Final Report

ARLINGTON NATIONAL CEMETERY

SYSTEMS ANALYSIS
AND RECOMMENDATIONS

nvtc
NORTHERN VIRGINIA
TECHNOLOGY COUNCIL

McLean, VA
24 January 2010

EXECUTIVE SUMMARY

Following the release of the Army Inspector General's report titled "Special Inspection of Arlington National Cemetery," dated 9 June 2010, the Northern Virginia Technology Council (NVTC) contacted Arlington National Cemetery, at the encouragement of Senator Mark Warner, and offered to conduct a pro bono systems analysis and make recommendations for improving operations at Arlington National Cemetery (ANC). Since June, newspaper and other media reports, a MITRE independent assessment report, and draft congressional legislation (which has since been enacted), have been publicized with the effect of creating a heightened sense of urgency for immediate improvements.

NVTC received a memo dated 6 August 2010 from the Secretary of the Army accepting NVTC's offer to conduct a pro bono assessment of ANC operations. NVTC then asked Booz Allen Hamilton, SAIC, and The MITRE Corporation to serve as the core team for collaborating with 14 other member companies to conduct the assessment.

The purpose of NVTC's assessment was to identify improvement opportunities and recommend solutions that will enable ANC leaders to restore America's confidence in the enduring integrity of ANC while honoring those who are laid to rest within its grounds. This document serves as the NVTC report of its findings and recommendations. The NVTC core team's approach to this assignment has been to discover root causes of ANC's operational challenges in order to identify ways to help the Army overcome them. In addition to the near-term measures already undertaken by ANC to improve conditions at the cemetery, the NVTC core team focused on six operational areas determined to be most critical to both near-term and long-term success (Scheduling, Chain of Custody, Religious Support Services, Field Operations, Deficiency Reporting, and Headstone Ordering).

It is recognized that restoring confidence in the integrity of ANC operations will require the verification of past burials, as called for in the statute signed by the President on 22 December 2010. Although the NVTC team acknowledges the need to respond to this legislation, it was not included in the scope of this effort due to timing and resource constraints.

The NVTC team conducted a three-month effort (September-November 2010) to analyze ANC's current systems, which include people, processes and technologies. The findings and associated recommendations identified in this report are based on direct onsite observations and therefore this report reflects a snapshot in time of ANC operations under recently appointed, new leaders. Throughout the engagement, the NVTC team met frequently with ANC staff to share observations and discuss potential quick wins and we saw some evidence of corrective actions being implemented. We did not see, however, an overall strategy or plan of action. The NVTC team has not returned onsite to assess the extent to which these improvements may contribute to the recommendations in our report. ANC is to be commended for its good intentions and desire to be responsive; however, it is the consensus of our team that the recommendations in this report will take a significant amount of time to be documented, trained and fully implemented to the point of institutionalization. Sustained improvement, based on a comprehensive plan of action, followed by persistent monitoring and periodic assessments, will ensure that initial gains in accountability and performance quality are fully achieved.

NVTC is pleased to present this document with its findings, key recommendations and a high-level roadmap for the Arlington National Cemetery. Recommendations have been organized into three categories: Focus on Fundamentals, Optimize ANC Operations, and Achieve the Long-term Vision.

A COMMON THEME

Through on-site observations and analyses of current business processes, existing technology, and a review of industry best practices, the NVTC team identified a number of findings and recommendations to help ANC leadership address critical challenges.

A common theme that emerged from the NVTC team's analysis can be summarized as follows:

> *ANC business processes are largely manual and do not reflect industry best practices or standard, consistent operating procedures, and have not been adequately enabled by technology. This has led to a counterproductive and error-prone working environment that has resulted in an erosion of public confidence.*

The publicized inconsistencies between the authoritative records (including grave markers) and the actual burial locations has led to a public perception that ANC is not fulfilling its obligations to grieving family members and those who have faithfully served their nation. With the recommendations that follow, ANC leadership has a framework to address near term challenges, while improving future operations and enhancing the experience of grieving families and honoring those interred in this national landmark.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

As a result of the analysis of processes, technologies, and best practices, the NVTC team identified a number of key recommendations that are summarized below (in order of relative criticality) and explained in more detail in this report. Additional findings, recommendations, and best practices, as well as the documentation of current and proposed future processes and technology capabilities are also included in this report.

1. ***Establish, Extend and Reinforce the Chain of Custody for All Remains:*** The current challenges faced by the Cemetery related to mismarked graves, unidentifiable remains, and the public perception that ANC is not adequately managing the process for documenting remains result from the lack of a clearly defined Chain of Custody process. In the case of urns, the problem is compounded by conflicting roles and lack of adequate procedures enabled by technology to facilitate the identification, tagging, handling, temporary storage and security of remains, thus increasing the opportunity for errors and loss of accountability.

   The NVTC team recommends that ANC leaders:

   - Establish and implement rigorous processes and procedures for maintaining end-to-end Chain of Custody that ensures standardized, accountable, and secure management of remains (whether in a casket or urn). End-to-end Chain of Custody means from the originating funeral home to the actual burial or inurnment site at ANC. By doing this, the Cemetery will be able to increase its confidence in, and accountability for, the remains that arrive at Arlington.

To do this, the Cemetery (or the Army) needs to establish policy and implement procedures to sustain a documented audit trail that begins at the originating funeral home, is maintained through transit to the Cemetery, continues through handover to a designated ANC authority (Remains Management Officer), and is retained as part of the permanent record following the burial or inurnment. The NVTC team acknowledges that current policy and legislation may need to be modified to accommodate this recommendation.

- Automate the Chain of Custody using proven in-transit-tracking technology that is currently in use by charitable organizations (e.g., the Red Cross), hospitals (to manage the transfer of human organs), and commercial companies (such as rental car companies and package delivery companies), to continuously track items from source to destination; an ANC case file with case ID will be able to capture or audit in-transit tracking information.

- Adopt the industry-recognized best practices of not accepting urns greater than 24 hours prior to inurnment service -- to reduce the opportunity for mishandling; take additional chain-of-custody management steps that both secure and honor remains contained in urns while they are temporarily stored at ANC.

2. ***Institute a Case Management Methodology:*** Recent public reports have indicated that ANC leaders are unable to adequately respond to inquiries regarding remains. The lack of data integrity of the available burial records (e.g., Record of Interment / Inurnment, Grave Locator Cards, maps, etc.) impedes ANC management's ability to demonstrate with a high degree of confidence the actual location and identification of remains. During its assessment, the NVTC team discovered duplicate records initiated for the same person, re-keying of data into separate systems, multiple instances of inaccurate headstone orders, and handwritten changes to paper records. Since the preservation of electronic data and records with enduring value is crucial to assuring accountability and maintaining the historical legacy of ANC, the current reliance on paper-only records combined with technical obsolescence and undocumented handling and oversight procedures, has contributed to ANC's inability to fully account for remains. The confusion that results from poor records management leads to loss of public trust.

The NVTC team's assessment has determined that the future state burial process will consist of a chain of interdependent processes (see figure below), each of which relies on quality standards being applied at each step. By concurrently capturing, maintaining, and validating the reliability and accuracy of authoritative records, the integrity of the burial process is further reinforced. A holistic case management approach to support the processes will need to incorporate a call center capability, workflow management, and data/records management.

Operational View of Future-state Operations
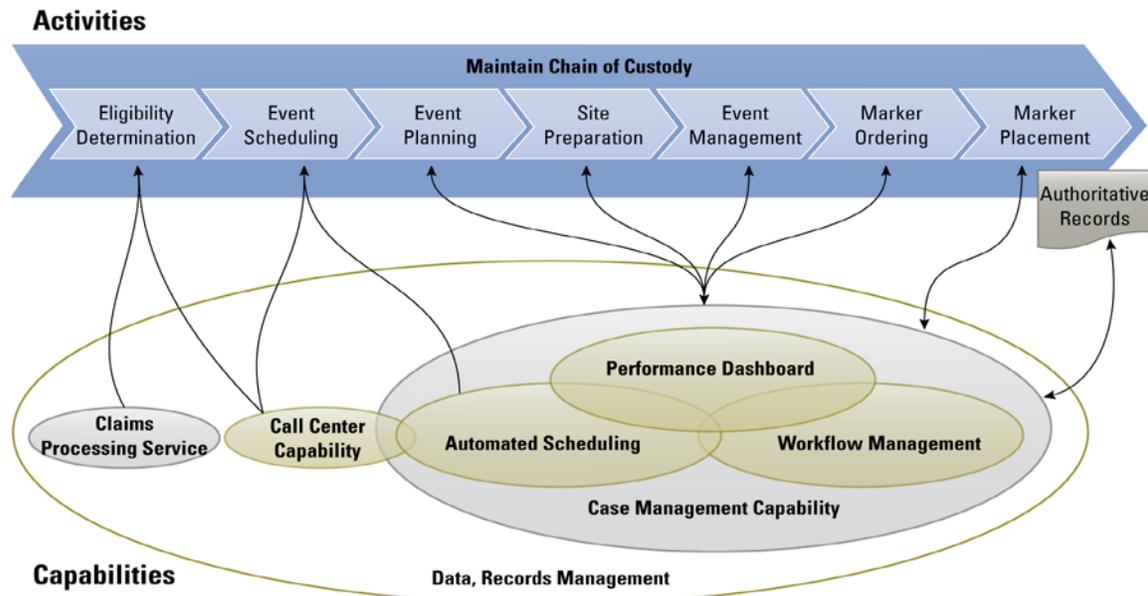
The NVTC team recommends that ANC leaders:

- Establish and implement a case management methodology that provides a holistic framework for managing the burial process, end-to-end; a case file with a unique case number will be used to link all records, data, and pertinent paperwork associated with each burial or inurnment at ANC; this can be done immediately with or without the benefit of technology

- Acquire and implement an integrated, web-based case management system that provides shared access to all case-related documentation, automated workflow, data and records management; a fully integrated system will provide enhanced data quality and increased visibility across ANC functions and data to support measurement and situational awareness that will be used by the performance dashboard and operations center; ANC leaders should acquire and implement commercially available case management technology that is currently used by insurance, medical, and social services providers

- Ensure that enhancements and improvements to ANC's call center capability are fully integrated with the automated case management capability; although it is recognized that ANC is working with the Army's Information Technology Agency (ITA) to leverage its call center capabilities, it remains important that any call center changes be well integrated with case management recommendations contained in this report

- Enhance the management of ANC data and records in accordance with National Archives and Records Administration's records management requirements; to do this, ANC must apply a policy that specifically identifies which data elements constitute a comprehensive, authoritative burial record

- Digitize all ANC historical data and records (including more than 300,000

burial records) to fully populate the case management data repository and to enable the management, use and reliance on authoritative burial records; this information should include reliable geo-mapping data to substantiate the location of remains

During this assessment, the NVTC team observed from a study of industry best practices that a by-product of implementing a case management methodology is the important contribution it makes to establishing and maintaining a culture of accountability.

Due to the high visibility and pace of operations, with up to 30 burials a day and 4 million visitors a year at a facility that is recognized as a national shrine, ANC faces challenges that are relatively unique to the cemetery industry. The next set of recommendations is about setting the conditions whereby individuals, teams, and leaders take pride in their performance and sustain an environment of mutual accountability while exercising the great responsibility entrusted to them.

3. ***Create and Maintain a Culture of Accountability:*** ANC has few formalized and documented processes, policies, standard operating procedures or business rules to govern operations. Variations observed in process execution, as well as in workforce attitudes, demonstrate the need for ANC leaders to train, motivate, and communicate with personnel to better enable them to achieve the desired level of performance. This variation also prevents ANC leaders from codifying best practices and facilitating effective coordination across functions. The lack of observed standardization is not limited to operational activities; there is also evidence of variation in organizational vision and strategy (e.g., vision is not finalized or published and no strategic plan exists). ANC practice variations reflected by these findings hinder its ability to produce and maintain the quality and integrity of operational outputs. The NVTC team understands that ANC leadership will next finalize ANC goals and objectives, which will form the basis for establishing performance metrics and institutionalization of change.

   To promote a culture of high-performance and personal accountability for the entire workforce, ANC leaders need to establish a clear vision and mission that instill staff members with the belief that they are individually and collectively responsible for the success of all cemetery operations. This culture will ensure a high-performance team that always honors those laid to rest within ANC grounds.

   The NVTC team recommends that ANC leaders:

   - Finalize, publish, and communicate the vision and mission for ANC; develop and communicate goals and objectives for achieving the vision and mission

   - Develop and institutionalize policies and business processes, define the roles and responsibilities of ANC staff, formalize business rules, and implement standard operating procedures

   - Conduct a competency assessment and gap analysis to understand at the individual level how well the workforce measures up to job proficiency requirements, implement a workforce development plan, train and continue to

develop the workforce to hone competencies and skills they need to do their jobs; this assessment must be completed at regular intervals as the Cemetery matures its operations by improving its business processes and enhancing its technology capabilities

4. ***Implement an Improved Automated Scheduling and Event Planning Capability***
The most difficult challenges when scheduling events at ANC are the resources required to coordinate everyone's participation and the identification of the next available timeslot for a ceremony. The scheduling tool doesn't provide the capability to automate the business rules needed to coordinate the participation of all required participants (service-specific honor guards, clergy, field operations, and event staff). Besides increasing the time it takes to schedule an event, the rearrangement of tentative schedules leads to missed opportunities, greater inefficiencies, and frustrated stakeholders.

The NVTC team recommends that ANC leaders:

- Reduce the complexity of the current Scheduling Process by detaching eligibility determination from event scheduling

- Leverage eligibility determination services available from the National Cemetery Administration (NCA) to take advantage of efficiencies resulting from economies of scale and the availability of automated tools, helping to alleviate the burden on families

- Acquire an online automated scheduling capability designed for businesses that rely on fixed, variable, part-time, flex-time and floating resources, many of which provide services delivered just-in-time; this capability should send alerts and notifications to all stakeholders, such as ANC workforce managers and the assigned Event Manager for each event, who would then ensure that the correct date/time becomes a part of the case record being maintained with the aid of a web-based Case Management tool

5. ***Assign an Accountable and Empowered Project Manager Who Is Reinforced by a Robust Governance Structure***
As has been previously established, ANC's high visibility, pace of operations, and the lack of a culture of accountability create additional risks for the organization. The urgency and necessity of making short-term modifications to secure and stabilize ANC's operations, while also orchestrating a complex transformation initiative (to address the fundamentals, optimize ANC operations, and achieve the future vision and mission of the enterprise), demand the full-time application of professional project management.

The NVTC team recommends that ANC leaders:

- Establish a project management office

- Assign a project manager, responsible for establishing an integrated master

plan, base-lining requirements, defining the enterprise architecture, planning any necessary acquisitions, and coordinating stakeholder participation

- Establish and leverage a governance structure to assist the project manager in the implementation of a roadmap to ANC's future-state; ensure that the governance structure remains accountable to the Secretary of the Army through formal changes in policy

- Establish a blueprint for integrating all of the recommendations and technical capabilities described in this report and other relevant initiatives, including those relating to data and records management, to provide a multi-dimensional context that incorporates business, data, services, security, and performance architectures

- Integrate the implementation of the recommendations in this report and other initiatives across all enterprise operations; this includes the development and application of policy, procedures, requirements, training, and the procurement of technology capabilities through full implementation

- Validate and implement the roadmap (see figure below) to accomplish fundamentals and optimize operations *en route* to achieving the vision for ANC
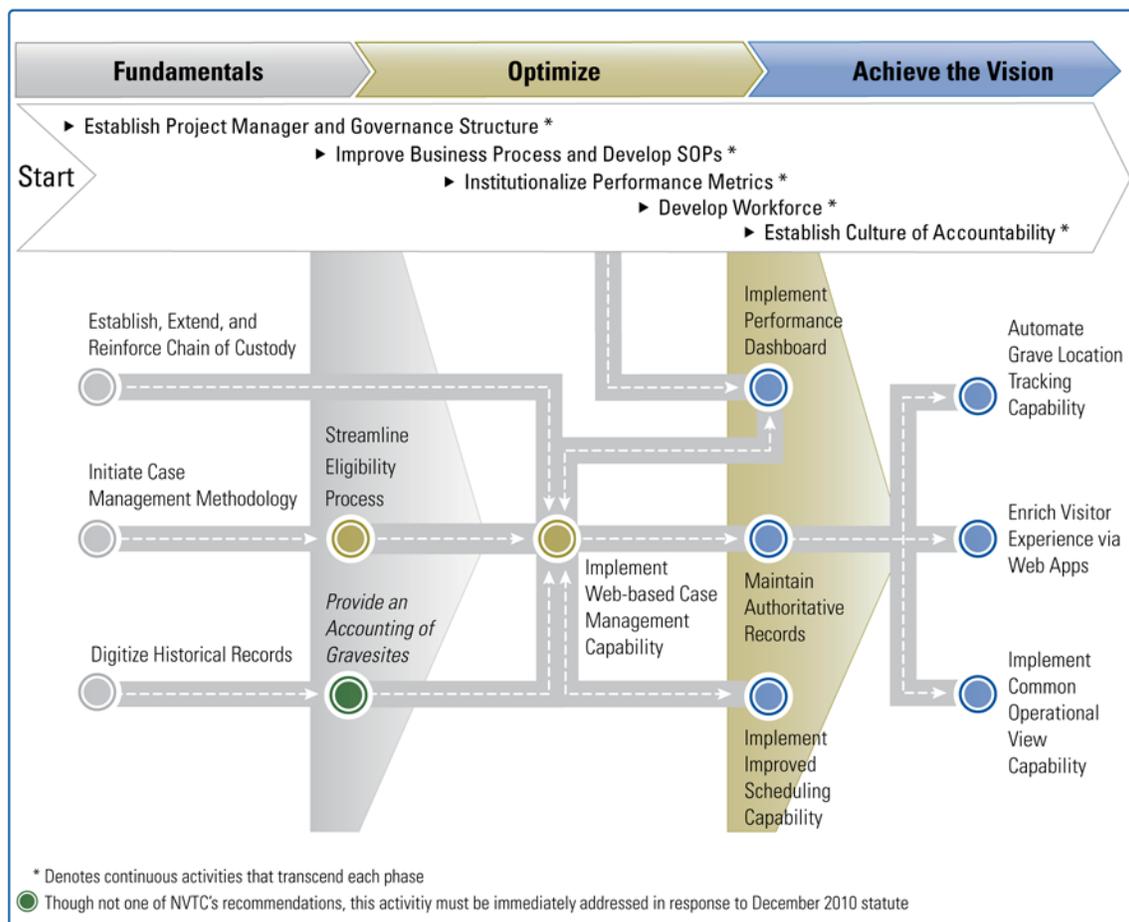
CONCLUSION

The NVTC team believes that the effective implementation of the recommendations cited above will accelerate ANC's achievement of the goal stated by the Secretary of the Army when he charted this assessment, i.e., to "restore America's confidence in the enduring integrity of Arlington National Cemetery." In order of relative priority, the NVTC team has provided its key recommendations, which can be immediately applied to resolving many of the challenges currently faced by ANC. The implementation and maintenance of a case management methodology, supported by documented business processes and automated records, data, and workflow management, will help to ensure an unbroken Chain of Custody for remains and the production of Records of Interment that can be maintained in perpetuity.

By "effective implementation," the NVTC team means to underscore the significance of a holistic approach that is rooted in continuous and rigorous oversight, which includes an empowered project management function reinforced by a robust governance structure that is accountable to the Secretary of the Army.