in the cemetery where plantings – intentional or voluntary – have grown to interfere with stones or fences (see, for example, Figure 25). In these cases a decision needs to be made concerning the value of the planting vs. the value of the monument or fence. Where the tree has greater value, it may be appropriate to slightly relocate the monument – moving it to a location where additional damage will be avoided. Otherwise, it will be necessary to remove the tree. This decision may be aided by carefully evaluating the health of the tree involved.

If removal is deemed necessary the trunk 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, although it is acceptable to paint an herbicide on the stump if it is a tree that will promote suckers.

Figure 25 illustrates a number of volunteer trees that, if not removed, will eventually cause significant problems. The presence of such volunteers reveals that adequate maintenance is not being provided.

### Pest Control

During this visit we observed no obvious evidence of pests but Indiana is at risk for a great many problems, including the Emerald Ash Borer (found in an adjacent county), Asian Longhorn Beetle (present in Chicago), Sudden Oak Death (possible introductions through California nursery stock), Beech Bark Disease (present in Michigan), and Gypsy Moth. Given the importance of the trees to the cemetery landscape, it is of critical importance that the City Cemetery trees be very carefully inspected on at least an annual basis.

We understand that one individual in the Parks and Recreation Department holds an Indiana Pesticide/Herbicide Applicator License. It is likely this individual is responsible for a great many applications. It is important that he devotes the necessary time to a careful review of cemetery issues.

## Shrubbery

### Selection and Planting

We did not observe abundant shrubbery in the cemetery and it appears that most of what is there has been planted by family members. They appear to be individual specimens, probably anticipated to serve as accents.

The number and placement of plantings is not particularly effective overall since they lack a unifying or cohesive theme. They appear disjointed – representing the multiple episodes of "beautification" with no clear planting plan. In fact, city/town cemeteries typically had few plantings historically since space was at a premium. This is another area where research may assist in helping to understand changes that may have taken placed in the cemetery over the past 30-40 years.

We imagine that the Parks and Recreation Department is responsible for these shrubs, although we do not know the

arrangements associated with their care. From what we observe, however, it is clear that the plants are being sheared, not pruned.

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. If planting lists cannot be located for the cemetery, plants such as boxwood, forsythia, hydrangea, lilac, and memorial rose are all known to be period appropriate.

**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, such as boxwood, 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, such as boxwood, 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 which exhibit episodic growth, such as forsythia, may benefit from a more continual fertilization program based on soil analysis and plant growth response.

**Pruning**

It is again in the category of pruning maintenance that we see problems at City Cemetery. A good example of this problem can be seen in Figure 26, where a variety of unnatural and fanciful shaped creations are illustrated. In addition, the pruning (or absence of correct pruning) has allowed the accumulation of significant amounts of deadwood.

The continuous shearing of the shrubs has caused a thick outer shell of foliage which created dense shade on the interior branches. This continuous shade has resulted in significant foliage drop, decreasing the health, value, and aesthetics of the plants.

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. With much deadwood on their interiors significant rehabilitation is necessary.

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.

There are examples of shrubbery at City Cemetery that have been planted too close to stones and monuments. As the plants have matured, they have overgrown their location, over-taking the monuments. In some cases the shrubs have been very unnaturally pruned around the monument. In such cases the correct approach is to prune severely, a process called renewal pruning, to bring the plants back into scale with their surroundings.

Renewal pruning means cutting the plants back to within 6 to 12 inches of ground level. In this instance, timing is more important than technique. The best time to prune severely is before spring growth begins. Pruning in late fall or midwinter may encourage new growth that can be injured by cold. Renewal pruning results in abundant new growth by midsummer. Once the new shoots are 6 to 12 inches long, the






Figure 26. Examples of pruning problems at City Cemetery. The top and middle rows show shearing and the creation of inappropriate shapes. Note also how the shrubs have been pruned around stones. The lower left photo shows the deadwood in one shrub that has been sheared, rather than pruned. The lower right photo shows a dead shrub that should be removed.

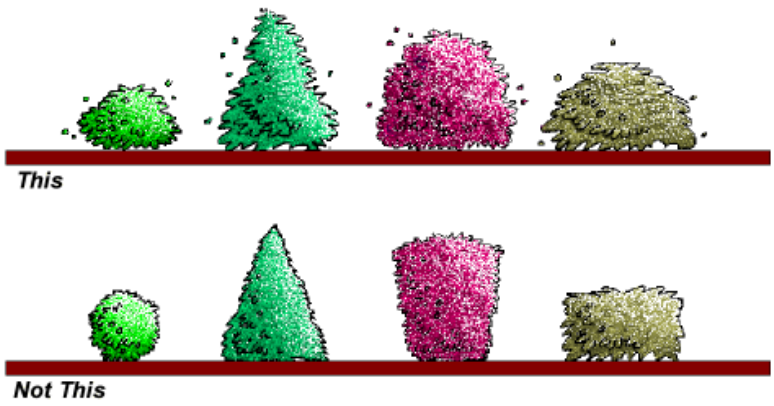



Figure 27. Correct and incorrect profiles of shrubbery. Much of the shrubbery at the cemetery is over sheared into unnatural and fanciful shapes inappropriate to the historic landscape.

tips should be pruned to encourage lateral branching and a more compact shrub.

Renewal pruning works well with most broadleaf shrubs, while narrow-leaf evergreens (such as boxwood) do not respond well when severely pruned and may actually decline. A better approach for these narrow-leaf evergreens is cutting them back slightly and transplanting – moving them away from the stones they are obscuring.

An alternative to the drastic removal of top-growth on multiple stem shrubs is to cut back all stems at ground level over a period of three years. At the first pruning, remove one-third of the old, mature stems. The following year, take out one-half of the remaining old stems and head back long shoots growing from the previous pruning cuts. At the third pruning in yet another year, remove the remaining old wood and head back the long new shoots.

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, such as forsythia, should be pruned after flowering since they produce flowers on the previous season's growth.

It appears that the shrubbery at the cemetery has been ignored for a very long time and, as a result, many of the plants are in very poor condition. Those that can be saved by careful pruning should be. Those that are dead or that cannot be rehabilitated should be removed and similar species replanted.

The condition of the shrubbery at the cemetery provides an excellent example of why only trained and certified staff should be allowed to work in a cemetery landscape. The plantings at a cemetery cannot be easily replaced and, in fact, represent artifacts just like the stones themselves. It is essential that the Parks and Recreation Department re-evaluate the level of maintenance being provided to the cemetery.

**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.

The cemetery lacks a defined type of turf and appears instead to represent a variety of grasses. We noticed a fair amount of Kentucky bluegrass, although there were some areas with fescue. 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.


Figure 28. Turf and mowing concerns. Top left shows a variety of broadleaf weeds mixed with the Kentucky bluegrass. Top right shows incomplete mowing. Middle row photos show damage done to stones by the use of large deck mowers too close to the stones. The bottom row photos show loss of paint caused by scraping stones and coping in the cemetery and the absence of bumpers.

It is clear that the cemetery turf has received little attention beyond mowing. This has lead to an overall decline in appearance and an increase in maintenance costs.

### Mowing

Mowing at the cemetery is conducted by at least two mowers. At the time of this assessment there was a Dixie Chopper zero turn radius riding mower with a 34-inch deck and a commercial walk behind mower equipped with a two-wheel rider (sulky or velky). The mower deck was probably about 36 inches.

Although these deck sizes are at the low end of commercial equipment, the use of riding or large walk behind mowers can be problematical, especially in a setting such as City Cemetery where monuments and coping present significant obstacles. It would be far better to abandon riding mowers and convert mowing at City Cemetery to the use of walk behind mowers with decks no larger than 21-inches.

Stones in the cemetery clearly reveal the damage that can be done by large equipment and less than perfect handling (see Figure 28).

The Parks and Recreation Department reports that mowing is conducted during the growing season "as needed." We appreciate that mowing should, in fact, be based on grass growth. That approach, of course, is less meaningful when the turf is largely weeds. It is also very difficult to appropriately schedule staff if there is no set policy.

In general, Kentucky bluegrass should be mowed to a height of 2.5 to 3.5 inches and frequently enough so that no more than 1/3 of the total leaf surface is removed. If the grass is allowed to become too high, the removal of grass adjacent to monuments would become more difficult with longer and thicker grass blades – and this in turn could lead to more damage to the stones.

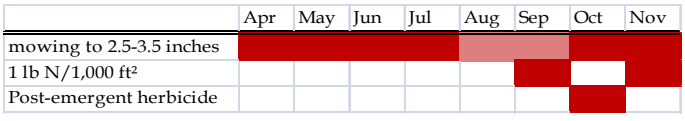
In addition to mowing, nylon trimmers are used around monuments, coping, fencing, and plantings. This is an acceptable practice, but it is critical that a very light weight line be used – along with worker attention – to minimize damage to soft stone such as marble. The maximum line diameter for use in the cemetery should be 0.065-inch. Thicker lines will cause unnecessary damage to the stones.

Figure 28 reveals damage done to markers by the impact of a mower as well as by the use of nylon trimmers with line that is too heavy. All mowers used in the cemetery should have a closed cell foam pad attached to the sides and front edges. This bumper will help to minimize accidental damage.

### Fertilization and Weed Control

As previously explained, the cemetery has not had soil tests conducted in 13 years and we are told that the turf is not fertilized. In addition, no pre-emergent weed control is used and the only post-emergent weed control reported is the use of Roundup®.

Table 2.
Suggested Minimal Maintenance Calendar




Documents such as Purdue's *Maintenance Calendar for Indiana Lawns* (available at www.agry.purdue.edu/turf/pubs/ay-27.pdf) provide excellent advice on establishing a maintenance schedule. This document is particularly useful since it recognizes that maintenance levels can be variable. The lowest recommended level is reproduced as Table 2.

Figure 29. Examples of water bibs in the cemetery. On the left is a modern bib that is leaking and requires repair. On the right is a historic (and probably frost proof) model.

As previously discussed, in order to minimize salt uptake by the stones, slow release organic fertilizers should be used and inorganic fertilizers should be avoided. An excellent source explaining organic fertilizer choices is http://www.cmg.colostate.edu/gardennotes/234.pdf. The publication at http://pubs.caes.uga.edu/caespubs/pubs/PDF/C853.pdf provides information on converting traditional inorganic fertilizer recommendations to safer organic recipes.

There are better choices for the control of broadleaf weeds than Roundup®. While marketed as a very safe herbicide, glyphosate is a very potent broad spectrum herbicide with a soil half life of approximately 45 days.

Often herbicides such as 2,4-D, dicamba, and MCPP are recommended for broadleaf weeds in Indiana lawns. Often herbicide products such as Triplet (www.nufarm.com/USTO/TripletrSF) or the lower concentration brand Trimec (www.pbigordon.com/professional/page.php?id=299) are used since they combine all three herbicides.

The Parks Department may wish to investigate using a tracking and email alert service for the treatment of various weed grasses, such as GDD Tracker available at http://www.gddtracker.net/about/.

Klupar (1962:223) states that weed eradication "is an operation considered essential in a well-kept cemetery." Thus, 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 pesticides be carefully applied and that overuse should be carefully avoided. Use should also ensure that drift does not occur and that the herbicide is not applied directly to the stone.

### Pest Control Practices

Low maintenance turf care accepts some degree of pest damage. However, the Parks and Recreation Department should be alert to significant pest problems. One Purdue lawn pest publication that may help is available at http://extension.entm.purdue.edu/publications/E-61.pdf.

### Renovation

There are many areas in the cemetery where the turf has been heavily invaded by weeds. We recommend that the city implement a renovation program in these areas in order to establish a good stand of Kentucky bluegrass.

We understand that such an effort will need to be phased. A publication to assist in this process can be found at

http://www.ca.uky.edu/agc/pubs/agr/agr51/agr51.htm.

### Irrigation

Although the assessment questionnaire reported that the City Cemetery did not have hose bibs, several were found during the inspection and all were operable.

This allows the use of spot watering, which is far preferable to any cemetery-wide irrigation system (which use very large quantities of water, interfere with markers and graves, and cause erosion to stones).

Figure 30. Park employees manually raking and loading leaves into a pickup.

We did observe that at least one bib was badly leaking during the assessment (Figure 29). Staff should periodically inspect these faucets and conduct repairs as necessary. In addition, we noticed that the more modern example was not frost proof, suggesting that the lines are drained during the winter. The cemetery should investigate installing Woodford (or equivalent) sanitary hydrants that would provide back flow prevention, frost proofing to a depth of 2-3 feet, and allow the faucet to be locked to prevent misuse. The Woodford Yard Hydrants, while lacking internal backflow prevention, can prevent frost damage to a depth of 5 feet. These may significantly reduce the level of maintenance necessary at the cemetery.

### Other Landscape Issues

The cemetery has avoided the unfortunate issue of lot owners using gravel in plots in an effort to control weeds. Graveled lots almost always present a variety of long-term maintenance problems. In addition, the practice is not historically appropriate. The city should discourage the practice whenever possible.

During our assessment we discovered that the Parks and Recreation Department was manually raking leaves, placing them in a pickup and moving them to an area near the service gate, where they were dumped for later pickup. This is a very labor intensive means of dealing with the cemetery's leaves.

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. The latter approach not only eliminates the work of gathering and removing leaves, but it also adds nutrients back into the soil.

For example, the 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 City 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.

We strongly recommend that the Parks and Recreation Department look into alternative means of handling leaves that would be more cost effective and benefit the cemetery.

We also recommend that the Parks and Recreation Department 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. There are additional maintenance schedules and checklists available at the Chicora website (http://chicora.org/lawn-maintenance.html).

**Recommendations**

**Proper maintenance and upkeep of the 20 acre City Cemetery requires two three-person crews working year-round. We recommend hiring at the Parks and Recreation Department to achieve that level of cemetery staffing. In addition, this crew should be dedicated solely to cemetery needs and activities. Supervisors should work in the field with their crews.**

**Technicians and supervisory staff should be encouraged to become certified by PLANET (or some similar local organization) in categories such as Landscape Technician – Exterior, Turfgrass Professional, or Ornamental Landscape Professional.**

**The city should work to ensure continuity of the staff by providing appropriate pay levels, fringe benefits, and educational opportunities (such as certification opportunities).**

**Tree and shrub selection within the cemeteries should be focused on historically appropriate species, based on identification of either original planting lists, replication of identified historic species in the cemetery, or using period lists. Species should, however, be evaluated to eliminate those with problems such as suckers, surface roots, inherent weakness, etc. The city should develop a tree plan to ensure that when any tree must be removed, an appropriate replacement is planted in its place.**

**All replacement trees should be of at least 1-inch caliper and 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.**

**Trees within the cemetery should be fertilized on a routine basis. This will require that soil testing be conducted every 3-5 years. The results should be evaluated by an ISA Certified Arborist. All trees should be inspected yearly and after any storm with winds in excess of 55 mph.**

**The Cemetery evidences a number of tree maintenance issues, likely the result of inadequate staff. There are trees in the cemetery that require pruning for thinning or cleaning. Others are diseased or dead. These issues should be dealt with immediately. If the city does not have adequate staff to permit the**

**level of care necessary, then a contract should be awarded to an ISA Certified Arborist for the work.**

**The cemetery evidences a number of accidental or weedy trees that need to be removed before they cause damage to monuments. Their existence reveals that those performing cemetery maintenance are either not adequately trained or that the staffing is too low. This requires immediate attention.**

**Shrubbery is not common, but much of what is present has been heavily sheared into inappropriate shapes. There is much damage as a result. Much of the shrubbery requires renewal pruning. The presence of this problem is another indicator of untrained or inadequate staff. We recommend that if the city cannot devote trained staff to care for these issues that they let a contract specific for the renewal and rehabilitation of the shrubbery.**

**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.**

**All staff must be periodically reminded of the level of care necessary in cemetery operations.**

**Soil analysis should be conducted to determine if adjustments are necessary for the turfgrass. Where fertilization is needed, only organic, slow release fertilizers should be used in order to minimize salt damage to the stones.**

**Limited pre-emergent and post-emergent weed control should be instituted at the cemetery, taking care to avoid stones. The herbicides will affect the stones and this work will need to be very carefully done to ensure that the stones are not damaged. However, a better stand of turf will reduce the overall maintenance cost of mowing.**

**We recommend a gradual program of turf renovation until sustainable stands of a single turf are achieved.**

**Water bibs should be inspected and repairs made where necessary. Consideration should be given to replacing the existing bibs with freeze proof, lockable faucets, eliminating the need to drain lines during the winter.**

**We recommend that the Parks and Recreation Department begin to mulch the cemetery leaves on site, rather than raking by hand and transporting the leaves.**

# OTHER MAINTENANCE ISSUES

**Signage**

The cemetery lacks effective signage. During our assessment the only signage we observed was a very small sign placed very high up on a utility pole at the corner of Elm and Colfax (Figure 31) that would be easily missed by visitors and the sign at the cemetery gate. Once at the cemetery there was no signage of any nature concerning rules, historic significance, or other details.

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., eligible for listing on the National Register). While the iron entrance gate provides a name and even some dates, there is no other explanation. In addition, this sign is useful only once one is already at the cemetery. The city should consider additional signage directing visitors to the cemetery.

Regulatory signage specifies laws, regulations, or expected standards of behavior. We recommend that the city develop signage dealing with, minimally, these issues (perhaps with some modifications of language as might be needed):

- The cemetery is open from 8am to 5pm. 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.

- The stones and monuments in this cemetery are fragile. Please refrain from leaning, sitting, or climbing on any monument or mausoleum. 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.

- 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 South Bend Parks and Recreation 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).

The only interpretative information is a brochure that does not seem to be widely circulated. There is also so much more that could be done with the brochure. We have


Figure 31. Signage for City Cemetery can be easily overlooked and appears very institutional.

previously warned against the "old dead white man" mentality, urging the city to ensure that historical research appeal to a broad range of interests. It is important to more fully explain some of the "significant sites." For example, why is the Miller Mausoleum empty? What did Enoch Weiss do to win the Medal of Honor? What exactly is the Birdsell Clover Huller? It is important to remember that brochures are being written for people who don't have the same background or familiarity that the writer does. It may be helpful to have the brochure keyed to numbers placed at the individual graves, helping individuals better find the listed monuments.

In addition, the brochure should include additional history concerning the cemetery, as well as the regulations. It should also be available to visitors – perhaps at a box at the Sexton's Cottage.

It would also be appropriate have some signage that would encourage people to park their autos and participate in a walking tour of the cemetery. This may be accomplished by supplementing a brochure with monument specific signage.

Two common types of stand alone signage are fiberglass and porcelain. Fiberglass signage is relatively resistant to vandalism. Paint can be removed easily prior to cross linking, light scratches can be buffed out, although deeper gouges and carving require sign replacement. The resin must be chosen for UV resistance to prevent the sign from yellowing. Good quality signs also print the graphics on an opaque carrier that will become saturated with resin and integral to the signage. Porcelain signs are among the most durable sign material, resisting graffiti and scratching. Good quality signs are also highly impact resistant.

**Other Public Outreach**

We have previously commented that when the Parks and Recreation website is visited it is almost impossible to find even a mention of City Cemetery. This might lead to the impression that the cemetery is little more than an afterthought to the department, rather than an important historical resource. The City should correct this by prominently identifying the site in the side bar, including historical information, and including cemetery specific regulations. The web site should also be a focus point for preservation efforts, including documents such as this assessment, as well as eventual conservation information.

The city should also consider a detailed stone-by-stone recordation of the cemetery, posting the results on the web. At present, only a very incomplete record is provided at http://www.rootsweb.ancestry.com/~instjose/cemeteries/city-southbend/city-southbend.htm.

Sadly, the South Bend City Plan section on Arts and Culture is entirely preoccupied with

arts, providing absolutely no attention to other cultural resources – such as the City Cemetery. The City Plan section on Public Facilities and Services likewise fails to envision the cemetery as a valuable resource to the city.

**Flowers and Other Grave Decorations**

There are no flower regulations for the City Cemetery. Like most cemeteries, an issue of considerable concern is the length of time that flower arrangements are allowed to remain on graves. During our visit in November we identified Christmas flower arrangements that had been on graves for 11 months (see Figure 32). This detracts from the dignity and beauty of the cemetery.

Figure 32. Christmas flowers on a grave for 11 months.

We recommend that the city adopt a flower policy that will minimize maintenance problems.

First, as previously recommended, we believe that all flowers or arrangements should be removed by the cemetery staff 10 days after holidays *or* when the arrangements become unsightly. This will allow staff to remove faded flowers, Christmas decorations after the holidays, and so forth.

Floral policies are common at cemeteries. National cemeteries have relatively constrained policies:

- Natural cut flowers may be used throughout the year and "will be removed when they become unsightly."
- Artificial flowers may be used only from October 10 through March 15 (when cut flowers are often not widely available).
- Potted plants are allowed only from 10 days before and 10 days following Easter Sunday.
- Memorial decorations will be removed 7 days after the holiday.
- Christmas decorations are permitted only during the season and will be removed no later than January 10.

Other policies that we could readily identify were all similar. The St. Ferdinand Cemetery, Ferdinand, Indiana, removes plastic flowers when they are "deteriorated," and removes other flowers and stands after one week. The Washington Park Cemetery in Indianapolis removes all arrangements "if they become unsightly or out of season." At Cedar Grove Cemetery at the University of Notre Dame, "all decorations that are damaged, aged, faded, dead or otherwise detract from the beauty of the cemetery grounds" are removed.

Many cemeteries are beginning to also struggle with the increasing tendency for the public to load graves with personal items. This problem is not unique to the United States, but has also been documented in Great Britain, where solar-powered lights, statues and windmills have appeared.

Some cemeteries have established rules based entirely on appearances. At times these are intentionally vague, for instance referring to "adornments considered offensive or otherwise inconsistent with the dignity of the cemetery." In other cases a fairly detailed list of

Figure 33. Examples of trash in the cemetery.

objectionable items has been devised: "Toys, stuffed or otherwise manufactured or sculptured animals, statues or statuettes, personal items and/or other unsightly objects."

Although aesthetics may reasonably be considered to suffer, most cemeteries attempt to control the proliferation on the grounds by the potential hazard to workers – a legitimate concern considering the use of mowers and trimmers on a routine basis.

Many cemeteries enact provisions that allow staff to remove such objects ("temporary objects") when they become withered, unsightly, or an obstruction to maintenance. Other cemeteries exclude all objects made of concrete, glass, plastic, fiberglass, metal, ceramic, and wood, again with the justification of safety.

Although this is not a problem at City Cemetery, we encourage cemeteries to consider enacting suitable provisions when there is time for consideration and it doesn't appear the rule is directed at a specific individual.

**Trash**

During the assessment the cemetery was examined for evidence of trash. In general the cemetery was clean. Trash was observed along the edge where N. Walnut houses back-up on the cemetery. Whether this trash is from the residents or poor trash collection is uncertain. However, this area does require more frequent trash collection. With additional attention the amount of trash may decrease over time. Otherwise the city can have trash collection take place on Walnut, rather than the rear alley as is done currently.

During our inspection we also

observed a wadded-up shirt on one of the stones. It is uncertain if this belonged to a crew member or was discarded by a pedestrian. In either event, this is another example of items that the staff must be constantly vigilant to identify and remove.

Another problem we observed is that with the ability of pedestrians to cut through the cemetery, there seems to be a considerable amount of non-cemetery trash. During our assessment, the trash found in a container at the service gate included pampers, a large knife, and an alcohol container. With the elimination of convenient cut-throughs we anticipate that some of these trash problems will decline.

In the one trash container we also found a large number of discarded American flags. Whether this represents vandalism or insensitivity is unknown. However, even these decorative flags should be treated with respect and not discarded on premises.

Finally, the plastic 55 gallon drums used as trash containers are an eyesore and should be immediately replaced. There are a variety of vandal resistant trash containers that would more effectively blend in with the surroundings. It is not necessary to purchase "historic replicas" since they would likely appear as out of place as the current drums at City Cemetery. For example, there are a variety of cast concrete receptacles that would perform well in these settings.

**Recommendations**

**The Parks and Recreation Department should develop better road signage to identify the location of the cemetery. If possible this signage should conform to a consistent tourist or historical site format for the entire city.**

**Regulatory signage is critical at the entrance 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 established 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 widely available 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.**

**The city's Parks and Recreation website provides no information concerning the cemetery, its history, landscape, care, or regulations. The city is missing an exceptional opportunity to engage an increasingly web savvy public in the cemetery's care and preservation. The addition of genealogical information could also be of immense interest to historians and family researchers. The city could also better promote the cemetery as a tourism resource.**

**The city should establish flower regulations for its cemeteries that maintain the dignity of the cemetery and allow reasonable maintenance. Seasonal displays, flowers, and plants should not remain on graves once they have died. The city should limit flowers on graves to a maximum of 10 days.**

**Trash is a problem along the fence bordering the rear yards of houses fronting Walnut Street. This area requires a greater frequency of inspection and trash collection. Staff should also be aware of items discarded in the cemetery and remove them at once. Staff should also be aware of items discarded in the trash containers, such as American flags.**

**The trash containers, 55 gallon drums, detract from the dignity and beauty of this historic property. They should be replaced with more fitting containers that better blend in with the cemetery landscape.**

# CONSERVATION ISSUES

**What is Conservation?**

Conservation 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 will know nothing of the Secretary of the Interior's Standards for Preservation and 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, conservation can be defined as preservation from loss, depletion, waste, or harm. Conservation seeks to limit natural deterioration.

Conservation will respect the historic fabric, examine the variety of options available, and select those that pose the least potential threat to the property. Conservation will ensure complete documentation, whether it is of cleaning, painting, or repair. Conservation will ensure that the work done today does not affect our ability to treat the object tomorrow.

**Standard for Conservation Work**

As Ruskin stated, the City of South Bend 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 properties 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 3-4 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 damage monument, is conducted by a trained conservator who subscribes to the Standards of Practice and Code of Ethics of the American Institute for Conservation of Historic and Artistic Works (AIC).

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 affect 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 of Conduct also requires 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.

## General Types of Stone Damage

Although a stone-by-stone assessment was not included in this assessment, it is possible to provide some general observations concerning the types of problems faced by the city's cemetery.

### Broken Stones

There are numerous examples of broken stones. Many of these stones should receive a high priority for conservation treatments since the stones are on the ground and subject to additional damage, increasing the eventual cost of appropriate repair.

The identification of these stones and development of treatment proposals by a professional conservator should be a very high priority. It is only with the development of detailed treatment proposals and cost estimates that a reasonable budget for this conservation work can be determined. We recommend a stone-by-stone assessment and development of treatment proposals.

In most cases gravestones are fragile and their repair is delicate work. There are many commercial products on the market, used by many commercial stone companies, which are inappropriate for (and often damaging to) historic stone.

Appropriate conservation treatment will usually involve drilling and pinning, carefully aligning the two fragments. Threaded 316 stainless steel rod (or occasionally fiberglass) and epoxy adhesives formulated for the specific stone are used in this type of repair. 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.

Sometimes pins are not used in a misguided or misinformed effort to save time and money. Instead the pieces are simply joined using a continuous bead of epoxy or some other adhesive. 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.

Figure 34. Examples of broken and improperly repaired stones. Top left and middle photos show tree damaged granite markers. Top right shows a sandstone marker with a fragment broken off and lying on the ground. Middle left shows a marble tab in socket stone that has fallen and shattered. Middle right shows one of the many failed "simple epoxy" repairs in the cemetery; note the yellowing epoxy smeared on the stone face. Bottom left shows another failed repair. Bottom right shows where smeared epoxy is being covered by white paint.

We see many examples of stones that have received "simple" epoxy repairs in the past where the repair has failed. We also see stones where the original repair has failed and a different type of material was used in an effort to repair the stone. We also see that the quality of the repairs throughout the cemetery is poor, evidencing inferior workmanship. Epoxy is consistently found on the surface of the stones, turning yellow with exposure to UV light. In many cases, in an effort to hide this yellow epoxy, someone has gone along and painted over the epoxy. This paint is now beginning to flake off.

It is very important that the Parks and Recreation Department not attempt to make repairs beyond the skill of the individuals involved. Once improperly repaired, proper repair requires more time and this, naturally, increases the cost.

**Ferrous Pins**

Several stones were observed with ferrous pins and these should be given a high treatment priority since, left untreated, the corrosion will cause significant spalling, cracking, and breakage of the stones. In these cases it will be necessary to use diamond core drills to remove the ferrous pins. They will then need to be replaced with stainless steel pins.

Figure 35. Example of ferrous pin in a pedestal tomb. The associated urn is today missing, but the pin must be removed.

After any such repairs it will be necessary to fill the voids with 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 scaling of bedded sandstone exposed to the elements.

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 nclude 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.

All infill work should be conducted by a trained conservator. The Jahn products, in fact, require certification in their use through Cathedral Stone.

**Tilting and Simple Resets**

Throughout the cemetery we observed seriously leaning stones. Some are headstones, others are set on various bases. When this occurs to headstones, the tilt may be sufficient to precipitate a ground break, dramatically increasing the cost of repair. For other monuments the tilt may be sufficient to cause the monument to fail and, in the process, there may be additional damage, or it may fall on a cemetery visitor.

Monuments should never be reset using concrete, but rather should be set in pea gravel.

Figure 36. Examples of stones that require resetting. The top row illustrates simple resets that could be done by staff or volunteers with little training. Middle row left and middle illustrate two stones that could be a hazard to the public and require immediate conservation intervention. Middle row right shows a small stone that can be reset by volunteers. Bottom row illustrates the eventual result without treatment


Figure 37. The Colfax memorial with a replacement angel that detracts from the simplicity and beauty of the monument.

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.

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, either a 1:2 mix lime putty or a 3.5 natural hydraulic lime and sand. This mix should be relatively dry to prevent staining the base and all excess mortar should be cleaned off immediately.

While resetting can be done by a conservator, it is a task that volunteers can readily perform. The exception are larger stones that require drilling and pinning for stability.

**Replacement Material**

Reference to the Secretary of the Interior's Standards for Preservation reminds us of how missing elements in a cemetery should be handled. Item 6, for example, tells us that we should carefully evaluate the level of intervention that is appropriate and, where replacement of materials is necessary, the new materials should match the old as closely as possible.

In fact, we should be very careful when this issue arises since we often do have the information necessary to appropriately replace lost materials. Our respect for the historic fabric should keep us from making alterations that could very possibly be out of historic character.

This is illustrated by the misguided effort at some point in time to replace the lost or stolen decorative element on the Schuyler Colfax monument. The result is a substitute angle that has incorrect scale and massing. The design likely bears no similarity to the original. In fact, the angle is so out of place it detracts from the monument. It would be far better that the monument have no decorative element than this one.

The city can help prevent such issues by enacting, as we have recommended, the rule that all modifications must be approved and that they have the right to remove all items placed in the cemetery without approval.

**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. An example of an

Table 3.
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. |

over cleaned memorial is the Colfax pedestal monument shown in Figure 36.

Table 3 discusses problems with a variety of "common" stone cleaning processes widely used by commercial firms and the public. Providing this sort of information to families who have loved ones buried at the cemetery may help deter abusive cleaning.

Cleaning is largely an aesthetic issue – we saw few examples where soil or biologicals were actually causing damage to the monuments. Consequently, the city should embark on an educational program to discourage inappropriate cleaning – explaining not only the dangers of bleach and other commercial methods, but also pointing out that such activities diminish the historical value and ambience of the cemetery. These cleaning methods remove not only soil, but also the patina of age – leaving monuments that no longer appear historic.

This educational program should point out that cleaning – even when done correctly – will gradually erode monuments, making them susceptible to more soiling and damage. Consequently, cleaning should be conducted no more frequently than perhaps once every 5 years.

The safest product for cleaning is simply low pressure (less than 90 psi) water and a soft bristle brush. When some other assistance is needed, a product that has been found safe for most stones is D/2 Architectural Anti-microbial distributed by Cathedral Stone.

**Ironwork Conservation**

Although ironwork has been mentioned previously in the section on Fixtures and Furnishings, we are briefly reviewing critical issues here.

Every effort should be made to retain all existing ironwork, regardless of condition. Replacement with new materials is not only aesthetically inappropriate, but often causes

galvanic reactions between dissimilar metals. When some of the existing ironwork is incomplete, a reasonable preservation solution is to repair and maintain the remaining work rather than add historically inappropriate and incorrect substitutes. If replacement is desired, salvage of matching elements is preferred over recasting. Replication is typically not an appropriate choice since it is by far the most expensive course of action, and is often done so poorly.

The single best protection of ironwork is maintenance — and this revolves around painting. We have previously outlined specific steps and materials to use, focusing on minimal cleaning, followed by a coat of rust converter and a two top coats of a flat or semi-gloss alkyd paint. Where a coating is still present it is usually necessary to remove this paint to near white metal in order to prime and paint successfully.

It may be appropriate to use small stainless steel braces with stainless steel nuts and bolts to re-attach rails to posts. While welding is often expedient, this approach causes a radical change to the fence. Once welded, pieces are no longer able to move with expansion/contraction cycles, and this causes internal stresses that may lead to yet additional structural problems. Careful inspection of fences in good condition reveals that virtually all connections were "slip joints" – allowing the parts to expand and contract.

In addition, while wrought iron is easy to weld because of its low carbon content, cast iron contains up to 4% carbon and is difficult to weld. Welding on cast iron should be done only by firms specializing in this work and capable of preheating the elements.

When used, welds should be continuous and ground smooth, in order to eliminate any gaps or crevices. When finished, it should be difficult to distinguish the weld — the original metal should blend or flow directly into the reattached part.

Another problem observed is the burial of the bottom fence rail in soil. In such cases moisture is held against the ironwork, promoting extensive corrosion.

When the fence is buried in the soil all that needs to be done is to resculpt the ground, lowering it below the bottom rail. This can not only resolve the corrosion problem, but can also promote better drainage away from the ironwork.

**Zinc Monuments**

The South Bend City Cemetery is especially fortunate to have a large and varied assemblage of "white bronze" or zinc monuments. Beginning in the 1870s, the Monumental Bronze Company in Bridgeport, Connecticut and subsidiaries in the U.S. and Canada produced the most commonly found items. They were generally created using very pure cast zinc that was soldered together.

Most are in good condition, but several in the cemetery require immediate conservation intervention. In one case a tree has caused extensive damage to a small marker, causing breakage and deformation of the brittle metal. In another case a zinc cross was filled with iron for strength; the iron is heavily corroded and the cross is broken. A third monument is separated from its base. And a fourth is sinking and at risk for toppling.

Some problems can be remedied by soldering or welding. In some cases the damage is so severe that the monument will require disassembly, corrections, and reassembly. Given the complexity of these repairs, the treatments will be costly, but the city should not allow these unique monuments to suffer additional damage.

Figure 38. Examples of zinc monument problems. Upper left shows tree damaged monument, with crushing, breakage of zinc panels, and open seams. Upper right shows a broken cross filled with corroding iron. Lower left shows a monument no longer attached to its sandstone base. Lower right shows a monument that is sinking and also no longer internally attached.

**Recommendations**

**We recommend that a stone-by-stone assessment be conducted at City Cemetery (this assessment will include the zinc monuments). This will identify all monuments in need of treatment, determine their priority for treatment, and provide costs for that work to be accomplished. This is a critical planning function.**

**All work in the cemetery should be conducted by trained conservators who subscribe to the Code of Ethics and Standards of 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 on all projects.**

**There are some treatments, such as resetting, that can be undertaken by volunteers or city staff with training and oversight. The city, however, should not attempt repairs beyond the skill level of the individuals available.**

**The city should strictly limit replacement of historic fabric and require that all such modifications receive approval.**

**Cleaning is a low priority, but when undertaken should be conducted in a manner**

**that does not endanger the stone or eliminate the stone's patina.**

# PRIORITIES AND FUNDING LEVELS

**Recommended Priorities**

Table 4 lists the recommendations offered throughout this assessment, classifying them by priority.

Priorities are identified here as First, Second, or Third:

> 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 which 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 City Cemetery as a historic resource.
>
> Third priorities are those that may be postponed for 3 to 5 years. They are issues that can wait for appropriations to build up to allow action. Some are also less significant undertakings or actions that require other stages to be in place in order to make them feasible or likely to be successful. Because they are given this lower priority, however, they should not be dismissed as trivial or unimportant.

Budget estimates are offered only for direct conservation issues and reflect 2009FY costs. Each budget is stand alone, including all necessary travel. Some savings will accrue by combining projects. No budgets are offered for other tasks since this report is being prepared several years after the assessment.

**Condition Assessment, Cemetery Stones** – A stone-by-stone assessment of City Cemetery monuments will require four days by two conservators. The cost will be $8,200.

**Condition Assessment, Mausoleums** – An assessment of the two family tomb structures at City Cemetery will require $3,400 and will provide treatment proposals outlining the conservation work necessary at the two structures. This work will require one-day on site and one day to prepare the final document.

**Condition Assessment, Sexton's House** – A preliminary study (not incorporating scale drawings or engineering studies) will require $4,600 and will provide initial information concerning the condition of extant historic fabric and offer recommendations for the preservation of this structure. The work will require two assessors on-site for approximately one day and a third researcher once site work is completed.

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 and on-going care and preservation efforts. The central problem is that South Bend 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. City Cemetery is an exceptional and unique resource and it deserves every possible effort to ensure its long-term preservation.

Table 4.
Prioritization of Recommendations

| Priority | Recommendation |
|---|---|
| **First – this fiscal or calendar year** | 1.1 All decisions regarding modifications, alterations, additions, or other actions affecting City Cemetery should be carefully evaluated against the Secretary of the Interior's Standards for Preservation. |
| | 1.2 Special care should be taken to protect all remaining historic fabric and the context. |
| | 1.3 The city should determine if the provisions outlined in the municipal code for their parks also apply to the City Cemetery. |
| | 1.4 The city should modify its existing code to include specific provisions including limiting the placement of markers without permission, establishing the hours the cemetery grounds are open, and establishing penalty provisions. The city should also establish a decoration policy specifying how long flowers and other decorations may be placed on graves and limiting the types of decorations. |
| | 1.5 We recommend the development of a Cemetery Commission as a means of securing the necessary long-term funding for the preservation of City Cemetery. |
| | 1.6 The city should develop a maintenance plan for the paved roads within the cemetery. Although in good condition currently, asphalt has a life of 10-15 years, so the city should be budgeting for increased maintenance costs. |
| | 1.7 The pedestrian gate on the west side of the cemetery should be kept locked. The service gate on the east side, at Linden, should be correctly set to close the unintended pedestrian passageway. This will help minimize inappropriate uses of the cemetery. |
| | 1.8 We recommend that a multifaceted approach against vandalism be taken. Specific steps include: locking the western pedestrian gate; reset the eastern service gate to eliminate the pedestrian passageway; educate staff to recognize and report vandalism; create a friends group to assist in patrolling the cemetery; contact residents adjacent to the cemetery and ask them to report suspicious activities in the cemetery; develop a form specifically for cemetery-related vandalism; immediately report all vandalism to the police and insist on investigation; establish a procedure to repair all vandalism quickly; increase police patrols. |
| | 1.9 The sexton's cottage should receive a detailed conditions assessment, with particular attention to the obvious foundation cracking observed during this assessment. |
| | 1.10 The mausoleums in the cemetery require a detailed assessment. |
| | 1.11 Proper maintenance and upkeep of the 20 acre City Cemetery requires two three-person crews working year-round. We recommend hiring at the Parks and Recreation Department to achieve that level of cemetery staffing. In addition, this crew should be dedicated solely to cemetery needs and activities. Supervisors should work in the field with their crews. |
| | 1.12 The Cemetery evidences a number of tree maintenance issues, likely the result of inadequate staff. There are trees in the cemetery that require pruning for thinning or cleaning. Others are diseased or dead. These issues should be dealt with immediately. If the city does not have adequate staff to permit the level of care necessary, then a contract should be awarded to an ISA Certified Arborist for the work. |
| | 1.13 The cemetery evidences a number of accidental or weedy trees that need to be removed before they cause damage to monuments. Their existence reveals that those performing cemetery maintenance are either not adequately trained or that the staffing is too low. This requires immediate attention. |

Table 4, cont.
Prioritization of Recommendations

| Priority | Recommendation |
|---|---|
| **First – this fiscal or calendar year, cont.** | 1.14 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.<br><br>1.15 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.<br><br>1.16 All staff must be periodically reminded of the level of care necessary in cemetery operations.<br><br>1.17 Soil analysis should be conducted to determine if adjustments are necessary for the turfgrass. Where fertilization is needed, only organic, slow release fertilizers should be used in order to minimize salt damage to the stones.<br><br>1.18 We recommend that the Parks and Recreation Department begin to mulch the cemetery leaves on site, rather than raking by hand and transporting the leaves.<br><br>1.19 The Parks and Recreation Department should develop better road signage to identify the location of the cemetery. If possible this signage should conform to a consistent tourist or historical site format for the entire city.<br><br>1.20 Regulatory signage is critical at the entrance 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 established simple guidelines for plantings, as well as the placement and removal of floral and grave decorations; and it should include contact and emergency information.<br><br>1.21 The city's Parks and Recreation website provides no information concerning the cemetery, its history, landscape, care, or regulations. The city is missing an exceptional opportunity to engage an increasingly web savvy public in the cemetery's care and preservation. The addition of genealogical information could also be of immense interest to historians and family researchers. The city could also better promote the cemetery as a tourism resource.<br><br>1.22 The city should establish flower regulations for its cemeteries that maintain the dignity of the cemetery and allow reasonable maintenance. Seasonal displays, flowers, and plants should not remain on graves once they have died. The city should limit flowers on graves to a maximum of 10 days.<br><br>1.23 Trash is a problem along the fence bordering the rear yards of houses fronting Walnut Street. This area requires a greater frequency of inspection and trash collection. Staff should also be aware of items discarded in the cemetery and remove them at once. Staff should also be aware of items discarded in the trash containers, such as American flags.<br><br>1.24 We recommend that a stone-by-stone assessment be conducted of the City Cemetery. This will identify all monuments in need of treatment, determine their priority for treatment, and provide costs for that work to be accomplished. This is a critical planning function. |

Table 4, cont.
Prioritization of Recommendations

| Priority | Recommendation |
|---|---|
| **First – this fiscal or calendar year, cont.** | 1.25 All work in the cemetery should be conducted by trained conservators who subscribe to the Code of Ethics and Standards of 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 on all projects.<br><br>1.26 The city should strictly limit replacement of historic fabric and require that all such modifications receive approval.<br><br>1.27 Cleaning is a low priority, but when undertaken should be conducted in a manner that does not endanger the stone or eliminate the stone's patina. |

Table 4, cont.
Prioritization of Recommendations

| Priority | Recommendation |
|---|---|
| **Second – over next 2 to 3 years** | 2.1 The residences on Elm at the entrance to the cemetery should be acquired by the city and removed. The available corridor should be landscaped using period appropriate plantings with a parking area dedicated to the cemetery. The brick paving should be carefully maintained by the city since it is part of the historic fabric and sets the character of the cemetery.<br><br>2.2 Curbing should be evaluated and, where damaged, should be repaired in kind (same profile, same material, and same color). This is a routine part of cemetery maintenance and should not be ignored.<br><br>2.3 The city should establish a protocol for assisting disabled clients and visitors. This should include appropriate training of staff and a means to provide access to remote graves.<br><br>2.4 Loose ironwork, zinc monuments, and stones should be secured using woven stainless steel wire or collected and safely stored until repair is funded.<br><br>2.5 The boundary fence is a particularly important defining feature of the cemetery and deserves very careful preservation. Over the years it has received very poor repairs. These need to be removed and correct repairs instituted. Once the repairs are complete, it should be carefully cleaned of adhering paint and repainted.<br><br>2.6 The cemetery entrance gate, while recently repainted, exhibits a variety of problems that will continue to contribute to the deterioration of the ironwork. The gate should receive immediate intervention to prevent water from entering the ironwork.<br><br>2.7 Technicians and supervisory staff should be encouraged to become certified by PLANET (or some similar local organization) in categories such as Landscape Technician – Exterior, Turfgrass Professional, or Ornamental Landscape Professional.<br><br>2.8 The city should work to ensure continuity of the staff by providing appropriate pay levels, fringe benefits, and educational opportunities (such as certification opportunities).<br><br>2.9 The city should develop a tree plan to ensure that when any tree must be removed, an appropriate replacement is planted in its place. All replacement trees should be of at least 1-inch caliper and 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.<br><br>2.10 Trees within the cemetery should be fertilized on a routine basis. This will require that soil testing be conducted every 3-5 years. The results should be evaluated by a ISA Certified Arborist. All trees should be inspected yearly and after any storm with winds in excess of 55 mph.<br><br>2.11 Shrubbery is not common, but much of what is present has been heavily sheared into inappropriate shapes. There is much damage as a result. Much of the shrubbery requires renewal pruning. The presence of this problem is another indicator of untrained or inadequate staff. We recommend that if the city cannot devote trained staff to care for these issues that they let a contract specific for the renewal and rehabilitation of the shrubbery. |

Table 4, cont.
Prioritization of Recommendations

| Priority | Recommendation |
|---|---|
| **Second – over next 2 to 3 years** | 2.12 Limited pre-emergent and post-emergent weed control should be instituted at the cemetery, taking care to avoid stones. The herbicides will affect the stones and this work will need to be very carefully done to ensure that the stones are not damaged. However, a better stand of turf will reduce the overall maintenance cost of mowing.<br><br>2.13 Water bibs should be inspected and repairs made where necessary. Consideration should be given to replacing the existing bibs with freeze proof, lockable faucets, eliminating the need to drain lines during the winter.<br><br>2.14 There is no interpretative signage or widely available 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.<br><br>2.15 The trash containers, 55 gallon drums, detract from the dignity and beauty of this historic property. They should be replaced with more fitting containers that better blend in with the cemetery landscape.<br><br>2.16 There are some treatments, such as resetting, that can be undertaken by volunteers or city staff with training and oversight. The city, however, should not attempt repairs beyond the skill level of the individuals available. |

Table 4, cont.
Prioritization of Recommendations

| Priority | Recommendation |
|---|---|
| **Third – over next 3 to 5 years** | 3.1 There remain a very large number of questions surrounding the cemetery. The current historic research has barely scratched the surface. Additional research should begin to place the cemeteries in a more secure historical context. This research could be tied into the development of mortuary practices in South Bend and the study of the African Americans who lived in the city.<br><br>3.2 All of the historic research can be used to generate better interpretative information for the city's web site, and tourist brochures. It is also critical in order to evaluate the National Register potential of the cemetery or its contribution to the expansion of the existing historic district.<br><br>3.3 The gravel roads pose problems in maintenance, as well as providing convenient pedestrian access. Consideration should be given to maintaining this current width (about 8 feet), but gradually paving them.<br><br>3.4 Driving in the cemetery can be difficult given the narrow roads. As use of the cemetery increases, it would be appropriate to direct traffic using signage and also closing many of the road to vehicular traffic using lockable bollards.<br><br>3.5 While moving the maintenance building may be prohibitively costly, the city should seek to screen the building and its concrete work pad from the rest of the cemetery using vegetation and other means.<br><br>3.6 There are relatively few copings in the cemetery, but those present should be uncovered and leveled. Some are evidencing spalling and these require additional conservation intervention.<br><br>3.7 We recommend a gradual program of turf renovation until sustainable stands of a single turf are achieved. |

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1917 Establishing a Successful Cemetery Business. In *The Cemetery Hand Book: A Manual of Useful Information on Cemetery Development and Management*, Second Edition, pp. 21-26. Park and Cemetery Publishing Co., Madison, Wisconsin.

# APPENDIX 1.

**MICHAEL TRINKLEY**

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**Education/Training**

| | |
|---|---|
| 1974 | B.A., Anthropology, University of South Carolina, Columbia |
| 1976 | M.A., Anthropology, University of North Carolina, Chapel Hill |
| 1980 | Ph.D., Anthropology, University of North Carolina, Chapel Hill |
| 1997 | Non-Destructive Investigative Techniques for Cultural Resource Management, NPS Workshop, Fort Scott National Historic Site, Fort Scott, Kansas (geophysical techniques) |
| 1999 | Jahn Installer Workshop, Cathedral Stone Products, Inc., Jessup, Maryland (3 days) (certified installer 9906811-SC) |
| 2001 | Preservation & Care of Brownstone Buildings, Technology & Conservation Conference, Boston, Massachusetts |
| 2003 | Lime Mortar Workshop, U.S. Heritage, Chicago, Illinois |
| 2004 | Preservation Masonry Workshop, School for the Building Arts, Charleston, SC (2 days) |
| 2005 | International Lime Conference, Orlando, Florida |
| 2005 | Edison Coatings Workshop, Richmond, Virginia (1 day) |
| 2005 | Historic Masonry Preservation Workshop, John Lambert, Campbell Center for Historic Preservation Studies, Mt. Carroll, Illinois (1 week) |
| 2005 | Preservation Masonry Workshop, College for the Building Arts, Charleston, SC (2 days) |
| 2005 | Masonry Analysis & Testing Workshop, Berkowitz and Jablonski, Campbell Center for Historic Preservation Studies, Mt. Carroll, Illinois (1 week) |
| 2005 | Jahn 4-Hour Workshop, Cathedral Stone Products, Columbia, SC |

| | |
|---|---|
| 2006 | Stone Carving and Restoration Workshop, Traditional Building Skills Institute, Snow College, Ephraim, Utah (3 days) |
| 2007 | Integrally Colored Concrete Workshop, Ron Blank & Associates, AIA Continuing Education, Columbia, SC |
| 2008 | IACET Aerial Work Platforms Training; Supported Scaffold Safety Training; Cranes, Chains, Slings and Hoist Safety Training, Columbia, SC |
| 2008 | Georgia Urban Agriculture Council & UGA Cooperative Extension Outdoor Water Use Registration Program Certificate #P86X9G4467 |

**Memberships**

American Institute for Conservation of Historic and Artistic Works
US/ICOMOS – Brick, Masonry & Ceramics Committee
Association of Preservation Technology
Preservation Trades Network
National Trust for Historic Preservation
Association of Gravestone Studies

**Abstract of Cemetery Conservation/Preservation Experience (not inclusive of legal/archaeological experience)**:

| | |
|---|---|
| 1992 | Reviewer of National Trust for Historic Preservation publication on historic cemeteries publication by Lynette Strangstad. |
| 1998-99 | Principal Investigator, Survey and Documentation of African-American cemeteries in Petersburg, Virginia. Including mapping, grave location, and development of historic context. (with Preservation Consultants, Charleston, SC). |
| 1998-99 | Conservation activities, Maple Grove Cemetery, Maple Grove United Methodist Church, Waynesville, North Carolina. |
| 1999 | Instructor, Cemetery Preservation: Making Good Choices Workshop, Virginia Association of Museums, Petersburg, Virginia. |
| 1999 | Instructor, Cemetery Preservation: Making Good Choices Workshop, Georgia Local History Conference, Augusta, Georgia. |
| 2000 | Consultation regarding maintenance and clearing of Ricefield's Woodville Cemetery, Georgetown County, South Carolina. |
| 2000 | Invited Speaker, Cemetery Conservation Techniques, Historic Cemetery Preservation Workshop, Maryland Historical Trust, Annapolis, Maryland. |
| 2000 | Preservation assessment, Summerville Cemetery, Augusta, Georgia. |

| | |
|---|---|
| 2001 | Assessment and preservation plan for Glenwood Cemetery, Thomaston, Georgia. |
| 2001 | Reconnaissance survey of cemeteries in Richland County, South Carolina. |
| 2001 | Preservation guidelines for St. Paul's Cemetery, Augusta, Georgia. |
| 2001 | Instructor, Cemetery Preservation: Making Good Choices Workshop, Restoration International Trade Event, New Orleans, La. |
| 2001 | Instructor, Cemetery Preservation: Making Good Choices Workshop, National Preservation Institute, Washington, D.C. |
| 2002-2003 | Conservation program, Old Waxhaws Presbyterian Cemetery, Lancaster County, South Carolina. |
| 2003 | Treatment of markers at the Vardeman Cemetery, Lincoln County, Kentucky. |
| 2003 | Consultation concerning cemetery walls and pathways, Maple Grove Cemetery, Waynesville, North Carolina. |
| 2003 | Invited Speaker, Preservation of African American Cemeteries Conference, 2003, Helena, Arkansas. |
| 2003 | Instructor, Cemetery Preservation: Making Good Choices Workshop, Washington County, Georgia Historical Society, Sandersville, Georgia. |
| 2003 | Preservation assessment, Old City Cemetery, Sandersville, Georgia |
| 2003 | Instructor, Cemetery Preservation: Making Good Choices Workshop, National Preservation Institute, Washington, D.C. |
| 2003 | Treatment of markers at Oakview and Riverside cemeteries; examination of burial vaults in white and African American sections, City of Albany, Georgia (FEMA funded). |
| 2003 | Preservation assessment, Historic Cemeteries at Five Cemeteries, Bannack State Park, Bannack, Montana |
| 2003 | Instructor, Cemetery Preservation: Making Good Choices Workshop, Bannack State Park, Bannack, Montana |
| 2003 | Consultation concerning cemetery brick wall, Midway Church, Midway, Georgia. |
| 2004 | Treatment of markers at Richardson Cemetery, Clarendon County, South Carolina. |
| 2004 | Instructor, Cemetery Preservation: Making Good Choices Workshop, National Preservation Institute, Washington, D.C. |
| 2004 | Treatment of markers at Maple Grove Cemetery, Waynesville, North Carolina. |

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| 2004 | Consultation regarding State Historical Marker, Roseville Cemetery, Florence County, South Carolina. |
| 2004 | Consultation regarding the Mary Musgrove Monument, Musgrove Mill State Park, Laurens County, South Carolina. |
| 2004 | Invited Speaker, Cemetery Preservation Workshop, SC Genealogical Society Annual Meeting, Walterboro, South Carolina. |
| 2004 | Treatment of markers at Wrightsboro Cemetery, Thomson, Georgia. |
| 2005 | Treatment of markers at Pon Pon Cemetery, Colleton County, South Carolina. |
| 2005 | Treatment of markers at Walnut Grove Plantation, Spartanburg County, South Carolina. |
| 2005 | Consultant on cemetery fence theft, Save Austin's Cemeteries, Austin, Texas. |
| 2005 | Treatment of markers at Richardson Cemetery (Second Phase), Clarendon County, South Carolina. |
| 2005 | Instructor, Cemetery Preservation: Making Good Choices Workshop, National Preservation Institute, Washington, D.C. |
| 2005 | Treatment of marker in Oakview Cemetery, Albany, Georgia. |
| 2005 | Treatment of markers at Trinity Cathedral, Columbia, SC. |
| 2005 | Preliminary preservation recommendations, Randolph Cemetery, Columbia, SC. |
| 2005 | Treatment of markers in Presbyterian Cemetery, Union, SC. |
| 2005 | Instructor, Cemetery Preservation: Making Good Choices Workshop, Save Oklahoma's Cemeteries, Muskogee, Oklahoma. |
| 2005 | Instructor, Cemetery Preservation: Making Good Choices Workshop, National Preservation Institute, Las Vegas, New Mexico. |
| 2005 | Treatment of marker, Reynolds Homestead, Critz, Virginia. |
| 2005 | Assessment and preservation plan for Lewis Cemetery, King and Queen County, Virginia. King and Queen County Historical Society. |
| 2006 | Treatment of markers in Presbyterian Cemetery, Union, SC (second phase). |
| 2006 | Assessment and preservation plan for Pine Lawn Memorial Gardens, Aiken, South Carolina. SC Department of Archives and History, Columbia. |
| 2006 | Assessment of Unadilla Cemetery, Unadilla, Georgia. |

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| 2006 | Invited Speaker, Planning a Cemetery Preservation Project, People and Places: South Carolina's Seventh Annual Statewide Historic Preservation Conference, SC Department of Archives and History, Columbia, South Carolina. |
| 2006 | Assessment and Preservation Plan, Memory Hill Cemetery, Milledgeville, Georgia. |
| 2006 | Assessment and Preservation Plan, Springwood Cemetery, City of Greenville & Friends of Springwood Cemetery, Greenville, South Carolina. |
| 2006 | Invited Speaker, Cemetery Rehab, South Carolina Landmark Conference, SC Department of Archives and History, Aiken, South Carolina. |
| 2006 | Assessment, Town of Dedham, MA cemetery, Vollmer Associates, Boston. |
| 2006 | Assessment and Preservation Plan, Naval Medical Cemetery Portsmouth Cemetery, Portsmouth, Virginia. |
| 2006 | Instructor, Cemetery Preservation: Making Good Choices Workshop, National Preservation Institute, Washington, D.C. |
| 2006 | Invited Speaker, Preservation Needs at Greenville's Springwood Cemetery, Greenville Chapter of SC Genealogical Society, Greenville, South Carolina. |
| 2006 | Preparation of landscape plan, Randolph Cemetery, Columbia, South Carolina. |
| 2006 | Treatment of markers in the Cason Plot, Long Creek Baptist Church, Warrenton, Georgia. |
| 2006 | Treatment of markers in the Watson Plot, Thomson City Cemetery, Thomson, Georgia. |
| 2006 | Treatment of markers at Trinity Cathedral, Columbia, South Carolina (second phase). |
| 2006 | Assessment and Preservation Plan, Old Athens Cemetery, University of Georgia, Athens, Georgia. |
| 2006 | Preparation of Treatment Plan, Terrell Tomb, Sparta, Georgia. |
| 2006 | Emergency conservation treatment, Settler's Cemetery, City of Charlotte, North Carolina. |
| 2006-2007 | Preservation Assessment and Recordation, St. Elizabeth's Cemetery, Washington, DC (for General Services Administration). |
| 2006-2007 | Preservation Assessment, three Raleigh Cemeteries, Raleigh, North Carolina. |
| 2007 | Historic research, Randolph Cemetery, Columbia, South Carolina. |
| 2007 | Treatment of Monuments at Laurelwood Cemetery, Rock Hill, South Carolina. |
| 2007 | Assessment of markers, Machpelah Cemetery, Lincoln County, North Carolina. |

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| 2007 | Assessment of Moss Family Cemetery, Stanly County, North Carolina. |
| 2007 | Treatment of Monuments at the Old Athens Cemetery, University of Georgia, Athens, Georgia. |
| 2007 | Treatment of markers at Trinity Cathedral, Columbia, South Carolina (third phase). |
| 2007 | Invited Speaker, Annual Conference of the South Carolina African American Heritage Commission, Mars Bluff, South Carolina. |
| 2007 | Instructor, Cemetery Preservation: Making Good Choices Workshop, National Preservation Institute, Greensboro, North Carolina. |
| 2007 | Treatment of markers at Machpelah Cemetery, Lincoln County, North Carolina. |
| 2007 | Assessment of markers, St. Johns Cemetery, Richmond, Virginia. |
| 2007 | Preservation Assessment, Village Cemetery, Newberry, South Carolina. |
| 2007 | Instructor, Cemetery Preservation: Making Good Choices Workshop, Lincolnton Historical Society, Lincolnton, North Carolina. |
| 2007 | Treatment of markers, Settler's Cemetery, Charlotte, North Carolina. |
| 2007 | Assessment of markers, Unitarian Church Cemetery, Charleston, South Carolina. |
| 2007 | Preparation of Conservation Scope of Work (cemetery stones), Chalmette National Cemetery, Louisiana (for Lord, Aeck & Sargent, Ann Arbor, Michigan). |
| 2007 | Preservation Assessment and Assessment of markers, Mann Family Cemetery, North Attleboro, Massachusetts. |
| 2007 | Treatment of the Pringle Vault, City Cemetery, Sandersville, Georgia. |
| 2007 | Assessment of the Plunk Family Cemetery, Lincolnton, North Carolina. |
| 2007 | Assessment of City Cemetery, South Bend, Indiana. |
| 2007 | Assessment of Magnolia Cemetery, Mobile, Alabama. |
| 2007 | Treatment of the Middleton family vault, Middleton Plantation, Dorchester County, South Carolina. |
| 2007 | Treatment of ledgers in family cemetery, Augusta, Georgia. |
| 2007 | Consultant, National Trust for Historic Preservation, Southern Field Office, Tornado damage at Oak View Cemetery, Americus, Georgia. |

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| 2007-2008 | Treatment of markers at Richardson Cemetery, Clarendon County, South Carolina (third phase). |
| 2008 | Assessment of the Coleman-Leigh-Warren Family Cemetery, Augusta, Georgia. |
| 2008 | Assessment of three city cemeteries, Thomasville, Georgia. |
| 2008 | Assessment of Cottage Cemetery, Augusta, Georgia. |
| 2008 | Assessment, South View Cemetery, Atlanta, Georgia. |
| 2008 | Treatment of Mitchem Family Cemetery stones, Clarendon County, South Carolina. |
| 2008 | Preparation of Conservation Scope of Work (brick, iron, stucco), Chalmette National Cemetery, Louisiana (for Lord, Aeck & Sargent, Ann Arbor, Michigan). |
| 2008 | Treatment of stones at Unitarian Church Cemetery, Charleston, South Carolina (first phase). |
| 2008 | Treatment of vandalized stones at Trinity Cathedral Church Cemetery, Columbia, South Carolina. |
| 2008 | Consultant, Dantzler Plantation, regarding brickwork, stucco, and rising damp, Holly Hill, South Carolina. |
| 2008 | Assessment, Christ Church Cemetery, Greenville, South Carolina. |
| 2008 | Treatment of stones at Magnolia Cemetery, Mobile, Alabama (first phase). |
| 2008 | Instructor, Cemetery Preservation: Making Good Choices Workshop, National Preservation Institute, Jacksonville, Florida. |
| 2008 | Treatment of Monuments at the Old Athens Cemetery, University of Georgia, Athens, Georgia (second phase). |
| 2008 | Treatment of Newman Swamp Methodist Church stones, Florence County, South Carolina. |
| 2008 | Treatment of Rehoboth Cemetery stone, Clarendon County, South Carolina. |
| 2008 | Penetrometer survey and mapping of Old Brick Church Cemetery, Fairfield County, South Carolina. |
| 2008 | Consultant, National Trust for Historic Preservation, Southern Field Office, Tornado damage at Oak View Cemetery, Atlanta, Georgia. |

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| 2008-2009 | Assessment and preservation plan for three City of Suwanee cemeteries, Suwanee, Georgia (includes GPR and mapping in association with GEL Geophysics, Charleston, South Carolina). |
| 2008-2009 | Assessment and preservation plan for city cemetery, Jonesborough, Tennessee. |
| 2008-2009 | Conservation assessment of Orleans City Cemetery, Orleans, Massachusetts. |
| 2009 | Treatment of monuments at Settler's Cemetery, Charlotte, North Carolina. |
| 2009 | Treatment of monuments at Magnolia Cemetery, Mobile, Alabama (second phase). |
| 2009 | Treatment of monuments at the Old Athens Cemetery, University of Georgia, Athens, Georgia (third phase). |
| 2009 | Assessment and preservation plan for St. Elizabeths Hospital, East Camus Cemetery, Washington, DC. |

**National Register Nominations of Cemeteries**

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| 1999 | Preliminary Multi-Property Nomination, African American Cemeteries of Petersburg, Virginia. Submitted to Virginia Department of Historic Resources, Richmond, Virginia (with Sarah Fick, Preservation Consultants). |
| 2000 | National Register Nomination, King Cemetery, Charleston County, South Carolina. Submitted to South Carolina State Historic Preservation Office, SC Department of Archives and History, Columbia. |
| 2002 | National Register Nomination, Scanlonville or Remley Point Cemetery, Charleston County, South Carolina. Submitted to South Carolina State Historic Preservation Office, SC Department of Archives and History, Columbia. |
| 2005 | Preliminary Information Form – Hopkins Family Cemetery, Richland County, South Carolina. Submitted to South Carolina State Historic Preservation Office, SC Department of Archives and History, Columbia. |
| 2007 | Preliminary Information Form – Harts Bluff African American Cemetery, Wadmalaw Island, Charleston County, South Carolina. Submitted to South Carolina State Historic Preservation Office, SC Departmen |

**Cemetery Preservation Plans**

**Historical Research**

**Identification of Grave Locations and Mapping**

**Condition Assessments**

**Treatment of Stone and Ironwork**

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