# Commemorating Military Service and Sacrifice in Virginia: An Analysis of Veteran Memorial Needs


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WELDON COOPER
CENTER FOR PUBLIC SERVICE
*University of Virginia*

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# EXECUTIVE SUMMARY

This study evaluates the interment needs of Virginia's veterans and assesses progress made since a report, *Meeting the Memorial Needs of Virginia Veterans: An Analysis of Existing and Proposed Cemetery Sites*, was published in 2007. Since then significant changes have occurred in federal and state policy, veteran demographics, consumer interment preferences, and the availability and projected longevity of regional national and state veterans cemeteries. These changes merit a re-assessment of many of the issues addressed in that study.

The previous study recommended that the Virginia Department of Veterans Services make long-term plans to establish a new veterans cemetery in Nelson County. This recommendation was based on two considerations. First, the study found that a 50-mile distance service area boundary should be used in Virginia state cemetery planning because burial data for the cemeteries showed that the vast majority of veteran interments were drawn from within 50 miles of a state cemetery. This finding was consistent with some national research at the time that a 75-mile service area radius used by the National Cemetery Administration (NCA) in cemetery siting was too large. Second, the Culpeper National Veterans Cemetery, which provides approximately 250 interments each year drawn mainly from a population of veterans who reside in Northern and Central Virginia, was projected to be depleted for casketed burial within 15-20 years or as early as 2022 unless additional land was secured to extend the life of the cemetery. A location analysis found that a new Nelson County cemetery would serve the largest population of unserved veterans if one assumed a 50-mile service area radius and Culpeper National Cemetery were closed.

Since the last report, the NCA has substantially overhauled its criteria for establishing new veterans cemeteries and reaffirmed its support for the 75-mile straight-line distance standard in funding new cemetery construction. It has decreased the unserved veteran population threshold required to establish a new national cemetery from 170,000 to 80,000. For areas with fewer than 80,000 unserved veterans, states can initiate application to the State Cemetery Grant Program for a new state veterans cemetery. The NCA has created an "urban initiative" where small cemeteries would be developed for columbaria and mausoleums in large cities that are less accessible to existing national cemeteries on the basis of travel time and other indicators. Lastly, the NCA is establishing "National Veterans Burial Grounds" within existing private or public cemeteries in rural areas with fewer than 25,000 unserved veterans in states without a state veterans cemetery or access to a national cemetery.

The Virginia Department of Veterans Services (VDVS) has also made several significant changes. The VDVS opened its third cemetery, the Southwest Virginia Veterans Cemetery, in Pulaski County in 2011. Interments at existing cemeteries have continued to increase due to the expanded visibility that comes with cemetery exposure and expanded outreach efforts. In addition, the VDVS has either now pre-installed or is in the process of installing outer burial containers at all three cemetery locations. The availability of these outer burial containers in the future at no cost to the veterans will make casketed burial a more affordable interment choice and provide an additional cost edge over interment in private cemeteries. Lastly, the VDVS has suspended its residency eligibility requirement for veteran interment. This policy change has been encouraged by the NCA, and now most state cemetery systems have adopted this same policy.

Veteran demographics and consumer preferences have also changed. Since the last study, the U.S. Department of Veterans Affairs (USDVA) has issued newer sets of veteran projections. The most recent product is the VetPop2011 model projections, which were published in January 2013. These projections show a significant increase in Virginia's veteran population over the planning horizon and an increased number of deaths compared to previous projections. They also show a varied pattern of veteran population growth within the state. The Hampton Roads and Northern Virginia regions are expected to see increases in their veteran populations,

and the balance of the state will experience significant decreases. Consumer interment preferences are also evolving. Increasing numbers of consumers are selecting cremation for its cost, simplicity, and environmental impact. Demand for cremation continues to outpace projections. New survey data and projections from varied sources such as the Cremation Association of North America, the Funeral and Memorial Information Council, and the U.S. Department of Veterans Affairs indicate that cremation will continue to grow as an interment choice and may overtake casketed burial in the next decade.

In contrast to the previous report, a 75-mile straight-line distance standard was adopted for cemetery location analysis in this study. This decision is made for two reasons. First, at the time of the last study, the distance standard was under review and the USDVA had contracted with an independent consultant to examine the issue. Since that time, ICF International has published its study and recommended the retention of the 75-mile standard. Furthermore, the NCA has adopted this recommendation and reaffirmed its support for the foreseeable future in awarding funds to states for new veterans cemeteries. Second, with the maturation of the Virginia veterans cemeteries and more extensive outreach and marketing activities being undertaken by the VDVS, veteran burial draw rates have improved markedly within the 75 mile service areas with much improvement also occurred within the 50-75 mile distance band. Therefore, current research and federal policy argue in favor of using the 75-mile standard. However, this study also examines the impact of using an alternative distance standard based on travel times along existing roadways. This access standard was suggested as an alternative measure in the ICF International study.

A location analysis reveals that new cemetery placement in Amherst County would provide the most optimal solution for Virginia veterans. This cemetery extends service to the greatest number of Virginia veterans based on the NCA 75-mile standard and would best position the state for the eventual closure of Culpeper National Cemetery. Moreover, Culpeper National is not optimally located to serve the needs of Virginia veterans, and its closure and replacement by an Amherst County cemetery would provide a more centralized cemetery service area solution for the commonwealth. The development of this fourth cemetery would result in four state contiguous cemetery service area bands that run parallel from east to west serving: (1) the Tidewater region, (2) the Piedmont region, (3) a region encompassing southern Shenandoah Valley and part of the Piedmont region, and (4) the Blue Ridge Highlands. Mountain Home National and Quantico National Cemeteries would cover the balance of the state, including the Appalachian region and Northern Virginia respectively. The new cemetery system would provide uninterrupted cemetery service for 99 percent of commonwealth veterans for at least a fifty-year time span.

Projections indicate that between 1,700 and 2,500 interments would be handled within a four-cemetery system by FY 2033 and potentially 36,000-55,000 veterans over the period FY 2014-2040. These projections are based on USDVA veteran death projections, estimates of county burial draw rates, and alternative assumptions about burial draw rate growth. Albert G. Horton, Jr. Memorial Veterans Cemetery in Suffolk would have the largest volume of burial activity and its interments would grow throughout the period even under very conservative burial draw rate assumptions. A new cemetery in Amherst County would handle approximately 300-370 burials each year, making it similar in volume to Virginia Veterans Cemetery in Amelia. Approximately 120-135 burials can expected to be first-interment casketed burials each year. Therefore, allowance should be made for at least 25 acres to accommodate casketed burial for an 80-year period. Based on the number of projected interments, DVS staffing guidelines would call for 2 administrative employees and 4 groundskeepers at an Amherst County veterans cemetery.

The upper range of projections is predicated on continued improvements in burial draw rates for the cemetery service regions. Virginia State Veterans Cemeteries veteran burial draw rates are currently about half of those achieved by the entire national and state veterans cemetery system (i.e., 6 percent of all veterans within the service area interred versus a 12 percent rate nationwide). Virginia state cemeteries are still relatively new and, with the exception of Albert G. Horton, Jr. Memorial Cemetery in Suffolk, are somewhat remote from large urban areas. These features may depress draw rates. Moreover, national cemeteries offer comparatively lower interment fees and may have greater drawing power. Outreach and marketing measures taken by the VDVS

in recent years may have contributed to recent improvements in draw rates. A further scaling up of these efforts could be important to making further progress on interment rates.

The VDVS has expanded its outreach and marketing, through both traditional channels and new media. For example, the cemetery superintendent of the newly established Southwest Virginia Veterans Cemetery devotes one day of aggressive outreach each week to church and veterans organizations throughout the West Central and Southwest region. The VDVS has also recently instituted a new program called the "Virginia Military Funeral Honors for Unclaimed Veterans' Cremains Program" which encourages funeral homes, crematories, and other organizations to identify unclaimed cremains that may be eligible for interment in a veterans cemetery. The VDVS has also upgraded its website. It has been revamped and now includes a section devoted to the veterans cemeteries. In addition, the department has established a presence on the social media site Twitter.

The potential exists to offer more online services. Several types of information provided by cemeteries are not yet available on the VDVS website, such as information about the cemetery's history, obituaries of newly interred veterans, videos, and information about additional resources. Links could be provided to outside sources such as a new USDVA online funeral directors resource kit that provides multimedia materials to educate funeral directors on how to assist veterans in understanding their eligibility and memorial benefits. Another option would be to develop interactive web-based tools that would allow veterans to enter information online and receive information on their eligibility and burial benefits. The VDVS could augment and integrate its Twitter presence with other social media such as Facebook and YouTube as several other state veterans affairs departments have done.

The VDVS could also expand the interment options available. Growing consumer price sensitivity, expanding environmental awareness and increasing cultural diversity are driving changes in interment choices. Private and veterans cemeteries are increasingly offering more varied green memorial options such as scattering gardens. The VDVS anticipates adding scattering gardens as part of Wood Walkway projects progressing at all three cemeteries. However, an ongoing effort to fund Wood Walkway improvements from private donations has slowed progress in this area. The VDVS may want to examine the introduction of scattering gardens earlier at one cemetery with the assistance of departmental funds as a way to test the popularity of this interment option and examine the cost effectiveness of introducing it elsewhere.

In order to maintain cemetery quality and ensure continued positive messages by way of word-of-mouth, the VDVS may also want to consider expanding its quality assessment efforts. The department already uses several service delivery measures that align with NCA performance measures. These measures could be expanded to the customer satisfaction area. The NCA and several state veterans cemeteries regularly conduct cemetery service satisfaction surveys. Surveys could be designed for next-of-kin for first interments to assess burial services, facility quality, grounds appearance, and staff availability and courtesy. The pre-application form could also be re-designed to help assess marketing and outreach efforts by soliciting information from veterans on why they chose the state veterans cemetery and what sources of information they relied upon to find out about their state veterans cemetery burial benefit.

# INTRODUCTION

This study evaluates the interment needs of Virginia's veterans and assesses progress made since a report, *Meeting the Memorial Needs of Virginia Veterans: An Analysis of Existing and Proposed Cemetery Sites*, was published in 2007. It describes various changes that have occurred since that report, including changes in U.S. Department of Veterans Affairs (USDVA) policy, Virginia Department of Veterans Services (VDVS) services, the geographical availability of national and state veteran cemeteries, and consumer death care choices. The study examines issues pertinent to determining veteran cemetery needs such as veteran demographics, burial location preferences, and choices of interment method. Using this information along with data on the locations and capacities of cemeteries that serve veterans who reside in Virginia, the study identifies an optimal location for a new state cemetery and provides new projections of veteran interments to the year 2040. The study also investigates ways to improve the attraction of veterans cemeteries through expanded marketing and use of new technology, providing new memorial products, offering new fee structures, and undertaking additional evaluation and assessment activities.

This report is divided into five additional sections. The next section discusses the history and characteristics of the Virginia State Veterans Cemetery system, reviews results from a 2007 analysis of state veterans cemeteries needs, and discusses policy, demographic, consumer and other changes that have occurred since that study. The second section examines determinants of veteran burial needs. These variables include the geographical pattern of veteran populations and deaths, veteran burial location preferences, and veteran interment mode choices (i.e., cremation or casket burial). Section three examines characteristics and market boundaries of regional veteran cemeteries, analyzes residential patterns of veterans interred in veterans cemeteries, and identifies locations for new cemeteries given certain assumptions about travel distance, market boundaries, veteran populations, and the geographical configuration of veteran cemeteries in service. The fourth section identifies the most optimal location for a new cemetery and presents projections of cemetery burial volumes for the period 2014-2040. The fifth section explores ways to maintain and build the draw of state veterans cemeteries through marketing and outreach, new products, and assessment and evaluation.

# SECTION 1
# BACKGROUND

## Virginia State Veterans Cemetery System

The VDVS established a State Veterans Cemetery System in the mid 1990s with financial assistance from the National Cemetery Administration (NCA) State Cemetery Grants Program in order to fill a substantial gap in veteran cemetery access in the Commonwealth. [1] Three cemeteries have been established to date and now provide service to approximately 60 percent of Virginia veterans (VDVS 2013). National cemeteries in the region help extend coverage to an additional 38 percent of Virginia veterans. The first cemetery was dedicated in 1997 with the acquisition and development of the 129-acre Virginia Veterans Cemetery in Amelia County, approximately 40 miles southwest of Richmond (see **Table 1.1**). In 2004, another state cemetery was opened, Albert G. Horton, Jr. Memorial Veterans Cemetery in Suffolk, on a 74-acre property. A third cemetery was opened in Pulaski County in 2011, approximately 50-miles south of Roanoke on 80 acres of land. These cemeteries are projected to meet the veteran burial needs of their respective service areas for the next 50 to 80 years.

Interments in Virginia state veterans cemeteries have increased each year since 2004 and totaled 7,863 at the end of FY 2012 (see **Table 1.2**). Much of this growth can be attributed to new cemeteries coming online, but rapid growth has also occurred at existing cemeteries. The compounded annual growth rate over the FY2006-FY2012 period for Albert G. Horton, Jr. Memorial Veterans and Virginia Veterans Cemeteries was 7.2 percent. Interments in Virginia state cemeteries in FY2011 represented 43.4 percent of all interments in Virginia national and state veterans cemeteries, up from about one-third in FY2006.

Interment in one of the three Virginia State Cemeteries is available to members of the U.S. armed forces who die on active duty, military retirees, and honorably discharged veterans. In addition, members of the reserves and National Guard who have served for 20 years and qualify for a military pension are also eligible. Certain additional categories of federal government employees (e.g., commissioned offices of the National Oceanic and Atmospheric Administration, some American merchant mariners) can also be interred. Spouses and child dependents may be interred. Finally, recent federal legislation has extended eligibility to biological or legally adoptive parents under certain circumstances.

State veterans cemeteries provide the following services at no cost to the veteran: provision of a gravesite, opening and closing of the grave, headstone or marker, and perpetual care of the gravesite. Spouses and dependents are charged a fee (currently $300) to cover the costs of these services. Veterans and spouses choosing in-ground, casketed burial must purchase an outer burial container, which may be purchased from VDVS for $400 (standard-sized casket) or $475 (oversized casket), or may be purchased at market rates from a funeral home. Upon the completion of construction projects in Fall 2013 to "pre-install" outer burial containers, Virginia's state veterans cemeteries will offer outer burial containers at no cost for new, first interments (and subsequent second interments) in the new burial sections. However, outer burial containers will have to be purchased for second interments in the existing burial sections (i.e., those without pre-installed outer burial containers) or when an oversized casket is required.

1 The VDVS receives 100 percent of construction and initial equipment expenses for establishing a new cemetery and has received similar cost share on recent large-scale improvements to existing cemeteries. In addition, the VDVS receives a plot allowance of $700 to cover the expense of each veteran burial. The commonwealth costs include the cost of cemetery property acquisition, operational costs in excess of the plot allowance, routine maintenance and equipment replacement costs. In FY 2013, the VDVS was allotted $1,109,791 from the General Fund and received $583,466 from the Non-General Fund. This latter amount is derived from federal plot allowances and interment related fees.

**Table 1.1 Virginia State Veterans Cemetery Characteristics**

| Cemetery | Location | Dedicated | Acreage | Total Interments as of FY 2012 | Characteristics | Projected Depletion Date |
|---|---|---|---|---|---|---|
| Albert G. Horton, Jr. Memorial Veterans | Suffolk | Nov. 2004 | 74<br>(28 developed phase one;<br>12 under construction phase two) | 4,790 | 1,920 niche columbaria<br>1,260 4X4 cremation plots<br>8,722 4X10 burial plots<br>4,090 preinstalled outer burial containers<br>Granite headstones and markers | FY 2060+ |
| Virginia Veterans | Amelia | May 1997 | 129<br>(29 developed phase one) | 2,908 | 1,440 niche columbaria<br>972 3X3 cremation plots<br>8,277 5X10 burial plots<br>Marble headstones and granite markers<br>1,610 pre-installed outer burial containers | FY 2080+ |
| Southwest Virginia Veterans | Dublin | May 2011 | 80<br>(27 developed phase one) | 166 | 625 niche columbaria<br>500 4X4 cremation plots<br>5,167 4X10 burial plots<br>2,750 pre-installed outer burial containers<br>Granite headstones and markers | FY 2090+ |

Source: Virginia Department of Veterans Services, USDVA Form 40-0241—State Cemetery Data

## Summary of Previous Cemetery Study

**Table 1.2 Virginia State Veterans Cemetery Interments, FY1997-FY2012**

| Year | Albert G. Horton, Jr. Memorial Veterans | Southwest Veterans | Virginia Veterans | Total |
|---|---|---|---|---|
| 1997 | -- | -- | 2 | 2 |
| 1998 | -- | -- | 95 | 95 |
| 1999 | -- | -- | 91 | 91 |
| 2000 | -- | -- | 124 | 124 |
| 2001 | -- | -- | 121 | 121 |
| 2002 | -- | -- | 175 | 175 |
| 2003 | -- | -- | 169 | 169 |
| 2004 | -- | -- | 179 | 179 |
| 2005 | 255 | -- | 188 | 443 |
| 2006 | 478 | -- | 231 | 709 |
| 2007 | 510 | -- | 228 | 738 |
| 2008 | 591 | -- | 213 | 804 |
| 2009 | 638 | -- | 248 | 886 |
| 2010 | 752 | -- | 263 | 1,015 |
| 2011 | 766 | 23 | 302 | 1,091 |
| 2012 | 799 | 143 | 279 | 1,221 |
| Total | 4,789 | 166 | 2,908 | 7,863 |

Source: Virginia Department of Veterans Services

An analysis conducted in 2007 (Rephann 2007) cited four factors that affected the need for additional burial space in Virginia. First, it was projected that the Culpeper National Cemetery, which provides approximately 250 interments each year drawn mainly from a population of veterans who reside in Northern and Central Virginia, would be depleted for casketed burial within 15-20 years or as early as 2022 unless additional land was secured to extend the life of the cemetery. Second, the number of annual veteran deaths over the next few decades was projected to be high by historical standards. Third, some newer cohorts of aging veteran cohorts, such as Vietnam veterans, had indicated in surveys that they were more likely to select a veterans cemetery than their WWII and Korean-War counterparts. Fourth and most importantly, many veterans remained outside a reasonable traveling distance of a state or national cemetery using a 50-mile straight-line or "as the crow flies" distance standard.

In assessing state and national cemetery needs, the NCA uses a 75-mile cemetery service area boundary. This boundary is considered to be the outer limit for which veterans will consider burial sites. Therefore, as a matter of policy, the NCA establishes new national cemeteries, expands existing national cemeteries, and awards state cemetery grants with the goal of maximizing the number of unserved veterans who reside within 75-mile straight-line distance of a proposed national or state cemetery. In examining the interment records of the two state veterans cemeteries, we found that the 75-mile standard may be too restrictive for Virginia because of its varied topographical and urbanization landscape. Burial data showed that the vast majority of veteran interments were drawn from within 50 miles of a state cemetery with little likelihood of veteran burial occurring outside that boundary. Furthermore, a 75-mile boundary can mean vastly different travel times for residents on both ends of the urban-rural continuum. Residents of urban corridors may experience significant traffic congestion when travelling while residents of mountainous and rural areas encounter lower road network density and natural barriers such as mountains and rivers that slow travel times. In addition, questions had been raised at the time about the continued relevance of the 75-mile service area standard. The NCA had commissioned with an independent consultant to re-examine the issue.

Because of these findings, the study recommended the adoption of a 50-mile distance service standard in Virginia state cemetery planning. Using this criterion in conjunction with the looming closure of Culpeper National Cemetery to casketed burial, the study recommended a new cemetery for west central Virginia located in Nelson County. This cemetery would serve the largest population of unserved veterans using a 50-mile standard, including many veterans who would be displaced by the closure of Culpeper National Cemetery. Interment projections showed that a new Nelson County veterans cemetery would handle approximately 150 veteran burials when it opened, approximately the same number of veterans interments projected for the Southwest Virginia Veterans Cemetery to be opened in 2011.

At the time these recommendations and projections were made, changes were occurring that had the potential to affect future state cemetery planning. First, veterans, like other citizens, showed an increasing preference for cremation over traditional casketed burial. The space requirement of inurnment is only a fraction of traditional casket burial. So, higher cremation rates would translate into much lower rates of cemetery land depletion. Second, the VDVS was adopting new marketing and procurement strategies to improve the percentage of veterans within established service areas that chose burial in a veteran cemetery. The department was ramping up outreach activities such as visiting funeral homes and veteran organization chapters, and gaining additional exposure from newspaper, radio, and television stories and announcements. It was also upgrading staffing, public relations materials and its website to improve dissemination of information about VDVS services and state veteran cemetery burial benefits. The Department was in the process of securing funding to pre-install outer burial containers at all three of its cemeteries. The availability of these outer burial containers would allow the department to pass cost savings onto veterans and provide a significant additional cost advantage over private cemeteries. These cost savings had the potential to further boost the burial draw rate of state veteran cemeteries. Third, the VDVS was considering removing restrictions on out-of-state burials. The policy at that time was to restrict burial to state residents or residents of the state at the time of their military induction. The removal was anticipated to have a small impact on the Albert G. Horton Memorial, Jr. Veterans Cemetery in Suffolk and the future Southwest Virginia Veterans Cemetery in Dublin.

## Key Changes Since Previous Study

Several significant changes have occurred in federal and state policy, veteran demographics, consumer interment patterns, and the configuration and projected longevity of regional national and state veterans cemeteries since the last study. These changes, which are examined in detail here, suggest the need to reexamine the memorial needs of veterans in the commonwealth.

### National Cemetery Administration Policies

The NCA has recently made several important policy changes. Since the last report, the NCA has substantially overhauled its standards for establishing new veterans cemeteries and reaffirmed its support for the 75-mile straight-line distance standard. It previously operated a two-tiered system consisting of national and state veterans cemeteries. National cemeteries could be established in areas where at least 170,000 veterans were outside 75 miles of a national or state veterans cemetery. Under that program, the VA opened eight cemeteries since the last report (Alabama, AL; Bakersfield, CA; Jacksonville, FL; Sarasota, FL, South Florida, FL; Louisiana, LA; Washington Crossing, PA; Ft. Jackson, SC) and now operates 132 national cemeteries.[2] State veterans cemeteries were viewed as a complement to the national cemeteries that services smaller veteran service areas and could be established under the initiative of individual states with financial assistance from the USDVA State Cemetery Grants Program in areas with fewer than 170,000 underserved veterans. The program has funded 81 state veterans cemeteries in 39 states and two state territories, including three in Virginia. State veterans cemeteries have opened since 2007 in Alabama, Arizona, Arkansas, Kentucky, Louisiana, Maine, Nebraska, Missouri, Washington State, Virginia, and West Virginia.

The NCA now reports that approximately 90 percent of the U.S. veteran population is within 75-miles of a national or state veterans cemetery and has expanded its goal to serve 94 percent in a similar capacity (USDVA 2012a). After an independent consultant's study, the NCA made certain changes to its burial policies. The study recommended keeping the 75-mile distance service area standard but decreasing the unserved veteran population threshold that triggers eligibility for a new national cemetery from 170,000 to 110,000 (Scott 2013; ICF International 2008). The NCA later decreased the threshold even further to 80,000. This policy change resulted in the need for five new national cemeteries (i.e., Central East, FL; Omaha, NE; Southern CO; Western NY, and Tallahassee, FL). The next tier was to be filled by state cemeteries that can initiate application with priority given for state cemeteries that serve fewer than 80,000 residents within 75 miles with priority given

2 However only 73 cemeteries are currently accepting casketed burials. Seventeen accept cremated remains or the casketed remains of family members in a gravesite of an interred family member. The remaining cemeteries are either closed or accept only the remains of family members in a gravesite of an already interred family member.

to projects that would bring the most unserved veterans within a service region. In addition, the State Cemetery Grant Program was expanded to Tribal lands. The NCA has since awarded several veterans cemetery grants to Native American Tribes, including the Yurok Tribe in California; the Rosebud Sioux and Oglala Sioux Tribes in South Dakota and the Yaqui Tribe in Arizona.

The NCA also created cost-effective solutions to improve access for residents of large metropolitan areas and low population density rural areas. The NCA created an "urban initiative" where small cemeteries would be developed for columbaria in the 50 U.S. cities by population that are less accessible to existing national cemeteries as measured by several criteria such as miles travelled, time travelled, and veteran cemetery utilization. This program resulted in five new cemetery development projects in New York City, Indianapolis, Los Angeles, Chicago, and San Francisco. The NCA is also establishing "National Veterans Burial Grounds" within existing private or public cemeteries in rural areas with fewer than 25,000 unserved veterans according to the 75-mile service area standard (USDVA 2012a; Scott 2013). Eight states qualify (Idaho, Montana, Nevada, North Dakota, Maine, Utah, Wisconsin, and Wyoming).

The NCA has made other changes that will have a much more modest impact on future cemetery planning. With the passage of the Veterans' Benefits Act of 2010, the NCA is now allowing parents to be buried with veterans in special situations. According to the law, a biological or adoptive parent who dies on or after October 13, 2010 may be interred with members of the U.S. armed forces who have (a) died after October 6, 2001 from hostile activity or from training-related injuries, (b) are interred in a national or state cemetery, (c) have space in the gravesite available, (d) have no spouse or dependent who is interred or eligible for interment in the space (Scott 2013). This law is expected to have little effect on the number of interments. The same law significantly increased the burial fee paid to state cemeteries for each veteran burial to $700 from $300 and provides for an annual inflation-adjustment to maintain the purchasing power of the payment beginning in FY2013. This increase has provided a substantial boost to the VDVS cemetery budget and enabled them to begin increasing spending on maintenance and equipment.

## Virginia Department of Veterans Services Policy and Cemetery Changes

Since the last study, the VDVS has opened its third cemetery and interments at existing cemeteries have continued to increase. The first full year of operation at the Southwest Virginia Veterans Cemetery in 2012 shows that the projected veteran interments reported in the previous cemetery study were close to actual interments in 2012. In addition, the increasing public exposure that comes with being an established cemetery and additional outreach efforts have resulted in significantly higher catchment area draw rates. Indeed, as will be shown later, it now appears that the cemetery catchment areas are larger than 50-miles as reported in the last study and better approximated by the 75-mile standard used by the NCA in cemetery planning. In addition, the VDVS has now pre-installed outer burial containers at all three cemetery locations: 2,750 outer burial containers as part of the cemetery development at Southwest Virginia Veterans Cemetery, 1,610 outer burial containers with the assistance of a $1.6 million VA grant in the Virginia Veterans Cemetery, and 4,090 outer burial containers at the Albert G. Horton, Jr. Memorial Cemetery as part of a $3.3 million grant. Lastly, the VDVS has suspended its residency eligibility requirement for veteran interment. This policy change has been encouraged by NCA and now most state cemetery systems have adopted this same policy. Evidence so far suggests that the policy change has had little impact on the cemeteries. Although Albert G. Horton Jr., Memorial Veterans Cemetery regularly buries residents from northeastern North Carolina, these burials were also occurring before the policy change because the veterans had once resided in Virginia.

## National and State Cemeteries in the Region

While no new national cemeteries have been established within the Virginia service region, three state cemeteries have opened in adjoining states. West Virginia opened the 354-acre Donel C. Kinnard Memorial State Veterans Cemetery in 2012. Kentucky opened the 75-acre North East Kentucky Veterans Cemetery in Grayson in 2010. In 2011, a new section was added to the East Tennessee State Veterans Cemetery in Knoxville, Tennessee at a separate, more distant location to the north of Knoxville on Lyons View Pike. Since these cemeteries do not prohibit Virginia veteran burials, they could at least theoretically affect the Virginia service area. However, they

are relatively remote and expected to have little impact on Virginia veteran burial needs.

No new National Veterans Cemeteries were established in the region since the last study. However, since that study, the anticipated depletion date for the Culpeper National Cemetery has been moved back and is now projected to be open for casketed burial until at least 2032.[3]

## Demographics and Consumer Death Care Choices

As will be shown in more detail in the following sections, demographic and consumer changes continue to confound projecting long-term burial needs. Since the last study, the U.S. Department of Veterans Affairs has issued two newer sets of veteran projections. The first, VetPop2007, was released two months after the publication of the previous study. In the last two months, the USDVA has issued new population projections using the VetPop2011 model. These projections show a significant increase in Virginia's veteran population over the planning horizon and an increased number of projected deaths. They also show a varied pattern of veteran population growth within the state. The Hampton Roads and Northern Virginia regions are expected to see increases in their veteran populations, and the balance of the state will experience significant decreases. Growth in cremation continues to outpace projections. New data and projections from varied sources such as the Cremation Association of North America, the Funeral and Memorial Information Council, and the U.S. Department of Veterans Affairs indicate that cremation disposition will continue to grow and may overtake casketed burial in the next decade.

3 Interview with Culpeper National Cemetery Superintendent, Ms. Cindy Jones-Valle, on October 19, 2012.

# SECTION 2
# DETERMINANTS OF INTERMENT NEEDS

This study relies on three types of information to determine the current and future interment needs of veterans. First, estimates and projections of veteran populations and deaths by location and year are needed. Second, veterans' propensity to select interment in a veterans cemetery versus some other location should be determined. Finally, veteran preferences for cremation versus casketed disposition must be estimated. Since Virginia's state veterans cemeteries offer two alternative cremains interment methods that have differing capital development expense, space requirements, and operational costs (columbaria and in-ground cremation burials), one must also determine the split between these two interment options.

It is methodologically simpler to represent the interment decision as occurring in discrete steps where a veteran chooses first where to be interred (i.e., veteran cemetery versus some other location such as a private cemetery) and then how to be interred (i.e., casketed remains versus cremains). Such decisions are probably made simultaneously, and one can imagine situations where the sequence is actually reversed. For instance, final disposition of cremains are sometimes decided by next of kin many years after a loved one's death since cremains may be retained indefinitely. Moreover, the decision to be cremated may also affect the decision to even use a cemetery. Less than half of cremains are placed in a cemetery because they are less likely, as Smith (1996) phrases it "to evoke the need or impulse to memorialize that is associated with ground burial and entombment." More importantly, perhaps, casketed remains must be interred in cemeteries for public health reasons. Thus, one implication of this increasing trend toward cremation may be that proportionally fewer veterans will choose interment in any cemetery, inclusive of veteran cemeteries.

This section examines each of these variables separately and in some detail with supporting data and analysis. Ultimately, the information described here will be used in the subsequent sections to inform service area delineation, cemetery location analysis, and interment projections.

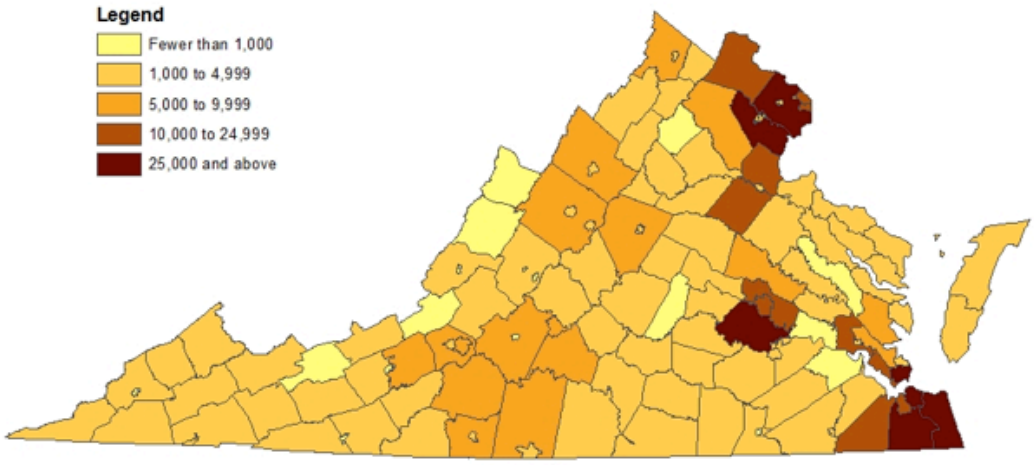
## Veteran Population and Death Projections

According to USDVA estimates, 827,810 veterans resided in Virginia in 2010, which ranked it 7th among states in the nation. This figure is up from 786,359 veterans and 10th highest reported in the 2000 U.S. Census. Virginia's veteran population as a percentage of civilian population aged 18 years and older ranked third in 2010, up from ninth in 2000. Virginia experienced the swiftest growth in its veteran population over the last decade (5.3 percent) and was only one of four states (the others being Georgia, Idaho, and South Carolina) to see veteran population increases over the decade.

Virginia's high veteran population can be attributed to several different factors. Most importantly, it has a large number of military bases and installations, with especially high numbers of servicemen and women working in the northern (e.g., the Pentagon, Fort Belvoir, Quantico Marine Corps Base) and the eastern (e.g., Joint Base Langley-Eustis, Oceana Naval Air Station, Norfolk Naval Base) regions of the state. The presence of these military activities and the close proximity of the seat of federal government in Washington, DC also attract many military contractors who employ large numbers of veterans with specialized skills who remain in the labor force and establish civilian careers. The state's generally low unemployment rate, wide array of recreational and cultural activities, and pleasant climate also attracts many military retirees. Lastly, a relatively high proportion of area youth serve in the military. The state averaged 3 recruits per 1,000 youth aged 18-24 for the Army, Navy, Marines, and Air Force in 2010, ranking it 10th highest in the nation and well above the national average of 2.3 per 1,000 (National Priorities Project 2013).

These factors also help to explain the geographical distribution of veterans within the state. Most of the state's veterans are located in the heavily populated Northern Virginia suburbs and Hampton Roads areas where military facilities are clustered (see **Figure 2.1**). As a share

**Figure 2.1 Veteran Population by Virginia Locality, 2010**




Source: U.S. Department of Veterans Affairs (2013)

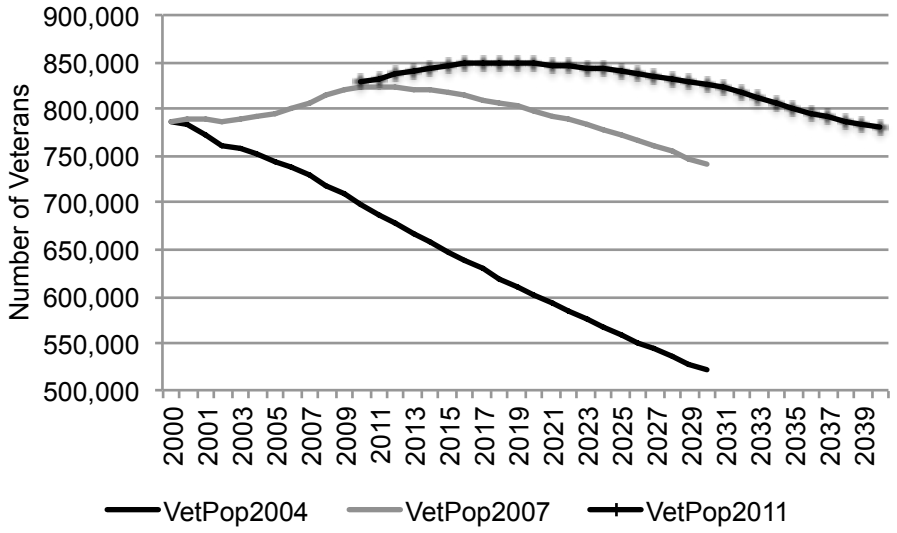
of the locality population, the pattern is a bit more dispersed with relatively high concentrations of veterans found in the Middle Peninsula and individual counties in nearly every region of the state.

The U.S. Department of Veterans Affairs has issued several sets of veteran population projections over the last fifteen years. Their first projection model was VetPop2000. VetPop2001 was introduced in 2002, VetPop2004 was completed in December 2004, and VetPop2007 was published in January 2008 (USDVA 2008). The most recent model, VetPop2011, was released in January 2013 (USDVA 2008, 2013). Each projection model incorporates novel revisions to methodology as well as more current data regarding veteran detachments from the military, migration, and death. The changes in these projections can have an impact on our analyses in two ways. First, since cemetery locational analysis is dependent on projected veteran population counts, the size and distribution of the veteran population could affect the need for additional cemeteries using standard NCA distance and population threshold eligibility criteria. Second, the size and distribution of veteran deaths would affect the projected volume of interments handled by existing and any future cemeteries.

The veteran population and death figures used in this study come from the VetPop2011 projection model (USDVA 2013). The VetPop2011 model introduces a number of methodological improvements and uses better demographic and actuarial data, including administrative records and survey data from the USDVA, Department of Defense, U.S. Census Bureau's American Community Survey, Department of Treasury's Internal Revenue Service, and the Social Security Administration. One key difference between model outcomes for this version and previous versions is that it projects both a younger veteran population because of changes in the characteristics of military separation and lower mortality for aged veterans because of improvements in health and longevity. Consequently, the model projects a significantly higher veteran population at each point in time than earlier models (See **Figure 2.2**).

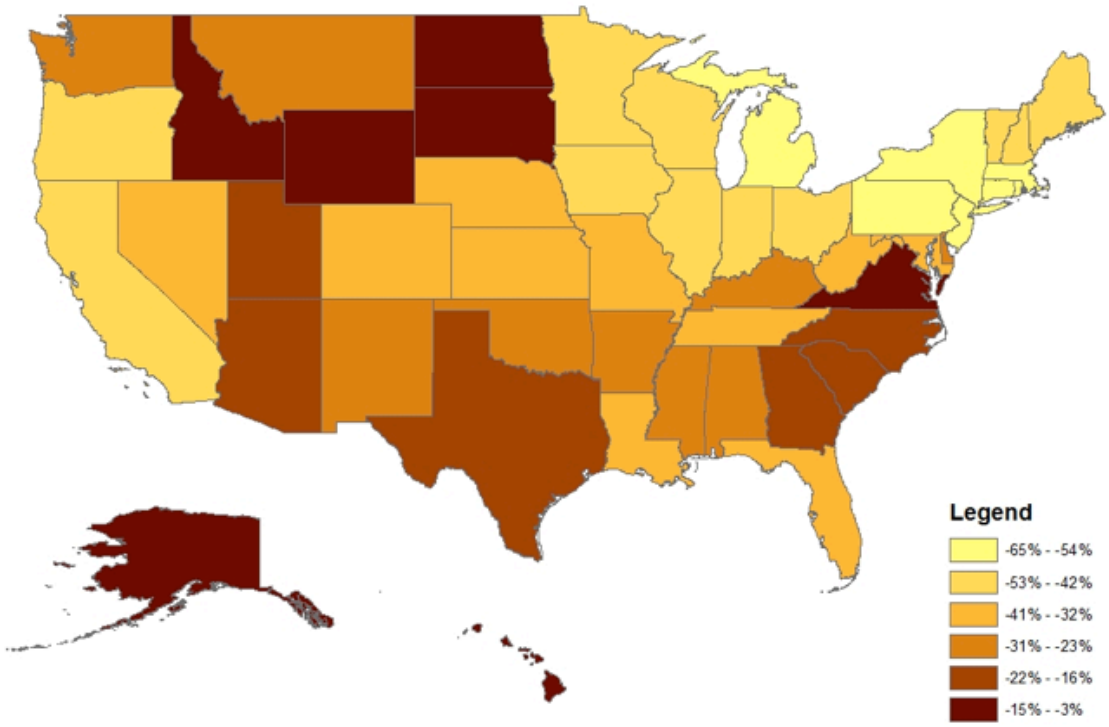
The migration module for VetPop2011 is also markedly different from earlier versions. The migration module is based on a predictive regression model that includes unemployment rates and cost of living. As a major military employer, Virginia is the location of many military detachments, some of whom choose to maintain residency in the commonwealth. Also, it has traditionally had lower unemployment rates and a lower cost of living that has favored inmigration. These model features produce projections that show a much lower projected rate of veteran population attrition in the Virginia than all but one other state, Wyoming (see **Figure 2.3**). The veteran

**Figure 2.2 Virginia Veteran Population by Year, 2000-2040**




Source: U.S. Department of Veterans Affairs (2007, 2008, 2013)

**Figure 2.3 Projected State Veteran Population Growth, 2010-2040**




Source: U.S. Department of Veterans Affairs (2013)

population in Virginia is projected to fall from 827,810 in 2010 to 780,582 in 2040, a rate of decrease of 6 percent compared to a national decrease of 37 percent over the same time period. The smallest rate of decrease is generally projected in southern and western states and the largest decrease in Northeastern and Midwestern/ Great Lake states.

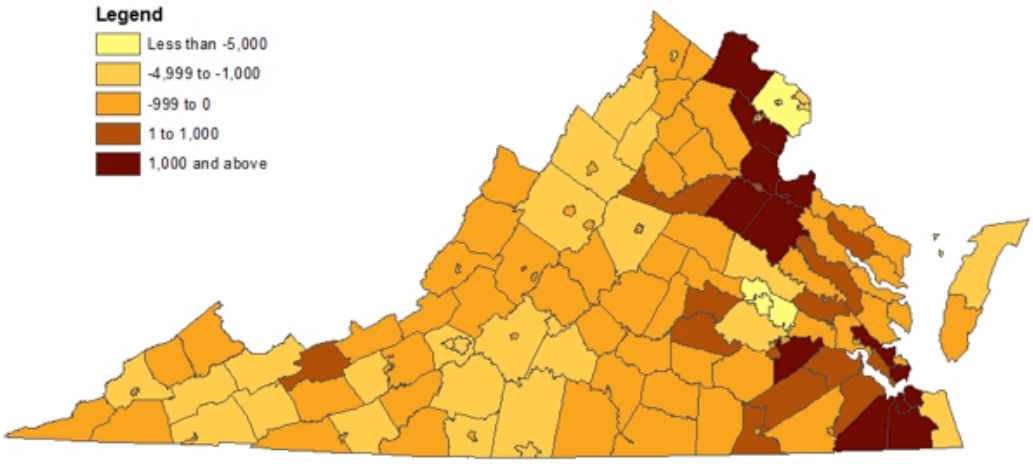
The methodology for making county estimates and projections has undergone significant refinement in VetPop2011. VetPop2004 was a top-down model that relied heavily on locality population projections from Woods and Poole Economics, Inc. and county-level adjustment factors to allocate projected state veteran populations. The current model is a bottom up model that uses county geographical units as the fundamental building blocks and aggregates from the county level to obtain state and national totals. County changes in veteran population are based on subtracting estimated veteran deaths from the additional veterans created by separations from the military and estimates of county net migration. The county level projections indicate that the commonwealth will experience a redistribution of its veteran population over the next several decades, with growth occurring in the Hampton Roads region and the outer suburbs of the Washington DC metropolitan area, and losses elsewhere in the state (See **Figure 2.4**).

Virginia's VetPop2011 veteran death projections show a bimodal pattern quite different from previous veteran population model projections (see **Figure 2.5**). These differences likely reflect the countervailing effects over time of more but younger veterans and lower mortality rates. They indicate peaks attained in 2013 and 2033 with a large cohort of WWII and Korean War era veteran deaths reflected in the first wave and Vietnam era veteran deaths in the second. Veteran deaths thereafter are projected to decline because of the decreasing veteran population. This decrease is due to mortality attrition to the veteran population base and the smaller number of veteran separations that result from reduced peacetime military forces.

## Interment Location Preferences

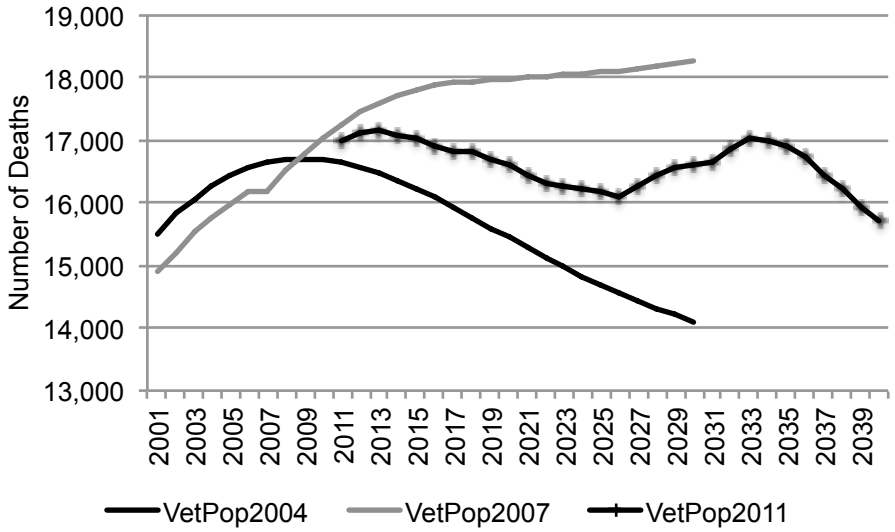
Veteran interment preferences are shaped by the same kinds of personal and financial factors as non-veterans. Since cemetery burial is a unique benefit provided only to veterans, knowledge of this benefit naturally also plays an important role. Veteran familiarity is far from universal. Only 41.5 percent of veterans indicated in the most recent 2010 veterans survey that they were aware of their national or state veterans cemetery burial benefits (Westat 2010). This is down from 58.5 percent awareness reported in a 2001 veterans survey (USDVA

**Figure 2.4 Projected Virginia Locality Veteran Population Growth, 2010-2040**




Source: U.S. Department of Veterans Affairs (2013)

**Figure 2.5 Virginia Veteran Deaths by Year, Estimated and Projected, 2001-2040**




U.S. Department of Veterans Affairs (2007, 2008, 2013)

2001), although changes to survey questions and methodologies might account for some difference.

Veterans have varied reasons for choosing interment in a national or state veterans cemetery. Pride in their service to country and the honor conferred by being buried there are the most important factors (see **Table 2.1**). Cost is secondary but may have increased somewhat in importance with the severity of the Great Recession and a greater consumer reluctance to spend on death care services. Almost 36 percent of veterans cited cost as a reason in 2010 compared to 27 percent in 2001. Quality of services offered by veterans cemeteries was identified as important by 21 percent, which is also higher than 10 percent reported from the 2001 survey.

An analysis of 2008 Veterans Burial Benefits Survey data suggests other demographic and attitudinal correlates with the decision to choose veterans cemeteries (ICF International 2008). They include a strong connection to the military, belonging to an ethnic minority and religiosity. Younger age groups and more recent service era veterans are also more likely to indicate a preference for a veterans cemetery interment.

Pre-planning and family considerations are important influences on burial location choices (see **Table 2.2**). Many veterans have already made plans for burial in a private cemetery. In numerous instances, veterans may have entered into pre-need contracts for funeral and burial arrangements. Also veteran cemetery rules on who may be interred may play a role. Veteran cemetery plots are generally reserved for veterans and their spouses, with special consideration for dependent children and parents in exceptional circumstances. These rules may be too restrictive for veterans who wish to be laid to rest in cemetery plots near their adult children, parents, or

**Table. 2.1 Reasons for Choosing National or State Veterans Cemetery**

| Reason | Percent of Respondents[a] |
|---|---|
| My connection to the military/past service to country | 50.4 |
| The honor of burial in a VA National shrine | 37.9 |
| No cost | 35.8 |
| Quality of services | 20.9 |
| Friends or family buried there | 12.9 |
| Other | 3.1 |
| Don't know | 29.3 |

Source: Westat (2010)

a Sums to more than 100 percent because more than one response allowed.

**Table. 2.2 Reasons for Not Choosing National or State Veterans Cemetery**

| Reason | Percent of Respondents[a] |
|---|---|
| Made other arrangements | 43.5 |
| Wanted location close to other family members | 35.9 |
| Don't know eligibility criteria | 29.1 |
| Didn't know how to make arrangements with VA | 14.4 |
| Veterans' cemetery too far away | 11.0 |
| Travel time to Veterans cemetery too long | 6.3 |
| Too difficult to make arrangements with VA | 2.2 |
| Wanted services that weren't available at Veterans' cemetery | 1.8 |
| Unable to make advance arrangements with VA | 1.4 |
| VA services don't accommodate religious preferences | 0.9 |
| Quality of services | 0.9 |
| Appearance of cemetery doesn't meet my expectations | 0.2 |
| Other | 7.7 |
| Don't know | 9.6 |

Source: Westat (2010)
a Sums to more than 100 percent because more than one response allowed.

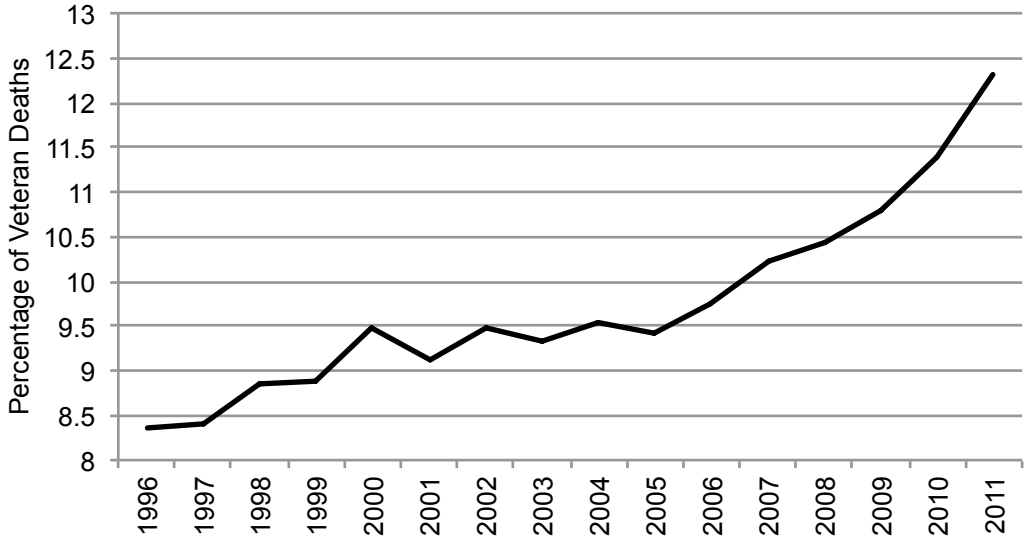
extended family members. In some situations, a private cemetery may hold the remains of several generations of family members, creating a strong emotional attachment to place.

Veterans survey responses highlight the importance of family, prior planning, and knowledge about benefits, but the importance of these factors has changed over time. Table 2.2 shows that 43.5 percent of veterans reported that they had made other arrangements in 2010, up slightly from 41.0 percent in 2001. On the other hand, a smaller percentage, 35.9 percent compared to 44.6 percent in 2001, cited wanting to be close to family members. This latter result may reflect the increased mobility of society and greater tendency for adult children to relocate away from parents for work and lifestyle reasons. Consistent with the finding that more veterans are unaware of their burial benefits, the percentage who indicated that they "don't know eligibility criteria" increased from 8.6 percent to 29.1 percent and percentage that "didn't know how to make arrangements with VA" jumped from 2.4 to 14.4 percent.

Recent veterans cemetery interment data show a significant increase in the percentage of veteran deaths interred in a national or state veterans cemetery. Approximately 8.3 percent of veteran deaths were interred in veterans cemeteries in 1996, expanding to an estimated 12 percent in 2011 (see **Figure 2.6**). This increase is likely at least partly related to the efforts made by the USDVA in expanding access to veterans cemeteries through an aggressive new cemetery construction program. Demographic and attitudinal differences among different service era cohorts may also play a role, since Vietnam-era veterans have indicated in surveys that they are more likely to choose veteran cemetery interment than their predecessors. One also cannot rule out the lingering effects of the recent Great Recession, which has pinched household budgets, and may have motivated more veterans to utilize their memorial benefits. Survey data suggest that the percentage of veterans who will choose veteran cemetery interment is likely to grow further. The 2010 Veterans Survey indicates that 13.4 percentage of veterans plan to be buried in National or State veterans cemeteries (Westat 2010). National Cemetery Administration planning guidelines recommend that allowance be made for 20 percent of veterans living within 75 miles of a veteran's cemetery to choose interment there.

Distance and travel time to a cemetery is an important factor in veteran interment choices. However, it is more visible in "revealed preferences" for burial location than in veteran survey responses. One recent study found that veterans buried in national or state veteran cemetery are located an average of 19.2 miles from their last residence compared to 3.8 miles for those buried in private cemeteries (ICF International 2008). Moreover the propensity for a veteran to be buried in a veteran cemetery decreased by 5 percentage points for each incremental 5 miles in distance from a cemetery (ICF International 2008). In contrast, recent survey results indicate that the percentage of veterans that cited the reason "veterans cemetery too far" was 11 percent in 2010, ranking fifth highest among

**Figure 2.6. National and State Veterans Cemetery Veteran Interments as Percentage of Total Veteran Deaths, 1996-2011**




Source: Cremation Association of North America (2012)

the reasons.[4] Over 6 percent of veterans also indicated that "travel time to veterans cemetery is too long."

Distance is a key decision parameter used by the USDVA in allocating funds for new cemetery construction and expansions and awarding grant funds to state governments for the construction of state veterans cemeteries. National and state veteran cemetery interment data show a pronounced distance gradient with negligible numbers of veterans electing veteran cemetery burial beyond a 75-mile boundary of their residence. Distance may serve as a proxy for many different variables such the strength of local or family attachments, increased search costs, the costs of transporting remains, or the opportunity costs of travel for funeral attendees and visitors.

The NCA currently regards any veteran within 75 miles of a national or state veteran cemetery with casket burial availability as effectively having his/her burial needs met. This service radius standard has now been used for several decades. Although some previous research suggested that a 50-mile radius might be more appropriate and congressional hearings have called the 75-mile service area standard into question (Rephann 2007; Hold 1992), this issue has essentially been "laid to rest" for the foreseeable future because of a recent study and the adoption of new policy parameters that set the stage for a new phase of cemetery construction to fill existing geographical gaps using a revised formula.

In 2008, an external consultant completed a comprehensive study of the distance standard which supported retention of the 75-mile standard (ICF International 2008). The study found that the propensity to select veteran cemetery "declines in roughly linear fashion rather than dropping off precipitously at some critical distance threshold" (ICF International 2008, p. 45). Although the study recognizes that geographic barriers, traffic congestion, undeveloped road networks, and other conditions can result in travel times diverging substantially from straight-line distance in some situations, they recommended retention of the standard for practical reasons. First, it is easier to apply, more transparent, and more likely to be perceived as fair than boundaries based on road network calculated distances and travel time estimations. Second, there is no widely acceptable

4 Curiously, this figure was higher than in 2001 even though the USDVA had expanded the availability of national and state veterans cemeteries whereby only 73 percent were within 75 miles of a national or state cemetery in 2000 to 88 percent in 2010 (USDVA 2012b).

source of data that captures actual travel conditions and these conditions fluctuate throughout the day, week, and time of the year. Third, drive time is highly correlated across communities with straight-line distance and provides little information not already reflected in linear distance when looking at representative urban and suburban communities.

Instead of altering the service area boundaries, the consultant recommended lowering the population thresholds that make areas eligible for a national veterans cemetery. Under the USDVA policy at the time, an area had to add at least 170,000 unserved veterans under the 75- mile distance standard to trigger a new national cemetery. The consultant recommended reducing it to 110,000 veterans for several reasons. First, no new areas would qualify for a new national veterans cemetery under the 170,000 standard. Second, reducing the population threshold would not "rollback progress" on the number of veterans served as would decreasing the distance standard. Third, reducing the threshold would better "link VA policy to current and future demographic changes in the veteran community." In contrast, changing the distance boundary or adopting a drive-time standard would be highly disruptive to the status quo, potentially creating numerous pockets of newly underserved veterans. Moreover, decreasing the distance in the absence of a new lower veteran population threshold would create the quandary of numerous unserved veterans without the possibility of new cemeteries being established to serve them.

The USDVA policy that was ultimately promulgated after the study adopted the spirit if not the specifics of the recommendations. The NCA essentially created a four-tier system as described earlier in the first section of this report. For three of the tiers, it kept the 75-mile standard intact. It lowered the national cemetery population threshold from 170,000 to 80,000. The second tier consists of states that are eligible to apply for NCA grant funding to construct state cemeteries if 80,000 or fewer veterans would be served. In fact, the FY13 Priority List of Pending State and Tribal Government Cemetery Construction Grant Pre-Applications show state applicants applying for new cemeteries for areas with unserved veteran populations ranging from 51,150 to 3,070 using the 75-mile distance standard (USDVA 2012c).[5] The third tier consists of National Veterans Burial Grounds which are created within existing private or public cemeteries in rural areas with fewer than 25,000 unserved veterans according to the 75-mile service area standard and that don't have an open national cemetery, a state veterans cemetery, or are served by a national cemetery in another state (Scott 2013; USDVA 2012a). Lastly, the NCA created an "urban initiative" for establishing small cemeteries for cremains in selected cities that are less accessible as measured by travel time and several other criteria.[6] This urban initiative is implicit recognition that travel times are important and that straight-line distance alone does not adequately capture access for many veterans living in large metropolitan areas.

## Interment Type Preferences

Depending on the disposition method chosen, veterans have several choices for placement of their remains. Casketed remains are generally buried in graves or mausoleums, though burial at sea is also an option for military members.[7] Cremains can be interred in ground or in columbaria niches. Alternatively, they may be kept by loved ones at home in urns or they may be scattered in cremation gardens, at sea, or other locations.

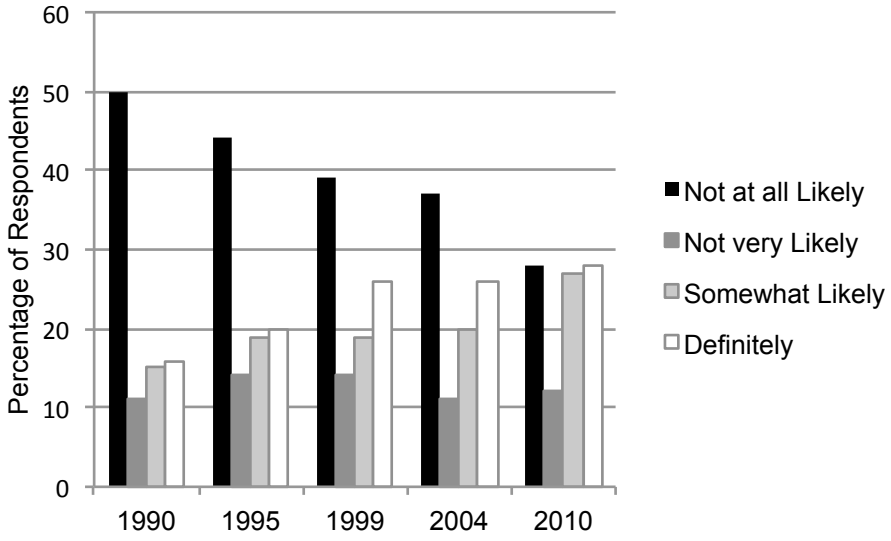
The most striking change in the death care industry has been the huge growth in cremation. This growth can be attributed to both demand and supply factors. On the demand side, consumer tastes have shifted as cultural and religious mores change, society becomes

5 U.S. Department of Veterans Affairs. 2012. FY 2013 priority list of pending state and tribal government cemetery construction grant pre-applications. http://www.cem.va.gov/cem/grants/priority_list.asp (Accessed April 4, 2013).

6 This programmatic change may reflect the incorporation of GAO recommendations (U.S. General Accounting Office 1997). In the report, the agency stated "Columbaria would be particularly useful in metropolitan areas where interment rates are high; past or projected cremation demand is significant; land is scarce, expensive or both; and no state veterans' cemetery exists to compensate for the lack of available national cemetery grave sites." (p. 20).

7 See the United State Navy Mortuary Affairs Burial at Sea Program. http://www.navy.mil/navydata/questions/burial.html (Accessed April 4, 2013).

**Figure 2.7 Likelihood of Choosing Cremation for a Loved One, 1990-2010**



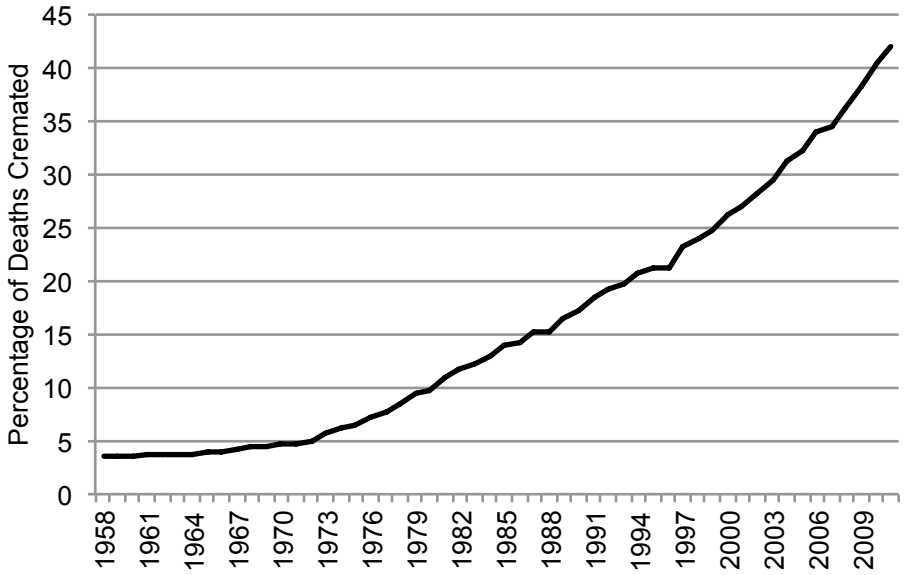

Source: Funeral and Memorialization Information Council (2010)

more transient, environmental considerations become more important and the country becomes more ethnically diverse (O'Meara 2005; Smith 1996). A clear majority, 55 percent of consumers, now indicate that they are either definitely or somewhat likely to choose cremation for a loved one compared to just 31 percent 20 years ago (see **Figure 2.7**). Consumers regard cremation as desirable from the standpoint of opening up greater possibilities for memorializing the departed such as burial, scattering, or keeping in urns or other compact formats that allow the remains to be easily transported to various locations. It is also much more economical compared to casketed burial. In the last few years, the Great Recession has placed additional burdens on household budgets and motivated some consumers to select less expensive interment options. On the supply side, crematory services are more widely available. A gradual loosening of state regulatory requirements that restricted cremation to mortuary operations may also have reduced crematory costs by freeing them from unnecessary overhead expense.

The cremation percentage of all interments has grown from 26 percent in 2000 to 42 percent in 2011 (see **Figure 2.8**) and is now the leading disposition method in 18 states, up from 7 states in 2000. Whereas these "cremation" states were entirely western in 2000, the pattern is now much more geographically dispersed and includes states in New England, the South, and the Great Lakes region. Virginia has experienced a similar growth trajectory, though it lags approximately 5-10 years behind the national trend in the overall cremation rate. Cremation was used for approximately 20 percent of Virginia deaths in 2000, 28 percent in 2006, and 34 percent in 2011. The Cremation Association of North America (CANA) has consistently projected rising rates of cremation, but they have also continued to underestimate demand for cremation. In its most recent projections, CANA stated that they would no longer provide projections beyond 5 years because of the "eccentric anomalies of the recent recession" which have introduced a higher degree of uncertainty in consumer choices. The Cremation Association of North America (CANA 2012) projects that nearly 50 percent of Americans will choose cremation by 2016, while this milestone was previously projected to occur in 2025 (CANA 2007).

Veterans respond to consumer surveys in much the same way as the general population. Lower proportions of veterans indicate that they are likely to choose in-ground casketed burial in 2010 compared to 2001, although uncertainty has also increased (see **Table 2.3**). Regional, demographic, cultural, and cost factors appear to play a big role in these choices. Veterans with no reli-

**Figure 2.8 U.S. Cremation Percentages, 1958-2011**




Source: Cremation Association of North America (2012)

gion, western residents, women and those who thought costs were important were more likely to choose cremation (ICF International 2008).

The growth in cremation is also supported by veteran cemetery interment data. Cremation interments made up 37 percent of interments in national cemeteries in FY 2003 but accounted for 48 percent in FY 2011 (see **Figure 2.9**). This percentage is somewhat inflated by the fact that 18 national veterans cemeteries can accommodate only cremated remains. If restricted to cemeteries where all burial choices are available, this percentage would be lower. But, the trajectory is clearly upward. Results for the three Virginia State Veterans Cemeteries where both cremains and casketed interments options are available show that the veteran cremains interments track the total Virginia resident interment trajectory. VDVS pre-application data is consistent with this

**Table 2.3. Veteran Interment Plans by Type, Percentage Distribution**

| Type | 2001 | 2010 |
|---|---|---|
| In-ground casket burial | 59.8 | 41.7 |
| Cremation | 30.3 | 23.8 |
| Mausoleum | NA | 1.5 |
| Something else | 2.7 | 9.1 |
| Don't know | 6.6 | 23.9 |

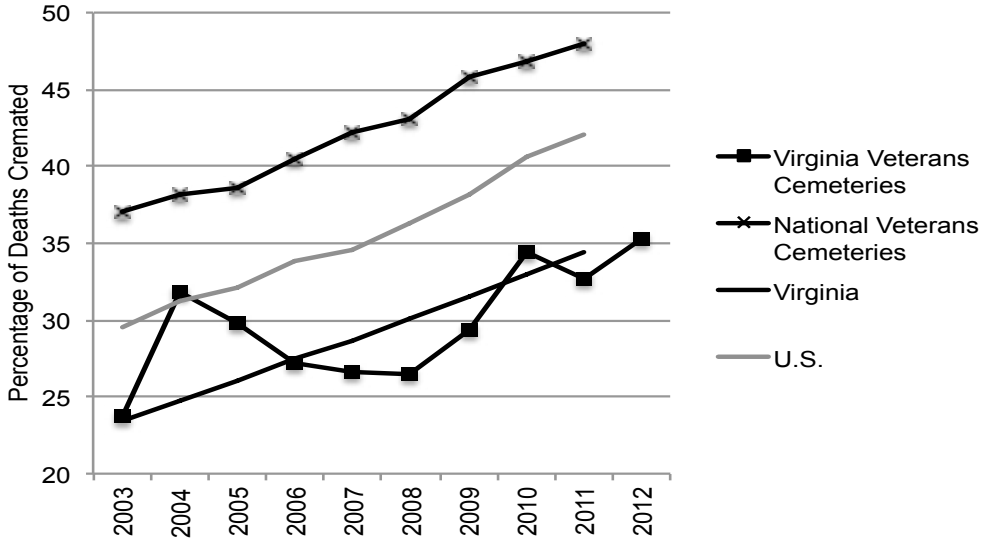
Source: Weststat (2010)

**Table 2.4 Virginia Veterans Cemetery Interments by Type Based on Pre-Applications, Percentage Distribution**

| | Percentage of Total | | | |
|---|---|---|---|---|
| Type | Albert G. Horton, Jr. Memorial Veterans | Southwest Virginia Veterans | Virginia Veterans | Total |
| Full-casket | 57.1 | 66.0 | 70.1 | 62.3 |
| In-ground cremains | 16.5 | 15.4 | 8.0 | 13.8 |
| Columbaria niche | 14.9 | 13.4 | 14.2 | 14.5 |
| Undecided | 11.5 | 5.2 | 7.7 | 9.4 |

Source: Virginia Department of Veterans Services based on 1997-January 2013 data.

**Figure 2.9 Cremation Percentages, Virginia Veterans Cemeteries, National Veterans Cemeteries, Virginia Residents, and U.S. Residents, 2003-2011**



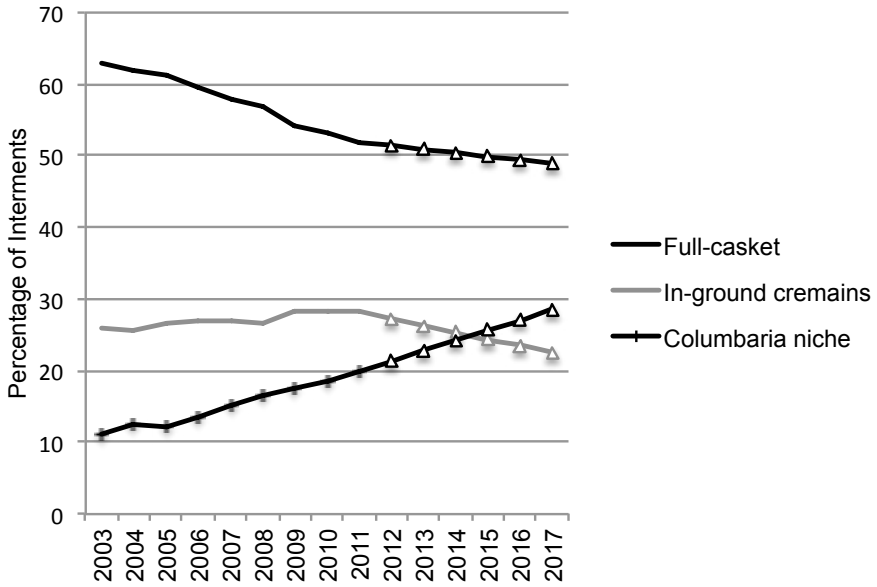

Source: Virginia Department of Veterans Services, U.S. Department of Veterans Affairs, and Cremation Association of North America (2012)

pattern. Pre-application data compiled in January 2013 suggest that 28.3 percent of veterans will choose inurnment with another 9.4 "undecided" (see **Table 2.4**).

Although changing preferences between cremation and casketed disposition are well understood, much less is available on how and why consumers and veterans choose to dispose of cremains. There is a discrepancy between survey responses and veteran cemetery interment results. Consumer survey data indicates that scattering is the most popular choice (39 percent), followed by burial (16 percent), keeping the urn at home by next of kin (10 percent), and columbarium at a church or cemetery (9 percent) (O'Meara 2005). The 2001 National Survey of Veterans shows a similar pattern: 65 percent prefer cremains to be scattered, 19 percent buried, 7 percent placed in a columbarium, and 9 percent some other arrangement (USDVA 2001). NCA interment figures indicate that in-ground cremains burial is more common than columbaria and scattering (see **Figure 2.10**). This result is largely a reflection of the limited availability of different interment options. All veterans cemeteries offer cremains burial. Fewer than half of national veterans cemeteries currently have columbaria. Only a handful offers scattering gardens. However, this is changing. Many veterans cemeteries are seeking to add columbaria and some plan to add scattering gardens as part of future improvements. Anecdotal evidence suggests that veterans favor columbaria when they are available. One NCA official remarked that columbaria are preferred because they are "often at eye level and "in some cases, it looks more like a memorial" (Johnston 2012).[8] VDVS pre-application data show more veterans selecting columbaria over cremains burial and current columbaria inurnments outpace in-ground inurnments. The NCA projects that columbaria inurnments will overtake cremains burial in the next few years in national and state veterans cemeteries.

8 This observation stands at odds with Holt (1992) who explained the preference for veteran cremains burial at the time reflected families reporting feeling "closer to the departed" when the cremains are buried.

**Figure 2.10 U.S. Veteran Cemetery Interments by Type, Percentage Distribution, FY 2003-FY 2011 (Actual) and FY 2012-FY 2017 (Projected)**




Source: U.S. Department of Veterans Affairs (2012a)

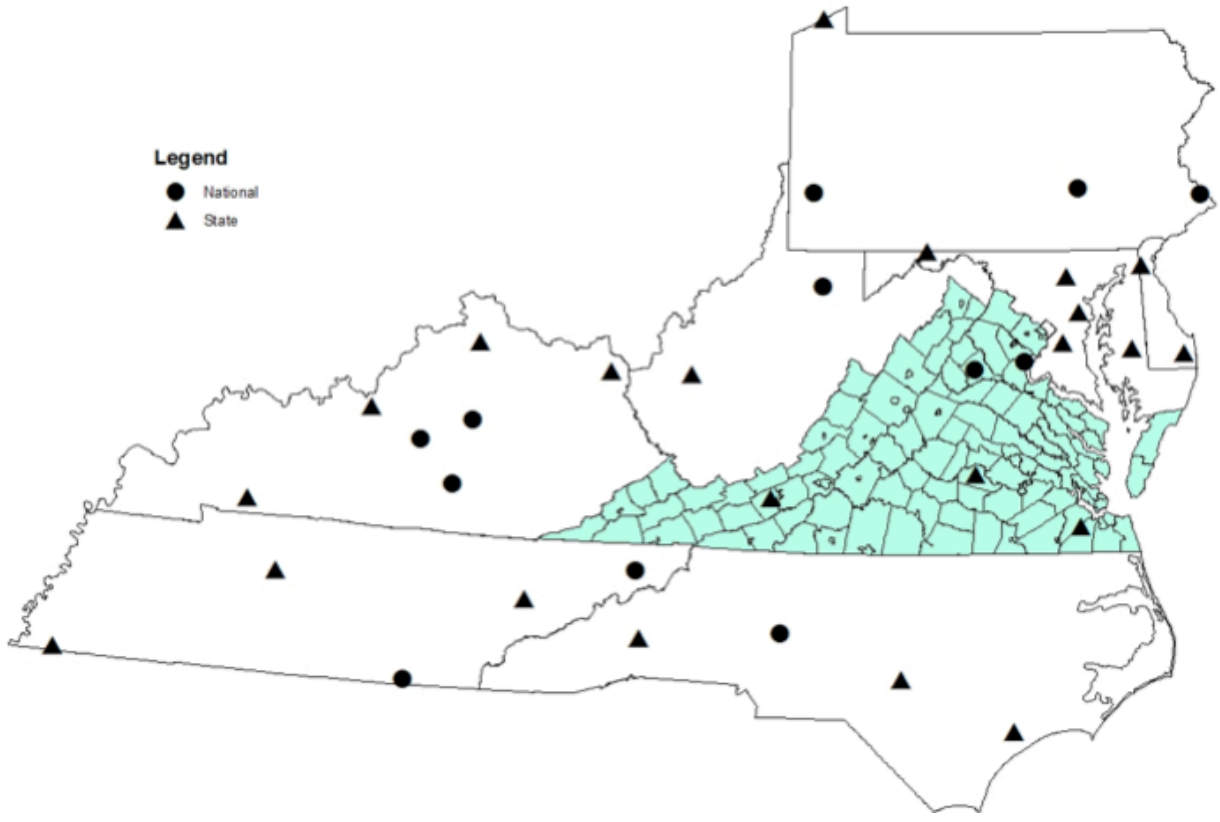
# SECTION 3
# LOCATION ANALYSIS

## Existing Cemeteries

**Figure 3.1** shows national and state cemeteries located in Virginia and in states within 75 miles of Virginia. It shows only USDVA national veterans cemeteries that offer casket burial choices since this is still the preference of well over half of veterans. Eleven national cemeteries in Virginia are closed to all new interments. Two national veteran cemeteries (Alexandria and Danville) are still open to inurnments but accounted for only 15 veteran inurnments in FY2011. They will be regarded as closed for this analysis and are not shown in Figure 3.1. The U.S. Army operates one national veterans cemetery, Arlington National. Arlington has more stringent eligibility criteria for in-ground casket burials than other national cemeteries. Only servicemen who died on active duty, retired military personnel, certain categories of disabled veterans, highly decorated veterans, and spouses or dependent family members of same are eligible. So for the purposes of this study, it too will be excluded from the analysis and does not appear in Figure 3.1.

This study assumes that veteran cemetery services for Virginia veterans are provided by two groups of cemeteries. The first group consists of national veterans

**Figure 3.1 Location of National and State Veterans Cemeteries in Virginia and Nearby States**



cemeteries open to casket burial located within the state of Virginia or within a 75-mile radius of the Virginia border. These cemeteries are illustrated in **Figure 3.2** with 75-mile circles superimposed. The second group consists of the three Virginia state veterans cemeteries. Veterans cemeteries in nearby states are not deemed relevant to the current analysis. Virginia's experience has been that few out-of-state veterans elect to be buried in another state's veterans cemetery unless they have family in the area or service-era connection to the area. The state boundary may form a psychological boundary for veterans in making their interment choices. Intermediate opportunities or distance may also be factors. Out-of-state state veterans cemeteries in adjacent states are also often superseded by closer national cemeteries or are often too remote to be seriously considered viable options for Virginia veterans. It is also possible that veterans in adjacent states are not aware that they are eligible for burial in a Virginia state veterans cemetery.

Three new state cemeteries within the region have been established since the last study. But, none of them affect our analysis here. They include the Donel C. Kinnard Memorial State Veterans Cemetery in Dunbar, West Virginia, Kentucky Veterans Cemetery-North East in Grayson, Kentucky, and a new section of the East Tennessee State Veterans Cemetery in Knoxville, TN.

**Table 3.1** shows the three state cemeteries and five active national cemeteries that will be considered in the analysis. All eight cemeteries are estimated to have space available until at least 2030. In order to estimate more precise cut-off dates reported in the table, we assumed that current depletion rates would be maintained indefinitely and that 69 percent of total casketed interments represent first casketed burials (i.e., the committal of a new burial space) based on NCA data. We also assumed that all undeveloped areas are developed to their full potential. The cemeteries include:

**Figure 3.2 75-mile Service Areas for National Veterans Cemeteries in the Region**

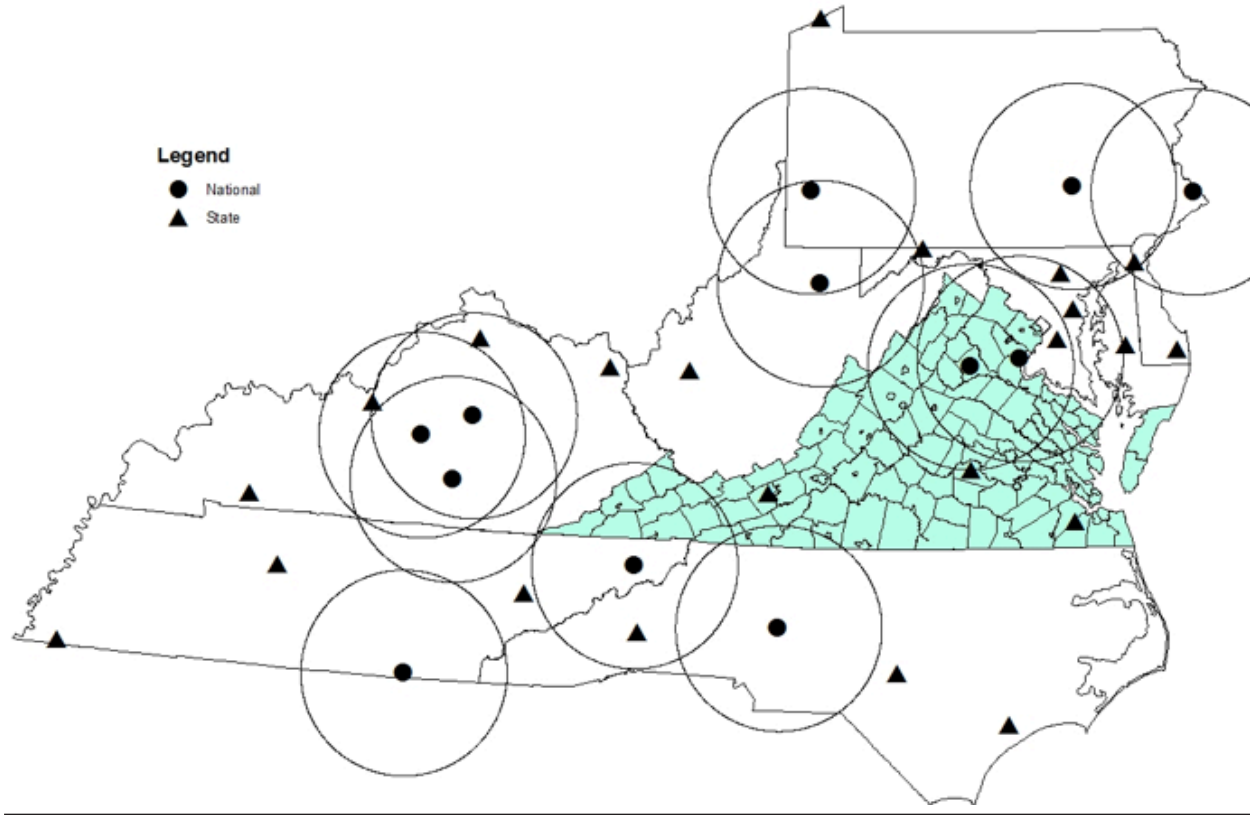


**Table 3.1 Veteran Cemetery Capacities**

| Cemetery | FY 2011 Casketed Interments | Occupied Casketed Gravesites | Casketed Gravesites | | Projected Full-Casket Depletion Date |
|---|---|---|---|---|---|
| | | | Available | Potential | |
| State -- Virginia | | | | | |
| Albert G. Horton, Jr. Memorial | 531 | 2,694 | 6,028 | 17,444 | 2075 |
| Southwest Virginia Veterans | 3 | 3 | 7,917 | 23,751 | 2728 |
| Virginia Veterans | 197 | 1,745 | 11,755 | 39,000 | 2310 |
| National -- Virginia | | | | | |
| Culpeper | 185 | 9,373 | 3,482 | 0 | 2038 |
| Quantico | 922 | 22,858 | 9,272 | 332,180 | 2545 |
| National – Out-of-State | | | | | |
| Salisbury, NC | 445 | 22,842 | 2,585 | 3,400 | 2030 |
| Mountain Home, TN | 326 | 12,855 | 1,256 | 25,900 | 2131 |
| West Virginia, WV | 208 | 3,756 | 5,412 | 5,070 | 2084 |

Source: U.S. Department of Veterans Affairs and Virginia Department of Veterans Services.

1. **Albert G. Horton, Jr. Memorial Veterans Cemetery**. This cemetery is the second of the three cemeteries operated by the Virginia Department of Veterans Services and opened in 2004. It is located in the City of Suffolk and occupies 73 acres of which 26 acres have already been developed as part of the first phase. In FY2013, the cemetery was awarded a $3.3 million grant by the USDVA to install outer burial containers and make other cemetery improvements. The cemetery is expected to have burial capacity for 60 years at current rates of depletion. It serves primarily veterans in the Hampton Roads area of Virginia.

2. **Southwestern Virginia Veterans Cemetery**. This cemetery was opened in Southwestern Virginia in 2011 and is the third in the VDVS system. It occupies an 80-acre tract in Dublin on land next to the Radford Army Ammunition Plant that was donated by the U.S. Army. The first phase of development consisted of 24 acres. At current depletion rates, the cemetery is projected to last over 500 years. It serves veterans in the west central and valley regions of Virginia.

3. **Virginia Veterans Cemetery**. This cemetery is the first of the three cemeteries operated by the VDVS and opened in 1997. It is located in Amelia County approximately 40 miles southwest of Richmond. The cemetery occupies approximately 129 acres of which 29 acres are currently developed. In FY2013, the cemetery was awarded a $1.6 million grant by the USDVA to install outer burial containers. It serves primarily veterans in the Richmond area and Piedmont region of central Virginia and is projected to have burial capacity for almost 200 years.

4. **Quantico National Cemetery**. The cemetery is located on a 727-acre site that was donated by the Department of the Navy and was opened in 1983. At current depletion rates, it would last over 500 years. Also, the possibility exists to expand the cemetery to meet future needs because of the presence of adjacent publicly owned property. The cemetery primarily serves veterans who reside in Northern Virginia.

5. **Culpeper National Cemetery**. The Civil War-era cemetery was established in 1867 and occupies 30 acres. The cemetery was briefly closed during the mid 1970s to casketed burials because of space limitations (Holt 1992). However, the Veterans of Foreign Wars donated 11 acres of land in 1975 to reopen the cemetery, and the Department of Veterans Affairs purchased another 12 acres in 2001 to extend the life of the cemetery. The NCA projects that the cemetery will be open to casketed interments beyond 2030, and the cemetery superintendent expects the cemetery to last well beyond 2030. At current depletion rates, it is estimated to last until 2038. The possibility exists that the cemetery will be expanded further at a later date, but doing so may not be the best way to serve Virginia veterans. The

cemetery serves the northern and central parts of Virginia. But, as Figure 3.2 indicates, the cemetery service area largely overlaps the Quantico National Cemetery service area. Rather than extend the cemetery further, a better option may be to establish a new more centrally located national or state cemetery in the Shenandoah Valley/Blue Ridge Mountain region.

6. **Mountain Home National Cemetery**. This 91-acre cemetery is located in Johnson City, Tennessee on the grounds of the Mountain Home Veterans Affairs Medical Center. It was established as a National Cemetery in 1973 and has adequate space to meet the burial needs of veterans at current depletion rates until 2131. This cemetery is approximately 30 miles from the Southwestern Virginia border and is the closest veterans cemetery for many veterans in that area.

7. **Salisbury National Cemetery**. The national cemetery was established during the Civil War and occupies 64 acres. It is located in Salisbury, North Carolina, approximately 35 miles south of Winston-Salem. At current depletion rates, the casketed burial space will be exhausted by 2030. Because it is located so far southward, its 75-mile service area intersects only a very small portion of Southside Virginia.

8. **West Virginia National Cemetery**. This 90-acre national cemetery was opened in 1987 on property donated by the State of West Virginia. The cemetery was provided to replace Grafton National Cemetery, which was closed to casket burial in 1961. It serves primarily veterans in the northern half of West Virginia. However, its service boundary also intersects small areas of Highland and Rockingham counties in Virginia. At current depletion rates, the cemetery should last until after 2080.

## Service Area Boundaries

This study assumes that the goal of state policy is to maximize the number of veterans who are located within a given distance of a national or Virginia state veterans cemetery. For the reasons discussed previously, out-of-state state veterans cemeteries are not counted as serving Virginia veterans. The previous study (Rephann 2007) used a 75-mile straight-line distance standard as a starting point for analysis, but recommended that the VDVS use a 50-mile straight-line distance standard instead since this smaller service area distance appeared to be a better approximation of the outer limit that Virginia veterans would consider as interment choices based on interment data collected at the time.

For this study, the 75-mile straight-line distance standard will be the principal service area standard. This decision is made for two reasons. First, at the time of the last study, the distance standard was under review and the USDVA had contracted with ICF International to study the issue. Since that time, ICF International recommended the retention of the 75-mile standard and the NCA has basically committed to the 75-mile standard for the foreseeable future in awarding funds to states for new veterans cemeteries. Second, with the maturation of the Virginia veterans cemeteries and more extensive outreach and marketing activities being undertaken by the VDVS, it appears that draw rates have improved markedly within the 75 mile service areas and that much improvement has also occurred within the 50-75 mile band. Therefore, more current research results and data argue in favor of using the 75-mile standard.

**Figures 3.3-3.5** show veteran burial draw rates for the Albert G. Horton, Jr. Memorial, Southwest Virginia, and Virginia Veterans Cemeteries by county of residence with concentric 75-mile and 50-mile rings superimposed. These veteran burial draw rates are computed by geocoding veteran addresses from VDVS burial records for each cemetery over the period May 2011 to December 2012[9] , assigning them to counties, tabulating total interments by county, and dividing this total by the estimated number of veteran deaths by county occurring during the time period.[10]

9 State cemetery interment data obtained from VDVS contained the address of each interment and fields to indicate whether the interment was a veteran, spouse of a veteran, or dependent of a veteran. Addresses were then geocoded using ARCGIS.

10 Estimated and projected deaths by county were obtained from the VetPop2011 projection model.

**Figure 3.3 Veteran Burial Draw Rates By Locality, Albert G. Horton, Jr. Memorial Veterans Cemetery**

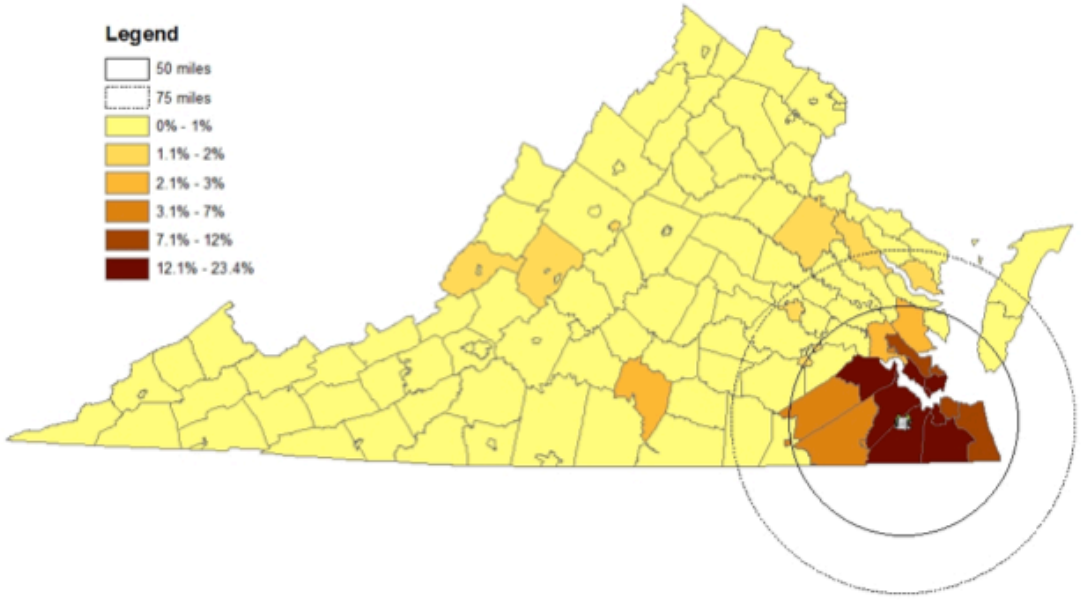



**Figure 3.4 Veteran Burial Draw Rates by City and County, Southwest Virginia Veterans Cemetery**

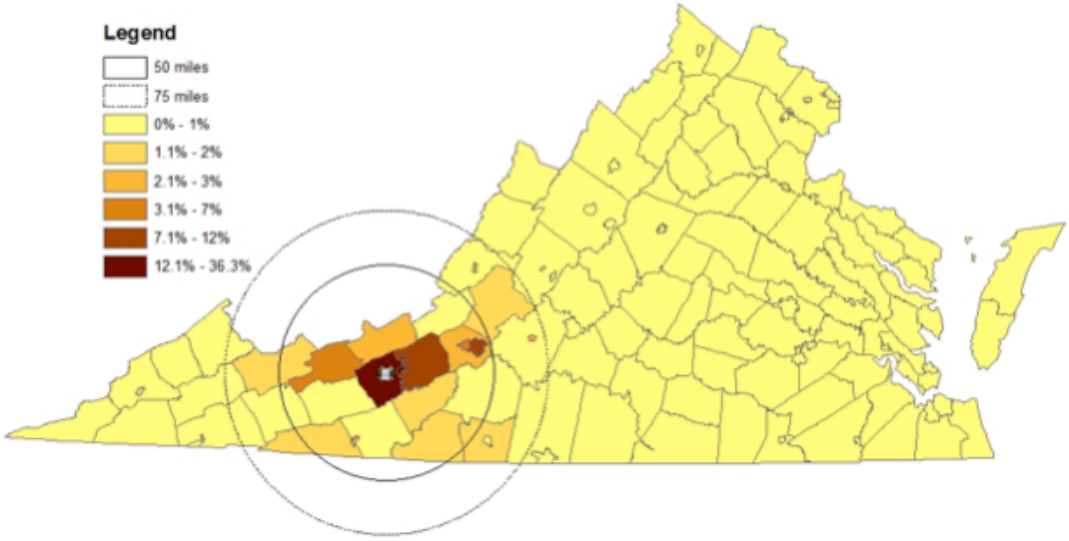
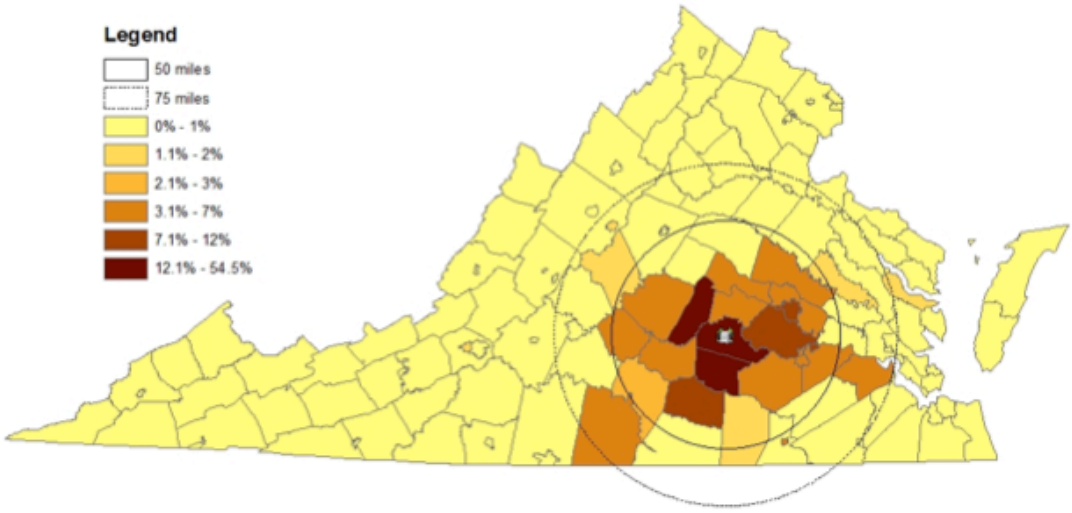


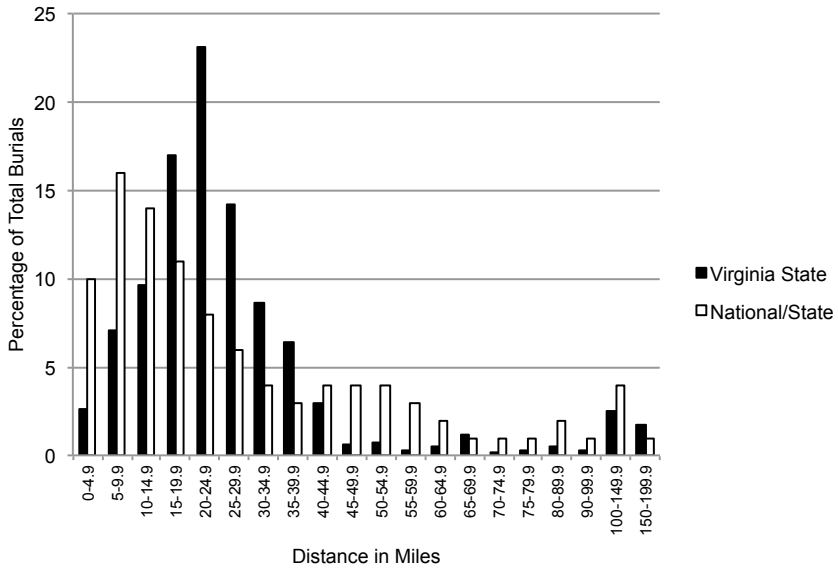
**Figure 3.5 Veteran Burial Draw Rates by City and County, Virginia Veteran s Cemetery**




While these figures continue to show higher burial draw rates within 50 miles of each cemetery, the draw rates of counties outside of 50 miles have also improved. The Virginia Veterans Cemetery, in particular, shows a clear improvement in the magnitude of draw rates beyond 50 miles with a much less concentrated pattern than found in the previous study (Rephann 2007).

**Figures 3.6-3.9** provide an alternative way of looking at the issue by showing distance from veteran residence to burial location in national or state veterans cemeteries. Benchmark national and state cemetery burial data used by ICF International in making its national cemetery recommendations are shown along with computations based on VDVS burial records. **Figure 3.6** indicates that 95 percent of veterans who are interred in national and state veterans cemeteries resided within a 75-mile radius. For veterans interred

**Figure 3.6 Distance from Veteran Residence to Burial Location in National and State Veterans Cemeteries**



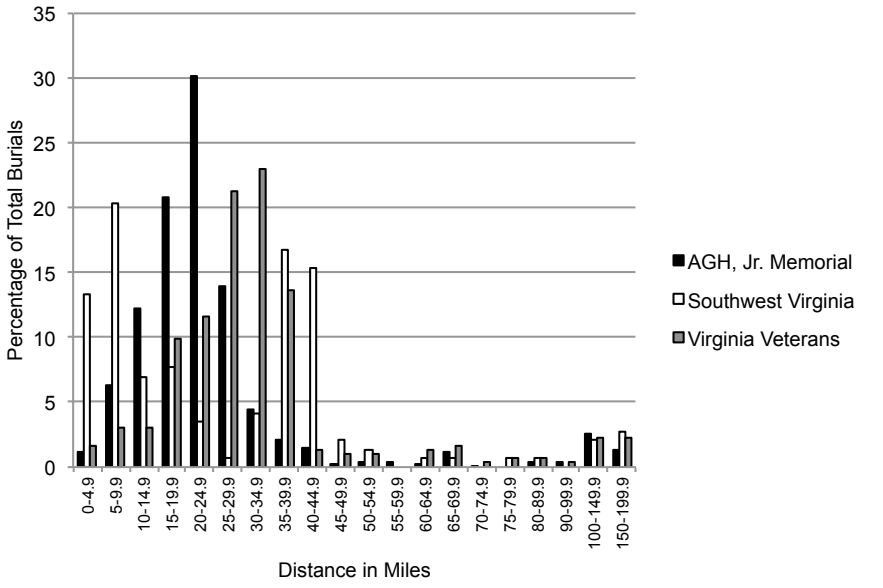

Source: ICF International (2008) and Computations Based on VDVS Interment Data (May 2011-December 2012)

in Virginia state veterans cemeteries, the exact same percentage resided within 75 miles of the burial cemetery. **Figure 3.7** indicates that while the distribution of interments by distance band varied, approximately 94-95 percent of interments originated from veterans living within 75 miles.

**Figures 3.8** and **3.9** show the distribution of veteran burials by distance from veteran residence to veterans cemetery with access measured by travel times in hours rather than straight-line distance. Using this metric, the burial patterns are only slightly different. Ninety-four percent of veterans who are interred in national and state veterans cemeteries resided less than two hours from the burial cemetery. The comparable figure for Virginia veterans interred in Virginia state veterans cemeteries is 89 percent. The results varied slightly for each individual state veterans cemetery with Southwest Virginia Veterans cemetery at 86, Albert G. Horton, Jr. Memorial Cemetery at 89 percent, and Virginia Veterans Cemetery at 91 percent of burials drawn from within two hours travel time.

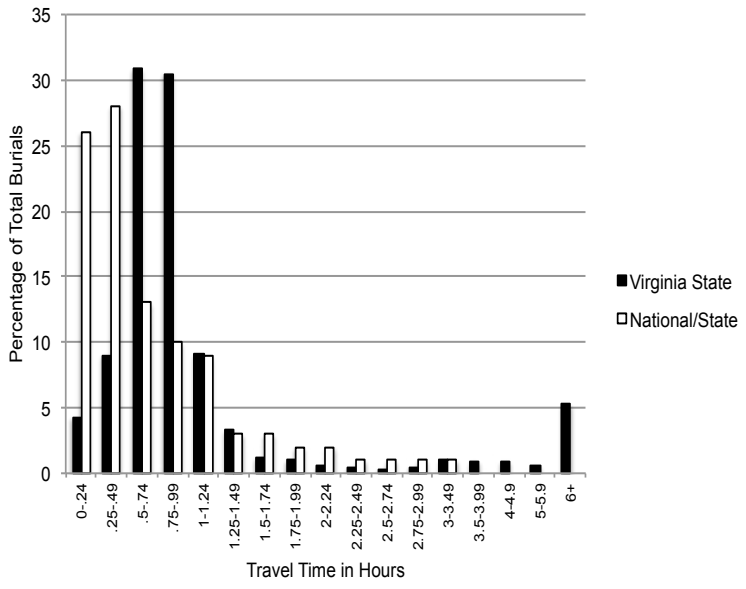
These results show that a 75-mile straight-line distance standard produces service areas that capture the same percentage of veteran burials by residence for veterans interred in Virginia State Veteran Cemeteries as do national and state veteran cemeteries for veterans interred nationwide. Furthermore, the results suggest that a two-hours travel time standard encompasses a similar percentage of total interments as does the 75-mile straight-

**Figure 3.7 Distance from Veteran Residence to Burial Location in Virginia State Veterans Cemeteries**



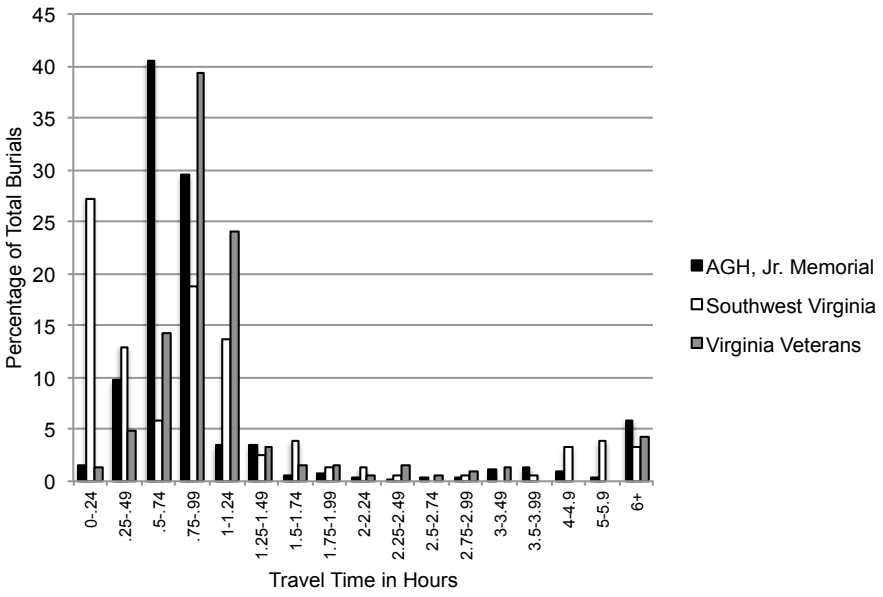

Source: ICF International (2008) and Computations Based on VDVS Interment Data (May 2011-December 2012)

**Figure 3.8 Travel Time from Veteran Residence to Burial Location in National and State Veterans Cemeteries**




Source: ICF International (2008) and Computations Based on VDVS Interment Data (May 2011-December 2012)

**Figure 3.9 Travel Time from Veteran Residence to Burial Location in Virginia State Veterans Cemeteries**




Source: ICF International (2008) and Computations Based on VDVS Interment Data (May 2011-December 2012)

line distance standard. These results provide additional evidence in favor of using the 75-mile distance standard used by the USDVA.

## Cemetery Location Models

This study uses a location-allocation model to determine the optimal location for a new cemetery given certain assumptions about travel impedance, impedance cutoffs, distributions of veteran population, and national/state cemeteries in service. The purpose of location-allocation is to locate service points that supply demand points in the most efficient manner. The cemetery analysis relies on a particular class of location-allocation model that selects the facility(ies) that provide(s) the "maximum coverage" for demand (Church and Reveille 1974). In the case of the veterans cemetery model, for example, the maximal coverage routine can select a predetermined number of cemeteries given the current or future configuration of veteran cemeteries that extend service to the most unserved veterans using the 75-mile straight-line distance standard. For this analysis, the demand points are the veterans populations located at geographical centroids. The travel impedance factor would be distance from demand points along a flat, featureless plane to existing and prospective cemetery locations, and the impedance cutoff would be 75 miles. ARCGIS Network Analysis provides solutions to these problems. The software solves location allocation problems in both continuous space (using straight-line distance) and transportation networks including highways and local streets.[11] It also provides the modeler considerable flexibility in varying network characteristics, demand characteristics, travel impedance factors, impedance cutoffs, and the number of existing and solution facilities.

This study adopts the recommendation of ICF International (2008) that census tracts be used instead of counties as the geographical units for cemetery location analyses as was done in the previous Virginia study (Rephann 2007). Census blocks are smaller subunits of counties that permit more detailed analysis of demand and prospective site locations. Since the VetPop2011 projection model provides county-level estimates and projections, census-tract level data was computed by allocating county veterans population to census tracts within each county using weights determined by 2007-2011 American Community Survey veteran population counts from the U.S. Census Bureau. These census tract veteran populations are assigned to the geographical centroids of the corresponding census tracts and serve as the demand points for the analyses.

11 A flat-featureless plane is replicated in ARGIS Network Analysis by creating an artificial network that contains lines connecting each demand point to existing and candidate facility locations.

Several alternative coverage scenarios are illustrated to examine the sensitivity of the results and locations to underlying assumptions. In developing scenarios for analysis and comparison, we make different assumptions about network features, travel impedances, cemetery availability, and the distribution of demand. For one set of scenarios, a flat, featureless plane (FFP) was used, the impedance factor was linear distance, and the impedance cutoff was 75 miles. These choices were made because the national service area guidelines are stated in terms of straight-line distance and a 75-mile cemetery service area radius. In a second set of scenarios, we investigate the sensitivity of the results to varying the network and impedance factor/cutoffs. In particular, because ICF Consulting suggested that a two-hour driving time standard along existing roadways might also be an appropriate standard and our earlier discussion indicated that it is comparable to the 75-mile straight-distance standard in terms of the percentage of burials encompassed, we use this criterion too to examine its effect on the solution. The ESRI Street Map North America dataset was used as the road and street network for the cemetery travel time analysis (ROAD). This road network accounts for the availability of primary, secondary, and local roads, speed limit restrictions on roadways, one-way streets and other obstacles that can result in travel time differences. It does not include information on traffic volumes during various times of the day and so congestion-related time delays are not included.

**Table 3.2 Cemetery Location Modeling Scenarios**

| Scenario | Figure | Network | Cemetery Depletion | Cemetery Addition? |
|---|---|---|---|---|
| 1 | 3.10 | FFP | No | No |
| 2 | 3.11 | FFP | Yes | No |
| 3 | 3.12 | FFP | Yes | Amherst County |
| 4 | 3.13 | ROAD | No | No |
| 5 | 3.14 | ROAD | No | Botetourt County |
| 6 | 3.15 | ROAD | No | No |
| 7 | 3.16 | ROAD | Yes | Lexington City |
| 8 | 3.17 | ROAD | Yes | Amherst County |

In several scenarios, eight locations listed in Table 3.1 were constrained to have cemeteries. In all "future" cemetery scenarios, Culpeper National and Salisbury National Cemetery are assumed to be depleted because they have estimated closure dates within the 2030-2040 period. The remaining cemetery locations are constrained to have cemeteries. In the current cemetery scenario, the 2014 veteran population projections were used. For future scenarios, 2035 veteran population projections were used.

**Table 3.2** summarizes the characteristics and locational choices for each scenario. Scenario 1 and **Figure 3.10** show the current coverage by national and Virginia state veterans cemeteries using the 75-mile distance

**Figure 3.10 Cemetery Service Areas, 75-Mile Straight Line Distance**

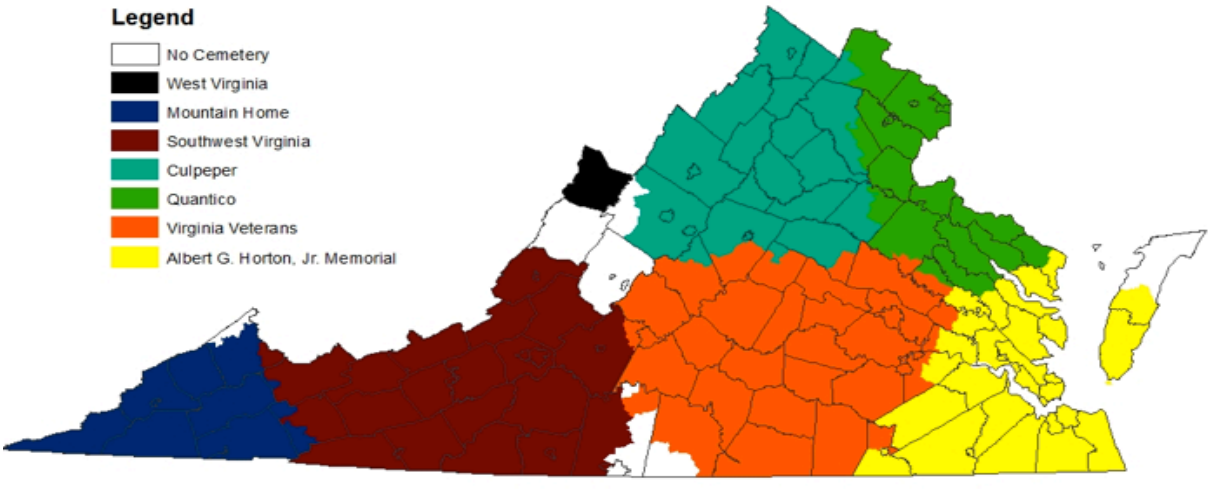
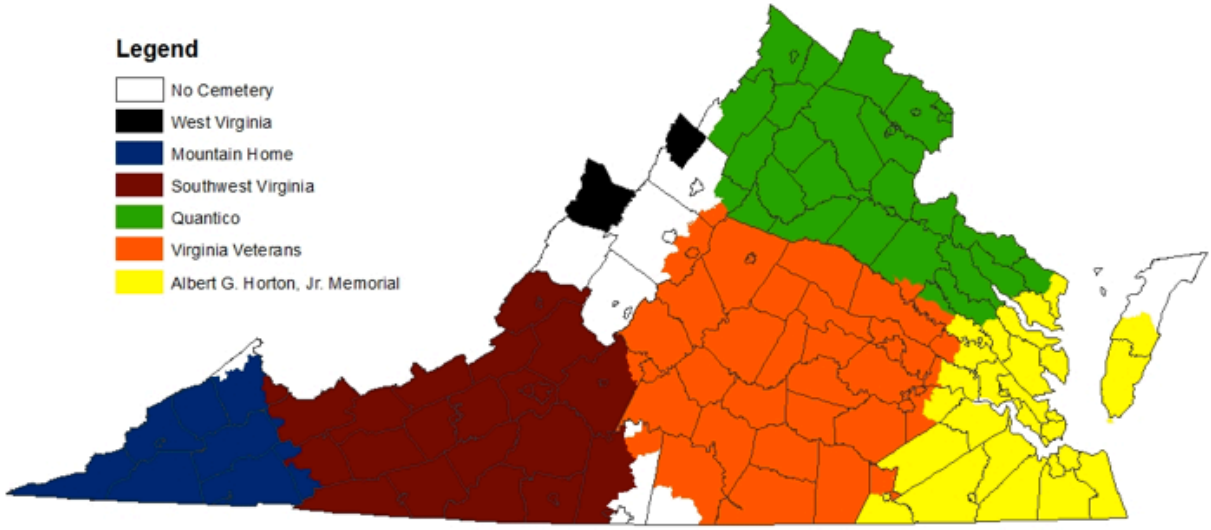


**Figure 3.11 Cemetery Service Areas, 75-Mile Straight Line Distance, Cemetery Depletion**




standard. Cemetery service area hatchings illustrate cemetery service regions by assigning census tracts to the nearest cemetery. The map shows four uncovered regions within the state, census tracts in an area surrounding Danville City, a census tract in Buchanan County, a portion of Accomack County, and a small region consisting of Rockbridge County (including Buena Vista and Lexington Cities), Bath County, and a portion of Augusta County. In this scenario, 13,899 veterans in total are unserved by a veterans cemetery in 2014. The second scenario (**Figure 3.11**) shows a situation where Culpeper National and Salisbury National are depleted. The loss of these cemeteries has a relatively limited effect on coverage with Quantico National Cemetery picking up much of the service area vacated by Culpeper National. However, portions of Shenandoah County, Rockingham County, Augusta County are now unserved. Beginning in 2031, 20,372 veterans

**Figure 3.12 Cemetery Service Areas, 75-Mile Straight Line Distance, Cemetery Depletion, New Cemetery in Amherst County**

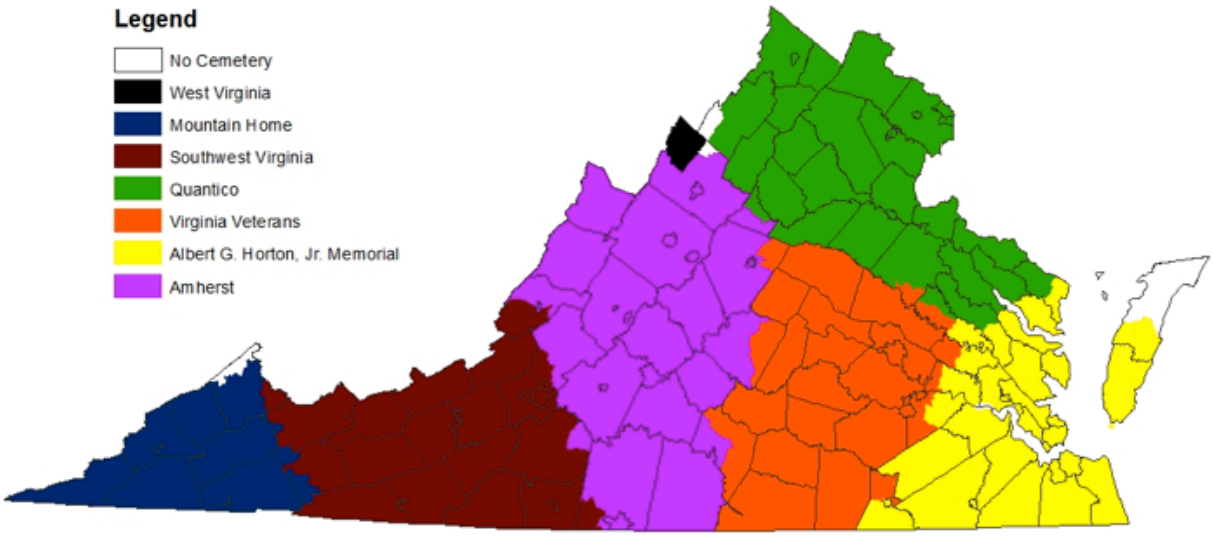
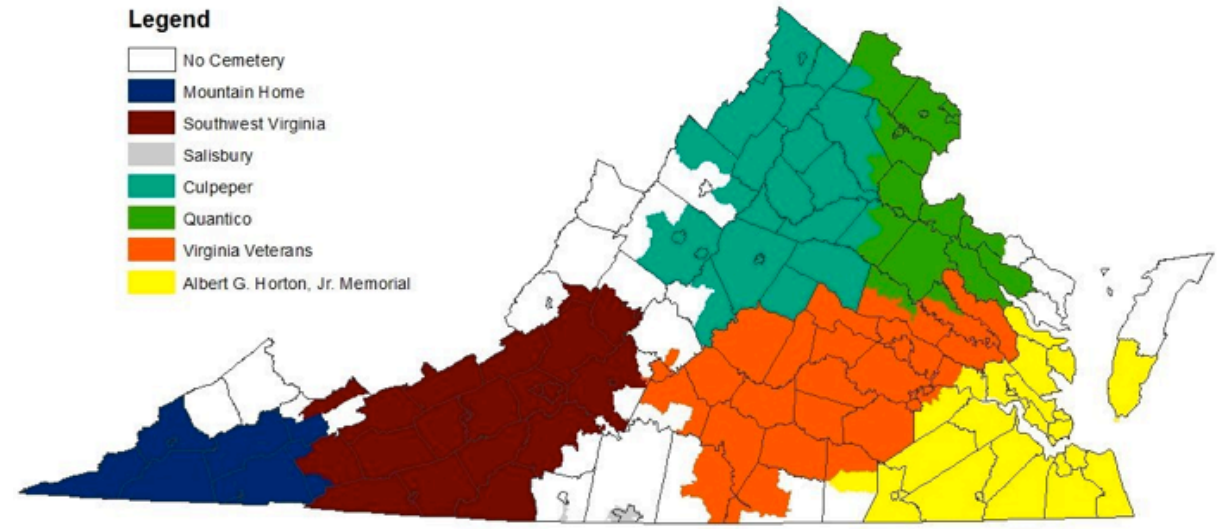


**Figure 3.13 Cemetery Service Areas, 2 Hours Travel Time**




are unserved by a veterans cemetery. In the third scenario (**Figure 3.12**), a location-allocation routine is run to select the optimal cemetery to maximize coverage of unserved veterans. This cemetery, located slightly east of Amherst town in Amherst County, brings 17,563 out of 20,018 unserved veterans into a cemetery service region in 2032.

Scenarios 4-8 illustrate how changing from straight-line distance and the 75 mile standard to roadway travel time and a 2 hour travel standard affects the analysis. Scenario 4 (**Figure 3.13**) shows veteran cemetery service areas using the 2-hour travel time standard. The effect of switching to this standard markedly increases the number of unserved veterans from 13,899 to 46,400 in 2014 and expands unserved regions in the Southwest, Northern Neck, Shenandoah Valley, Southside and Frederick County. **Figure 3.14** illustrates scenario 5 in which a new cemetery is located to provide maximal coverage to these unserved veterans. It indicates an optimal

**Figure 3.14 Cemetery Service Areas, 2 Hours Travel Time, New Cemetery in Botetourt County**

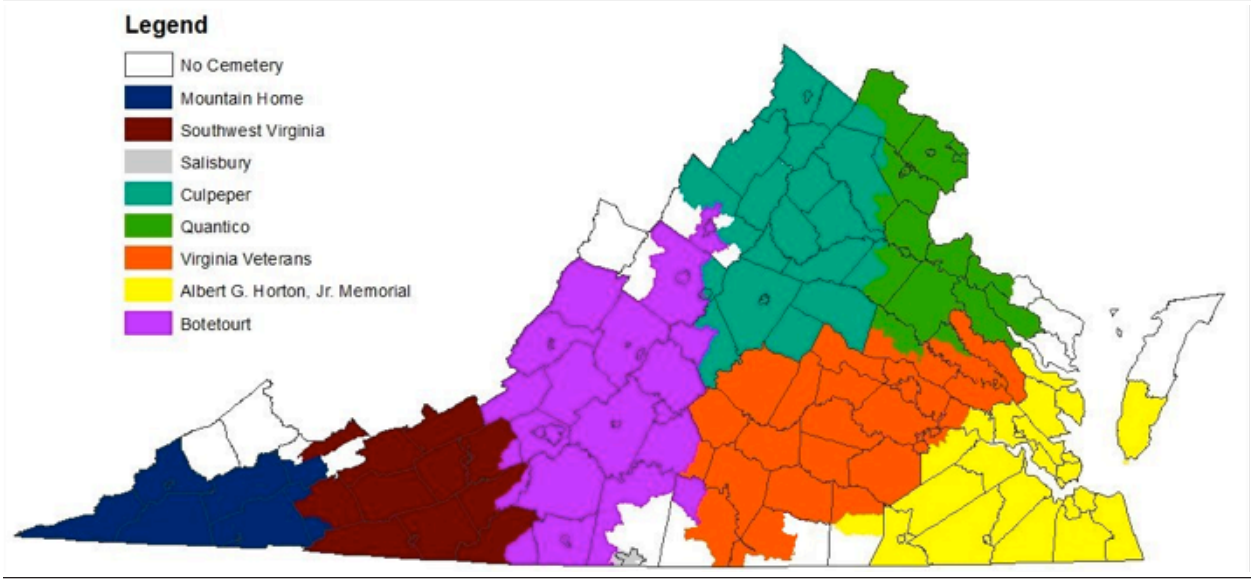
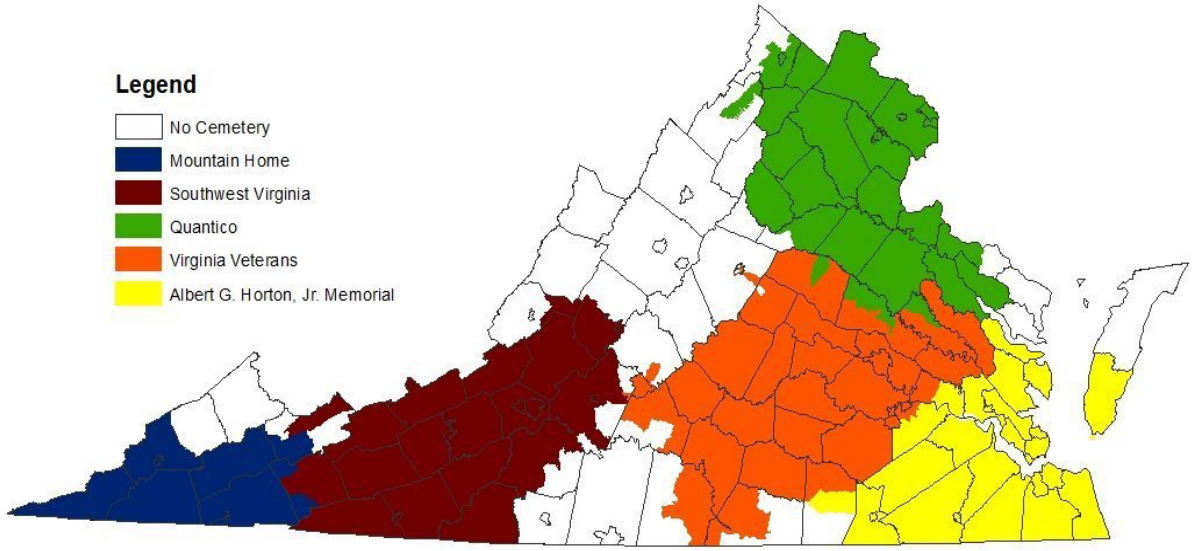


**Figure 3.15 Cemetery Service Areas, 2 Hours Travel Time, Cemetery Depletion**




location in Botetourt County that brings an additional 25,296 veterans into a cemetery service region. The cemetery serves principally parts of the Valley and Southside regions. **Figure 3.15** shows a scenario where Culpeper National and Salisbury National Cemeteries are closed. The effect on veteran coverage in this scenario is much more dramatic than in Scenario 2 which used the 75-mile straight-line distance standard. The effect is felt principally in the Shenandoah Valley region. A total of 64,406 veterans are unserved in 2032 compared to 36,096 veterans if Culpeper National were to remain open. **Figure 3.16** shows the effect of locating a single cemetery to provide maximum coverage of the unserved veterans. This results in a location in Lexington City

**Figure 3.16 Cemetery Service Areas, 2 Hours Travel Time, Cemetery Depletion, New Cemetery in Lexington City**

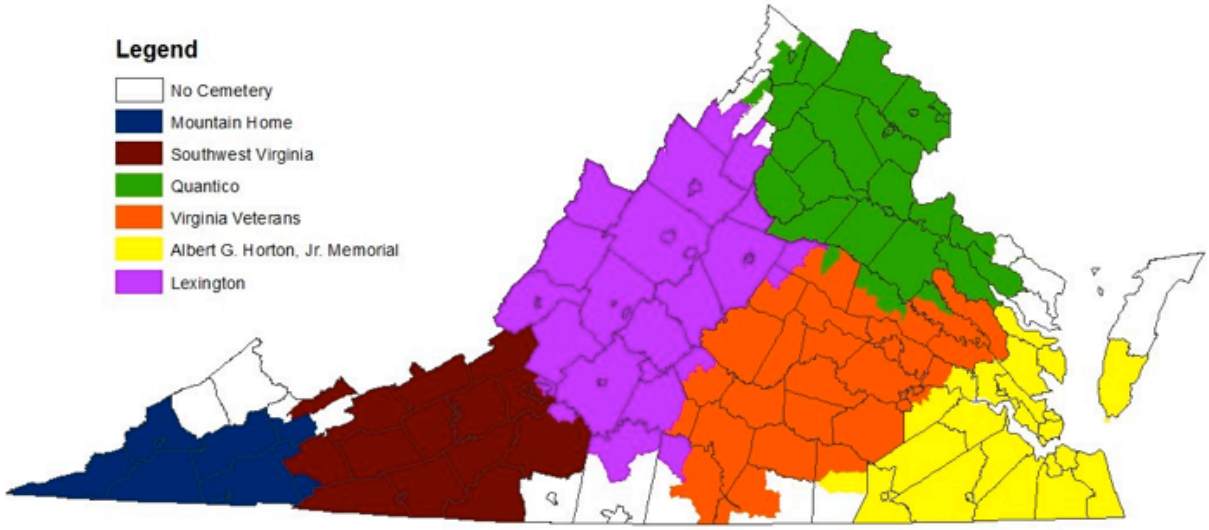
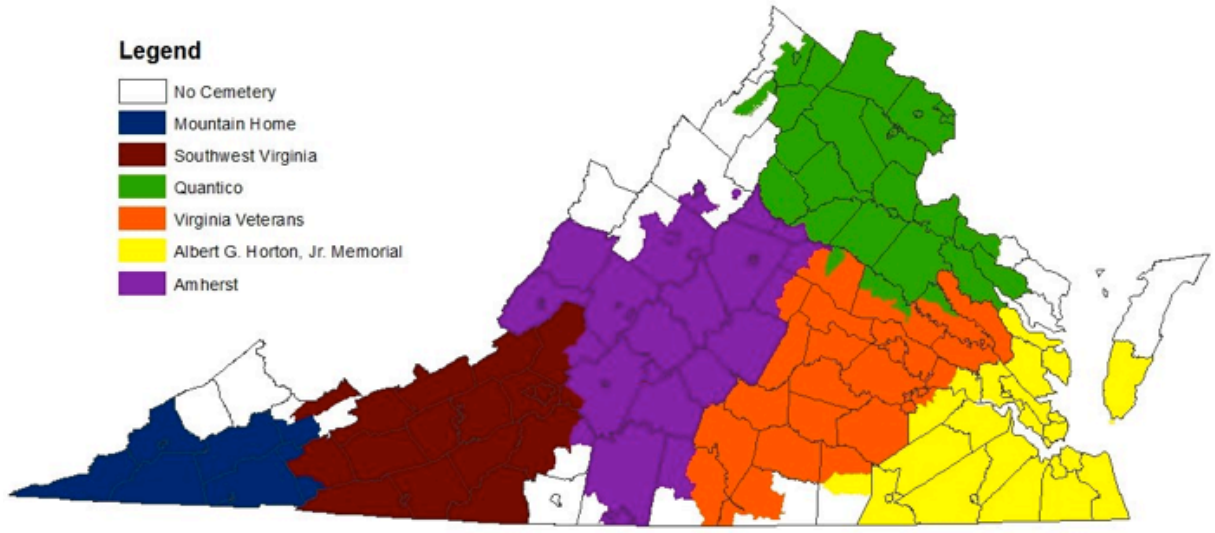


**Figure 3.17 Cemetery Service Areas, 2 Hours Travel Time, Cemetery Depletion, New Cemetery in Amherst County**




and brings 40,226 out of 64,406 unserved veterans into a cemetery service region. If instead, the Amherst County cemetery solution obtained using the 75-mile standard were imposed, the coverage pattern looks like **Figure 3.17**. In this instance, areas of the Shenandoah Valley would be extended coverage but pockets in Southside, Southwest, the upper Shenandoah Valley and Eastern Virginia would still be unserved.

# SECTION 4
# BURIAL NEEDS ANALYSIS

## New Cemetery Needs

The various scenarios examined in the previous section result in a wide range of possible outcomes depending on the impedance factor/limit used and cemetery closure scenario. In three of the cemetery addition scenarios, locations are identified within a relatively small triangular region in the lower Shenandoah Valley and West Central region anchored by Botetourt County, Lexington City, and Amherst County. They provide similar coverage by improving cemetery access to lower Shenandoah Valley and Southside veterans who are currently either outside an existing service region or located on the periphery of an existing service region.

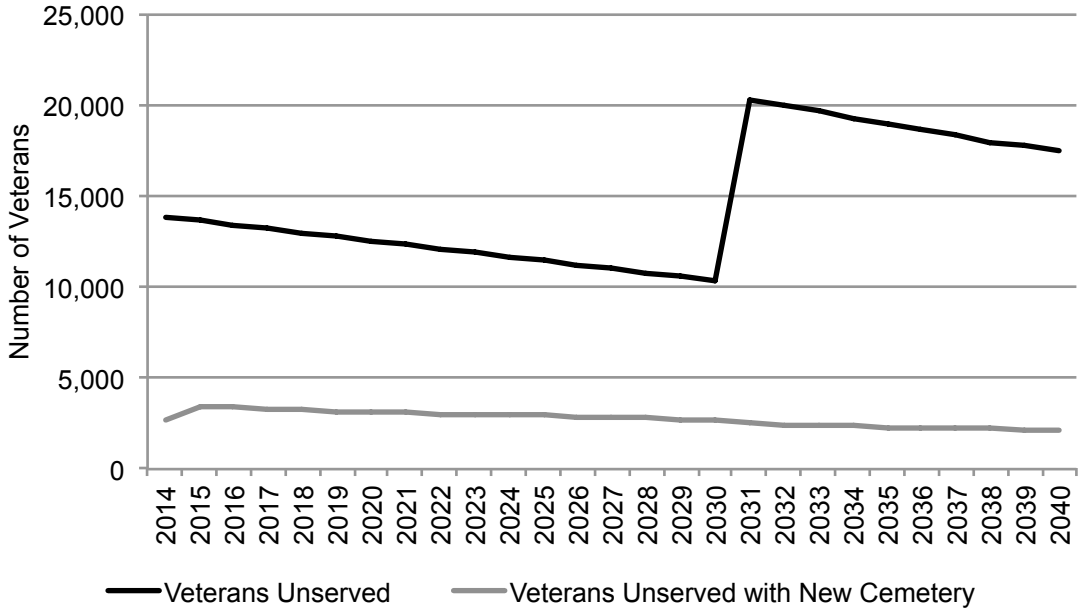
Of the various choices, Amherst County probably represents the best choice because it is based on the NCA 75-mile straight-line distance standard and would best position the state for the closures of Culpeper National Cemetery and Salisbury National Cemetery after 2030. Indeed, Culpeper National is not optimally located to serve the needs of Virginia veterans and its eventual closure and replacement by Amherst would provide a more centralized cemetery service area solution for the commonwealth. The development of this fourth cemetery would result in four state cemetery bands that run parallel from east to west that serve (1) the Tidewater region, (2) the Piedmont region, (3) a region encompassing southern Shenandoah Valley and part of the Piedmont region, and (4) the Blue Ridge Highlands. Mountain Home National and Quantico National Cemeteries would cover the balance of the state, including the Appalachian region and Northern Virginia respectively. An Amherst County location also provides reasonable coverage using the travel time impedance factor and two-hour impedance limit. While it does not represent the optimal travel time locational solution, it would extend coverage to many of the same areas serviced by a Lexington or Botetourt County cemetery. Finally, the new configuration would provide uninterrupted cemetery service for commonwealth veterans for at least a fifty-year time span.

A key constraint on building a new cemetery would be the availability of capital and operational funds. The USDVA State Cemetery Grants Service Program requires that states secure the land for any new cemetery. The USDVA currently offers a favorable cost share with 100 percent of new cemetery project costs eligible for funding. There is no guarantee that this program or the favorable cost share will remain in place in the distant future, especially given current federal budget difficulties. This situation may provide additional impetus to applying for funding sooner rather than latter.

Under current program guidelines, a new Virginia state cemetery would likely be assigned a relatively low priority rating by the USDVA. **Figure 4.1** shows the number of veterans who are currently unserved by a national or Virginia state cemetery under a scenario where all eight regional cemeteries remain open until 2030 and Culpeper National and Salisbury National are closed in 2031. Under this "worst case" scenario, the Commonwealth does not attain a level of 25,000 uncovered veterans at any time. An Amherst state cemetery would extend service to 11,161 if it were available immediately and 17,563 veterans in 2032 under a cemetery depletion scenario (see Figure 4.1). Priority rankings are assigned on a competitive basis with higher priority given to project applicants where new cemeteries would serve the greatest number of unserved veterans. But, the most recent FY 2013 priority list contains state cemetery applicants that would extend service to comparable numbers of veterans or fewer veterans (USDVA 2012c).

The USDVAs new rural initiative may offer an alternative path to serving veterans in Virginia's underserved regions. As discussed in the first section, this USDVA program creates National Veteran Burial Grounds in combination with private and public cemeteries to create access in areas for veteran populations below the 25,000 threshold. The USDVA has identified 8 cemeteries that will receive this funding in the near future. It is not yet clear if this initiative will be extended to other regions

**Figure 4.1 Projected Number of Veterans Residing Outside of National or Virginia State Veterans Cemetery Service Region, 2014-2040**




of the country in the future or if Virginia's underserved regions would be competitive against other U.S. regions. However, if the program is extended and Virginia is eligible, this option too might be explored.

## Interment Projections

Interment projections are produced here for basically two reasons. First, they can help to inform decision-makers about the cemetery depletion dates and the need to acquire additional land. Second, they can provide information for budget planning since higher interment numbers could increase the need for staffing and materials.

Interment projections for Virginia's veterans cemeteries are produced in much the same manner as described by Coutts, Basmajian, and Chapin (2011). In that study, the authors estimate: (a) the number of deaths by time and place, (b) the percentage of the local population who will choose local interment, and (c) the percentage choosing each interment mode (i.e., cremation or casket burial). They then combine this information to produce interment projections.

County veteran death projections for 2014-2040 are derived from the VetPop2011 model.[12] County veteran burial draw rates for the three existing cemeteries are estimated using VDVS records on burials for each cemetery by county of residence for the period May 2011-December 2012.[13] This time interval is the only one in which all three veterans cemeteries were open. Veteran burials were aggregated by county of residence for each cemetery and divided by estimated deaths for each county to compute a county draw rate.[14, 15] County veteran draw rates for a potential Amherst County veterans cemetery are based on a linear regression equation

12 Veteran death projections were not published online with the VetPop2011 veteran population projections. Veteran death rates were obtained from the USDVA Office of the Actuary via e-mail by request.

13 The burial records contained addresses for veterans or next-of-kin that were geocoded using ARCGIS and assigned to individual counties.

14 Deaths over the 20-month period to form the base of the draw rate were estimated by interpolating 2011-2013 fiscal year deaths obtained from the VetPop2011 model.

15 For interned veterans that resided outside the state, out-of-state resident burial rates were estimated by dividing out-of-state interments by total out-of-state deaths.

that measures the decreasing attraction of a cemetery to veterans who reside further away.[16] These county draw rates were then multiplied by county death projections and aggregated for each cemetery to get a projection of veterans likely to be interred in each cemetery.

**Table 4.1 Pre-application and Interment Counts by Veterans, Spouses, and Dependents**

| | Pre-applications | Interments |
|---|---|---|
| Veterans | 7,104 | 6,790 |
| Spouse | 5,607 | 1,487 |
| Dependent | 22 | 68 |
| Interment/veteran ratio | 1.79 | 1.23 |

Source: Virginia Department of Veterans Services

Calculations using the procedure above provide projections of the number of veteran interments. These numbers underestimate the number of "first interments," the number of new gravesites that are used, because it does not account for veteran spouses and dependents that may be interred first. Interment data from the NCA indicate that there are approximately 1.1 burials each year for every veteran burial. Therefore, in order to estimate first interments, the projections are inflated by a factor of 1.1. Finally, a ratio of total interments to veterans of 1.5 (i.e., five spouse and dependent interments for every 10 veteran interments) is used based on NCA data to inflate the veteran deaths in order to obtain projections of total interments. This adjustment factor accounts for spouse and dependent interments that occur after veteran burial. Current VDVS interment data to date show that there are over 2 spouses and dependents interred for every ten veterans (see **Table 4.1**). Pre-application information indicates almost 8 spouses and dependents will be buried for every 10 veterans. The low number of family interments at this point may reflect the fact that the state cemeteries are relatively new and that female spouses live longer on average than males. NCA planning guidelines recommend that cemeteries prepare for 5 in 10 (Burgess 2007). This 5 in 10 ratio also represents an average of the pre-application and interment ratios for Virginia veterans cemeteries.

**Table 4.2** presents the projections by cemetery and for the cemetery system as a whole using the formula described above which assumes that the burial yield rate pattern in the future will be the same as the 2011-2012 period. It also assumes that the Amherst County veterans cemetery will be fully operational in FY 2023. Approximately 1,600 veterans could be interred within a four-cemetery system in FY2023 and potentially over 36,000 veterans during the period FY2014-2040. The Albert G. Horton, Jr. Memorial Veterans Cemetery in Suffolk would have the largest volume of burial activity followed by Virginia Veterans Cemetery in Amelia, and a new Amherst County Cemetery. The Albert G. Horton, Jr. Memorial also experiences the most interment growth over the period, rising from 888 burials in 2014 to a projected 978 by 2035, while both the Virginia Veterans and Amherst Veterans cemeteries would see relatively steady interment numbers over the period. The Southwest Cemetery is projected to experience decreasing interments throughout the projection period because of a falling veteran population within its service region.

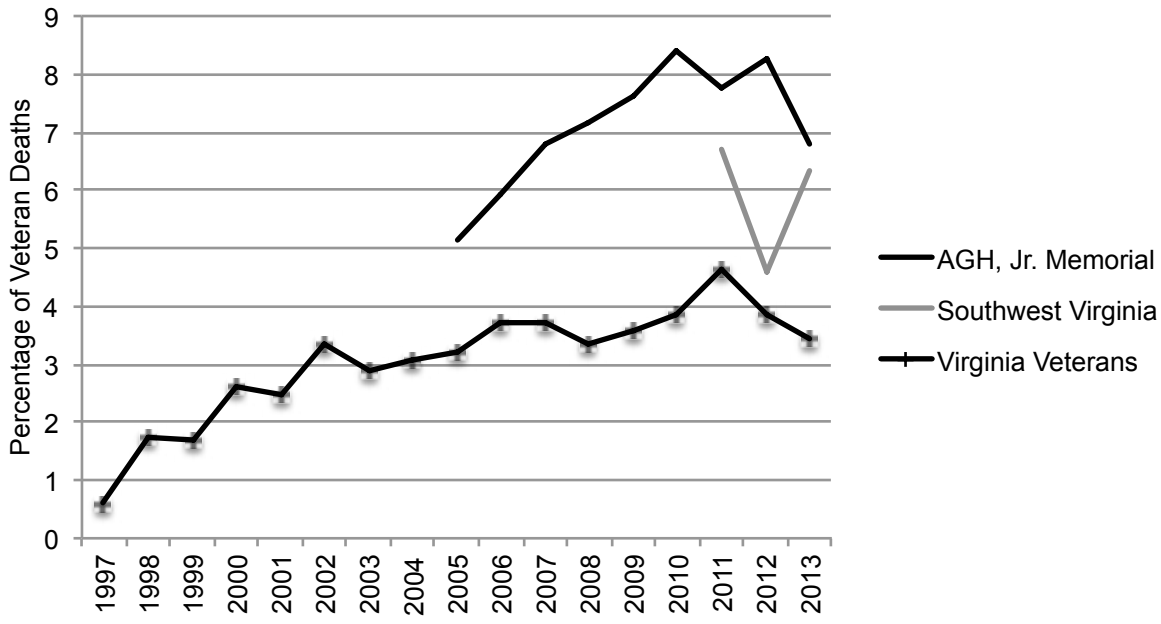
The constant burial yield projection scenario should be viewed as baseline scenario. It assumes that there are no changes in marketing or outreach activities that may take place in the future that would increase burial draw rates. With increasing exposure, each cemetery should become more visible over time and veteran burial draw rates may improve. **Figure 4.2** shows that draw rates at the two cemeteries with the longest histories, Albert G. Horton, Jr. Memorial (opened in 2004) and Virginia Veterans Cemetery (opened in 1997) have been gradually increasing. Moreover, all national and state cemeteries

16 Locality burial draw rates were regressed on distance of county of residence from state cemetery of interment where distance was measured from each locality's American Community Survey 2007-2011 veteran population centroid (i.e., coordinates of the estimated center of the county or independent city veteran population). County draw rates and distances for all three cemeteries were included in the estimation. The implicit assumption is made that any state cemetery selected in the future will experience the same burial-distance relationship as the three existing cemeteries. Therefore, these rates are applied to death projections for localities that are estimated to have positive draw rates by year to obtain interment projections for each cemetery. The estimated equation was YIELD_RATE=4.853129-0.0347884DISTANCE.

**Table 4.2 Interment Projections by Cemetery, Constant Draw Rate**

| | Albert G. Horton, Jr. Memorial | Southwest Virginia | Virginia Veterans | Amherst | Total |
|---|---|---|---|---|---|
| 2014 | 888 | 146 | 296 | 0 | 1,330 |
| 2015 | 889 | 146 | 297 | 0 | 1,331 |
| 2016 | 885 | 144 | 298 | 0 | 1,327 |
| 2017 | 881 | 143 | 299 | 0 | 1,324 |
| 2018 | 882 | 143 | 301 | 0 | 1,326 |
| 2019 | 880 | 141 | 301 | 0 | 1,322 |
| 2020 | 876 | 139 | 301 | 0 | 1,316 |
| 2021 | 869 | 137 | 300 | 0 | 1,306 |
| 2022 | 865 | 134 | 300 | 0 | 1,300 |
| 2023 | 865 | 133 | 300 | 294 | 1,592 |
| 2024 | 866 | 131 | 301 | 293 | 1,591 |
| 2025 | 867 | 129 | 301 | 292 | 1,590 |
| 2026 | 868 | 127 | 301 | 291 | 1,588 |
| 2027 | 882 | 127 | 305 | 294 | 1,608 |
| 2028 | 897 | 127 | 309 | 297 | 1,630 |
| 2029 | 909 | 127 | 312 | 299 | 1,646 |
| 2030 | 919 | 126 | 314 | 299 | 1,658 |
| 2031 | 927 | 124 | 314 | 299 | 1,665 |
| 2032 | 946 | 125 | 319 | 302 | 1,693 |
| 2033 | 964 | 125 | 322 | 305 | 1,715 |
| 2034 | 973 | 123 | 322 | 303 | 1,721 |
| 2035 | 978 | 121 | 320 | 300 | 1,719 |
| 2036 | 977 | 118 | 315 | 295 | 1,705 |
| 2037 | 973 | 114 | 309 | 289 | 1,685 |
| 2038 | 971 | 111 | 303 | 282 | 1,668 |
| 2039 | 967 | 107 | 296 | 275 | 1,646 |
| 2040 | 966 | 104 | 291 | 269 | 1,630 |
| Total | 24,632 | 3,473 | 8,247 | 5,279 | 36,352 |

**Figure 4.2 Virginia State Veterans Cemetery 75-Mile Radius Veteran Burial Draw Rate by Cemetery, FY 1997-2013**



draw approximately 12 percent of all veteran burials and recent survey data indicate that 13.4 percent of all veterans plan to be buried in a National or State veterans cemetery. Therefore, the prospects for continued improvement in burial rates are good.

**Table 4.3** presents an alternative and more realistic projection scenario in which burial draw rates at each cemetery increase by 50 percent by 2040 at an incremental pace each year over the period. This would still place the Virginia state veterans cemeteries below the national average burial draw rates for national and state veterans cemeteries. This assumption results in interment projections that are 50 percent higher by the year 2040. In this scenario, all four cemeteries experience a gradual increase in interments with peaks achieved in 2040 for Albert G. Horton, Jr. Memorial, 2034 for Southwest Virginia, and 2035 for Virginia Veterans and an Amherst County cemetery.

**Tables 4.4-4.7** provide breakdowns of total interments by burial type for each cemetery under the increasing burial rate scenario. Interment mode for the state veterans cemeteries are projected using Virginia and U.S. CANA projection data.[17] The cremation percentages assumed for the period are shown in **Figure 4.3**. Also, it is assumed that columbarium interments will represent

17 CANA now provides projections for Virginia to 2016. CANA previously provided a 15-year projection but discontinued the practice in its most recent report because of "eccentric anomalies" in the cremation rate data caused by recession. Rather than assume that the recent rapid growth in cremation would continue beyond 2016, more conservative assumptions were made. Beginning in 2017, the CANA national projections for the period 2016-2025, which meshed with the current Virginia CANA 2016 projection, were used instead thereafter. The rate of growth from 2016-2025 was assumed to continue through the remainder of the projection horizon of 2026-2040 resulting in the 50 percent cremation milestone being reached in 2035, ten years earlier than would have occurred for projections used in the previous cemetery study (Rephann 2007).

**Table 4.3 Interment Projections by Cemetery, Draw Rate Growth**

| | Albert G. Horton, Jr. Memorial | Southwest Virginia | Virginia Veterans | Amherst County | Total |
|---|---|---|---|---|---|
| 2014 | 904 | 149 | 301 | 0 | 1,354 |
| 2015 | 922 | 151 | 308 | 0 | 1,380 |
| 2016 | 934 | 152 | 314 | 0 | 1,401 |
| 2017 | 947 | 154 | 321 | 0 | 1,422 |
| 2018 | 964 | 156 | 329 | 0 | 1,449 |
| 2019 | 977 | 157 | 335 | 0 | 1,469 |
| 2020 | 989 | 157 | 340 | 0 | 1,487 |
| 2021 | 998 | 157 | 345 | 0 | 1,499 |
| 2022 | 1,010 | 157 | 350 | 0 | 1,516 |
| 2023 | 1,026 | 157 | 356 | 0 | 1,539 |
| 2024 | 1,042 | 158 | 362 | 299 | 1,861 |
| 2025 | 1,060 | 158 | 368 | 303 | 1,889 |
| 2026 | 1,077 | 158 | 374 | 307 | 1,917 |
| 2027 | 1,111 | 160 | 384 | 316 | 1,970 |
| 2028 | 1,146 | 163 | 395 | 325 | 2,028 |
| 2029 | 1,178 | 164 | 404 | 332 | 2,079 |
| 2030 | 1,209 | 165 | 412 | 338 | 2,125 |
| 2031 | 1,237 | 166 | 419 | 343 | 2,165 |
| 2032 | 1,279 | 169 | 431 | 353 | 2,232 |
| 2033 | 1,320 | 171 | 441 | 361 | 2,294 |
| 2034 | 1,351 | 171 | 447 | 365 | 2,334 |
| 2035 | 1,376 | 170 | 450 | 367 | 2,364 |
| 2036 | 1,393 | 168 | 449 | 366 | 2,376 |
| 2037 | 1,406 | 165 | 446 | 364 | 2,381 |
| 2038 | 1,421 | 162 | 443 | 361 | 2,388 |
| 2039 | 1,433 | 159 | 439 | 357 | 2,387 |
| 2040 | 1,449 | 156 | 436 | 354 | 2,395 |
| Total | 31,160 | 4,330 | 10,901 | 5,809 | 51,700 |

## Table 4.4 Albert G. Horton, Jr. Memorial Veterans Cemetery Projections

| | First Interments | | | | Total Interments | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Cremains | | | | Cremains | |
| | Casket | Columbarium | Burial | Total | Casket | Columbarium | Burial | Total |
| 2014 | 410 | 169 | 84 | 663 | 560 | 230 | 115 | 904 |
| 2015 | 408 | 178 | 89 | 676 | 557 | 243 | 121 | 922 |
| 2016 | 404 | 187 | 94 | 685 | 551 | 256 | 128 | 934 |
| 2017 | 403 | 194 | 97 | 694 | 550 | 265 | 132 | 947 |
| 2018 | 408 | 199 | 100 | 707 | 556 | 272 | 136 | 964 |
| 2019 | 410 | 205 | 102 | 717 | 559 | 279 | 139 | 977 |
| 2020 | 412 | 209 | 104 | 725 | 562 | 285 | 142 | 989 |
| 2021 | 412 | 213 | 106 | 732 | 562 | 291 | 145 | 998 |
| 2022 | 413 | 218 | 109 | 740 | 563 | 298 | 149 | 1,010 |
| 2023 | 417 | 224 | 112 | 752 | 568 | 305 | 152 | 1,026 |
| 2024 | 420 | 230 | 115 | 764 | 572 | 314 | 157 | 1,042 |
| 2025 | 423 | 236 | 118 | 777 | 577 | 322 | 161 | 1,060 |
| 2026 | 427 | 242 | 121 | 790 | 582 | 331 | 165 | 1,077 |
| 2027 | 436 | 253 | 126 | 814 | 594 | 344 | 172 | 1,111 |
| 2028 | 446 | 263 | 131 | 840 | 609 | 358 | 179 | 1,146 |
| 2029 | 455 | 273 | 136 | 864 | 620 | 373 | 186 | 1,178 |
| 2030 | 462 | 283 | 141 | 886 | 630 | 386 | 193 | 1,209 |
| 2031 | 469 | 292 | 146 | 907 | 639 | 398 | 199 | 1,237 |
| 2032 | 481 | 305 | 152 | 938 | 656 | 416 | 208 | 1,279 |
| 2033 | 492 | 318 | 159 | 968 | 671 | 433 | 216 | 1,320 |
| 2034 | 499 | 328 | 164 | 991 | 680 | 447 | 223 | 1,351 |
| 2035 | 504 | 337 | 168 | 1009 | 687 | 460 | 230 | 1,376 |
| 2036 | 505 | 344 | 172 | 1021 | 689 | 470 | 234 | 1,393 |
| 2037 | 505 | 351 | 175 | 1031 | 689 | 478 | 239 | 1,406 |
| 2038 | 506 | 358 | 179 | 1042 | 690 | 488 | 244 | 1,421 |
| 2039 | 505 | 364 | 182 | 1051 | 689 | 496 | 248 | 1,433 |
| 2040 | 507 | 371 | 185 | 1063 | 691 | 506 | 253 | 1,449 |
| Total | 12,138 | 7,145 | 3,567 | 22,850 | 16,552 | 9,744 | 4,864 | 31,160 |

## Table 4.5 Southwest Virginia Veterans Cemetery Projections

| | First Interments | | | | Total Interments | | | |
|---|---|---|---|---|---|---|---|---|
| | Casket | Columbarium | Cremains Burial | Total | Casket | Columbarium | Cremains Burial | Total |
| 2014 | 68 | 28 | 14 | 109 | 92 | 38 | 19 | 149 |
| 2015 | 67 | 29 | 15 | 111 | 91 | 40 | 20 | 151 |
| 2016 | 66 | 31 | 15 | 112 | 90 | 42 | 21 | 152 |
| 2017 | 66 | 32 | 16 | 113 | 89 | 43 | 21 | 154 |
| 2018 | 66 | 32 | 16 | 114 | 90 | 44 | 22 | 156 |
| 2019 | 66 | 33 | 16 | 115 | 90 | 45 | 22 | 157 |
| 2020 | 65 | 33 | 17 | 115 | 89 | 45 | 23 | 157 |
| 2021 | 65 | 34 | 17 | 115 | 88 | 46 | 23 | 157 |
| 2022 | 64 | 34 | 17 | 115 | 88 | 46 | 23 | 157 |
| 2023 | 64 | 34 | 17 | 115 | 87 | 47 | 23 | 157 |
| 2024 | 64 | 35 | 17 | 116 | 87 | 47 | 24 | 158 |
| 2025 | 63 | 35 | 18 | 116 | 86 | 48 | 24 | 158 |
| 2026 | 63 | 36 | 18 | 116 | 85 | 49 | 24 | 158 |
| 2027 | 63 | 36 | 18 | 117 | 86 | 50 | 25 | 160 |
| 2028 | 63 | 37 | 19 | 119 | 86 | 51 | 25 | 163 |
| 2029 | 63 | 38 | 19 | 120 | 86 | 52 | 26 | 164 |
| 2030 | 63 | 39 | 19 | 121 | 86 | 53 | 26 | 165 |
| 2031 | 63 | 39 | 20 | 122 | 86 | 53 | 27 | 166 |
| 2032 | 63 | 40 | 20 | 124 | 87 | 55 | 27 | 169 |
| 2033 | 64 | 41 | 21 | 125 | 87 | 56 | 28 | 171 |
| 2034 | 63 | 42 | 21 | 126 | 86 | 57 | 28 | 171 |
| 2035 | 62 | 42 | 21 | 125 | 85 | 57 | 28 | 170 |
| 2036 | 61 | 42 | 21 | 123 | 83 | 57 | 28 | 168 |
| 2037 | 59 | 41 | 21 | 121 | 81 | 56 | 28 | 165 |
| 2038 | 58 | 41 | 20 | 119 | 79 | 56 | 28 | 162 |
| 2039 | 56 | 40 | 20 | 116 | 76 | 55 | 27 | 159 |
| 2040 | 54 | 40 | 20 | 114 | 74 | 54 | 27 | 156 |
| Total | 1,702 | 983 | 491 | 3,176 | 2,321 | 1,340 | 669 | 4,330 |

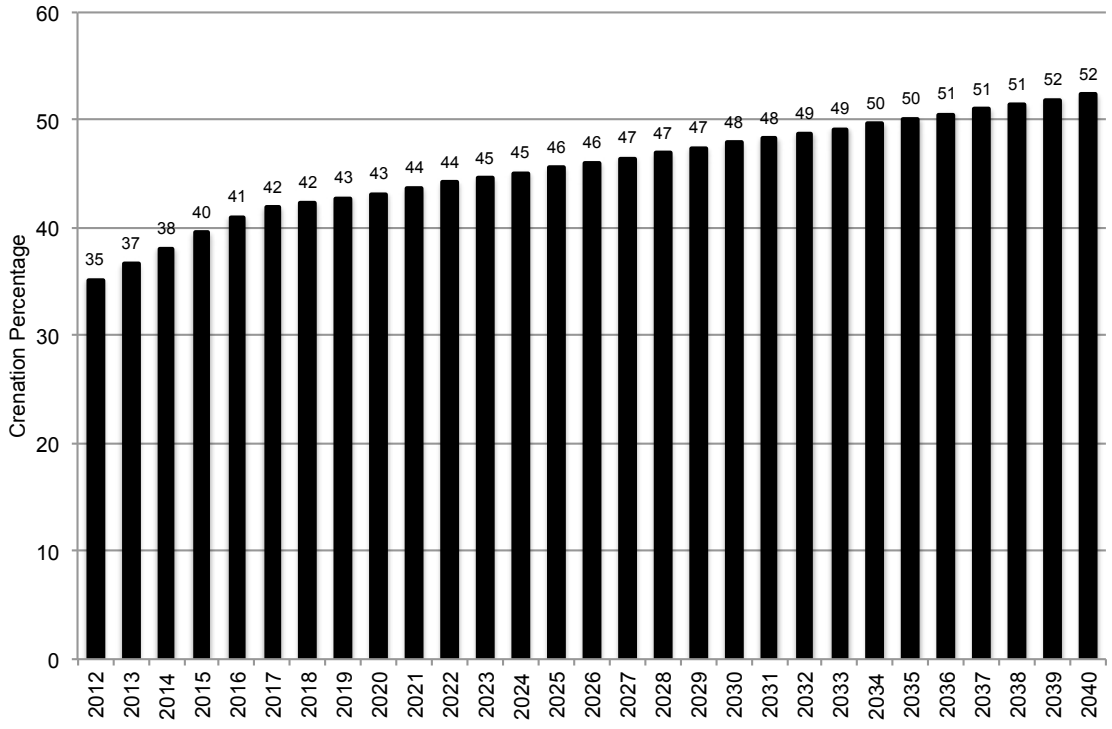
## Table 4.6 Virginia Veterans Cemetery Projections

| | First Interments | | | | Total Interments | | | |
|---|---|---|---|---|---|---|---|---|
| | Casket | Columbarium | Cremains Burial | Total | Casket | Columbarium | Cremains Burial | Total |
| 2014 | 137 | 56 | 28 | 221 | 186 | 77 | 38 | 301 |
| 2015 | 136 | 60 | 30 | 226 | 186 | 81 | 41 | 308 |
| 2016 | 136 | 63 | 31 | 230 | 185 | 86 | 43 | 314 |
| 2017 | 137 | 66 | 33 | 235 | 186 | 90 | 45 | 321 |
| 2018 | 139 | 68 | 34 | 241 | 190 | 93 | 46 | 329 |
| 2019 | 140 | 70 | 35 | 246 | 192 | 96 | 48 | 335 |
| 2020 | 142 | 72 | 36 | 250 | 193 | 98 | 49 | 340 |
| 2021 | 142 | 74 | 37 | 253 | 194 | 100 | 50 | 345 |
| 2022 | 143 | 76 | 38 | 256 | 195 | 103 | 51 | 350 |
| 2023 | 145 | 78 | 39 | 261 | 197 | 106 | 53 | 356 |
| 2024 | 146 | 80 | 40 | 266 | 199 | 109 | 54 | 362 |
| 2025 | 147 | 82 | 41 | 270 | 200 | 112 | 56 | 368 |
| 2026 | 148 | 84 | 42 | 274 | 202 | 115 | 57 | 374 |
| 2027 | 151 | 87 | 44 | 282 | 205 | 119 | 59 | 384 |
| 2028 | 154 | 91 | 45 | 290 | 210 | 124 | 62 | 395 |
| 2029 | 156 | 94 | 47 | 297 | 213 | 128 | 64 | 404 |
| 2030 | 158 | 97 | 48 | 302 | 215 | 132 | 66 | 412 |
| 2031 | 159 | 99 | 49 | 307 | 217 | 135 | 67 | 419 |
| 2032 | 162 | 103 | 51 | 316 | 221 | 140 | 70 | 431 |
| 2033 | 164 | 106 | 53 | 324 | 224 | 145 | 72 | 441 |
| 2034 | 165 | 109 | 54 | 328 | 225 | 148 | 74 | 447 |
| 2035 | 165 | 110 | 55 | 330 | 224 | 150 | 75 | 450 |
| 2036 | 163 | 111 | 55 | 329 | 222 | 151 | 76 | 449 |
| 2037 | 160 | 111 | 56 | 327 | 219 | 152 | 76 | 446 |
| 2038 | 158 | 112 | 56 | 325 | 215 | 152 | 76 | 443 |
| 2039 | 155 | 111 | 56 | 322 | 211 | 152 | 76 | 439 |
| 2040 | 152 | 112 | 56 | 320 | 208 | 152 | 76 | 436 |
| Total | 4,059 | 2,380 | 1,188 | 7,627 | 5,535 | 3,245 | 1,620 | 10,401 |

## Table 4.7 Amherst County Veterans Cemetery Projections

| | First Interments | | | | Total Interments | | | |
|---|---|---|---|---|---|---|---|---|
| | Casket | Columbarium | Cremains Burial | Total | Casket | Columbarium | Cremains Burial | Total |
| 2014 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2015 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2016 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2017 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2018 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2019 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2020 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2021 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2022 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2023 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 2024 | 120 | 66 | 33 | 219 | 164 | 90 | 45 | 299 |
| 2025 | 121 | 68 | 34 | 222 | 165 | 92 | 46 | 303 |
| 2026 | 122 | 69 | 35 | 225 | 166 | 94 | 47 | 307 |
| 2027 | 124 | 72 | 36 | 231 | 169 | 98 | 49 | 316 |
| 2028 | 126 | 74 | 37 | 238 | 172 | 102 | 51 | 325 |
| 2029 | 128 | 77 | 38 | 243 | 174 | 105 | 52 | 332 |
| 2030 | 129 | 79 | 40 | 248 | 176 | 108 | 54 | 338 |
| 2031 | 130 | 81 | 40 | 252 | 177 | 111 | 55 | 343 |
| 2032 | 133 | 84 | 42 | 259 | 181 | 115 | 57 | 353 |
| 2033 | 134 | 87 | 43 | 265 | 183 | 118 | 59 | 361 |
| 2034 | 135 | 89 | 44 | 268 | 184 | 121 | 60 | 365 |
| 2035 | 134 | 90 | 45 | 269 | 183 | 123 | 61 | 367 |
| 2036 | 133 | 91 | 45 | 269 | 181 | 124 | 62 | 366 |
| 2037 | 131 | 91 | 45 | 267 | 178 | 124 | 62 | 364 |
| 2038 | 128 | 91 | 45 | 265 | 175 | 124 | 62 | 361 |
| 2039 | 126 | 91 | 45 | 262 | 172 | 123 | 62 | 357 |
| 2040 | 124 | 91 | 45 | 259 | 169 | 124 | 62 | 354 |
| Total | 2,178 | 1,389 | 693 | 4,260 | 2,970 | 1,894 | 946 | 5,809 |

**Figure 4.3 Cremation Percentage Projection Assumptions**




Source: Based on CANA (2007, 2012) and author's interpolation

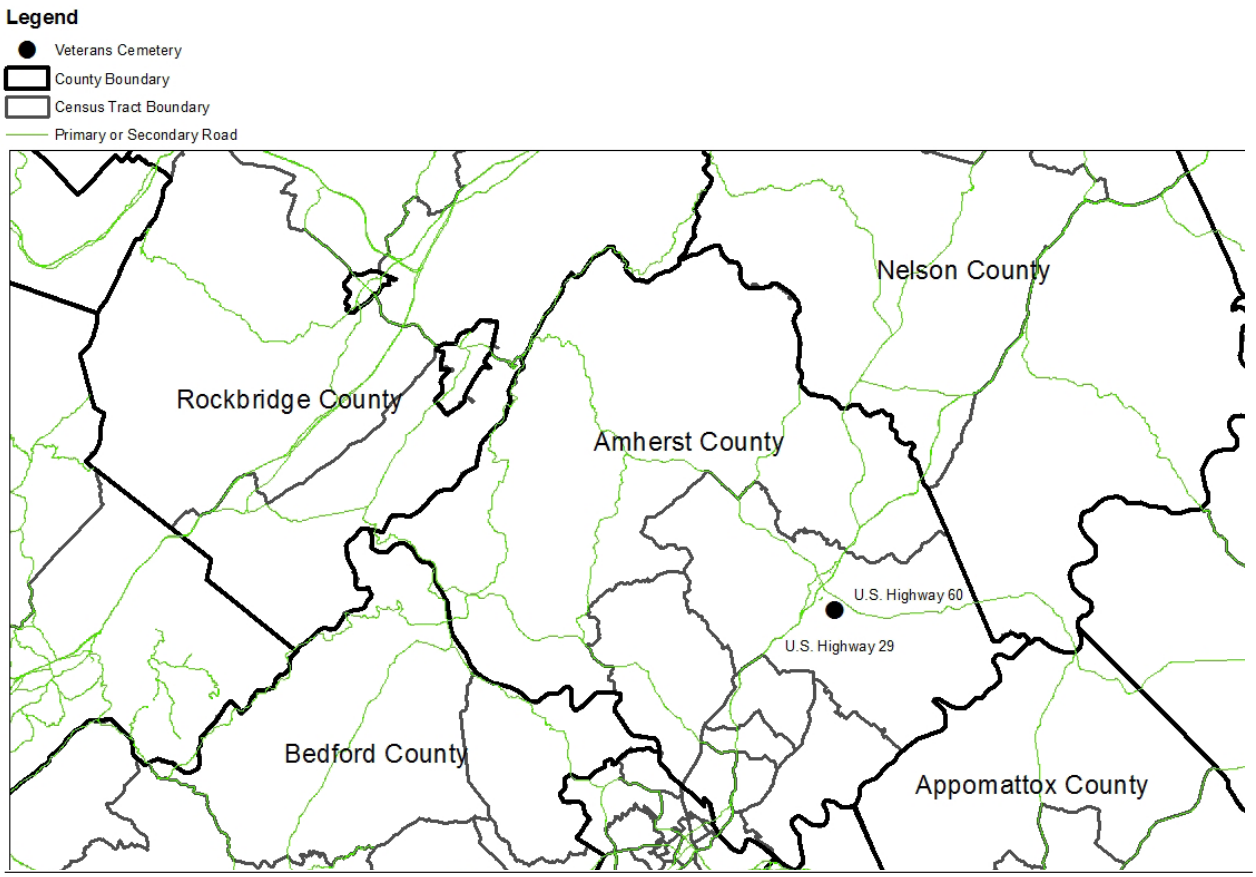
60 percent of all cremation interments. This percentage is an approximate average of the columbarium and in-ground niche interment split for existing interments at the state cemeteries and preferences that veterans indicated on pre-applications.

## Cemetery Location, Size and Acquisition

These projections can be used to determine land acquisition and staffing needs for a future Amherst County cemetery. We make the assumption that 4X10 gravesites with 6 square feet allotment per space buffer will be used for casketed burial. NCA requires that accommodation be made for at least 50 years of veteran burial, but we assume 80 years. If average depletion rates for 2023-2040 are projected outward to 2103, an additional 10.4 acres minimum would be needed for casketed burial. Additional acreage would be desired for esthetic reasons. Moreover, using the Southwest Virginia Veterans Cemetery master plan as a guide, 15 acres would be needed for administrative and maintenance buildings, water and septic systems, roads, committal shelter, columbarium, and in-ground cremation. Therefore, a 30-acre facility at minimum would meet the needs of veterans for approximately the next century. Based on the number of projected interments, DVS staffing guidelines would call for two administrative employees and four groundskeepers (VDVS 2013).

**Figure 4.4** shows the veterans cemetery location-allocation solution as a northeastern census tract with geographical centroid near the junction of U.S. Highway 29 that runs North/South and U.S. Highway 60 that runs East/West. **Figure 4.5** provides a Google Earth 3D satellite representation of the location. The area is primarily rural farm and forestland. The topography consists of rolling hills like much of Virginia's Piedmont region. The primary built-up area in the region is Amherst several miles to the west. Candidate parcels must also be compatible with local zoning regulations, be unhindered by easements or other development restrictions, be served by water and utilities, have soils appropriate for growing turfgrass, and be free of environmental and natural disaster hazards such as hazardous waste and

**Figure 4.4 Amherst County Veterans Cemetery Location**



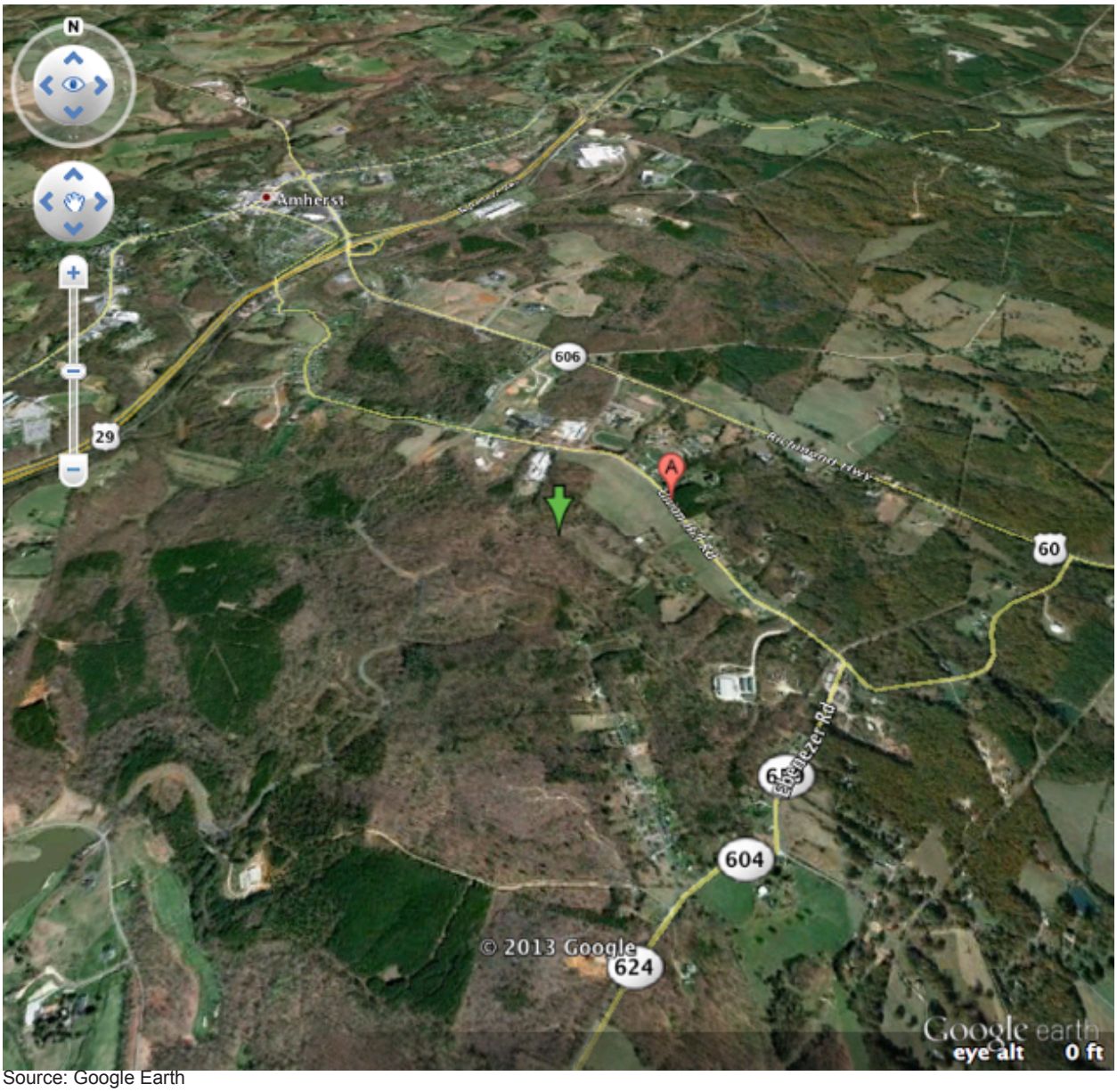

location in a flood plain. Property values in the area are moderate with an average cost of $5,287 per acre for farm and undeveloped land between 25 and 100 acres.[18] Moreover, Amherst County is projected to grow much slower than the state.[19] Thus, land availability should not be a problem and prices are unlikely to escalate. In any event, land acquisition costs will be a very small portion of the project development costs and should be less than $250,000 for 35 acres or less.

New land acquisitions may also be justified in the vicinity of the Albert G. Horton, Jr. Memorial Cemetery. At current casketed interment volumes, the cemetery will have no available land beginning in 2075. At projected volumes, the cemetery would be depleted in 2063. If the same 80-year time horizon for new cemetery additions is adopted for cemetery preservation, it would be justifiable to acquire approximately 15-20 additional acres to maintain service at the cemetery into the next century.

18 Estimate based on average per-acre price for 14 rural properties advertised on LandAndFarm.com

19 The Weldon Cooper Center for Public Service projects Amherst County to grow at a 6 percent rate from 2020 to 2040 compared to 20 percent for the state as a whole based on projections published on November 13, 2012.

**Figure 4.5 Satellite Imagery of Cemetery Location Area**




Source: Google Earth

# SECTION 5
# IMPROVING AWARENESS AND USE OF VIRGINIA STATE VETERANS CEMETERIES

## Expanding Outreach and Marketing Efforts

Despite improved outreach and marketing activities including the use of nontraditional media, many veterans remain unaware of their memorial benefits. More troubling, almost 10 percent don't know where to look for burial benefits information (ICF International 2008). Those who do know about their benefits obtain the information from a wide variety of sources (see **Table 5.1**), including U.S. Department of Veterans Affairs, veterans organizations, funeral homes, senior citizen groups, and family members. Non-traditional media such as the Internet have also become a leading source of information with 43 percent indicating that they got information from a USDVA web site, 15 percent from an Internet search engine, 10 percent from a military web site, and 4 percent from a non-government web site. In comparison, traditional media such as newspapers, magazines, TV, and radio rank much further down the list.

**Table 5.1 Sources of Information on Interment Benefits used by Veterans, Percentage of Respondents**

| Sources | Percentage of Respondents |
|---|---|
| Veteran Affairs by toll-free telephone | 48.6 |
| Veteran Affairs web site | 42.9 |
| Visit Dept. of Veteran Affairs facility | 32.3 |
| VA benefits handbook | 31.0 |
| Veterans Service Organization | 27.2 |
| Funeral home | 20.8 |
| Social Security Administration | 16.0 |
| Internet search engine | 15.4 |
| A fellow veteran | 14.5 |
| Don't know | 9.7 |
| Military web site | 9.5 |
| Senior citizens group | 7.3 |
| Family member | 4.4 |
| Non-government web site | 3.9 |
| Newspaper or magazine | 1.4 |
| TV or radio public service announcement | 1.4 |
| Physician | 0.9 |
| Employer | 0.5 |
| Not interested in getting information | 0.3 |
| Other | 0.3 |

Source: ICF International (2008) based on 2008 Veterans Burial Benefits Survey

The VDVS has a well-established routine of reaching out to traditional media and veterans and death care groups. Periodic media exposure is gained from local newspaper, radio, and television outlet features, especially surrounding special events such as Memorial Day ceremonies. DVS Cemetery staff also routinely visits funeral homes, veteran organization chapters, and churches within a 50-mile radius of the state veterans cemeteries to increase awareness of the state veterans cemeteries and veteran burial benefits. In recent years, outreach has been expanded to various statewide organizations such as the Virginia Funeral Directors Association and Virginia Board of Funeral Directors and Embalmers. The burial operations manager for the new Southwest Virginia Veterans Cemetery devotes one day of aggressive outreach each week to church and veterans organizations throughout the West Central and Southwest region. The VDVS has also recently instituted a new program called the "Virginia Military Funeral Honors for Unclaimed Veterans' Cremains Program" which encourages funeral homes, crematories, and other organizations to identify unclaimed cremains that may be eligible for interment in a veterans cemetery.

The VDVS has upgraded its non-traditional media presence since the last report. The VDVS website has been revamped

and now includes a section devoted to the veterans cemeteries, which is broken into categories describing cemetery services. One section describes each of the three state veterans cemeteries and provides photos, contact information and hours of operation, pre-application information and downloadable forms, a description of low-cost outer burial containers available for purchase from VDVS, and a list of special commemorative events recognized by the cemeteries. Another section describes the program for unclaimed veterans' cremains. A final category describes cemetery policy regarding gravesite placement of flowers and decorations such as wreaths and flags. The department also maintains a social media presence through Twitter that includes occasional news and announcements about the state veterans cemeteries.

The Board of Veterans Services has discussed various options for improving veterans marketing. One proposal is to implement a telephone based Tele-Vet System that would provide around-the-clock access to a catalog of prerecorded messages on various veterans' issues through touch-tone dialing. Another proposal is to expand social media contacts with veterans by expanding its presence on various social media sites such as Facebook, LinkedIn, YouTube, etc.

The potential exists to offer more online services. As a recent American Cemetery Survey shows (see **Table 5.2**), the vast majority of cemeteries have websites and most utilize social media as well (see **Table 5.3**). Several types of information provided by cemeteries are not yet available on the VDVS website, such as information about the cemetery's history, obituaries of newly interred veterans, videos, and information about additional resources. Links could be provided to outside sources such as a new USDVA online funeral directors resource kit that provides multimedia materials to educate funeral directors on how to assist veterans in understanding their eligibility and memorial benefits.[20] Another option would be to develop interactive web-based tools such as suggested in ICF (2008) that would allow veterans to enter information online and receive information on their eligibility and burial benefits. The VDVS could augment and integrate its Twitter presence with other social media such as Facebook and YouTube as several other state veterans affairs departments have done.

20 This kit can be found at: http://www.cem.va.gov/cem/funeraldirector.asp (Accessed April 11, 2013).

**Table 5.2 Cemetery Website Content**

| | % of Cemeteries |
|---|---|
| Contact information | 89 |
| Pictures of cemetery | 78 |
| Information about cemetery's history | 73 |
| Driving directions | 56 |
| Information about additional resources | 37 |
| List of burials | 28 |
| Obituaries | 26 |
| Videos | 17 |

Source: American Cemetery Technology Survey (Parmalee 2013)

Virginia could also extend its outreach and marketing efforts to adjacent states. As discussed in section three, veterans in adjacent states may not be aware that they are eligible for burial in a Virginia state veterans cemetery. Virginia has not extended outreach and marketing efforts across state lines, nor has Virginia sought partnerships or reciprocal agreements (which could include funding) with adjacent states. The northeast part of North Carolina lies within the 75-mile service area of the Albert G. Horton, Jr. Memorial Veterans Cemetery. Similarly, the southeast part of West Virginia is within the 75-mile area served by the Southwest Virginia Veterans Cemetery. Increased marketing efforts and partnership agreements with North Carolina and West Virginia could increase the utilization of these cemeteries.

## Offering New Memorial Options

Many private cemeteries have responded to consumer demand for more varied memorial options such as "green" interment choices, mausoleums, and memorials enhanced with digital media (Llewelyn 1998). New

**Table 5.3 Cemetery Use of Social Media**

| | % of Cemeteries |
|---|---|
| Facebook | 70 |
| Twitter | 22 |
| Linkedin | 20 |
| MySpace | 2 |
| Pinterest | 3 |
| YouTube | 14 |

Source: American Cemetery Technology Survey (Parmalee 2013)

technology, growing environmental consciousness and increasing cultural diversity are driving much of the change. Environmentally sensitive burial methods (often termed "green burial") include practices as varied as placing unembalmed bodies in wooden boxes or shrouds, scattering gardens for cremains, living memorials such as the "spirit tree" burial in which a biodegradable urn is buried below a newly planted tree and gradually atrophies to leave feed cremains nutrients to the tree, and artificial underwater reef structures for depositing cremains (Basmajian and Coutts 2010). According to a FAMIC (2010) study of consumers' attitudes toward memorialization and ritualization, 66 percent of respondents are not aware of green funeral services. However, 43 percent of survey respondents indicated that they might be interested in exploring "green" funeral options.

The Department of Veterans Affairs Advisory Committee on Minority Veterans has cited the culturally distinct practices of minority veterans, especially Native American/Alaskan and Muslim American veterans, as meriting expanding the types of interment options made available. The National Cemetery Administration has contracted with Booz Allen and Hamilton to conduct a study of emerging burial practices. The study presents trends and new developments in burial practices and includes a survey and focus group component to gauge how veterans are satisfied with current veterans cemetery services and their level of interest in having other interment options available at veterans cemeteries. This study has not yet been publicly released (U.S. Department of Veterans Affairs 2012d).

The challenge in expanding burial options will be to be more responsive to cultural diversity and new consumer preferences while maintaining the features expected of national shrines. Some veterans cemeteries are offering scattering gardens and others have plans to offer them. The new tribal veterans cemeteries show that new burial grounds features can be accommodated in ways that preserve the national shrine character. With more veterans considering cremation and more environmentally friendly disposition methods, the construction of a scattering garden has considerable merit.

The VDVS anticipates adding scattering gardens as part of Wood Walkway projects progressing at all three cemeteries some time in the next five years. However, the need to fund memorial improvements from private donations has slowed progress in this area. The VDVS may want to accelerate the introduction of scattering gardens with departmental funds at one site as a way to test the popularity of this interment option and examine the cost effectiveness of introducing it elsewhere.

VDVS staff has also noted that the utilization of in-ground cremation burial could be improved if vertical headstones similar to those used for casketed burial were available in lieu of the flush markers currently required. If this option were available, some veterans currently choosing casketed burial would choose cremain burial. The availability of this option would allow veterans to reduce their overall memorial associated expense. Moreover, some veterans choosing columbaria would elect for cremain burial. However, any change would require the consent of the NCA. The Board of Veterans Services (BVS) may want to study this issue further, including its likely impact on space needs and operational costs, and contact the NCA at a later date about the possibility of modifying the policy.

## Providing Cost Effective Burial Options

As the recent recession illustrates, consumers can be very responsive to cost differences in making death care decisions. Many consumers have decreased planned expenditures on funeral arrangements and cremation has increased in popularity (Sack 2011; Chapman 2010). Recent survey data show that veterans are like other consumers in being sensitive to cost in planning their final arrangements. The U.S. veteran survey ranked cost third among the criteria veterans used in making burial decisions.

Since the last study, the VDVS has undertaken measures to reduce veteran burial costs and pass the savings on to veterans. With the financial assistance of the NCA State Cemetery Grants Program, outer burial containers have now been installed or are being installed at all three state cemeteries. These outer burial containers will be offered to veterans and their spouses at no charge. They would ordinarily cost an estimated $1,000 each to install. The only charge that veterans' families would incur is a $300 interment fee for spouses. This fee is charged because the state is not reimbursed for the cost of interring spouses and dependents.

**Table 5.4 National, State, and Private Cemetery Interment Costs**

| Type | National | State | Private Veteran | FCAVBR |
|---|---|---|---|---|
| Plot/Perpetual care -- veteran | $0 | $0 | $1,153 | $965 |
| Plot/Perpetual care – spouse | $0 | $0 | $1,320 | $965 |
| Grave opening/closing -- veteran | $0 | $0 | $1,168 | $1,000 |
| Grave opening/closing – spouse | $0 | $300 | $1,168 | $1,000 |
| Outer burial container -- veteran | $0 | $400 | $1,308 | $1,036 |
| Outer burial container – spouse | $0 | $400 | $1,308 | $1,036 |
| Marker – veteran[a] | $0 | $0 | $940 | $1,300 |
| Marker --- veteran and spouse | $0 | $0 | $1,178 | $2,181 |
| Administrative fees | $0 | $0 | $218 | $223 |
| Average veteran cost | $0 | $400 | $4,787 | $4,524 |
| Average veteran and spouse cost | $0 | $1,100 | $8,549 | $8,406 |

a The prices are for flush-markers with a 28-inch by 16-inch granite base installed except for the Funeral Consumers Alliance of the Virginia Blue Ridge Survey which is for the low-cost marker reported by the cemetery.

Virginia's veterans cemetery fees appear to be in line with what other state cemeteries charge. Based on information from 31 state veterans cemeteries from elsewhere in the U.S. that posted fee information online, we found that fees charged for spouses and dependents at state cemeteries elsewhere in the U.S. vary from zero to $700, and several states have tiered price structures based on whether the interment is casket burial or cremains. The average burial fee is $288. When information for 17 cemeteries on this list that also appeared in a survey of 36 state veterans cemetery cemeteries conducted by the National Cemetery Administration in 2007 were compared, the average fee increased from $235 to $329, a 40 percent increase over the time period. This result suggests that the VDVS managed to hold the line on fees during a period when some states were compelled to increase their fees.

**Table 5.4** provides up-to-date costs of casketed burial for national and state veterans cemeteries and private cemeteries. These costs include the prices of a plot, perpetual care, grave opening/closing, headstone/marker, headstone installation, and outer burial container. Veterans, spouses, and eligible dependents interred in cemeteries maintained by the NCA incur no cemetery related costs. Veterans who choose interment in a private cemetery are eligible for some USDVA benefits such as a headstone through the Headstones and Markers Program. In addition, some private cemeteries offer "veteran gardens" where veterans may obtain discounted or free plots. However, the veteran is responsible for all cemetery costs not included in the contract. Such costs may include the purchase of the plot, perpetual care, opening and closing of the grave, outer burial container, installation of the headstone or marker if a USDVA headstone is not selected, and miscellaneous administrative fees. Moreover, spouses and dependents may incur a cost for the cemetery plot and many of the same burial costs again.

The table shows updated 2013 costs based on private cemeteries that hosted veteran gardens and were contacted for price information as part of the 2007 study. They included cemeteries located in Mecklenburg County, Lexington City, Russell County, and Virginia Beach City. The table shows that the cemeteries offered discounted veteran plots but none was free. The cost of the free marker is reflected in the private veterans garden cemetery price in Table 5.4 but it does not include the cost of the base and placement of the marker. Costs of lots, opening/closing, outer burial container and administrative fees had increased significantly over 2007 reported levels. The average cost of an veteran casketed burial is $4,787. With a spouse included, the cost is $8,549. Estimates of memorial costs based on a survey of licensed and municipal cemeteries from the Funeral Consumers Alliance of the Virginia Blue Ridge (FCAVBR) (2011) indicates a average low interment cost of $4,787 for a single interment and $8,406 for a couple, which is consistent with the price information provided here.

Some veterans are eligible for a burial and funeral expense allowance and a plot allowance.[21] The burial and funeral allowance is $300, and the plot allowance

21 The eligibility requirements are described at: http://www.benefits.va.gov/BENEFITS/factsheets/burials/Burial.pdf (Accessed April 12, 2013).

is $700. The use of these benefits would further reduce interment costs at private cemeteries.

A Virginia state veterans cemetery now offers an approximately $4,400 cost advantage over these private cemetery alternatives. With a spouse included, the cost advantage is approximately $7,450. This expense may be still higher if the veteran chooses a private cemetery that does not offer veteran discounts. It could be as much as $1,000 lower if the veteran was eligible for the burial and plot allowances.

The VDVS and the BVS have examined the feasibility of decreasing veteran and spousal burial charges by using operating budget surpluses that accrued as a result of the increase in the federal burial allowance to $700 (VDVS 2012). Options considered by VDVS and the BVS were to decrease or eliminate the $300 spousal charge and to decrease or eliminate the $400 outer burial container charge. Because reducing or eliminating these charges would require depleting funds needed for maintenance reserve, infrastructure, and equipment replacement, these fees will remain in place, but will be reviewed by VDVS and BVS annually. Additional options that might be considered by VDVS and the BVS would be to institute a sliding fee for spouses based on a financial means test or to waive the fee for indigent spouses and dependents.

## Assessing Veterans Cemetery Services

The Virginia state veterans cemeteries continue to offer a high standard of appearance and service. To maintain these quality standards, the Department of Veterans Services annually monitors several performance measures as part of its strategic planning efforts (VDVS 2013).[22] These measures are generally service delivery measures that show how staff has achieved performance goals with respect to ordering and installing headstones and markers.

In order to maintain cemetery quality and ensure continued positive messages by way of word-of-mouth, the VDVS may want to expand its quality assessment efforts. A larger quality assessment plan would be linked formally to the department mission and vision and align more completely with NCA performance measures. Among the additional service delivery measures that the NCA uses are outside audits that gauge "accuracy of inscriptions on headstones and markers, proportion of headstones that are correctly positioned and aligned, clear and free of debris, level grade and blended with adjacent grade levels" (U.S. Department of Veterans Affairs 2012e). The USDVA also tracks the percentage of the veteran population served within 75 miles of a national or state cemetery. Finally, the USDVA uses the results of customer satisfaction surveys. Among the items that are tracked are the percentage of respondents who rate national cemetery appearance as excellent, percentage of respondents who rate the quality of service provided by the national cemeteries as excellent, and percentage of respondents who are willing to recommend a national cemetery to veteran families in their time of need.

Several states also conduct cemetery service satisfaction surveys. For example, Minnesota sends a survey to next-of-kin of a family member interred at a state veterans cemetery six months after the burial (Minnesota Department of Veterans Affairs 2011). Questions on the survey pertain to burial services, quality of facilities, grounds appearance, staff availability and courtesy, and overall satisfaction. Texas sponsors an extensive survey that addresses many dimensions of cemetery service, including staff performance, and burial service quality (Texas General Land Office 2012). The survey also asks questions important for assessing its marketing and outreach efforts. The VDVS pre-application form could also be re-designed to help assess marketing and outreach efforts by soliciting similar information from veterans on why they chose the state veterans cemetery and what sources of information they relied upon to find out about their state veterans cemetery burial benefit.

22 Department of Veterans Service Plan, 2012-2014. https://solutions.virginia.gov/pbreports/rdPage.aspx?rdReport=vp_Agency&rdAgReset=True&Agency=912 (Accessed April 3, 2013).

Finally, the VDVS might consider establishing numerical targets for interments using benchmarks derived from NCA experience. Even with recent growth, Virginia State Veterans Cemeteries veteran draw rates are only approximately half (6 percent of all veterans within the service area interred versus a 12 percent rate nationwide) of those achieved by the entire national and state veterans cemetery system. In part this result reflects the relative newness of the cemeteries, the greater drawing power and lower interment costs of national cemeteries, and the comparative remoteness of some state cemeteries from large urban areas.[23] In earlier planning documents, the department set forward the very ambitious goals of increasing burials by 10 percent each year at Virginia Veterans Cemetery and 20 percent at Albert G. Horton, Jr. Memorial Cemetery through increased outreach and marketing efforts (VDVS 2006). The actual compounded annual growth rate over the FY2006-2012 period for these cemeteries combined was only 7.2 percent. Therefore, a more modest target growth rate of, say, 5-10 percent would move the cemeteries at a more realistic pace towards the national benchmark.

23 More than half of veterans who are interred in national and state veterans cemeteries resided only 20 miles away or less. For veterans interred in Virginia state veterans cemeteries, only 37 percent resided within 20 miles of the cemetery. This pattern reflects the fact that Virginia veterans cemeteries are located further from more urbanized areas.

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