MEMORANDUM

To: Mayor and Members of the City Council

From: Ralph Clark, Interim City Manager
Sean Clark, Parks and Recreation Director
Jon Hawley, Grants Administrator

Date: November 5, 2021

Re: Consideration - Award of Contract - Old Oak Grove Archaeological Survey

BACKGROUND:

On July 20, 2021, the City of Elizabeth City won a Historic Preservation Fund grant from the NC Office of Archives and History for the Old Oak Grove Cemetery Archaeological Survey. This award is to fund a boundary survey and a ground-penetrating radar (GPR) survey to precisely define the cemetery and the locations of all buried remains. The estimated project cost is $50,800, and the HPF grant will fund 60 percent of it, or $30,480; the City's required match is $20,320.

The City Council voted to accept the grant award on September 13. Subsequently, City staff issued a request for proposals (RFP) from qualified firms from October 14 to October 29. We circulated the RFP via a mass email to qualified firms listed on the Office of Archives and History/Office of State Archaeology (OAH/OSA) website.

We received a good response. Five firms provided timely proposals, while another submitted an hour after the RFP deadline. Based upon a review of the proposals, and feedback from OAH/OSA staff, we are recommending the City award the project to New South Associates, of Greensboro.

ANALYSIS:

Our grant contract documents require that we hire a qualified firm that will ensure all project activities "shall be performed according to the Secretary of Interior' Standards and Guidelines for Archaeology and Historic Preservation." (Please see Title 36 of the Code of Federal Regulations, Part 61, Appendix A.) This is because the HPF is a federally-funded program, and the work will support Old Oak Grove's potential nomination to the National Register.

The nature of the work proposed in our RFP also falls under NC General Statutes 143, Article 3D (the "Mini-Brooks Act"), to select firms based foremost on qualifications.

The five timely responses the City received are as follows:

- Cardno, of Wake Forest: $50,800
- Infrasense, of Woburn, Ma.: $50,762
- New South Associates, of Greensboro: $50,607.28
- NV5, of Columbus, Ga.: $47,994
- Richard Grubb and Associates, of Wake Forest: $50,800

The proposals were reviewed by City staff and OAH/OSA staff. OAH/OSA staff advised that the three most qualified firms were New South, RGA, and Cardno. While NV5 did have the lowest-cost proposal, OAH/OSA staff expressed concerns that their GPR survey team was less experienced, and they proposed to conduct GPR with engineers rather than archaeologists. (Also, it should be restated that the RFP was to consider qualifications foremost.)

New South, RGA, and Cardno have extensive experience with archaeological surveys, and their proposed survey teams include individuals with extensive background/experience in archaeology, anthropology, and interpreting GPR data. All three are strong candidates, but City staff recommend New South Associates.

Per its proposal, attached, New South was founded in 1988 and is based in Stone Mountain, Ga., but has several branch offices, including in Greensboro, NC. It has a permanent staff of 116 – the largest indicated among RFP respondents – and has worked extensively with numerous federal agencies. It has also surveyed more than 90 cemeteries across several states, which appears to be the most of any respondent. All proposed members of New South's project team have degrees in anthropology or archaeology, with extensive experience in geophysics/GPR data collection and interpretation.

City staff recommend the council authorize retaining New South Associates for this project. We are eager to get this work started, and keep on track to meet our project deadline. Our grant contract documents require all work to be complete by September 2, 2022. To ensure this deadline is met, we have set a completion deadline of August 15, 2022. The consultant will provide a final presentation to the City Council at the completion of the project.

STAFF RECOMMENDATION:

By motion, authorize the mayor and City staff to retain New South Associates for the Old Oak Grove Cemetery Archaeological Survey, in an amount not to exceed $50,800, and execute all necessary documents.

NEW SOUTH ASSOCIATES
PROVIDING PERSPECTIVES ON THE PAST

Mapping and Ground-Penetrating Radar (GPR) Survey of a Historic African-American Cemetery, Old Oak Gr Elizabeth City, Pasquotank County, North Carolina

22 October 2021

City of Elizabeth City
Jon Hawley
Grants Administrator
Finance Department
Elizabeth City
P.O. Box 347
Elizabeth City, North Carolina 27907-0347
252-621-7352
jhawley@cityofec.com

Assumptions

- Old Oak Cemetery is an African American cemetery located in Elizabeth City, North Carolina.
- There are approximately 2,469 interments recorded in the cemetery (according to Findagrave.com).
- Marked interments date from the late nineteenth century through the present. The cemetery is still in active use.
- There are an unknown number of unmarked graves present in the cemetery.
- NSA will make a reasonable effort to coordinate project work with the ECSU History Department.

PHASE 1: BOUNDARY SURVEY

- NSA will contract with a licensed surveyor to mark the cemetery boundary.
- This boundary will be used to determine the extent of the GPR and pedestrian survey area.

PHASE 2: PEDESTRIAN SURVEY, GPR SURVEY, AND MAPPING

PEDESTRIAN SURVEY

- There is a possibility of unmarked graves within the wooded perimeter of the cemetery.
- This area is not accessible to GPR survey due to vegetation.
- The perimeter of the cemetery will be investigated by pedestrian survey by an experienced archaeologist.
- Result from pedestrian survey will be included in reporting.

GROUND-PENETRATING RADAR (GPR)

- GPR survey area will be approximately 8 acres.
- GPR grids will be located where ground access is available. Areas with dense vegetation, structures, prohibitive topography, or obvious disturbance will not be surveyed with GPR.
- GPR data will be collected with a GSSI SIR 4000 with a digital 350 MHz hyperstacking antenna or SIR 3000 with a 400 MHz antenna.
- GPR transect spacing of 0.5 meters.
  GPR grid corners will be mapped with a total station and/or RTK GPS.

MAPPING

- A detailed map will be made of all visible markers within each survey area. This will include markers, depressions, fieldstones, and plantings. Mapping will be done with a total station and/or RTK GPS with centimeter accuracy.

- Markers will be recorded with one or two points (depending on the marker size). The number of people indicated by that marker will also be recorded. Each marker will be assigned a unique number. A marker inventory database is not included in the cost below.

RESULTS AND REPORTING

- Results will be documented in a detailed report (draft, revised draft, and final).
- Reporting will include results of mapping, GPR survey, and results of pedestrian survey.
- No archival research will be conducted.
- Complete North Carolina cemetery site form based on results of survey.
- Report will include relevant maps and GPR results.
- Coordinates and spatial data will be provided for all GPR anomalies, but anomalies will not be marked at the cemetery.
- All GIS data will be provided as a digital database.
- GIS work will all be in shapefile format, but can be converted to CAD or Google Earth format.

PHASE 3: PUBLIC PRESENTATION

- NSA geophysical specialist or principal investigator will present at Elizabeth City City Council Meeting.
- Meeting date will be determined in consultation with city.

	Hours	Rate		Subtotal
1) LABOR				
PLANNING AND ADMINISTRATION				
PROJECT ADMINISTRATION				
Senior Geophysical Specialist	8	$87.32		$698.56
Geophysics Specialist	4	$63.62		$254.48
PHASE 2: PEDESTRIAN SURVEY, GPR SURVEY, AND CEMETERY MAPPING				
PEDESTRIAN SURVEY				
Geophysics Specialist	8	$63.62		$508.96
Assistant Geophysics Specialist	8	$49.90		$399.20
MAPPING				
Geophysics Specialist	72	$63.62		$4,580.64
Assistant Geophysics Specialist	72	$49.90		$3,592.80
GPR SURVEY				
Geophysics Specialist	80	$63.62		$5,089.60
Assistant Geophysics Specialist	80	$49.90		$3,992.00
GPR DATA PROCESSING				
Senior Geophysical Specialist	8	$87.32		$698.56
Geophysics Specialist	120	$63.62		$7,634.40
Assistant Geophysics Specialist	32	$49.90		$1,596.80
REPORTING				
Senior Geophysical Specialist	12	$87.32		$1,047.84
Geophysics Specialist	72	$63.62		$4,580.64
GIS Specialist	32	$68.34		$2,186.88
Graphics Specialist	8	$59.31		$474.48
Editor	8	$72.50		$580.00
TASK 3: PREPARE FINAL FINDINGS AND PRESENT TO PUBLIC				
Geophysics Specialist	12	$63.62		$763.44
TOTAL LABOR				$38,679.28
2) EXPENSES				
Phase 1: Boundary Survey	1 Unit @		$3,000.00	$3,000.00
Mileage	2500 Miles @		$0.560	$1,400.00

Hotel	43 Nights @	$96.00	$4,128.00
Per Diem - Work	40 Days @	$40.00	$1,600.00
Per Diem - Travel	10 Days @	$30.00	$300.00
Geophysics equipment fee	10 Days @	$150.00	$1,500.00
TOTAL EXPENSES			$11,928.00

3) PROJECT TOTAL	$50,607.28

all eligible local governments have the opportunity to apply for funding.

(m) States shall be responsible for reviewing requests from CLG subgrantees for grant amendments as required by OMB Circular A-87, and for issuing approval or denial of such requests. If any action by a CLG will result in a change in the overall grant project or budget requiring NPS approval, the State shall obtain such approval prior to granting approval to the CLG subgrantee. A State shall not forward to NPS any action which is inconsistent with the purpose or terms of the grant. CLG subgrantee requests for revisions to the grant are invalid unless they are in writing and signed by an authorized official of the State grantee.

(n) State performance in transferring funds to CLGs shall be reviewed by the Secretary during performance evaluations and audits of State programs as required by Sec. 101(b)(2) of the *National Historic Preservation Act, as amended.*

(o) States may submit grant amendment requests to NPS to reallocate monies set aside for local governments in instances where no certified governments exist, wish to receive funds, or are qualified to receive funds. Such requests will be considered grant reprogramming actions and shall be submitted to NPS not less than one calendar year after the beginning of the fiscal year of the State's HPF appropriation. All such requests shall clearly document the State's attempts to encourage and assist local governments in developing local historic preservation programs pursuant to § 61.5 of these regulations, in being certified, and in applying for funding.

(p) The District of Columbia shall be exempted from the requirements of § 61.7 because there are no subordinate local governments in the District. If a territory believes that its political subdivisions lack authorities similar to those of local governments in other States and hence cannot satisfy the requirements for local certification, it may apply to the Secretary for exemption from the requirements of § 61.7.

(q) Where there is no approved State program, the method for allocating funds will be determined by the Secretary in accordance with the procedures set forth for States in this section. To the extent feasible, there should be consistency and continuity in funding allocation policy of the CLG program of a State that does not have an approved historic preservation program. Therefore, if a now disapproved State program had an approved allocation process, the Secretary will consider it in the review of any application for funding from CLGs within that State.

[49 FR 14899, Apr. 13, 1984, as amended at 50 FR 35225, Aug. 30, 1985]

§ 61.8 Waiver.

The Secretary may waive any of the requirements of these rules which are not mandated by statute or by government-wide regulations, if, in his/her opinion, as expressed in writing to the State, the State historic preservation program would benefit from such waiver, and the purposes, conditions, and requirements of the *National Historic Preservation Act, as amended,* would not be compromised.

§ 61.9 Information collection requirements.

The information collection requirements contained in this part have been approved by the Office of Management and Budget under 44 U.S.C. 3507, *et seq.,* and assigned clearance number *1024-0038.* The information is being collected as part of the process of reviewing the procedures and programs of State and local governments participating in the National historic preservation program. The information will be used to evaluate those procedures and programs. The obligation to respond is required to obtain a benefit.

Appendix A to Part 61—Professional Qualifications Standards

In the following definitions, a year of full-time professional experience need not consist of a continuous year of full-time work but may be made up of discontinuous periods of full-time or part-time work adding up to the equivalent of a year of full-time experience.

(a) *History.* The minimum professional qualifications in history are a graduate degree in history or closely related field; or a bachelor's degree in history or closely related field plus one of the following:

(1) At least two years of full-time experience in research, writing, teaching, interpretation or other demonstrable professional activity with an academic institution, historical organization or agency, museum, or other professional institution; or

(2) Substantial contribution through research and publication to the body of scholarly knowledge in the field of history.

(b) *Archeology.* The minimum professional qualifications in archeology are a graduate degree in archeology, anthropology, or closely related field plus:

(1) At least one year of full-time professional experience or equivalent specialized training in archeological research, administration or management;

(2) At least four months of supervised field and analytic experience in general North American archeology; and

(3) Demonstrated ability to carry research to completion.

In addition, to these minimum qualifications, a professional in prehistoric archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the prehistoric period. A professional in historic archeology shall have at least one year of full-time professional experience at a supervisory level in the study of archeological resources of the historic period.

(c) *Architectual history.* The minimum professional qualifications in architectual history are a graduate degree in architectural history, art history, historic preservation, or closely related field, with coursework in American architectural history; or a bachelor's degree in architectural history, art history, historic perservation, or closely related field plus one of the following:

(1) At least two years of full-time experience in research, writing, or teaching in American architectural history or restoration architecture with an academic institution, historical organization or agency, museum, or other professional institution; or

(2) Substantial contribution through research and publication to the body of scholarly knowledge in the field of American architectural history.

(d) *Architecture.* The minimum professional qualifications in architecture are a professional degree in architecture plus at least two years of full-time professional experience in architecture; or a State license to practice architecture.

(e) *Historic Architecture.* The minimum professional qualifications in historic architecture are a professional degree in architecture of State license to practice architecture, plus one of the following:

(1) At least one year of graduate study in architectural preservation, American architectural history, preservation planning, or closely related field; or

(2) At least one year of full-time professional experience on historic preservation projects. Such graduate study or experience shall include detailed investigations of historic structures, preparation of historic structures research reports, and preparation of plans and specification for preservation projects.

APPENDIX B TO PART 61—INFORMATION SOURCES

The following National Park Service Regional Offices and State Historic Preservation Offices are sources of information concerning the programs covered by these regulations.

Alaska Regional Office

Alaska Regional Office, 2520 Gambell Street, Anchorage, Alaska 99503, 907-277-1666

Alaska: Chief of History and Archeology, Division of Parks, Department of Natural Resources, 619 Warehouse Avenue, Suite 210, Achorage, Alaska 99501, 907-274-4646

Mid-Atlantic Region

Mid-Atlantic Region, 143 South Third St., Philadelphia, PA 19106, 215-597-8068

Connecticut: Connecticut Historical Commission, 59 South Prospect Street, Hartford, Connecticut 06106, 203-566-3005

Delaware: Division of Historical & Cultural Affairs, Hall of Records, Dover, Delaware, 19901, 302-678-5314

District of Columbia: Dept. of Consumer and Regulatory Affairs, 614 H Street, NW., Washington, D.C. 20001, 202-535-1500

Indiana: Department of Natural Resources, 608 State Office Building, Indianapolis, Indiana 46204, 317-232-4020

Maine: Maine Historic Preservation Commission, 55 Capitol Street, Station 65, Augusta, Maine 04333, 207-289-2132

Maryland: State Historic Preservation Officer John Shaw House, 21 State Circle, Annapolis, Maryland 21401, 301-269-2851

Massachusetts: Massachusetts Historical Commission, 294 Washington Street, Boston, Massachusetts 02108, 617-727-8470

Michigan: Michigan History Division, Department of State, Lansing, Michigan 48918, 517-373-6362

New Hampshire: Department of Resources & Economic Development, P.O. Box 856, Concord, New Hampshire 03301, 603-271-3484 or 3558

New Jersey: Department of Environmental Protection, CN 402, Trenton, New Jersey 08625, 609-292-2885

New York: Office of Parks Recreation & Historic Preservation, Agency Building #1, Empire State Plaza, Albany, New York 12238, 518-474-0468

Ohio: State Historic Preservation Officer, The Ohio Historical Society, Interstate 71

Proposal for a Ground-Penetrating Radar Survey and Marker Mapping of a Historic African American Cemetery, Old Oak Grove Cemetery

City of Elizabeth City, Pasquotank County, North Carolina

Submitted to:

Jon Hawley • Grants Administrator, Finance Department, City of Elizabeth City • P.O. Box 404 • Elizabeth City, NC 279071-0404 • jhawley@cityofec.com • 252-621-7352

Prepared by:

New South Associates, Inc. • 6150 East Ponce de Leon Avenue • Stone Mountain, Georgia 30083
and
New South Associates, Inc. • 1006 Yanceyville Street • Greensboro, North Carolina 27405

Sarah Lowry

Sarah Lowry, MA, RPA – Director of Geophysics,
Principal Investigator

October 22, 2021

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INTRODUCTION

New South Associates, Inc. (NSA) is pleased to present this proposal and budget for mapping and a ground-penetrating radar (GPR) survey of the Old Oak Grove Cemetery in Elizabeth City, North Carolina. The goal of the project is to determine the location of marked and unmarked graves to provide information that will be used by the city to manage and interpret the cemetery. The results of the survey will include the precise location and number of graves in the Old Oak Grove Cemetery and will contain sufficient information to contribute to the potential nomination to the National Register of Historic Places (NRHP).

The Old Oak Grove Cemetery was established in 1886. It is located on the east side of Peartree Road and the entire property is approximately 13.6 acres. The cleared portion used for the cemetery is approximately eight acres. The cemetery contains approximately 2,400 graves and is the oldest African American Cemetery in Elizabeth City. The cemetery founders include Hugh Cale, the founder of the Elizabeth City State Normal School, today known as Elizabeth City State University. Historic burials include Civil War era "US Colored Troops." Additionally, interments include founding members of the university Hugh Cale, Peter and Symera Moore, and the John Henry Bias family.

This work has been divided into three phases: Phase 1 includes a boundary survey to identify the property boundary. Phase 2 is the geophysical data collection and processing, marker and cemetery feature mapping, and writing a technical report; and Phase 3 consists of preparing final report findings, and a public presentation of results at an Elizabeth City City Council Meeting. Please see the list of assumptions attached to the enclosed budget for details and cost.

The remainder of this proposal presents our Approach and Work Plan, Team Qualifications and Corporate Experience, and References Cited. It also provides a proposed schedule and a list of deliverables. The appendices include similar project example slip sheets with client contact information and the resumes of the principal investigator and geophysical archaeologist. A sample GPR report from a cemetery is attached with this transmittal.

APPROACH AND WORK PLAN

PHASE 1 – BOUNDARY SURVEY

Prior to beginning geophysical survey, pedestrian survey, or mapping, a licensed surveyor will be employed to mark the parcel boundaries. The surveyor will clearly flag the edges of the property owned by the City of Elizabeth City to define the edge of the project area. NSA does not have a licensed land surveyor on staff and will subcontract with a reputable firm to perform the work.

PHASE 2 – GPR SURVEY AND CEMETERY FEATURE MAPPING

Following the establishment of a property boundary, the GPR survey, cemetery feature mapping, pedestrian survey, and reporting will be completed. Mapping and survey will be comprehensive, and the goal will be to identify all visible markers within the cemetery (including headstones, fieldstones, ornamental vegetation, grave depressions, and other funerary materials). GPR mapping will be conducted in all accessible area. The results from the survey and mapping will all be compiled into a report that meets Secretary of the Interior's (SOI) Standards for Archaeological Documentation. This will include detailed methods, results, and mapping.

GPR Survey

All open and accessible areas of the cemetery will be surveyed using GPR (estimated 8 acres). Ground-penetrating radar is a remote sensing technique frequently used by archaeologists to investigate a wide range of research questions. Specifically, it is used to prospect for potential subsurface cultural features such as human graves. It is non-invasive, non-destructive, relatively quick, and efficient. GPR works through transmitting pulses of electromagnetic energy into the ground from a surface antenna, where the waves reflect off contrasting materials (e.g. buried objects, features, or bedding contacts) (Conyers 2004, 2006, 2013). The strength of these reflections and the time it takes the energy to travel are recorded by the antenna. Relative reflection strength is used to map out below ground anomalies, which can be interpreted by trained practitioners. Travel time is used as a proxy for depth.

Ground-penetrating radar is an effective tool to map subsurface features at a variety of archaeological sites. GPR can be used in a wide variety of environments including within wooded areas and through grass, mulch, and asphalt. If the antenna is constantly lifted from the ground, it lowers the data quality. The Old Oak Grove Cemetery is predominately open and maintained, the woods surrounding the cemetery are not maintained and will likely be unsuitable for GPR.

New South will use a Geophysical Survey Systems, Inc. (GSSI) either SIR 3000 or SIR 4000 computer with either a 400 megahertz (MHz) or 350 megahertz (MHZ) digital hyperstacking antenna. Both the 400 and 350 MHz antennas operate at a center frequency antenna with an excellent compromise between depth penetration and resolution. Transect spacing will be 50 centimeters. Grids are typically oriented perpendicular to the long axis of any grave features (roughly north to south). Depth penetration will depend on local conditions but is presumed to be a maximum of approximately 1.5 to 2 meters. The data will be downloaded to a PC for processing. New South uses GSSI's RADAN program for GPR data processing. Following post-processing, all GPR data will be exported as slice maps into ArcGIS where it will be interpreted. Interpretations will be made using both images from the plan view maps and the profiles.

In all GPR surveys in cemeteries New South takes a conservative approach to grave identification. All profile imagery collected with the GPR is individually processed and compared to each other with the goal of identifying any anomalies that have the characteristics of graves. These anomalies will all be marked and identified as possible graves. It is our view that identifying false positives is preferred to false negatives and every effort is made to identify any anomaly that may be a grave or associated with a grave. However, because GPR is dependent on the presence of contrast between the grave and the surrounding soils. It is possible that over time any contrast may have degraded, and the grave will not reflect the electromagnetic energy from the GPR. In this case, a grave may be missed. New South cannot guarantee that all graves will be identified.

Cemetery Feature Mapping

The cemetery footprint within the marked boundary that is not accessible to GPR (estimated 5 acres) will be systematically pedestrian surveyed by an experienced archaeologist, and all possible mortuary features will be flagged. This will include markers, fieldstones, depressions formed by collapsed graves, funeral home markers, plantings, and any other possible mortuary features. If partially buried markers are identified during pedestrian survey, they will be cleared of accumulated debris to facilitate recording. No markers will be excavated, cleaned, or restored.

All GPR grid corners and grave markers will be mapped using either a Trimble RTK GPS unit or total station (with approximated 2-4 cm accuracy). Mapping will include detailed marker mapping of all possible funerary materials within the cemetery (overlapping with the GPR survey). This will include traditional grave markers, funeral home markers, ornamental vegetation, and depressions created when graves collapse. All grave markers will be given a unique numerical indicator so they may be paired with an inventory in the future. This proposal does not include a marker inventory or conditions assessment. Markers will be associated with GPR results in the GIS to quantify an approximate number of unmarked graves.

Elizabeth City State University Coordination

Upon receipt of the contract NSA will contact the university history department to introduce ourselves and explain the project scope. NSA will invite students and faculty to visit fieldwork and perform brief instrument demonstrations. Because NSA does not know the level of availability of students and faculty, the proposed project is not reliant on their participation. NSA will not rely on volunteer labor to complete fieldwork but will be available to show interested parties the survey process. With the permission of the City of Elizabeth City, NSA will share all results and reporting with the university.

Reporting and Data Transmission

Once data collection, interpretation, and mapping are concluded a full technical report will be completed. This report will include a management summary, project description, field methods (including detailed maps show where GPR survey was conducted), and detailed results and interpretations. The reporting will meet the standards outlined in the "Archaeological Investigation Standards and Guidelines" published by the North Carolina Office of State Archaeology (OSA). The deliverables will include GIS data in shapefile or geodatabase format, the spatial data will be compatible with the existing databases used by OSA and Elizabeth City. A North Carolina Cemetery form will be completed for the cemetery (professional version).

The report will be submitted to the client in a draft report. The City of Elizabeth City and OSA will have an opportunity to comment and submit revisions. These will be incorporated into a revised draft, which upon approval will be made final. The final draft will include transmission of all GIS and spatial data and all raw and processed GPR data (if desired).

PHASE 3– PUBLIC PRESENTATION

Following the conclusion of fieldwork and reporting, a presentation about the work done in the cemetery will be presented to the public at an Elizabeth City City Council meeting. This presentation will include a discussion of the GPR survey method, results, and time for questions. If desirable, New South will put the information into a slide presentation (such as PowerPoint) with maps and GPR results. The presentation will be arranged in consultation with the cemetery and the City of Elizabeth City. The presentation will either be in person or via video conference, depending on public health conditions and city preferences.

SCHEDULE

The project RFP lists the preferred fieldwork start date as before November 15, 2021. Due to staff availability at NSA, this may not be possible. We would like to propose the following alternate schedule will still completing the final reporting by August 15, 2022.

NSA proposes the following schedule:

Notice to Proceed (NTP)

- Upon NTP, NSA will contact a licensed surveyor to perform the boundary survey. Based on discussion with local surveyors, availability may be limited and will require advanced scheduling.

- GPR and Mapping field will be completed after the boundary survey is performed. It may require multiple mobilizations. All fieldwork schedules will be communicated with the city and the interested parties at the university.

- April 4, 2022 – Fieldwork Complete. Following the completion of fieldwork data processing and report production will be take approximately 8 weeks.

- May 30, 2022 - Draft report submitted to City of Elizabeth City (comments needed by June 27, 2022)

- July 11, 2022 – Revised Draft Report submitted (comments on revised draft must be received by August 1, 2022).

- Final report and digital materials submitted within two weeks of the receipt of comments from the City of Elizabeth City. The final draft will be submitted by August 15, 2021.

- Presentation of results at city council meeting will be coordinated with the City of Elizabeth City.

DELIVERABLES

1. Technical report (Draft, Revised Draft, and Final)

2. GIS data compatible with ArcGIS.

3. Raw and processed GPR data.

4. Presentation of Results at City Council Meeting.

CORPORATE EXPERIENCE AND TEAM QUALIFICATIONS

New South is a SBA 8m, WBENC, and DOT certified women-owned small business providing cultural resource consulting services: Archaeology, History, Architectural History, Historic Preservation Planning, Public Outreach, Cemetery Surveys and Relocations, and Geophysical Survey. Incorporated in Georgia in 1988, New South is headquartered in Stone Mountain, Georgia, and maintains branch offices in Columbia, South Carolina; Greensboro, North Carolina; and Nashville, Tennessee.

New South has a permanent staff of 116 professionals that includes specialists in prehistoric and historic archaeology, history, architectural history, historic preservation planning, zooarchaeology, lithic analysis, artifact curation, urban archaeology, oral history, the Cold War, physical anthropology, remote sensing, and cemetery studies, as well as computer, GIS, and graphics specialists. Our permanent personnel are supported by a large number of BA, MA, and PhD degreed specialists who work with us on a project basis and as technicians.

New South's staff is assigned to five departments: History, Archaeology, Laboratory, Production, and Administration. The technical departments: Archaeology, History, and Laboratory, provide technical field studies, analyses, and reports. Administration oversees project schedules and report production as well as accounting, while the Production Department produces report illustrations and interpretive exhibits and websites.

New South is recognized as one of the premier providers of cultural resource services for the US Government. Federal agencies we have worked with include the US Army Corps of Engineers (Wilmington, Savannah, Jacksonville, Mobile, New Orleans, St. Louis, Nashville, Louisville, Huntington, Fort Worth, and St. Paul Districts), the Bureau of Land Management, the Centers for Disease Control and Prevention, the Department of Defense (Army, Navy, Air Force, and Marine Corps), the Department of Energy, the Department of Homeland Security, the Federal Emergency Management Agency, the Federal Energy Regulatory Commission, the Federal Highway Administration, the General Services Administration, the National Aeronautics and Space Agency, the National Park Service, the National Institute of Occupational Safety and Health, the US Agency for International Development, the US Army National Guard, the USDA Forest Service, and the Department of Veterans Affairs. New South Associates holds, has held, or has been partners on ID/IQ contracts with the Fort Worth, St. Louis, New Orleans, Mobile, Jacksonville, Savannah, and Wilmington District of the US Army Corps of Engineers as well as with GSA, FHWA, NPS, and the USDA Forest Service. New South Associates currently holds IDIQ contracts with the NCDOT in both Archaeology and History.

New South is one of the most respected firms in the cultural resource industry. A charter member of the American Cultural Resources Association (ACRA), New South and its projects are the recipient of ACRA's Quality Product and Industry Awards, the American Association for State and Local History's Award of Merit, a Certificate of Appreciation from the National Historic Landmarks Program of National Park Service, 1st Place in the Cultural Resources category of the Future Tampa planning competition, the Georgia Trust for Historic Preservation's Excellence in Preservation Service Award, the National Council for Public History's M. C. Robinson Award, National Aeronautics and Space Administration Historic Preservation Service Award, and the Federal Highway Administration Excellence in the Human Environment Initiative (twice), as well as countless accolades from State Historic Preservation offices and state and federal agencies on the review of New South Associates' reports. New South Associates' staff includes current or former Presidents of the Georgia Council of Professional Archaeologists, and the Council of South Carolina Professional Archaeologists, well as current or former members of the Board of Directors of the American Cultural Resources Association, the Society of Historical Archaeology, the Georgia Archaeological Society, the Archaeological Society of South Carolina, the DeKalb Historical Commission, and the Stone Mountain Historic Preservation Committee. Secretary of State Cathy Cox named Mary Beth Reed, New South's President, one of the Outstanding Women in Historic Preservation in Georgia in 2000.

New South's Geophysical Survey Program is recognized as an industry leader for archaeological and cemetery applications. The program is staffed by three archaeologists at the MA level, all of who have extensive experience with cemeteries. Additional staff include two highly experienced assistant geophysical specialists. The Geophysical Survey Program has conducted projects across the Southeast, Mid-Atlantic, Midwest, and US Virgin Islands. Geophysical specialists at New South have conducted over 90 geophysics surveys in cemeteries (Table 1).

Table 1. Summary of New South's Geophysical Experience with Cemeteries

Project Name	Client	Year	Cost in Thousands	County	State
Simeon Gower Cemetery	NCDOT	2020	14	Johnston	North Carolina
GPR Survey of an Unknown and Roberts Family Cemetery	Hapt and Bowman Families	2020	9	Dillon	South Carolina
African American Section of Oakwood Cemetery	City of High Point	2020	8	Guilford	North Carolina
Phase I Archaeological Survey and Ground-Penetrating Survey at Selected Sections of the Broughton Hospital	North Carolina Office of State Archaeology	2020	30	Burke	North Carolina
Frays Grant Cemetery	Ronald M. Goldberg	2020	12	Albemarle	Virginia
Cannon Cemetery at VTS Smyrna	Tennessee Army National Guard	2020	37	Rutherford	Tennessee
Johnson Cemetery at the Tooele Army Depot	US Army Corps of Engineers	2020	53	Tooele	Utah
Bay Mill Indian Community Cemetery GPR and Mapping	US Army Corps of Engineers	2020	36	Chippewa	Michigan
Unnamed Cemetery (22Ho12476) GPR	Mississippi Department of Transportation	2020	11	Holmes	Mississippi
Mapping and GPR of the Confederate Section of Oakwood Cemetery, Richmond, VA	Oakwood Confederate Cemetery Trust and Virginia Department of Historic Resources	2019	52	Richmond City	Virginia
Chick-a-lee-lee Cemetery GPR	Graham	2019	8	Graham	North Carolina
Jones Cemetery Mapping and GPR	USDA Forest Service	2019	4	Davidson	North Carolina
Sholar Cemetery GPR	Wake Forest	2019	5	Wake	North Carolina

Project Name	Client	Year	Cost in Thousands	County	State
Palmour and Landrum Cemeteries	Croy Engineering	2019	13	Fayette	Georgia
Dunwoody Cemetery GPR	Georgia Department of Transportation (GDOT)	2019	3	McIntosh	Georgia
Barker House and Cemetery GPR	Bill Barker	2019	5	Vance	North Carolina
Raleigh City Cemetery GPR	City of Raleigh	2018	5	Wake	North Carolina
Dozier School GPR	GeoSyntec Consultants (Tallahassee)	2018	15	Jackson	Florida
Dunn Cemetery	Mungo Homes	2018	23	Wake	North Carolina
Meekins Cemetery GPR	SC Dept. of Transportation (SCDOT)	2018	4	Marlboro	South Carolina
Fall Line Freeway Cemetery	Georgia Department of Transportation (GDOT)	2018	4	Washington	Georgia
John N. Smith Cemetery Additional GPR	John N. Smith Cemetery Restoration and Preservation Inc.	2018	5	Brunswick	North Carolina
Thomas Sumter Memorial Park Cemetery	SC Dept. of Parks, Recreation and Tourism	2018	8	Sumter	South Carolina
Dix Cemetery GPR	City of Raleigh	2018	10	Wake	North Carolina
Bethany Church Cemetery GPR	Forest Hazel	2018	3	Chatham	North Carolina
Mapleton Solar	Cypress Creek Renewables, LLC - Asheville	2018	5	Hertford	North Carolina
John N. Smith Cemetery GPR	John N. Smith Cemetery Restoration and Preservation Inc.	2018	5	Brunswick	North Carolina
Red Banks Primitive Baptist Church Geophysical Survey	NCDOT, Office of Human Environment	2017	14	Pitt	North Carolina
Friendship Cemetery GPR	Wake Forest Historical Museum	2017	9	Wake	North Carolina
Biddleville Cemetery	Mecklenburg County Asset and Facility Management	2017	5	Mecklenburg	North Carolina
Wyly Cemetery GPR	Tennessee Valley Authority (TVA)	2017	19	Loudon	Tennessee
Carlisle Indian School GPR Survey	US Army Corps of Engineers (USACE) - St Louis	2016	15	Cumberland	Pennsylvania
Oak Grove Cemetery GPR	City of Raleigh	2016	6	Wake	North Carolina
Old Town Cemetery Hillsborough	Town of Hillsborough	2016	4	Orange	North Carolina
Kenneth Black Cemetery	Moore County Historical Association	2016	3	Moore	North Carolina
Raine Slave Cemetery - APCO Geophysics	Appomattox 1865 Foundation	2016	4	Appomattox	Virginia
SR 20 Improvements - Cemetery Study, PI 0013531	Jacobs Engineering Group Inc.	2015	13	Henry	Georgia
Trinity Methodist Church Cemetery	Locke-Lane Construction Company, Inc.	2015	5	Iredell	North Carolina

Project Name	Client	Year	Cost in Thousands	County	State
Fuquay-Varina Duke Energy Cemetery	Duke Energy	2015	11	Wake	North Carolina
AME Zion Cemetery	Mecklenburg County Park and Recreation	2015	4	Mecklenburg	North Carolina
McLeod Plantation Cemetery	Jaeger Company	2014	13	Charleston	South Carolina
SC160 Cemetery	Campco Engineering	2014	3	York	South Carolina
Snow Creek Church	Snow Creek Community Cemetery Association	2014	5	Iredell	North Carolina
Heritage Glen Subdivision	McPherson Grading Co.	2014	5	Alamance	North Carolina
Mount Ararat/Bella Highsmith Cemetery	North Carolina Department of Transportation	2014	55	New Hanover	North Carolina
Reservation Bluff Cemetery (1MS449)	Tennessee Valley Authority (TVA)	2014	30	Marshall	Alabama
Browns Summit Methodist Church Cemetery	Glandon Forest Equity, LLC	2014	2	Guilford	North Carolina
AFSC Site	ICON Venue	2014	39	Fulton	Georgia
Old Town GPR	Ross Environmental Services, Inc.	2014	9	Williamson	Tennessee
Fountain Inn Cemetery	City of Fountain Inn	2013	5	Greenville	South Carolina
Port Mayaca Memorial Gardens Cemetery	City of Pahokee	2013	5	Martin	Florida
Roslyn Wright Cemetery	Fidelity Title Insurance	2013	8	Mecklenburg	South Carolina
Anglin Cemetery	JEH Homes	2013	3	Forsyth	Georgia
North Pinewood Cemetery, B-5792	North Carolina Department of Transportation	2013	16	Mecklenburg	North Carolina
NC 158	North Carolina Department of Transportation	2013	144	Currituck	North Carolina
Roper Mountain Road Extension	Florence & Hutcheson, Inc.	2013	13	Greenville	South Carolina
Oakland Cemetery-Hart Lot	George Hart	2012	1	Fulton	Georgia
Unnamed Cemetery GPR and Mapping	Kimley-Horn & Associates	2012	8	Wake	North Carolina
Harris Chapel and Barker Cemeteries GPR	James Barker	2012	2.5	Vance and Granville	North Carolina
Walker Cemetery GPR	Florence and Hutcheson, Inc.	2012	3	Greenville	South Carolina
Baptist Grove Church Cemetery GPR	Baptist Grove Church	2012	8	Wake	North Carolina
Remote Sensing Survey, Oaklawn Cemetery	NCDOT, Office of Human Environment	2012	15	Mecklenburg	North Carolina
Woodlawn Cemetery Grave Identification and Assessment Survey	Federal Highway Administration	2012	33	Fairfax	North Carolina
HAAF Area 3 - Tuttle Clinic Cemetery Survey	LG2 Environmental Solutions	2012	48	Chatham	Georgia

Project Name	Client	Year	Cost in Thousands	County	State
Elmwood/Pinewood Cemetery Archaeological Survey	NCDOT Professional Services Management Unit	2012	32	Mecklenburg	North Carolina
Hasty Fowler Seacrest Cemetery	NCDOT, Office of Human Environment	2012	76	Mecklenburg and Union	North Carolina
Resthaven Cemetery GPR	City of Washington	2011	5	Wilkes	Georgia
Site 1 Impoundment Unmarked Graves GPR	U.S. Army Corps of Engineers	2011	9	Palm Beach	Florida
GPR at Hampton Plantation	SC Department of Parks, Recreation & Tourism	2011	2	Georgetown	South Carolina
Locklear Family Cemetery GPR	Mary Henderson	2011	3	Robeson	North Carolina
McLeod Plantation GPR and Ground Truthing	Charleston County Parks and Recreation Commission	2011	18	Charleston	South Carolina
GPR Survey at Canyon de Chelly	National Park Service	2011	3	Apache	Arizona
Fort Lee Cemeteries Survey	Versar	2011	15	Prince George	Virginia
Beaufort Marine Corps Air Station, Cemetery Mapping and GPR (cemeteries)	Dial Cordy and Associates Inc	2010	77	Beaufort	South Carolina
Site 31BW757** GPR (cemetery)	Bald Head Island Club	2010	3	Brunswick	Georgia
Oddfellows and Christ Church Cemeteries GPR	Accomac Roots	2010	4	Accomack	Virginia
Fort Lee Roundabout Cemetery Survey	Federal Highway Administration	2010	28	Prince George	Virginia
Brinson Cemetery GPR Survey	Charles Parker	2010	3	Emanuel	Georgia
Pleasant Hill Baptist Church Cemetery	Pleasant Hill Baptist Church	2010	6	Lamar	Georgia
McArthur Slave Cemetery Relocation, Avondale Burial Place, PI 0000566	PBS&J (Atlanta)	2009/2010	532	Bibb	Georgia
Christiansted Bypass Cemetery and Contentment Documentation	Federal Highway Administration	2009	18	St. Croix	U.S. Virgin Islands
Randolph Cemetery GPR	Historic Columbia Foundation	2009	7	Richland	South Carolina
Mullis Cemetery GPR	Ward Mullis	2009	2	Union	North Carolina
Old Shiloh Church Cemetery	Generation Siting Engineer	2008	3	Cleveland and Cherokee	North Carolina and South Carolina
Hawkins Cove Cemetery GPR	TRC Companies	2008	4	Franklin	Tennessee
NC Ports Cemetery GPR Survey	North Carolina Ports Authority	2008	3	Brunswick	North Carolina
Brunswick Town GPR Survey	North Carolina State Archaeology	2008	2	Brunswick	North Carolina
Bruce Family Cemetery	William Snyder	2008	1	Guilford	North Carolina

Project Name	Client	Year	Cost in Thousands	County	State
Old School Cemetery Mapping and Conditions Assessment	City of Washington	2007	30	Washington	Georgia
Old Presbyterian Cemetery GPR	First Presbyterian Church	2007	6	Guilford	North Carolina
St. Helena Cemetery Survey	The Center for Historic Cemeteries Preservation	2006	5	Beaufort	South Carolina

PROJECT SLIP SHEETS

Representative project slip sheets, with client contact information, are provided in Appendix A.

Elmwood/Pinewood Cemetery, Mecklenburg County, North Carolina. NCDOT Rail Division proposed a grade separation of the CSX Rail Line in the City of Charlotte, North Carolina. The new alignment would have extended into the known boundaries of Elmwood/Pinewood Cemetery. New South was contracted to conduct the GPR survey to identify unmarked graves, full marker inventory, and detailed mapping of a 5.1-acre area. Results indicated the presence of approximately 500 known graves with existing markers and approximately 700 additional unmarked graves. These data were used to assist NCDOT with project planning and design alternatives.

Clark's Creek Cemetery, Mecklenburg County, North Carolina. Mecklenburg County Parks and Recreation Department wanted to know the extent of unmarked graves and establish a boundary for the Clark's Creek Cemetery for preservation purposes. New South conducted archival research and GPR survey. Results indicated a very dense cemetery with a high number of unmarked graves. Because of the cemetery's unique history, it was recommended for consideration as a local landmark and/or for nomination to the National Register of Historic Places.

SR 20/Work Camp Cemetery, Henry County, Georgia. New South was contracted by GDOT to conduct a GPR survey of a reported unmarked cemetery along SR 20 in Henry County, Georgia. The goals were to determine the presence/absence of graves, estimate the number of graves, and identify the cemetery boundary. Results indicated 72 probable graves in two distinct clusters that were later verified through independent archival research.

TEAM QUALIFICATIONS

New South proposes to assign the following personnel for the project. Both people assigned to this project meet the Secretary of Interiors requirements for archaeology. Resumes of the project personnel are attached in Appendix B.

Principal Investigator and Geophysics Specialist – Sarah Lowry, MA, RPA

Ms. Lowry has a B.A. in Anthropology and Geography from the University of Denver and an M.A. from the University of Denver, and more than 10 years of professional experience in both the eastern United States and Southwest. She is a Registered Professional Archaeologist (RPA). She has specialized in geophysical applications in archaeology, geographic information systems (GIS), global positioning systems (GPS), and laser transit mapping. Her experience includes extensive use of GPR and other geophysical techniques to map historic and prehistoric cemeteries across the United States. Ms. Lowry's experience includes using GPR to survey over 50 cemeteries and human burial sites across the United States. She will be directly responsible for all aspects of the project from fieldwork through reporting.

Geophysics Specialist – Maeve Herrick, MA, RPA

Ms. Herrick has a B.A. in Anthropology and Religion from the University of Vermont. She also has an M.A. in Anthropology from the University of Denver, where she specialized in geophysical methods in archaeology. Her experience includes extensive use of GPR and magnetometer to locate graves and to map archaeological sites across the United States. She will be supervising all phases of fieldwork, mapping, data processing, and reporting.

Assistant Geophysics Specialist – John Kimes

Mr. Kimes holds bachelor's degrees in Anthropology and Religious Studies from the University of North Carolina at Greensboro. He has experience in all phases of applied archaeology including the use of GPR to map cemeteries and archaeological sites in the southeastern United States. Mr. Kimes will be assisting in all phases of fieldwork, including mapping, GPR data collection, and data processing.

Assistant Geophysics Specialist – Jordan Cole

Mr. Cole has a B.A. in Archaeology from La Trobe University. He has specialized in the technical aspects of collecting and processing geophysical data on a wide variety of site types, including historic cemeteries. Mr. Cole also has considerable experience as a land surveyor within the construction industry and is skilled with surveyor's equipment including Trimble GPS units and total stations. He will be assisting in all phases of fieldwork, including mapping, GPR data collection, and data processing.

REFERENCES CITED

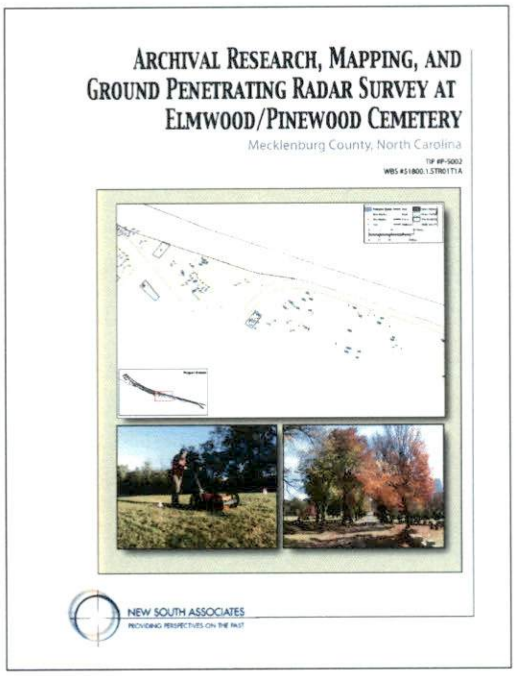
Conyers, Lawrence
2006 Ground-penetrating Radar. In *Remote Sensing in Archaeology: An Explicitly North American Perspective*, pp. 131–159. The University of Alabama Press, Tuscaloosa, Alabama.
2013 *Ground-penetrating Radar for Archaeology*. 3rd ed. AltaMira Press, Lanham, Maryland.

Conyers, Lawrence B.
2004 *Ground-penetrating Radar for Archaeology*. AltaMira Press, Lanham, Maryland.

APPENDIX A: PROJECT SLIP SHEETS

ARCHIVAL RESEARCH, MAPPING, AND GROUND PENETRATING RADAR SURVEY AT ELMWOOD/PINEWOOD CEMETERY

Mecklenburg County, North Carolina



New South Associates conducted archival research, detailed mapping, marker inventory, and ground penetrating radar survey of a portion of Elmwood/Pinewood Cemetery in Charlotte, North Carolina. The North Carolina Department of Transportation (NCDOT) was evaluating the feasibility of constructing a grade separation on the CSX Railroad. A portion of the Norfolk Southern railroad abuts the northern boundary of Elmwood/Pinewood cemetery. The GPR survey included part of the cemetery that is within the railroad right-of-way and beyond. An agreement between the Norfolk Southern Railway and City of Charlotte indicated the cemetery has encroached upon railroad right-of-way.

The results of this study indicate the presence of 580 known graves was inferred from markers and mapping, and 638 GPR anomalies consistent with expectations for historic graves. The total number of potential graves in the study area was 1,218. However, this estimate is conservative and represents only a minimum number. Because a significant portion of the study area was characterized as potters fields, the actual number of graves could be much higher.

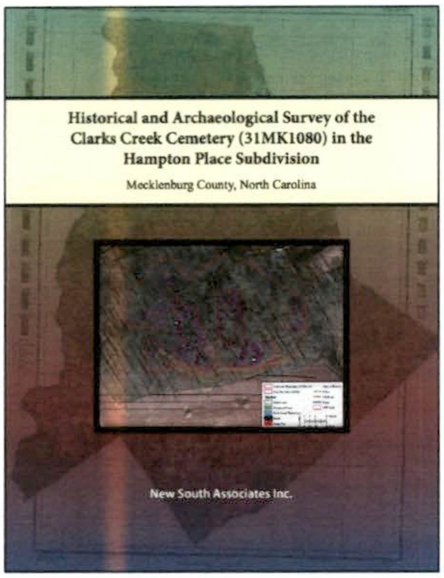
New South Associates recommended that all GPR features consistent with expectations for human graves be treated accordingly. If this alternative is chosen, it is recommended that NCDOT conduct ground-truthing of GPR features to evaluate the density of burial features, particularly in the potters field. This could be done through controlled sampling of selected areas through mechanical removal of topsoil. That phase would also indicate to what extent, if any, additional unmarked graves might be present.

Budget:	*Schedule:*	*Key personnel:*	*Client:*
$31,844.90	October 6, 2011 to February 1, 2012	Shawn Patch Sarah Lowry	NCDOT Matt Wilkerson 919-715-1561 mtwilkerson@dot.state.nc.us

Historical and Archaeological Survey of the Clarks Creek Cemetery (31MK1080) in the Hampton Place Subdivision

Mecklenburg County, North Carolina

New South Associates conducted a historical and archaeological survey of a historic cemetery, Site 31MK1030. The property is owned by Mecklenburg County and the study was undertaken to establish boundaries for the cemetery so that it could be preserved and maintained. Other than the proposed construction of a fence around the cemetery, no undertakings were presently scheduled that would cause ground disturbance at the site.



The study included historical research and geophysical and surface survey of the cemetery in an effort to identify its period of use and to document marked and possible grave locations. The historical investigations could not clearly identify a specific community or institution associated with the cemetery, nor could clear dates of its use be determined. However, prior investigations that suggested it was associated with the Jonahville AME Zion Church appear to be incorrect, and New South proposes that the site be renamed the Clarks Creek Cemetery. The geophysical and surface surveys indicated an estimated total of 389 individual burials in the cemetery. This number is likely low because the GPR survey was not comprehensive. Given the number of burials, the cemetery is almost certainly a community or church burial ground. Conditions and the nature of the grave markers suggest that the site ceased to be used by the 1920s.

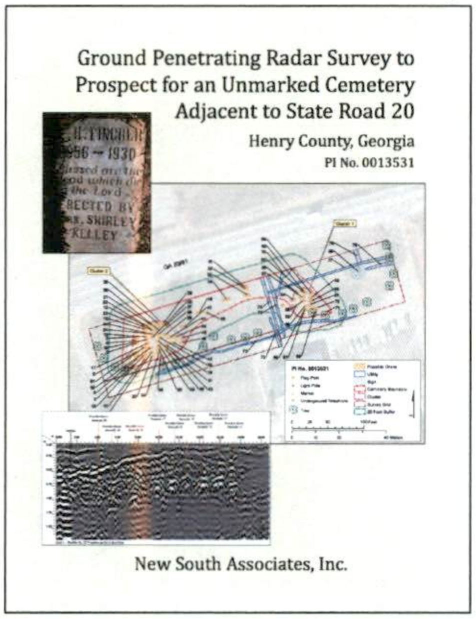
New South Associates recommended that the 389 markers and anomalies identified as probable graves should be treated as burials and be avoided if future ground disturbance as planned. Because unmarked burials could be present that were not detected, caution should be taken if any ground is to be disturbed within the cemetery, and a 30-foot buffer around the newly established boundaries was recommended to lessen the risk of disturbing any unmarked burials. If any ground disturbance would disturb known or potential burials, and avoidance was not possible, then additional steps should be taken to relocate the burials in compliance with North Carolina Statutes, Chapter 65, Article 12, Abandoned and Neglected Cemeteries. Additionally, this cemetery is a unique and important historic site and might warrant local landmark status or listing on the National Register of Historic Places in the future.

Budget:	*Schedule:*	*Key personnel:*	*Client:*
$11,000.00	March 1, 2016 to June 8, 2016	Shawn Patch Sarah Lowry Ellen Turco	Mecklenburg County Asset and Facility Management Alicia Rocco 704-336-8466 Alicia.rocco@mecklenburgcountync.gov

Ground Penetrating Radar Survey to Prospect for an Unmarked Cemetery Adjacent to State Road 20

Henry County, Georgia

New South Associates conducted ground-penetrating radar (GPR) survey south of State Road 20 (Hampton Street) on the front lawn of the Henry County Department of Transportation building in an area thought to contain an unmarked cemetery. The GPR survey had three major goals: (1) to determine if there are possible graves in the survey area; (2) to estimate the number of possible graves; and (3) to draw a boundary around the possible unmarked graves. The project area for the GPR survey was south of SR 20 on the lawn in front of the Henry County DOT building. The survey was undertaken during the concept phase of planned work on SR 20. Two GPR grids were collected, covering approximately 0.94 acres. There were 72 possible graves identified in two distinct clusters with seven possible graves outside of the clusters.



Following the identification of 72 possible graves, a phone conversation with Mr. Gene Morris, retired County Historian for Henry County, and provided information about the well-known pauper cemetery was located at the front of the property along SR 20. Prior to the construction of the county building (presently the county DOT building), the Henry County Water and Sanitation Authority conducted a study in which the site was scraped and a map of potential graves was produced that also has two clusters of graves.

The cemetery has been recorded as site 9HY533. In accordance with Georgia State Law, Title 36, Chapter 72, on abandoned cemeteries and burial grounds, the cemetery was not disturbed during this survey. New South Associates recommended that the 72 geophysical anomalies identified as probable graves should be treated as such for design and planning purposes and avoided. No field verification of graves or other anomalies is necessary at this time because the design has been shifted to avoid impacts. However, should the design be altered in the future to encroach on the cemetery boundary, a permit pursuant to OCGA 36-72 will be necessary.

Finally, because burials could have been missed due to lack of preservation and ground conditions, caution should be taken if any ground is to be disturbed on the south side of SR 20 within the vicinity of the cemetery clusters and seven isolated anomalies.

Budget:	*Schedule:*	*Key personnel:*	*Client:*
$13,207.16	October 26, 2015 to January 8, 2016	Shawn Patch Sarah Lowry Terri Gillett	Georgia Department of Transportation Jacobs Engineering Jonathan Cox jonathan.cox@jacobs.com

APPENDIX B: RESUMES

SARAH M. LOWRY
DIRECTOR OF GEOPHYSICS/ARCHAEOLOGIST
NEW SOUTH ASSOCIATES, INC.
1006 Yanceyville Street
Greensboro, North Carolina 27405
336.379.0433 (Phone)
336.379.0434 (Fax)
slowry@newsouthassoc.com

EDUCATION
M.A., Anthropology (Archaeology focus), University of Denver - 2009
B.A., Double Major: Anthropology and Geography; University of Denver - 2007

YEARS OF EXPERIENCE: 13 years **with New South Associates:** 11 years

SUMMARY OF EXPERIENCE
Sarah Lowry is a Registered Professional Archaeologist with experience in all phases of archaeological fieldwork and she has expertise with near-surface geophysical mapping for archaeological applications. Ms. Lowry has experience with a variety of site types including prehistoric, historic domestic, urban, industrial, military, and funerary sites. Ms. Lowry has worked on projects for numerous state and federal agencies including: several state Departments of Transportation; the Tennessee Valley Authority, the US Army Corps of Engineers; and the National Park Service. Ms. Lowry has worked in Georgia, Florida, South Carolina, North Carolina, Tennessee, Utah, New York, Virginia, Kentucky, Alabama, Pennsylvania, Maryland, Kansas, Colorado, Arizona, and New Mexico. Ms. Lowry is proficient in the use of ground-penetrating radar, magnetometer, and resistivity, as well as in the operation of GIS software and mapping equipment, such as the Garmin and Trimble GPS units and the Total Station. She has experience conducting systematic metal detection surveys. Ms. Lowry's areas of expertise include:

- Geographic information systems (GIS)
- Ground Penetrating Radar (GPR)
- Magnetic Gradiometer
- Metal Detection
- Global positioning systems (GPS)
- Site Mapping (Total Station, GPS, RTK GPS)
- Archaeological Excavation Field Skills

KEY EXPERIENCE

2021 **Principal Investigator.** Ground-Penetrating Radar Survey of Cannon Cemetery (40RD233) at the Volunteer Training Site-Smyrna, Tennessee Army National Guard, Smyrna, Rutherford County, Tennessee. Managed the project that included GPR survey, archival research, and cemetery mapping, Work was submitted for Tennessee Army National Guard.

2020 **Principal Investigator.** Archaeological Investigations at Site 31CV510 (New Bern Town Lot 31), Craven County, North Carolina. Managed the project that included a GPR survey and archaeological testing on state owned land where construction of a pump station is planned. Work was conducted for Rivers and Associates, Inc. in consultation with the North Carolina Office of State Archaeology.

2020 **Principal Investigator and Geophysics Specialist.** Ground-penetrating Radar Survey, Boundary Delineation, and Mapping of the Simeon Gower Cemetery (31JT499), Johnston County, North Carolina. Directed GPR survey, inventory, data processing, historic research, and reporting for the historic family cemetery. Work was conducted for RK&K and North Carolina Department of Transportation.

2020 **Principal Investigator.** Ground-Penetrating Radar Survey, Mapping, and Oral History Documentation at the Clearview Plantation Slave Cemetery (31WR298), Warren County, North Carolina. Directed project that included GPR survey and marker mapping, historic research, and oral history interviews with the descendent community. Work was conducted for Cooperative Solar, LLC.

2019 **Principal Investigator.** Archaeological Survey and Interpretation of the Hutchinson House, Edisto Island. Directed GPR survey, data processing, and reporting of the landscape evolution on the historic African American homesite. Work conducted for the Edisto Island Open Land Trust.

2018 **Principal Investigator.** GPR Survey to Prospect for Unmarked Graves at the Thomas Sumter Memorial Park Cemetery Sumter County, South Carolina. Directed GPR survey, data processing, and reporting for the Sumter family cemetery prior to planned ground disturbance. Work was submitted to South Carolina Department of Parks, Recreation, and Tourism.

2018 **Principal Investigator.** Geophysical Survey and Archaeological Testing at the Dunn Cemetery, Wake County, North Carolina. Directed survey work, data processing, and reporting for a nineteenth century plantation cemetery that was graded by the developer. Work was submitted to Mungo Homes of North Carolina, Inc.

2017 **Principal Investigator.** Ground Penetrating Radar Survey for Historic Features at the Old Orange County Courthouse (31OR663**), Orange County, North Carolina. Directed the geophysical survey and data processing of the courthouse grounds to prospect for eighteenth- through twentieth-century courthouse features. Work was submitted to Legacy Research.

2017 **Principal Investigator.** Ground Penetrating Radar Survey of the Western Half of the Damascus Congregational Christian Church Cemetery, Orange County, North Carolina. Directed geophysical survey and data processing of the older section of the church cemetery to prospect for unmarked graves. Work was submitted to the Damascus Congregational Christian Church for use by their burial committee.

2016 **Geophysics Specialist/Archaeologist.** Geophysical Survey, Metal Detecting, and Testing to Prospect for Archaeological Features within a Section of Fort King George State Historic Site, McIntosh County, Georgia. Directed field work, data processing, and reporting for geophysical survey and excavations of selected portions of a complex multi-component historic site in Darien, Georgia. Field work included, GPR, magnetic gradiometer, metal detecting, and selected test excavations. Work was conducted for the Georgia Department of Natural Resources, Historic Preservation Division.

2016 **Geophysics Specialist.** Historical and Archaeological Survey of the Clarks Creek Cemetery (31MK1080) in the Hampton Place Subdivision, Mecklenburg County, North Carolina. Directed field work and data processing for the geophysical survey and mapping of the historic cemetery that has no formal markers. Work was conducted for the Mecklenburg County Government.

2015 **Geophysics Specialist.** Geophysical Survey and Systematic Metal Detecting to Prospect for a Possible Segment of Braddock's Road at Little Meadows, Garrett County, Maryland. Directed field work for a geophysical survey to prospect for a possible segment of Braddock's road and George Washington encampment dating to the French and Indian War. Field work included metal detecting, GPR, magnetic gradiometer, mapping, and mechanical trench excavations. Work was conducted for URS Corporation and TRC.

2015 **Geophysics Specialist.** Geophysical Survey of Hiwassee Island (40MG31), Meigs County, Tennessee. Conducted a GPR and magnetic gradiometer survey of approximately 150 acres on Hiwassee Island to identify potential prehistoric and historic features. Results from the analysis included the identification of extensive Mississippian village components. Work was conducted for the Tennessee Valley Authority.

2015 **Archaeologist.** Cultural Resources Survey of the Proposed Tellico Reservoir Development Agency Land Sale: Wear Bend Industrial Development, Tellico Reservoir, Little Tennessee River Mile 16R, Loudon County, Tennessee. Conducted phase I archaeological survey of land proposed for sale. Work was conducted for the Tennessee Valley Authority.

2014 **Geophysics Specialist.** Archaeological Geophysics Survey of the Bell Site (40RE1), Roane County, Tennessee. Conducted geophysical survey of approximately 20 acres of Huffine Island, also known as the Bell Site. Both GPR and magnetic gradiometer data were collected and results from the analysis used to map the prehistoric site. Work was conducted for the Tennessee Valley Authority.

2013 **Geophysics Specialist.** Investigating Prehistoric Settlement in the Upper Guntersville Basin: Archaeological Geophysics Survey of the Raccoon Creek Wildlife Management Area, Jackson County, Alabama. Conducted a GPR and gradiometer survey of approximately 73 acres of a wildlife management area on the Tennessee River. Survey results identified prehistoric site patterning and contributed to resource management. Work was conducted for the Tennessee Valley Authority.

2013 **Geophysics Specialist.** Archival Research, Archaeological Geophysics Survey, and Soil Coring for the Proposed MultiModal Passenger Terminal (MMPT) Site, Atlanta, Georgia. Directed field work for GPR survey of approximately 40 acres of area in the metro Atlanta area to identify potential archaeological features and provide interpretations of the overall study area. Work was conducted for HNTB Corporation for the Georgia Department of Transportation.

2012 **Geophysics Specialist.** Archaeological and Geophysical Survey and Assessment, Fort Donelson Confederate Monument Landscape, Fort Donelson National Battlefield, Stewart County, Tennessee. Conducted a geophysical and metal detection survey for Civil War battle features around a park monument. The project included GPR, systematic metal detection, and GIS analysis. Work was conducted for Fort Donelson National Historical Park.

2012 **Geophysics Specialist.** Geophysical Survey to Prospect for Historic Features at the Brunswick Town Dock, Brunswick County, North Carolina. Conducted a GPR and magnetic gradiometer survey to prospect for colonial era historic features at a North Carolina state historic site. Work was conducted for the Brunswick Town State Historic Site.

2011 **Geophysics Specialist.** Identification of Unmarked Burials at Canyon de Chelly National Historic Park Using Ground Penetrating Radar (GPR), Arizona. Conducted a GPR survey to prospect for unmarked burial in an area where utility lines were proposed. Work was conducted for the Canyon de Chelley National Park.

2011 **Geophysics Specialist**. Archival Research, Mapping, and Ground Penetrating Radar Survey at Elmwood/Pinewood Cemetery, Mecklenburg County, North Carolina. Conducted a GPR survey to prospect for unmarked graves in the historic Elmwood/Pinewood Cemetery in Charlotte. Cemetery survey included paupers fields and both African American and White cemetery segments. Work was conducted for the North Carolina Department of Transportation.

2011 **GIS Specialist.** Battlefield Analysis: Six Maritime Battles in Maryland, Revolutionary War and War of 1812. Used Geographic Information Systems (GIS) to map and assess battle features from Maryland Maritime Battles. Research on naval battles was used to make predictive maps outlining areas where potential resources could be identified. Work was conducted for Maryland Historical Trust.

2010 **Archaeologist.** Historic Properties Management Plan for W. Kerr Scott Reservoir: 2010 Update.

As a part of a team of archeologists, conducted background research to review existing literature, sites, and other sources; developed GIS data layers for all known cultural resources and surveys; interviewed personnel at the reservoir concerning historic properties and management operations; and synthesized his information into an updated historic properties management plan. Work conducted under contract to the US Army Corps of Engineers, Wilmington District

2010 **Geophysics Specialist.** Cultural Investigations and Geophysical Survey along the Cumberland River, Lyon, Russell, Trigg Counties, Kentucky and Cheatham, Stewart, Sumner Counties, Tennessee. Conducted a geophysical survey of a prehistoric site using GPR and magnetic gradiometer to identify potential site features. Work was conducted for the US Army Corps of Engineers.

2010 **Geophysics Specialist.** Conduct Geophysical Survey and Archeological Assessment for Stanton House Property, Women's Rights National Historic Property. Conducted a geophysical survey of the Stanton House property using GPR, magnetic gradiometer, and electromagnetic conductivity. Data analysis was conducted to identify Stanton era landscape features. Work was conducted for the National Park Service, Northeast Region.

2010 **GPR Specialist.** Identification of Unmarked Graves at Christ Union and Odd Fellows Cemeteries Using Ground Penetrating Radar (GPR), Accomack County, Virginia. Ms. Lowry served as a private consultant responsible for ground penetrating radar on this assessment project.

2010 **Geophysics Specialist and GIS Specialist.** Windows in Time: Documentation, Mapping, and Management Recommendations of Eight Historic Cemeteries at Marine Corps Air Station Beaufort, Beaufort County, South Carolina. Conducted a cemetery survey, condition assessment, mapping, and limited GPR survey of historic African American cemeteries on the Marine Corps Air Station. Work was conducted for the Dial Cordy and Associates and the United States Army Corps of Engineers

2010 **Geophysics Specialist.** Identification of Unmarked Graves at the Brinson Cemetery Using Ground Penetrating Radar (GPR), Emanuel County, GA. Conducted a GPR survey to prospect for unmarked burials of an enslaved population dating to before the Civil War. Work was conducted for the Brinson Family.

REPORTS AND PUBLICATIONS

Technical Reports

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2018 Large-Scale Geophysical Surveys in the Tennessee River Valley (with Shawn Patch). Paper presented at Current Research in Tennessee Archaeology, 30th Annual Meeting,

2017 Presentation on Using Ground Penetrating Radar in Cemetery Management. Best Practices in Cemeteries Workshop, Wake Forest, North Carolina.

2017 Mississippian Villages in East Tennessee: Geophysical Case Studies at Five Sites to Examine Community Layout and Land Use (with Shawn Patch). Paper Presented at the 45th Annual Computer Applications and Quantitative Methods Conference, Atlanta, GA. In an invited symposium organized by Peter Leach.

2017 Technical Women in Cultural Resource Management: Amplifying the Importance of Non-Traditional Skill Sets in Modern Archaeology. Paper Presented at the 45th Annual Computer Applications and Quantitative Methods Conference, Atlanta, GA. In an invited panel discussion organized by Katie Simon, Sara Gale and Lisa Fischer.

2016 A New Look at Ledford Island: Mapping a Late Mississippian Village with Near Surface Geophysics (with Shawn Patch and Lynne Sullivan). Paper Presented at the 73rd Annual Southeastern Archaeology Conference, Athens, GA.

2016 Geophysics in the Urban South: A Discussion of Ground Penetrating Radar Survey under the Asphalt and into the Past of Southern Cities (with Shawn Patch). Paper Presented at the 5th Annual Southeastern Historic on Sites Conference, Knoxville, TN.

2016 Geophysical Applications in North Carolina Cemeteries. Paper Presented at Exploring North Carolina's Archaeological Heritage through Remote Sensing and Geophysics on March 12, 2016, Raleigh, NC. In an invited symposium organized by the North Carolina Office of State Archaeology.

2015 In Between the Mounds and Outside of the 1930's WPA Excavations: A Geophysical Survey of the Bell Site (40RE1), Roane County, Tennessee (with Shawn Patch). Paper presented at the 72nd Annual Southeastern Archaeological Conference, Nashville, TN.

2014 Where the Shovel Can't Go: Using Near Surface Geophysics for Section 106 and Section 110 Compliance at Large, Complex Archaeological Sites (with Shawn Patch). Paper presented at the 5th International Conference on Remote Sensing in Archaeology.

2014 Ground-penetrating Radar as a Tool for Large Cemetery Management. Paper presented at the Society for American Archaeology Annual Meeting, Austin, TX. In an invited symposium organized by Sarah Lowry and Shawn Patch

2013 Using Ground-Penetrating Radar in North Carolina Historic Cemeteries: Methods, Results, and Research. Paper presented at the Southeastern Conference on Historic Sites Archaeology, Fort Caswell, NC.

2012 The Importance of Geophysical Prospecting in Kiln Site Investigations (with Christopher T. Espenshade). Paper presented at the Society for Historic Archaeology Annual Meeting, Baltimore, MD.

2011 Mapping the Landscape of the 'Center of the Rebellion': Geophysical Prospection at the Elizabeth Cady Stanton House, Seneca Falls, New York (with Shawn M. Patch). Paper presented at the Council for Northeast Historical Archaeology, Utica, NY.

2011 The Cemetery at Hampton Plantation: Using Ground Penetrating Radar Survey to Identify Unmarked Graves. Poster presented at the Charles Towne Landing Archaeology Conference, Charleston, SC.

2010 Geophysical Prospection as an Archaeological Survey Method: Ground-penetrating Radar, Magnetometer, and Intra-site Patterning in North-Central Tennessee. Paper presented at the Southeastern Archaeological Conference, Lexington, KY.

2008 Ground-penetrating radar mapping at Pueblo Bonito, Chaco Canyon, New Mexico. Paper presented at the Society American Archaeology Annual Meeting, Vancouver, B.C.

2007 Ground-penetrating Radar for Stratigraphic Mapping Lake and Fen Sediments, Grand Mesa, Colorado. Poster presented at the Association of American Geographers, San Francisco, CA.

SPECIALIZED CLASSES AND WORKSHOPS

2018	Geophysical Survey for CRM Archaeology ACRA Webinar, Instructor
2018	Excavation Workshop for Tribal Personnel, Instructor, Bell Site, Huffine Island, TN.
2017	Excavation Workshop for Tribal Personnel, Instructor, Hiwassee Island, TN.
2015	Geophysical Archaeology Workshop for Tribal Representative and Tennessee Valley Authority, Instructor and Workshop co-lead, Hiwassee Island, TN.
2012	Advanced Metal Detecting for Archaeologists, Charles Towne Landing, Charleston, SC.
2009	National Park Service Archaeological Prospection Workshop, Ground-Penetrating Radar Instructor, Natchitoches, LA.
2007-2009	University of Denver Ground-Penetrating Radar Workshop by Professor Lawrence Conyers, Instructor.

EMPLOYMENT

2010-	Archaeologist/Remote Sensing Specialist, New South Associates, Inc.
2008-2009	GIS Specialist, Intermountain Regional Office, National Park Service.
2007-2009	Graduate Teaching Assistant, University of Denver, Department of Anthropology.
Summer 2008	Cartographic Technician, Chaco Culture National Historic Park.
Summer 2007	Cartographic Technician, Chaco Culture National Historic Park.
Summer 2006	Cartographic Aide, Chaco Culture National Historic Park.

PROFESSIONAL MEMBERSHIPS AND REGISTRATIONS

Register of Professional Archaeologists (RPA)
Society for American Archaeology (SAA)
Southeastern Archaeological Conference (SEAC)

MAEVE ELIZABETH HERRICK
GEOPHYSICAL SPECIALIST/ARCHAEOLOGIST
NEW SOUTH ASSOCIATES, INC.
mherrick@newsouthassoc.com

EDUCATION

M.A., Anthropology (Archaeology focus), University of Denver - 2017
B.A., Double Major: Anthropology and Religion; University of Vermont - 2015

YEARS OF EXPERIENCE: 5.5 years with New South Associates: 3.5 years

SUMMARY OF EXPERIENCE

Maeve Herrick has expertise with near-surface geophysical mapping for archaeological applications at a variety of site types including precontact, historic, and funerary sites. She has worked in at least 15 states on projects for numerous state and federal agencies including: the North Carolina, Tennessee, Georgia, Maryland, Mississippi, and Vermont Departments/Agencies of Transportation, the Tennessee Valley Authority, the U.S. Army Corps of Engineers, the National Park Service, the US Department of Energy, the Air Force Civil Engineering Center, and the US Forest Service. Herrick has directed fieldwork for at least 60 projects, authored or co-authored over 50 technical reports, conducted 7 professional presentations, submitted 3 conference papers, and published a master's thesis and journal article. Herrick's areas of expertise include:

- Geographic information systems (GIS)
- Ground-penetrating radar (GPR)
- Magnetic gradiometer
- Global positioning systems (GPS, RTK GPS)
- Site mapping (Total Station, GPS)
- Archaeological excavation field skills

KEY EXPERIENCE

2020 **Geophysical Specialist and Author.** Directed fieldwork for a GPR survey, marker mapping, and grave marking of the African American section of Oakwood Cemetery (31GF594) in High Point, North Carolina. Processed and analyzed data, wrote report, provided recommendations for amended site boundaries, and submitted a site form for the section. Conducted a public presentation for the City of High Point summarizing the results of the GPR survey and marking mapping. Marked grave locations with permanent nails markers. Work was conducted for the City of High Point.

2019-2020 **Geophysical Specialist and Author.** Directed fieldwork for a GPR survey and marker mapping at the Slave Cemetery at Clearview Plantation (31WR298) in Warren County, North Carolina. Processed and interpreted data, co-authored the report, provided recommendations for amended site boundaries, and submitted new site forms with amended boundaries determined through the survey.

2019 **Geophysical Specialist and Author.** Directed fieldwork for a GPR and magnetic gradiometer survey of an Ojibwe village and cemetery (site 21SL0151), a National Register of Historic Places

(NRHP) listed nineteenth century lighthouse, and a twentieth-century buoy depot and dock (site 21SL0819) on Minnesota Point in Duluth, Minnesota. Processed and analyzed data, wrote report, provided recommendations for amended site boundaries, submitted new site forms with amended boundaries determined through the survey. Work was conducted for the U.S. Army Corps of Engineers.

2018 **Geophysical Specialist and Author.** Directed fieldwork for a ground-penetrating radar survey to prospect for historic streetcar features along Piedmont Avenue in Atlanta, Georgia. Processed and analyzed data, wrote report, and provided recommendations for future research. Work was conducted for Midtown Alliance.

2018 **Geophysical Specialist.** Directed magnetic gradiometer and GPR surveys at the historic Bayly House in Cambridge, Maryland. Processed and analyzed data in the field and marked recommended areas for excavation on the ground based on results. Produced a map to guide excavations. Work was conducted for the Maryland State Highway Administration.

2017 **Geophysical Specialist and Co-Author.** Phase I Archaeological Survey and Tribal Field School at The Guntersville Dam Reservation, Marshall County, Alabama. Conducted remote sensing survey of sampled portions of known shell midden sites. Emendations were recommended to site boundaries in the survey area based on results. Work was conducted for the Tennessee Valley Authority.

REPORTS AND PUBLICATIONS

Technical Reports

2021 Herrick, Maeve, Robbie D. Jones, Sarah Lowry, and John Kimes. *Ground-Penetrating Radar Survey of Cannon Cemetery (40RD233) at the Volunteer Training Site-Smyrna, Tennessee Army National Guard Smyrna, Rutherford County, Tennessee.* Report Submitted to the Tennessee Army National Guard, Construction and Facilities Maintenance Office – Environmental Division. Technical Report 4104.

2021 Olin, Susan, John Kannady, Hugh B. Matternes, Maeve Herrick, Jera Davis, and Patrick Sullivan. *Phase I Archaeological Survey of the SR 11/SR 49/US 41 Bridge Replacement over Norfolk Southern Railroad PI#0013712, Bibb County, Georgia.* Report Submitted to the Georgia Department of Transportation. Technical Report 2852.

2021 Pokrant, Marie E., Brian J. Snyder, Laura Kate Schnitzer, Hugh Matternes, Paige Dobbins, Jera Davis, Stefanie M. Smith, Velma Fann, Christopher Espenshade, Sarah Lowry, Maeve Herrick, and Johannes Loubser. *Phase I Archaeological Survey and Phase II Investigations of Interstate 75 Commercial Vehicle Lanes from Interstate 475 to State Route 20. Report submitted to GDOT, Atlanta, Georgia..* Report Submitted to the Georgia Department of Transportation. Technical Report 4022.

2021 Davis, Jera R., Hugh B. Matternes, Maeve Herrick, Patricia McMahon, and David Amrine. *Phase I/II Archaeological Survey of Proposed Improvements to SR 20 from I-75 to I-575, Bartow and Cherokee Counties, Georgia.* Report Submitted to the Georgia Department of Transportation. Technical Report 3076.

2020 Dobbins, Paige, Pam Devore, Sarah Lowry, Maeve Herrick, Velma Fann, Danny Gregory, and Dr. J.W. Joseph. *Archaeological Survey to Locate the Port Tampa Cemetery on MacDill Air Force*

Base, Florida. Report Prepared for MacDill Air Force Base and Air Force Civil Engineer Center. Technical Report 4071.

2020 Adams Pope, Natalie, Rebecca Shepherd, Maeve Herrick, Stefanie Smith, and Leslie Raymer. *History in Two Acts: Archaeological Examination of Warwicktowne and a Confederate Encampment on the Former City Farm, Newport News, Virginia.* Report Submitted to the City of Newport News. Technical Report 3062.

2020 Walls, Lauren, Velma Fann, Danny Gregory, Brian Cavanaugh, and Maeve Herrick. *Phase I Archaeological Survey for the State Route 109 (Portland Bypass) From State Route 52, West of Portland, to Existing State Route 109, North of Portland, Sumner County, Tennessee.* Report Submitted to the Tennessee Department of Transportation. Technical Report 4079.

2020 Lowry, Sarah, Maeve Herrick, and Sherry Teal. *Archival Research, Mapping, and Ground-Penetrating Survey to Prospect for Unmarked Graves at the Frays Grant Family Cemetery Albemarle County, Virginia.* Report Submitted to Wellington Financial. Technical Report 4080.

2020 Lauren A. Walls, Josh Blackmon, and Maeve Herrick. *Phase I Archaeological Survey of 225 Acres at Pickwick Dam Hardin County, Tennessee.* Report Submitted to the Tennessee Valley Authority. Technical Report 4057.

2020 Herrick, Maeve and John Kimes. *GPR Survey to Locate, Delineate, and Estimate the Number of Interments in an Unmarked Slave Cemetery and the Roberts Family Cemetery Dillon County, South Carolina.* Report Submitted to Mac Haupt and Helen Bowman. Technical Report 4088.

2020 Herrick, Maeve and John Kimes. *Ground-Penetrating Radar Survey of the Footprint of a Planned Sidewalk on the East Side of Folly Road and West of McLeod Plantation Charleston County, South Carolina.* Report Submitted to Reveer Group Civil Engineers. Technical Report 4045.

2020 Herrick, Maeve, Samantha Taylor, Sherry Teal, and John Kimes. *Phase I Archaeological Survey and Ground-Penetrating Survey at Selected Sections of the Broughton Hospital Burke County, North Carolina.* Report Submitted to the North Carolina Office of State Archaeology. Technical Report 4081.

2020 Lowry, Sarah, Maeve Herrick, and John Kimes. *GPR Survey to Identify Suspected Unmarked Graves at the Bentonville Battlefield State Historic Site Johnston County, North Carolina.* Report Submitted to the Bentonville Battlefield State Historic Site, City of High Point. Technical Report 4064.

2020 Herrick, Maeve and John Kimes. *Ground-penetrating Radar Survey, Marker Mapping, and Anomaly Marking at the African American Section of the Oakwood Cemetery (Site 31GF594), Guilford County, North Carolina.* Report Submitted to the Planning and Development Department, City of High Point. Technical Report 4033.

2020 Herrick, Maeve, Sherry Teal, and John Kimes. *Ground-Penetrating Radar Survey of the 1813 Waterson-Chitty House and the 1782 Stockburger Farm Lots Forsyth County, North Carolina.* Report Submitted to the Old Salem Museums & Gardens. Technical Report 4037.

2020 Snyder, Brian J., Laura Kate Schnitzer, Hugh Matternes, Paige Dobbins, Jera R. Davis, Stefanie M. Smith, Velma Fann, Christopher T. Espenshade, and Maeve Herrick. *Phase I Archaeological Survey of Interstate 75 Commercial Vehicle Lanes from Interstate 475 to State Route 155, Butts,*

Henry, Lamar, Monroe, and Spalding Counties, Georgia. Report Submitted to Georgia Department of Transportation. Technical Report 4022.

2020 Herrick, Maeve and Velma Fann. *Ground-Penetrating Radar Survey, Mapping, and Oral History Documentation of the Slave Cemetery at Clearview Plantation (31WR298), Warren County, North Carolina.* Report Submitted to Cooperative Solar, LLC. Technical Report 3065.

2020 Herrick, Maeve. *Ground-Penetrating Radar Survey and Mapping at the Bay Mills Indian Community Cemetery (20CH531), Chippewa County, Michigan.* Report Submitted to the United States Army Corps of Engineers. Technical Report 3055.

2020 Herrick, Maeve. *Ground-Penetrating Radar Survey and Mapping of an Unnamed Cemetery (22Ho1246), Holmes County, Mississippi.* Report Submitted to the Mississippi Department of Transportation Environmental Division. Technical Report 3061.

2019 Patch, Shawn M., Christopher T. Espenshade, Keith C. Seramur, Maeve Herrick, and Brian Snyder. *Phase III Archaeological Data Recovery of Site 31GF466, Guilford County, North Carolina.* Report Submitted to the North Carolina Department of Transportation. Technical Report 2917.

2019 Lowry, Sarah, Maeve Herrick, Velma Fann, and Sarah Stephens. *Ground-Penetrating Radar Survey, Mapping, and Condition Assessment for the Confederate Section of the Oakwood Cemetery, Richmond, Virginia.* Report Submitted to the Oakwood Confederate Cemetery Trust, Inc and Virginia Department of Historic Resources. Technical Report No. 3042.

2019 Lowry, Sarah, Maeve Herrick, Lynne P. Sullivan, Sarah Stephens, and Shawn Patch. *Archaeological Geophysics Survey of Bussell Island (40LD17), Tellico Reservoir, Loudon County, Tennessee.* Report Submitted to the Tennessee Valley Authority. Technical Report No. 3021.

2019 Lowry, Sarah, Maeve Herrick, and Lauren Walls. *Geophysical Survey of The Old Town Archaeological Site (40WM2), Williamson County, Tennessee.* Report Submitted to Middle Tennessee State University. Technical Report No. 3016.

2019 Lowry, Sarah, Maeve Herrick, Chris Espenshade, and Otto Gockman. *Archaeological Geophysical Survey for Minnesota Point Beach Nourishment, Duluth, St. Louis County, Minnesota.* Report Submitted to the U.S. Army Corps of Engineers. Technical Report No. 3007.

2019 Gregory, Danny, Lauren Walls, Maeve Herrick, Robbie D. Jones, and Sydney Schoof. *Phase II Evaluations and Geophysical Survey of Six Archaeological Sites at Arnold Air Force Base, Coffee and Franklin Counties, Tennessee.* Report Submitted to Statistical Research, Inc. Technical Report No. 3005.

2019 Herrick, Maeve, Robbie D. Jones, and Sarah Stephens. *Ground-Penetrating Radar Survey at Chick-a-le-lee Cemetery, Graham County, North Carolina.* Report Submitted to the North Carolina Department of Transportation. Technical Report No. 3002.

2019 Herrick, Maeve and Sarah Stephens. *Ground Penetrating Radar Survey to Identify Unmarked Graves at the Jones Cemetery (31DV318), Davidson County, North Carolina.* Report Submitted to USDA Forest Service. Technical Report No. 3000.

2019 Wise, Ronald and Maeve Herrick. *Geophysical and Shovel Test Survey of Reported Location of Vogel Mounds (3PH0017), Phillips County, Arkansas.* Report Submitted to the U.S. Army Corps of Engineers. Technical Report No. 2996.

2019 Herrick, Maeve and Sarah Lowry. *Ground-Penetrating Radar Survey to Prospect for Unmarked Graves at the Sholar Cemetery (31WA2241), Wake County, North Carolina.* Report Submitted to the Town of Wake Forest. Technical Report No. 2983.

2019 Herrick, Maeve. *Ground-Penetrating Radar Survey for Possible Archaeological Features at Site 40TP42, Tipton County, Tennessee.* Report Submitted to the Tennessee Valley Authority. Technical Report No. 2972.

2019 Herrick, Maeve. *Ground Penetrating Radar Survey to Prospect for Architectural Features and a Possible Cemetery at the Barker House Property (VN0381) Vance County, North Carolina.* Report Submitted to Bill Barker. Technical Report No. 2965.

2019 Lowry, Sarah, and Maeve Herrick. *Ground Penetrating Radar Survey to Map City Cemetery, Wake County, North Carolina.* Report Submitted to City of Raleigh Parks. Technical Report No. 2936.

2019 Herrick, Maeve. *Geophysical Survey at the Dunwoody Cemetery, McIntosh County, Georgia.* Report Submitted to the Georgia Department of Transportation. Technical Report No. 2942.

2019 Stewart, James, Josh Blackmon, and Maeve Herrick. *Fort Monroe Visitor and Education Center Data Recovery, Fort Monroe, Virginia.* Report Submitted to the Fort Monroe Authority. Technical Report No. 2916.

2019 Herrick, Maeve, Hugh B. Matternes, and Sarah Lowry. *Ground-penetrating Radar and Probe Survey to Identify the Possible Extent of the Palmour and Landrum Cemeteries on Ebenezer Road, Fayette County, Georgia.* Report Submitted to Croy Engineering.

2019 Davis, Jera, Sarah Lowry, and Maeve Herrick. *Ground-Penetrating Radar Survey and Test Excavations Beneath TVA Transmission Towers E5 and 24 at Site 40HR25, Hardin County, Tennessee.* Report Submitted to the Tennessee Valley Authority. Technical Report No. 2963.

2018 Herrick, Maeve. *GPR Survey to Prospect for Unmarked Graves in Two Cemeteries Along SR 92, Paulding County, Georgia, PI 621720.* Report Submitted to the Georgia Department of Transportation. Technical Report No. 2910.

2018 Lowry, Sarah, Maeve Herrick, and David Amrine. *Ground Penetrating Radar Survey and Testing for the Possible William McCandless Unmarked Grave Site(38CS420/0303), Chester County, South Carolina.* Report Submitted to the South Carolina Department of Transportation. Technical Report No. 2940.

2018 Lowry, Sarah, Maeve Herrick, and Sherry Teal. *Remote Sensing Survey at Mill Pond Cemetery (Site 31HN182** and 31HN1075), Henderson County, North Carolina.* Report Submitted to the North Carolina Department of Transportation. Technical Report No. 2927.

2018 Herrick, Maeve. *Ground-Penetrating Radar Survey to Prospect for Streetcar Features Along Piedmont Avenue City of Atlanta, Fulton County, Georgia.* Report Submitted to Midtown Alliance. Technical Report No. 2882.

2018 Lowry, Sarah and Maeve Herrick. *Ground Penetrating Radar Survey to Determine the Boundary of the Dorothea Dix Cemetery, Wake County, North Carolina.* Report Submitted to the City of Raleigh. Technical Report No. 2833.

2018 Herrick, Maeve and Sarah Lowry. *Ground Penetrating Radar Survey for Possible Unmarked Graves at the A.G. Dozier School for Boys North Campus, Jackson County, Florida.* Archaeological Research Permit No. 1819.011. Report Submitted to Geosyntec. Technical Report No. 2898.

2018 Shepherd, Rebecca and Maeve Herrick. *Archaeological Investigations at Robertson Millpond Preserve, Wake County, North Carolina.* Report Submitted to Wake County Parks, Recreation, and Open Space. Technical Report No. 2874.

2018 Herrick, Maeve. *Ground Penetrating Radar Survey at the Michael Braun House, Rowan County, North Carolina.* Report Submitted to the Rowan Museum, Inc. Technical Report No. 2871.

2018 Lowry, Sarah, Hugh B. Matternes, and Maeve Herrick. *Geophysical Survey and Archaeological Testing at the Dunn Cemetery, Wake County, North Carolina.* Technical Report No. 2808.

2018 Patch, Shawn M., Sarah Lowry, and Maeve Herrick. *Geophysical and Archaeological Survey of Arsenal Park, Cumberland County, North Carolina.* Report Submitted to the North Carolina Civil War History Center. Technical Report No. 2807.

2018 Herrick, Maeve. *Ground-penetrating Radar Survey of the Meekins Cemetery at the Right-of-Way of Hebron Dunbar Road.* Report Submitted to South Carolina Department of Transportation. Technical Report No. 2856.

2018 Lowry, Sarah and Maeve Herrick. *GPR Survey to Prospect for Unmarked Graves at the Thomas Sumter Memorial Park Cemetery.* Report Submitted to the South Carolina Department of Parks, Recreation, and Tourism. Technical Report No. 2836.

2018 Adams Pope, Natalie, Jera R. Davis, Maeve Herrick, and Hugh B. Matternes. *Phase I Archaeological Survey of SR 24 from East of Chambers Road to West of Helton Lane.* Report Submitted to the Georgia Department of Transportation Office, of Environmental Services. Technical Report No. 2869.

2018 Herrick, Maeve. *Ground-penetrating Radar Survey to Identify Graves on the Southern Side of the John N. Smith Cemetery.* Report Submitted to John N. Smith Cemetery Restoration and Preservation Inc. Technical Report No. 2847.

2018 Lowry, Sarah and Maeve Herrick. *Ground-penetrating Radar (GPR) Survey to Prospect for Mass Graves Resulting from Mine Explosions in the Bethany Church Cemetery.* Submitted to Forest Hazel. Technical Report No. 2812.

2017 Herrick, Maeve and Sarah Lowry. *Ground-penetrating Radar Survey to Prospect of Burials within the John N. Smith Cemetery.* Report Submitted to John N. Smith Cemetery Restoration and Preservation Inc. Technical Report No. 2788.

2017 Herrick, Maeve, Colin Bean, Lauren Walls, and Shawn M. Patch. *Phase I Archaeological Survey for the Counce—Hickory Valley NERC Alert Project.* Report Submitted to the Tennessee Valley Authority. Technical Report No. 2785.

2017 Lowry, Sarah, Maeve Herrick, Summer Ciomeck, Ellen Turco, and Shawn M. Patch. *Remote Sensing Survey at the Red Banks Primitive Baptist Church (PT0049 and Site 31PT460).* Report Submitted to the North Carolina Department of Transportation. Technical Report No. 2774.

2017 Lowry, Sarah, Lynne P. Sullivan, Maeve Herrick, and Shawn M. Patch. *From Cyrus Thomas to the WPA: Magnetic Gradiometer Survey of Long Island, Roane County, Tennessee.* Report Submitted to the Tennessee Valley Authority. Technical Report No. 2746.

2017 Lowry, Sarah, Shawn M. Patch, and Maeve Herrick. *Magnetic Gradiometer Survey to Study the Effects of Controlled Vegetation Burning on Ledford Island (40BY13), Bradley County, Tennessee.* Report Submitted to the Tennessee Valley Authority. Technical Report No. 2730.

Publications

2017 *An Integrated Archaeological Investigation of Colonial Interactions at a Seventeenth- Century New England Site.* Master's thesis, Department of Anthropology, University of Denver.

2017 A 17th-Century Wangunk Vessel from the Lt. John Hollister Site, Glastonbury, CT. *Bulletin of the Archaeological Society of Connecticut,* 79.

PRESENTATIONS

2020 Oakwood Cemetery Archaeological Survey. Public presentation for the City of High Point, North Carolina.

2019 Treading on Unknown Sacred Ground: Archaeological Approaches to Finding Lost Graves and Misplaced Cemeteries. Presentation at the Georgia Municipal Cemetery Association Conference in Savannah, Georgia.

2018 Examining Wangunk-Hollister Interactions through Analysis of the Colonial Landscape and Indigenous Pottery. Paper to be Presented at the 51st Annual Conference on Historical and Underwater Archaeology, New Orleans, LA. In an invite panel discussion: The John Hollister Site: 17th Century Fortified Farm Complex in Glastonbury, Connecticut.

2018 Geophysical Methods at the Hollister Site: Summary of Finds. Paper to be Presented at the 51st Annual Conference on Historical and Underwater Archaeology, New Orleans, LA with Peter Leach and Jasmine Saxon. In an invite panel discussion: The John Hollister Site: 17th Century Fortified Farm Complex in Glastonbury, Connecticut.

2018 A Hands-on Past: 3D Replication as a Form of Archaeological Engagement. Paper presented at the 51st Annual Conference on Historical and Underwater Archaeology, New Orleans, LA with Bonnie Clark and Michael Caston. In an invite panel discussion: The Intersection of Technology and Public Archaeology.

2017 Presentation on Using Ground-penetrating Radar in Cemetery Management. Best Practices in Cemeteries Workshop, Wake Forest, North Carolina.

2016 Amache Field School Workshop on Ground-penetrating Radar, Granada, Colorado.

SPECIALIZED CLASSES AND WORKSHOPS

2020	Python for Everyone with Esri
2019	National Preservation Institute Training Seminar: Section 106: An Introduction with Claudia Nissley.
2018	African American Burial Grounds Workshop with Dr. JW Joseph, Dr. Hugh Matternes, Shawn Patch, Sarah Lowry, and John Mintz.
2018	SAA Online Seminar Series: Geophysical Remote Sensing in Archaeology: An Overview and Practical Guide for Beginners and Intermediate Users, Teachers, and Consumers with Jarrod Burks.
2017	SAA Online Seminar Series: Archaeological Applications of Terrestrial Laser Scanning with Malcolm Williamson.
2015-2017	University of Denver Ground-penetrating Radar Research Lab with Professor Lawrence Conyers.
2016	University of Denver Advanced GPR Seminar with Professor Lawrence Conyers.

EMPLOYMENT

2017- Geophysics Specialist/Archaeologist, New South Associates, Inc.
2015, 2017 Graduate Teaching Assistant, University of Denver, Department of Anthropology.
Summer 2016 Crew Chief, Amache Field School, Granada, CO.
Spring 2015 Teaching Assistant, University of Vermont, Department of Anthropology.
Summer 2014 Archaeology Intern, Vermont Agency of Transportation.

PROFESSIONAL MEMBERSHIPS AND REGISTRATIONS

Member, Register of Professional Archaeologists (RPA)