

# FY 2015 Secretary of Defense Environmental Awards

## Redstone Arsenal

### Army Nomination Cultural Resource Management – Team

#### Introduction and Background

Redstone Arsenal (RSA) is a largely civilian installation focused on research and development of high-tech aspects of the Army's aviation and missile programs. Primary missions include materiel management, acquisition, contracting, and full life-cycle sustainment of Army systems; management of space operations and missile defense; and explosives training and research. Team Redstone is composed of more than 37,500 employees including 1,000 military, 20,500 civilians and 16,000 contractors. Installation area totals 38,125 acres, although NASA manages 1,864 acres for the Marshall Space Flight Center (MSFC).

Prior to Army acquisition in 1941, the area included rural communities of yeoman, tenant, and sharecropper farms centered around large plantations. Approximately 550 families were displaced when the Army purchased the land as part of the mobilization leading up to U.S. involvement in WWII. Three facilities were established: Huntsville Arsenal, Huntsville Ordnance Plant, and Huntsville Chemical Warfare Depot. Following WWII, operations shifted to demilitarization, and many buildings were leased to private enterprise. Part of the land was put up for sale in 1949, but the sale was canceled when the Army decided to consolidate its rocket programs at RSA. During the 1950s, Wernher von Braun and his team oversaw the development of Army rocket systems at RSA and made major contributions to the fledgling U.S. space program. After

#### JUDGING CRITERIA



Program  
Management



Technical  
Merit



Orientation  
to Mission



Transferability



Stakeholder  
Interaction



Impact/  
Outcomes



Wernher von Braun and others pose in 1958 with a model of Explorer I, the rocket for which was developed at RSA.

NASA was formed, the MSFC was established to develop the technology for manned space flight. From the 1960s-1980s, RSA was known as a technological center for such Army missile and aviation systems as the Pershing II, MLRS, and Patriot. Since the 1980s, RSA has seen continued growth including major expansion resulting from the 2005 BRAC.

Cultural Resources (CR) at RSA cover a broad spectrum. RSA manages 971 archaeological sites ranging from Paleoindian lithic scatters to historic farm sites. Historic architecture on RSA includes 1,434 individual structures: two that pre-date Army acquisition of the land; 715 from the WWII era; and 717 from the Cold War era through 1966. Historic districts include: three relating to WWII munitions production; one composed of WWII era earth-covered storage magazines; the former Ordnance Guided Missile School; and a test range of Cold War era static rocket test facilities.



RSA's current Integrated CR Management Plan (ICRMP) was implemented in 2013 and covers 36,261 acres. Revisions include updates to the RSA five-year plan, the prehistoric context, the description of the physical environment including paleontological resources, and the addition of an appendix detailing the history of RSA's CR program.

Six Memoranda of Agreement (MOA) have been signed by RSA and the Alabama State

Historic Preservation Officer (SHPO): four for mitigation of impacts to National Register of Historic Places (NRHP)-eligible structures and two for archaeological sites.

### Program Summary

The RSA Cultural Resources Team (CRT) is a component of the Cultural and Natural Resources (CNR) Branch of the Environmental Management Division (EMD) of the Garrison Directorate of Public Works. The Cultural Resource Manager (CRM) is tasked with implementing the ICRMP. The RSA CRM meets the Secretary of the Interior's Standards for a professional archaeologist, with more than 15 years of experience in CR management, and a MA degree in Anthropology. A contracted architectural historian provides expertise on the historic architecture and districts, reviews undertakings for impacts to historic structures, conducts small architectural surveys and assists with writing agreement documents involving impacts to historic structures. The staff also includes a contracted archaeological field technician that is responsible for monitoring sites and refining and marking site boundaries.



The RSA CRT has made stewardship of Army resources a priority. Contracts are awarded based on best value, creative approaches are sought to reduce constraints for land-use and development, grants provide alternate sources of funding, and volunteers from the surrounding community are actively recruited. At the same time, the CRT aggressively promotes its efforts to make the installation an island of preservation in the rapidly-developing Middle Tennessee Valley. Every public outreach and education opportunity is pursued to demonstrate to the local population how federal resources are being used to preserve and learn from north Alabama's cultural heritage.

In 2012, the CRT received the Industry-Public Sector Client's Award from the American Cultural Resources Association. Recent grants received include \$1,886 from Legacy National Public Lands Day (NPLD) program for the clean-up of the NRHP-eligible Harris House and a 2012 Research Grant of \$500 from Alabama Archaeology Society (AAS) to be used toward radiocarbon dating of a prehistoric feature.



Coordination with the Master Planning and Engineering divisions as well as installation tenants has allowed the RSA CRT to identify CR constraints early in the planning process, increasing the likelihood that resources can be avoided or creative mitigation measures can be implemented. The CRT works closely with Garrison Master Planning to update the Installation Master Plan and incorporate CR management throughout the planning process - calculating potential management costs, and strategizing ways to mitigate CR constraints in high-priority areas.

### Accomplishments

#### Overall Cultural Resources Conservation Management



The RSA CRT relies on innovative management approaches and staffing to maximize the effectiveness of the program. The inventory of archaeological sites was completed in 2011, but since then, the contracted archaeological technician has used historic imagery, LiDAR data, and predictive modeling to systematically re-delineate recorded archaeological sites and conduct targeted re-survey of areas with conspicuous gaps in site density. The CRT uses that data to update the cultural resources layers on the RSA Geographic Information System (GIS), which has dramatically reduced incidences of inadvertent discoveries, reducing unanticipated costs and time-delays.



The CRM also coordinated with Alabama SHPO to re-evaluate 142 late 19th-early 20th century historic archaeological sites for NRHP-eligibility in light of newly-compiled information. The re-evaluation is demonstrating that oral and archival history provides the bulk of significant information on the rural domestic sites, and archaeological data is largely redundant and low on analytical potential. This approach could save the Army nearly \$6,390,000 on archaeological Phase II evaluations, and will free up nearly 250 acres of Installation land for mission activities.



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In another cost-saving measure, the RSA CRM collaborated with University of Alabama in Huntsville (UAH) on an archaeological



UAH students at the 2014 field school.



field school on RSA. The inaugural field school took place the summer of 2014, and was structured as a Phase II investigation for evaluating the NRHP eligibility of a 19th century house site, chosen based on mission priorities.



Results are being reported as collaboration between the participating students and professor and the RSA CRT and will be presented to the Alabama SHPO for concurrence. Labor was provided by students, professor, and the CRT. The field school is planned to be an annual event, potentially yielding a savings to the Army of \$30,000 - \$50,000 each year.



The CRM also coordinated with two area universities to set up unpaid internships for History majors to assist the CRT. In FY13 and 14, interns contributed over 400 hours assisting with archaeological site re-delineation, site evaluation, and artifact processing. This has both furthered the goals of the CRT in a cost-effective way and provided education, training, and vocational experience to local students.

#### Historic Buildings and Structures



All historic structures on RSA that will be 50-years-old by 2016 have been inventoried and evaluated for their NRHP eligibility. Twelve individual architectural surveys have been reported and concurred with by SHPO. The staff architectural historian regularly reviews the Real Property inventory for accuracy and issues updates of the historical status of structures to the Garrison Physical Space Manager.



The RSA CRT promotes adaptive reuse of historic architectural properties in support of mission needs. The Harris House (Building 8012), a Craftsman-style bungalow constructed in 1927, was used as officer's quarters through the 1980s and was later reclassified as storage space until 2012, when the CRT secured a Legacy NPLD grant to clean up the building which had been neglected by former tenants. By making the space more presentable, a new tenant was secured to occupy the house as office space, ensuring more vigilant upkeep and funding for regular maintenance. By relying on Legacy funds and volunteer labor for the cleaning and repair, there was minimal cost to the Garrison. The conversion in use required no changes that would adversely affect the historic character of the house, and the CRT was involved in the planning process to ensure that upgrades did not affect the NRHP eligibility of the house.



In FY14, the Goddard House (Building 7134), a ca. 1830 plantation house, was placed on the demolition list. Two different evaluations had found the structure ineligible for listing on the NRHP since it was moved from its original location in 1955 and was heavily modified by the Army. Since nothing required preservation of the structure, the CRT made arrangements to salvage historic hardware from the house and donate it to the Historic Huntsville Foundation, a non-profit organization that provides historic hardware for local historic restoration projects. The CRT also hosted descendants of the original plantation owners at the house to view it one last time before it is demolished.

In 2014, the RSA and the Alabama SHPO signed an MOA for the mitigation of adverse effects to the Cold War era McMorrow Laboratory (Building 5400) which is eligible for the NRHP under Criterion B. In compliance with the MOA, the CRT conducted HABS Level II photographic documentation of the building's exterior, and took digital photographs of significant interior spaces in mitigation of the adverse effects.

### Archaeological Resources

Although the archaeological inventory was completed in 2011, work continues to more

carefully define site boundaries and formally evaluate sites for NRHP eligibility.



Eligible sites are almost always avoided on RSA, but mitigation of adverse effects is becoming increasingly necessary as missions expand. The final phase of data recovery operations on a site that will be affected by RCRA clean-up operations at a WWII-era wastewater treatment plant is underway, while a complex MOA was signed by RSA, SHPO, ACHP, City of Huntsville, and LW Redstone LLC in August 2013 for affects to archaeological resources resulting from the development of the Redstone Gateway EUL. Mitigation for impacts at the EUL will include the data recovery of a 26-acre historic plantation site in the Area of Potential Effect (APE).



Also, during the award period, in consultation with the Alabama SHPO, Tennessee Valley Authority (TVA) and 17 federally-recognized tribes, the RSA CRT conducted rescue excavations on six prehistoric sites eroding along sections of the Tennessee River bank, the southern boundary of RSA. Much of the work was conducted in-house at a cost-savings to the Army. Since none of the sites had been formally evaluated prior to the rescue excavations, the work doubled as Phase II evaluations of each site.



Public interpretation of the archaeological resources is a major priority of the CRT. Since FY13, the RSA CRT has partnered with the Archaeological Institute of America for a community education event scheduled for International Archaeology Day in October of each year. The event has grown each year – the FY13 event attracted around 50 people, while the FY14 event attracted over 300. This year's event will include activities presented by TVA, USFS, NPS, Alabama Archaeological Society (AAS), UAH, and Huntsville City Schools.



In FY13, the CRM contributed two scholarly articles to academic journals including an article on the survey of a small Civil War battlefield in the *Huntsville Historical Review*, and an article defining the Terminal Woodland Period Widows Creek Phase in the *Journal of Alabama Archaeology*. In FY13 and 14, the CRT

contributed ten articles to the newsletter of the AAS, presented a paper at the Southeastern Conference on Historic Sites Archaeology, and gave four guest lectures for local college classes.

### Native American Program



RSA has developed an excellent trust relationship with the 16 federally-recognized Native American tribes it consults with. During the award period, consultation included two meetings, two conference calls, five sets of certified letters, and countless emails and phone calls.



In consultation with the tribes, the RSA CRT has completed inventories of all potential cultural items in the RSA collection as defined by Native American Graves Protection and Repatriation Act (NAGPRA). The notice of inventory completion of all material collected prior to 1990 (NAGPRA Sec. 5), was published in the Federal Register on 28 September 2012, and all of the Sec. 5 material was repatriated to the Chickasaw Nation in November 2012 after RSA executed an MOA with the Chickasaw Nation for use of a reburial area that was formally surveyed and sited on the installation.



In April 2013, the RSA CRT completed a formal inventory of all material collected since 1990 (NAGPRA Sec. 3), including a thorough examination of unanalyzed bone from early projects for the presence of human remains. All requirements have been met for repatriation of the Sec. 3 material to the Chickasaw Nation. The repatriation and reburial has been scheduled for October 29.

### Curation



All archaeological collections from RSA are curated at the Erskine Ramsay Archaeological Repository in Moundville, AL. The Repository is managed by and located near the University of Alabama (UA) which has the largest anthropology program in the state. The location is optimized to make the collections accessible to researchers. Costs of curation are included in the budget for all contracted archaeological work, and the repository is specified in all project statements of work. In 2013, RSA executed a Memorandum of Understanding

(MOU) with the UA Museums for curation of their archaeological collections at Erskine Ramsay. The MOU allows for loaning material from the collection for research and display following established repository guidelines and with notice to RSA. Many of the more display-worthy items have been loaned back to RSA for use in interpretive displays.

All of the RSA collection is curated in compliance with 36 CFR 79. In FY14, the last 51.7 cubic feet of the collection was brought into compliance using FY13 funds.



The CRM continues to make an effort to locate artifacts from RSA sites that were mentioned in early reports as held in private collections. In four instances, the CRM was successful in tracking down those artifacts and convincing the private collectors to return the artifacts to the Army.



The RSA CRT recognizes the constraints curation facilities face around the country in housing and maintaining growing archaeological collections. Efforts are made at RSA to minimize collection of artifacts and costs of curation through strategic sampling.

### Cultural Resources Awareness and Education



Public outreach is a pillar of the RSA CRP. The CRT regularly updates the Garrison website with information including summaries of the resources, cultural contexts, and the most current ICRMP. In FY13, the CRM added an article about the importance of preserving archaeological resources. In FY13, Legacy NPLD funds were used for printing brochures about the archaeology and history of RSA. These are included at interpretive displays throughout the Installation. The CRT also presents at various tenant activities such as the RTC Wellness Day and the Aviation and Missile Command "Adventures in AMCOM." During the award period, the RSA CRT gave 17 presentations or tours to local organizations, set up two public archaeology exhibits, contributed to six articles in the RSA PAO newspaper, and gave two interviews to local TV stations.

The CRT worked with Huntsville City Schools Earthscope to set up an Indian Education



Students play a Native American game during Earth Day at the Indian Education Outdoor Classroom on RSA.

Outdoor Classroom at the RSA Path to Nature as a venue for annual Indian Education field trips for all Huntsville City fourth-graders. Held each year since 2006, the field trips include an award-winning geo-cache activity and visits to a replica Mississippian Period house built by the CRT and community volunteers. Students play Native American games and learn about other aspects of Native American culture. The CRM trained Earthscope teachers who continue the field trips, which are attended by 1,500 students each year. In addition, 300 area fifth-graders attend RSA's annual Earth Day celebration where volunteers demonstrate prehistoric lifeways, and the CRM gives a talk about the importance of preserving cultural resources.

### Community Relations

  The RSA CRT maintains two interpretive displays on post, and manages the artifact loan for two additional displays at NASA's MSFC. In FY13, the CRM installed a temporary exhibit in the Huntsville Public Library on local prehistoric cultural history.

The CRM serves as a board member with the AAS serving in the capacities of Newsletter Editor and President of the Huntsville Chapter. The staff Architectural Historian serves on the Board of Directors and is Web Manager for the Historic Huntsville Foundation and serves on the Huntsville Historic Preservation Commission. Over the last two years, the staff Architectural Historian contributed three

reports to local preservation organizations on historic resources in the surrounding community.

  The RSA CRT has developed partnerships with several local, regional, and national organizations to further the goals of CR management and preservation. The AAS has proven to be a valuable partner. In FY13 and 14, AAS volunteers provided 375 hours of cost-free labor, and AAS presented the CRP with a research grant for \$500. Other volunteers including area students, retirees, and service members have contributed an additional 285 hours. The CRT has also fostered close working relationships with NASA, TVA, the USFS, the NPS, and the Alabama Army National Guard (ALARNG). Other CR teams at NASA's MSFC, TVA, and ALARNG regularly seek input and advice from the RSA CRT on their CR management decisions. The CRM participates in the Army CR Community of Practice, contributing to online discussions and exchanging information with other Army CR management professionals.

   

  In the spirit of E.O. 13287, the CRT has reached out to preservation organizations in the surrounding community to promote preservation and heritage tourism. In 2012, RSA teamed up with the Madison Station Historical Preservation Society to host Madison Derby Day to highlight the area's Civil War and 19th century agricultural heritage. The partnership with the North Alabama Chapter of the AIA has also been instrumental in promoting interest in local archaeology. RSA has improved public access to its historic properties, providing public tours, giving public talks, and donating reports to local libraries.

  In accordance with E.O. 12898, the RSA CRT has reached out to local descendants of minority populations displaced by Army acquisition of the land. A compilation of oral history from surviving displaced peoples collected by the CRT between 1996 and 2005 was distributed to displaced families still living in the surrounding communities along with Phase II reports of historic



A young student watches archaeology in action during a tour of a data recovery of a prehistoric site on RSA.

farm sites associated with the families. The RSA CRT makes every effort to coordinate visits by descendants to the historic cemeteries on post, and to facilitate genealogical research through coordinating access and sharing historical data.

### Cultural Resources Compliance



In compliance with the NHPA, National Environmental Policy Act (NEPA), and AR 200-1, the RSA CRT coordinates with the Alabama SHPO on all determinations of eligibility and all undertakings with the potential to affect historic properties. During the award period, the RSA CRT held one face-to-face meeting with SHPO; requested comments during the updating of the ICRMP; got SHPO concurrence with the findings of two surveys, two site reevaluations, nine Phase II evaluations, and 12 Phase II proposals; submitted seven environmental assessments to SHPO for review; and consulted with SHPO on dozens of undertakings. RSA consulted with 17 Native American tribes during the NAGPRA process and in fulfillment of Section 106 obligations.



The CRT succeeded in getting all requested projects funded and obligated in FY13 and 14. Total requested FY13 funds equaled \$1,112,370, of which IMCOM funded \$890,992. Total FY13 RSA CR expenditures amounted to \$1,051,744. A total of \$172,611 of the expenditures was secured through alternate funding channels: competitive bidding for three contracts resulted in over \$68,000 being realigned for other requirements; the Engineering Division provided another

\$34,611 toward a Phase II in support of a specific construction project; and \$70,000 was transferred to the CR program by the Army Materiel Command to cover additional Phase II evaluations. In FY14, the CRT requested and received funding in the amount of \$679,774.

The RSA CRT has a well-honed process in place to review all undertakings for potential to affect cultural resources. All proposed undertakings are entered into a Job Order Request database which is reviewed weekly in a meeting between Garrison Engineering Division and CNR Branch staff. Appropriate NEPA actions are identified for each project, and the appropriate subject matter experts (SME) are selected. All projects requiring additional review are entered into a NEPA database which automatically notifies the appropriate SME. Each SME reviews the proposed undertaking and any corresponding draft NEPA document and enters applicable legal requirements into the NEPA database. If the CRT determines that a proposed action has the potential to affect cultural resources, revision of the work plan is recommended to avoid the resource. If avoidance is problematic, the CRM determines the appropriate stakeholders with which to consult, and initiates consultation. All undertakings involving ground disturbance on the installation are monitored for inadvertent archaeological discoveries.

### Conclusion

Redstone Arsenal has long been a pioneer in defense technology, but in lock step with its continually growing and increasingly complex mission, its CRT has pioneered innovative programs and has become a model of CR management. From early completion of archaeological and architectural inventories, to early fulfillment of NAGPRA obligations, to improved systems for ensuring accuracy in GIS data and thorough compliance in the review process, the RSA CRT strives to meet and exceed its obligations as efficiently as possible. The recent fiscal uncertainty is just the latest challenge that RSA is adapting to by creating alternative approaches to reducing constraints, implementing alternative funding and staffing measures, and setting up cooperative programs with partners outside the gates, all of which further the goal of responsible stewardship of our shared heritage.