BID COVER

City of Gainesville

Procurement Division
(352) 334-5021(main)

Issue Date: May 26, 2023

REQUEST FOR PROPOSAL: #PWDA-230046-DH
Ecological Analysis and Tree Inventory

PRE-PROPOSAL MEETING: ☒ Non-Mandatory ☐ Mandatory ☐ N/A ☐ Includes Site Visit
DATE: June 8, 2023 **TIME:** 9:00 am
LOCATION: Smokey Bear Park (2300 NE 15th St Gainesville, FL 32609)

QUESTION SUBMITTAL DUE DATE: June 15, 2023 @ 5:00 pm

All meetings and submittal deadlines are Eastern Time (ET).

DUE DATE FOR UPLOADING PROPOSAL: June 22, 2023 @ 3:00pm

SUMMARY OF SCOPE OF WORK: The purpose of this project will be to complete an ecological analysis of the City of Gainesville's (CITY) urban forest, public and private; complete a detailed tree inventory of all City of Gainesville owned trees, and to estimate change in the overall canopy coverage in Gainesville from 1995 -2023.

For questions relating to this solicitation, contact: Diane Holder, holderds@gainesvillefl.gov

Bidder is not in arrears to City upon any debt, fee, tax or contract: ☒ Bidder is NOT in arrears ☐ Bidder IS in arrears
Bidder is not a defaulter, as surety or otherwise, upon any obligation to City: ☒ Bidder is NOT in default ☐ Bidder IS in default

Bidders who receive this bid from sources other than City of Gainesville Procurement Division or DemandStar.com MUST contact the Procurement Division prior to the due date to ensure any addenda are received in order to submit a responsible and responsive offer. Uploading an incomplete document may deem the offer non-responsive, causing rejection.

ADDENDA ACKNOWLEDGMENT: Prior to submitting my offer, I have verified that all addenda issued to date are considered as part of my offer: Addenda received (list all) # ADDENDUM NO. 1 and ADDENDUM NO. 2

Legal Name of Bidder: ACRT, Inc.

DBA: ACRT, Inc.

Authorized Representative Name/Title: Maegan Mullinax, Business Development Manager

E-mail Address: mmullinax@acrtinc.com FEIN: 34-1462242

Street Address: 4500 Courthouse Blvd, Suite 150 Stow, OH 44224

Mailing Address (if different): _____

Telephone: (330) 803-0976 Fax: (330) 945-7200

By signing this form, I acknowledge I have read and understand, and my business complies with all General Conditions and requirements set forth herein; and,

☒ Proposal is in full compliance with the Specifications.

☐ Proposal is in full compliance with the Specifications except as specifically stated and attached hereto.

SIGNATURE OF AUTHORIZED REPRESENTATIVE: MM Mullinax

SIGNER'S PRINTED NAME: Maegan Mullinax DATE: 6/27/2023

This page must be completed and uploaded to DemandStar.com with your Submittal.

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Part 1 - Technical Proposal

1.0 Project Planning

ACRT works with our clients in 42 states across the U.S. We have an increased presence in the state of Florida. Our project lead, Dr. Anand Persad, Director of ACRT's Research, Science, and Innovation team, lives locally right outside of Gainesville, FL. Dr. Persad works closely with the University of Florida and is excited by the opportunity to work with the City of Gainesville to achieve its goals with this project.

Additional support the City will receive comes from our operations team. ACRT's support team is unsurpassed in the industry. Our professional foresters in the field are reinforced by their direct Operations Manager, who supervises and performs field visits. It is during these visits that once again set ACRT apart. Operations Managers provide safety updates, quality assurance audits, company updates, coaching, safety audits, and equipment checks. ACRT also has professional teams in place with expertise in safety, IT, fleet management, communications, finance, human resources, administration, and operations to aid our professional foresters in any way necessary.

1.1 Team Organization

ACRT has always provided field-level managers with the highest quality and quantity for its customers and staff. Through "straw polls" when dealing with our competitors' customers, we always find that our support is the strongest in the industry. The following outlines how ACRT organizes our teams to achieve this elevated level of success. Our operations team are non-billable positions included in our rate structure's overhead.

Assistant operations managers generally have between fifteen and twenty direct reports in the field. The assistant operations manager role at ACRT is responsible for developing a safety culture and ensures compliance to customer, company and industry practices and policies. They are the primary point of contact for field employees with company related needs. They perform employee screening during the hiring process, as well as new hire on-boarding, training, coaching, and mentoring. The assistant operations manager also performs safety and work quality auditing. Finally, they are the primary point of contact between ESI employees in relationship to ACRT employee needs and performance.

Operations managers generally have between twenty and thirty direct reports, including assistant operations managers. Operations managers champion safety culture and ensure compliance to policies and procedures set by the City and ACRT. They develop and support assistant operations managers and field employees. They administer performance evaluations and reward programs. They serve as the primary liaison between mid and upper-level the City and ACRT management. The operations manager evaluates the ongoing needs of the City and its programs to create and implement new and meaningful training programs for ACRT staff. They actively participate in the City safety meetings and report to the City and ACRT. Operations managers would become closely integrated with the City team and heavily involved as a resource to the City.

ACRT currently has 3 operations managers located in the state of Florida.

Our Senior Operations Manager, Cliff Benedict, has substantial experience in project operations. He manages ACRT's Ready Force Team, a group of highly trained arborists specializing in short-term projects/startups and emergencies. Managing this team requires a heavy level of involvement from the planning and development stages to project completion and advanced coordination. The Sr. Operations

Manager supports the Director of Operations in their role. They also guide and mentor the Operations & Assistant Operations Managers to further advance their leadership development. Sr. Operations Managers visit projects to ensure everything runs smoothly and provide additional support when necessary.

The Director of Operations, David Burke, will be an active participant in the success of the City and ACRT programs. Burke creates internal safety goals and programs to ensure the success of all parties. Directors will actively monitor the City contract safety requirements and participate in the management and executive level calls and meetings. Field management success starts with the selection process by identifying, hiring, training, and retaining. The Director is responsible for the strategic development of training of staff. When needed, the Director acts as the lead risk investigator for claims and is a liaison between customer and employee relations concerns.

Quality is critical in any industry, but it is essential in vegetation management. Robust leadership and committed foresters provide peace of mind, but they also create quantifiable confidence that the work being planned and performed on your rights-of-way is being done right. With ACRT's Operations Managers in place, the City can count on reliable, experienced, local leadership to guarantee that the work is being planned and verified with the highest level of precision.

1.2 Analysis of Tree Canopy using Remote Sensing Techniques

Change detection and characterizing the urban forest over time: From data provided and additional field assessments as needed we can provide valuable insights into the changes that have occurred in the urban forest over time. To characterize urban forest types and other layers of land cover, we will be guided by conditions specific to each site characterization and use metrics (such as degree of urbanization) to guide our analyses. We will utilize advanced image processing techniques such as aerial photogrammetry to extract accurate cover information and to visualize the changes that have taken place over the specified time periods.

Our team has extensive experience in remote sensing analysis, including the interpretation of satellite imagery Landsat and NAIP and other forms aerial photography and lidar and abilities to use methods accounting for orthographic projections (pictures at an angle). We can add layers of overlay to capture the change of cover with time.

The Research, Science, and Innovation unit (RSI) of ACRT Services, Inc. can provide technical expertise and value-of biological, arboricultural, and added field capacities in the analysis of City of Gainesville. Multi-Sensor Data Fusion: ACRT Services can integrate data from multiple sensors, such as Landsat and NAIP imagery, to obtain a comprehensive understanding of the urban forest. We emphasize our proficiency in handling different data formats, calibration techniques, and image registration processes to ensure accurate and seamless fusion of the datasets.

1. Image Pre-processing: Our expertise extends to image pre-processing techniques, including radiometric and geometric correction, atmospheric correction, and image enhancement. These processes ensure imagery is optimized for analysis, enhanced quality, and accuracy.
2. Classification and Segmentation: Our company demonstrates proficiency in image classification and segmentation algorithms. ACRT Services RSI can extract meaningful information from imagery, such as identifying and delineating tree canopies and differentiating them from other

land cover classes. We emphasize our utilization of advanced classification methods, such as supervised and unsupervised techniques, to accurately map and quantify the tree canopy coverage.

3. Change Detection: We highlight our ability to detect and analyze changes in the tree canopy cover over time. Along with change detection algorithms, such as image differencing, vegetation indices, and time series analysis to identify areas of canopy loss, gain, or stability, providing valuable insights into the dynamics of the urban forest.

4. Accuracy Assessment: Our company showcases commitment to accuracy and quality control by discussing our rigorous validation and accuracy assessment procedures. For example, we can ground truth data as necessary and include field measurements, and statistical techniques to assess the accuracy of the remote sensing analysis (as/if needed). This ensures that the results are reliable and can be confidently used for decision-making.

5. High-Resolution Aerial Imagery: We emphasize our access to high-resolution aerial imagery, which allows for a more detailed and accurate assessment of tree canopy cover. RSI presents resources that enable us to acquire and process such imagery. We highlight the advantages of high-resolution data, such as improved identification of individual trees, capturing fine-scale variations in canopy cover, and supporting more precise mapping and analysis.

6. Data Visualization and Reporting: Our company showcases our proficiency in data visualization techniques, including the creation of informative maps, imagery overlays, and visual representations of the urban forest analysis results. We discuss our capacity to generate clear and comprehensive reports that effectively communicate the findings to stakeholders and decision-makers.

7. Drone services are included in our offerings with licensed pilots as/ if needed to further assess any areas including the ecological plots. (By this we mean we possess capacity to add other systems and layers if it becomes necessary as we perform our ecological analyses)

1.3 Field Work and i-Tree ECO Analysis

Key technical details and steps involved:

1. Stratified Random Sampling: We will establish a minimum of 150 permanent field plots (not exceeding 200 plots) distributed across various land use categories. This stratified random sampling approach ensures that our assessment covers a representative range of urban forest areas within the City of Gainesville.

2. Plot Assessment: Each permanent field plot, typically measuring 1/10th acre, will be established using appropriate GPS and other markers and existing plots will be located and assessed. Our team of trained professionals will collect detailed data on various parameters related to trees, shrubs, and ground cover within the designated plot area.

3. i-Tree ECO Modeling Software: The data collected during field assessments will be processed using i-Tree ECO modeling software. This powerful software, developed by the USDA Forest Service, allows for comprehensive analysis of the urban forest's structure, health, and economic benefits. It utilizes sophisticated algorithms to calculate important metrics and generate valuable insights.

4. Ground Truthing: Ground truthing is a crucial aspect of our methodology. It involves validating and refining the data obtained from remote sensing (such as Landsat imagery) through direct field observations. By comparing and cross-referencing the information collected on-site with the remote sensing data, we ensure the accuracy and reliability of our assessments.

5. Integration of Remote Sensing Data: In conjunction with field sampling, we will leverage remote sensing data, including high-resolution imagery such as Landsat imagery. This imagery will provide a broader perspective on the urban forest by capturing large-scale canopy coverage and changes over time. It will help us identify trends and patterns in the urban forest's development and evaluate the effectiveness of management efforts.

6. Collaboration with GIS Technology: Geographic Information System (GIS) technology will be integral to our analysis. We will utilize GIS tools to integrate and visualize the collected field data, remote sensing data, and other relevant spatial information. This integration enables us to create comprehensive maps, identify hotspots, and derive meaningful insights from the combined datasets.

Overall: By employing these technical methodologies, ACRT -RSI ensures a thorough and accurate assessment of the urban forest. We combine the power of advanced modeling software, ground truthing, remote sensing data, and GIS technology to provide the City of Gainesville with valuable information regarding the health, diversity, and economic benefits of its urban forest.

In addition to the technical details mentioned, it is essential to highlight the following:

1. Data Collection Parameters: Our field assessments will encompass a wide range of parameters related to trees, shrubs, and ground cover. These may include species identification, tree height, diameter at breast height (DBH), crown condition, health assessments, canopy cover estimates, and ground cover composition. By collecting detailed and standardized data, we can provide a holistic understanding of the urban forest's characteristics and dynamics.

2. Multi-Year Analysis: To gain insights into the urban forest's changes over time, we will conduct a multi-year analysis covering four specific time periods: 1995, 2005, 2016, and 2023. By comparing canopy coverage data from these years, we can assess trends, identify areas of growth or decline, and evaluate the effectiveness of past tree planting and management initiatives.

3. Urban Forest Health Assessment: The i-Tree ECO modeling software will allow us to assess the health of the urban forest beyond physical structure. It will provide valuable insights into the environmental and economic benefits associated with the trees, such as carbon sequestration, air pollutant removal, energy savings, and stormwater mitigation. These assessments will help the City of Gainesville understand the broader contributions of the urban forest to the community's well-being and sustainability.

4. Recommendations and Actionable Insights: Our analysis will not be limited to data collection and reporting. We will provide the City with actionable recommendations based on the findings from the field work and i-Tree ECO analysis. These recommendations may include strategies for enhancing tree diversity, targeting specific areas for tree care and maintenance, optimizing future tree planting initiatives, and implementing urban forestry management plans.

5. Collaboration and Stakeholder Engagement: Throughout the process, we recognize the importance of collaborating with key stakeholders, including the City's urban forestry department, community organizations, and residents. We will actively involve stakeholders in the data collection process, ensuring their perspectives and local knowledge are incorporated. This collaborative approach fosters a sense of ownership and increases the likelihood of successful implementation of future tree planting and management initiatives.

1.4 Example Reports

Our team's goal is to provide the highest level of reporting and public engagement the City would like to see in a final report. From simple one-page documents to public facing websites, our marketing and communications team works alongside the City and ACRT operations to create a top notch final report. Please note, a final report is included in the pricing below, but it does not include website development. Should the City like pricing for this service, ACRT would be happy to provide it. What is included is assistance with any publications the City is interested in writing. Our team publishes an average of 40 articles per year, and we would love to assist the City in sharing the good its team does for Gainesville's citizens.

Highlighted Project

Measurable Results

Our team has proven cost-savings in previous case studies by reduced mowing and advanced integrated vegetation management practices. This validates return on investment with the added benefit of becoming an environmental steward of the rights-of-way under our clint's supervision. This provides the tools and information needed to aid in improving public relations by sharing outcomes with stakeholders.

National Grid's Approach to Better Land Management

National Grid has been utilizing integrated vegetation management (IVM) practices to enhance ROW plant and wildlife biodiversity since the 1950s. Their large transmission corridors interconnected green spaces are teeming with native plant communities, pollinators, and wildlife. As a component of National Grid's overall environmental stewardship program, they launched a collaborative BIOaudit™ study with scientists and industry experts from ACRT Services, assess the quality of our ROWs as we move forward.

National Grid's Objective

"With responsibility for more than 1,600 miles of utility transmission corridors, we are always working judiciously to ensure each site is managed using the right strategies and to implement the latest advancements in science into our programs."

Their goals include:

- Reducing the use of herbicide on our ROWs
- Reducing mowing frequency to support plant growth
- Using the latest technology for herbicide planning
- Creating more sustainable ground cover

- Increasing bloom variety for nectar and pollen availability
- Providing food, shelter, and protection for insects and wildlife
- Reducing work needed on ROWs to lessen our carbon footprint

Published articles detailing the ongoing project with National Grid:

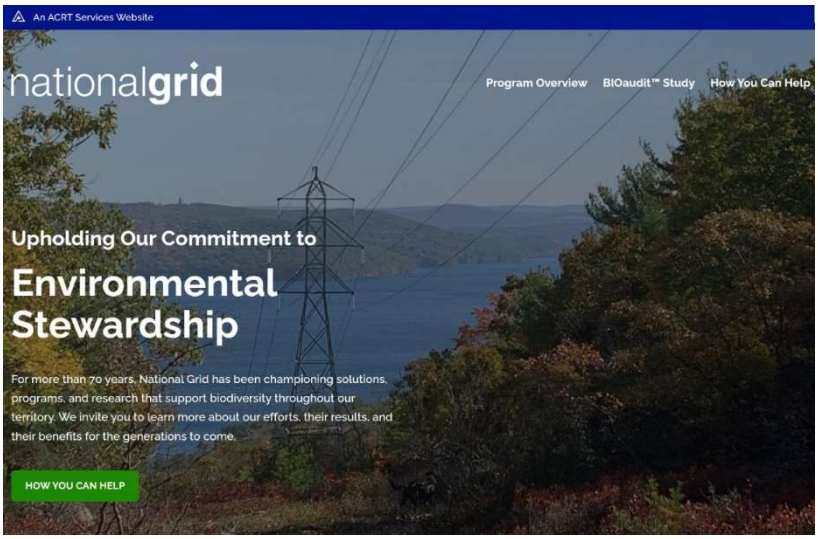
[National Grid Undertakes Pollination and Biodiversity Programs]

[National Grid: Making Way for Right-Of-Way Real Estate with Pollinator Project]

[National Grid's Biodiversity Study for Integrated Vegetation Management]

[The New Biological ROI]

[Monitoring Monarch Butterfly Health in ROW Corridors]

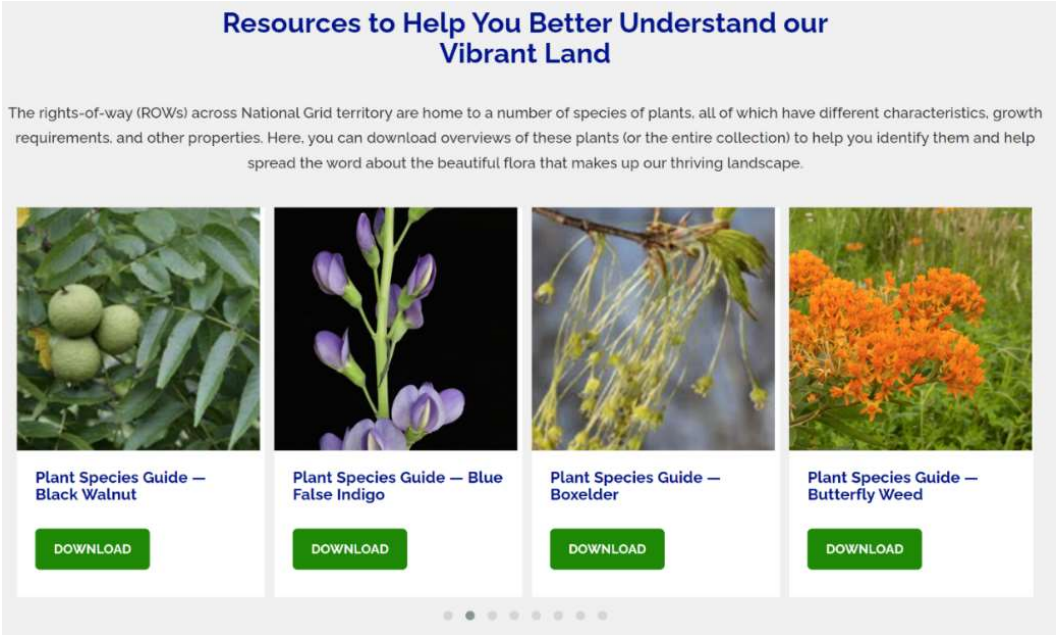


An important component of ACRT's partnership with national Grid is the development and launch of the public-facing website aimed to educate stakeholders.

[National Grid: Upholding Our Commitment to Environmental Stewardship]

Plant Species Guides

Snapshots of ACRT customized plant species compatibility guides can be found on National Grid's BIOaudit webpage.



The flowing are examples of native and non-native species observed.

COMMON MILKWEED

Asclepias syriaca

GENERAL INFORMATION

Family: Asclepiadaceae

Form: Herb

GROWING ENVIRONMENT

Hardiness Zone: 3 – 9

Light Exposure: Full Sun

Soil Type: Clay/Sand

pH Range: Various

Moisture: Low – Medium

Growth Rate: Moderate

BLOOM INFORMATION

Bloom Time: June – August

JAN FEB MAR APR MAY **JUN**

JUL **AUG** SEP OCT NOV DEC

Flowering: Flowering

Bloom Color: Pink

CHARACTERISTICS

Type: Perennial

Persistence: Deciduous

Leaf Arrangement: Opposite

Leaf Margins: Entire

Flower: Umbel

Fruit: Follicle

Woody Stem: No

DISTRIBUTION

Aggressive: Nonaggressive

Compatibility: Compatible

Native *Native and Non-Native*

Non-Native *Absent/Unreported*

ACRT

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COMMON KNOTWEED

Polygonum arenastrum

GENERAL INFORMATION

Family: Polygonaceae

Form: Herb

GROWING ENVIRONMENT

Hardiness Zone: 5 – 10

Light Exposure: Partial Shade

Soil Type: Loam

pH Range: Various

Moisture: Low – Medium

Growth Rate: Low

BLOOM INFORMATION

Bloom Time: May – November

JAN	FEB	MAR	APR	MAY	JUN
JUL	AUG	SEP	OCT	NOV	DEC

Flowering: Flowering

Bloom Color: Green, White

CHARACTERISTICS

Type: Annual/Perennial

Persistence: Deciduous

Leaf Arrangement: Alternate

Leaf Margins: Entire

Flower: Cyme

Fruit: Achene

Woody Stem: No

DISTRIBUTION

Aggressive: Nonaggressive

Compatibility: Compatible

Native *Native and Non-Native*

Non-Native *Absent/Unreported*

The following is a copy of the simple one-page report we submitted using data collected from the City's re-inventory in 2021.

TREE INVENTORY 2021

City of Sedalia, Missouri

OVERVIEW

In March 2021, ACRT conducted a thorough tree inventory of 2,319 parcels by the request of the City of Sedalia, Missouri. ACRT started with an estimated total amount of 1,950 parcels and added an additional 369 parcels to the project by request of the City while remaining within the project budget.

Tree Inventory Attributes

Tree inspections were comprehensive and include all trees that displayed outward signs of the health, vigor, or structural integrity within the rights-of-way.

Tree assessments included:

- Exterior physical properties of the tree
- Species
- Stem count
- Condition
- Defect severity
- Composition
- Height
- Trunk diameter

After tree health was evaluated, ACRT arborists evaluated:

- Site conditions
- Recommended maintenance
- Location rating
- Public safety
- Improper pruning practices
- Failure probability

ACRT arborists evaluated the sites to:

- Establish clearance requirements
- Identify the presence of overhead utilities
- Damage to hardscape
- Growing space type (island, median, natural area, open/ unrestricted, raised planter, tree lawn/parkway, well/pit)
- Growing space available

Tree Risk & Mitigation Prescription

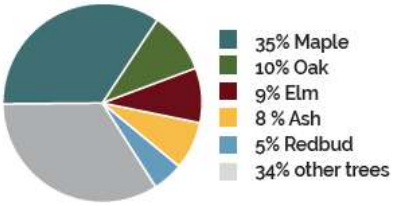
All of the tree inventory attributes were used to evaluate the level of risk of the tree and to make a professional determination on the prescription to reduce or mitigate the risk.

Tree prescriptions were determined not only by the failure probability but also the strike-likelihood of all or portions of the tree to any target. The prescriptions were in accordance with industry best management practices and ANSI A300s Pruning Guidelines Parts 1-9.

Each tree was located according to the scope: address (when available), GPS located, photographed, and mapped.

Top 5 Species Recorded

Over 90 species were recorded within the City's rights-of-way. In Urban Forestry, variety is your friend. It is important to consider what is the right tree for this space and to include a broad assortment of trees. While an urban planting of one tree species can be striking, if a pest or disease is introduced it can lead to a large loss of City trees.



Primary Maintenance

Planning regular maintenance is vital in tree health, especially in established trees within the urban forest. Annual inventories are a wonderful way to achieve that!

ACRT's arborists used industry standard best management practices and the ANSI A300s pruning guidelines, parts 1-9 as reference for the following prescriptions.

Environmental Benefits

Greenhouse Gas
217,406 lbs CO2 avoided
362,344 lbs CO2 sequestered

Water Saved
6,762,204 gallons

Energy Saved
162,330 kWh
$17,548 saved

Air Quality
36,568 lbs. pollutants removed
$116,816 saved

Environmental benefits data from: Nowak, D.J., Walton, J.T., Greenfield, E.J., Ellingsworth, D., Binkley, M., & Maco, S. (2006). iTree Canopy (Version 7.1) Retrieved March 26, 2021, from https://canopy.itreetools.org/

ACRT Prepared by ACRT, 4500 Courthouse Boulevard, Suite 150 Stow, Ohio 44224

Part 2 – Price Proposal

PART 3 – PRICE PROPOSAL

3.1 PROJECT COSTS AND DELIVERABLES

Total cost is based on completion of all project tasks and deliverables stated above (TASKS 1- 5).

Budget will cover: labor, field equipment (including computer tablets for data collection), computer for data input and analysis, vehicle mileage, printing and postage, purchase of imagery.

1. TOTAL COST FOR ECOLOGICAL ANALYSIS-: $ 150,000

2. COST FOR TASK 4 TREE INVENTORY - $ 4.76 per tree cost
(Total cost will be based on an estimated 38,500 number of trees-25,000 total street trees and 13,500 total urban park trees)

Award will be based on total cost of 1 and 2.

NOTE: If travel is involved in the execution of an awarded contract for this solicitation, should any air travel be required the City's travel policy allows for Coach air travel only. All other travel will be billed in accordance with the Federal General Services Administration rates which can be found at: https://www.gsa.gov/travel/plan-book/per-diem-rates. In addition, long distance phone calls, printing, and other administrative costs may be billed at cost only -no mark-up. Evidence of these expenditures will be submitted when invoicing the City. Travel and administrative costs should be identified in the Price Proposal.

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Part 3 – Qualifications

3.0 ACRT Services – Company Information

ACRT Services and its family of companies offer independent consulting solutions to organizations throughout the U.S., including vegetation management consulting, utility metering services, arborist training, customized safety courses, technology solutions, and now environmental services to empower the best people in the industry.

ACRT, Inc. is the only independent national vegetation management consulting firm. We proactively manage vegetation across rights-of-way to help utilities provide safe and reliable service to customers. We operate a nationally recognized Arborist Training School. Est. 1985

Bermex, Inc. provides metering solutions for gas, electric, and water. Customers stay because we save them money, mitigate operational problems, and improve customer service. Est. 1972

ACRT Pacific, LLC. provides vegetation management services to utilities in California for the state's diverse landscape and unique risks and challenges. Est. 2018

EnviroScience, Inc. is a team of expert biologists, divers, scientists, and engineers that provides technical solutions to environmental challenges, with a special focus on aquatic environments. Est. 1989

ACRT, Inc.

ACRT, Inc. is the only nationwide independent utility vegetation management consulting company and we have been serving the industry for over 37 years. We provide experienced personnel to deliver the highest standard of performance to our partners. We support vegetation management programs from coast-to-coast and manage hundreds of thousands of miles of rights-of-way.

We excel in offering a holistic approach to utility vegetation management. ACRT is considered a prime consulting vendor for many utilities and has been providing vegetation management and contract training services in over 42 states across the U.S.

EnviroScience

EnviroScience, Inc. is a team of over 140 expert biologists, commercial divers, environmental scientists, and environmental engineers headquartered in Stow, Ohio, with regional offices throughout the U.S. Since 1989, we have provided expert technical services to help our clients meet their environmental design and regulatory requirements. Our clients include federal, state, and municipal governments; departments of transportation; the railroad industry; utilities, mining, manufacturing, and engineering firms; and private individuals. Our ecological consulting services are nationally recognized and include restoration and environmental compliance assistance on projects of all sizes for freshwater mussels, bats, fisheries, aquatic surveys, and streams and wetlands. We also have a large bioassay and taxonomy identification laboratory to support ecological and biomonitoring projects, including whole effluent toxicity and harmful algal bloom testing.

Few environmental firms in the country retain our degree of scientific knowledge, talent, and capability under one roof, and most of our staff have over 10 years of experience in their respective fields. Because of our team's diverse professional background, we can provide comprehensive in-house services and an integrated approach to solving environmental challenges—saving clients time, reducing costs, and ensuring high-quality results. We always put our client's needs first by only using necessary resources and consistently completing projects on time and within or below budget. Because of this business model, we hold master service agreements with many national transportation entities, utility companies, and other industry members.

The EnviroScience Team

- Algal Taxonomists
- Bat Ecologists
- Botanists
- Commercial Divers
- Engineers
- Environmental Planners
- Environmental Scientists
- Fisheries Biologists
- Geologists
- Geomorphologists
- GIS Analysts
- Herpetologists
- Macroinvertebrate
- Taxonomists
- Mussel Specialists
- NEPA Specialists
- Regulatory Specialists
- Stormwater Inspectors
- Toxicologists
- Wastewater Scientists
- Wetland Scientists

3.1 ACRT's History

Dick Abbott and his wife Sue were the founding members of ACRT, officially incorporating the acronym Appraisal, Consulting, Research, and Training in February of 1985. In the beginning, Dick and Sue ran ACRT out of their home, but the company quickly grew and eventually moved to Ohio where our headquarters is today.

Dick's influence is also the reason behind our organization's close ties to safety. For 15 years, Dick was the chairman for the Z-133 Safety Standards Committee, the creators of the Tree Trimming Safety Standards that are still used today.

In 2003, we became completely employee-owned, a move that Dick and Sue decided to make for the benefit of our people and our company. Our employee stock ownership plan (ESOP) gives our employees a qualified retirement plan and enables them to be a direct part of the success of our organization. This provides an unmatched, free, and flat distribution of stocks to everyone in our company and empowers our employees. Our success is our employee's success.

Additionally, our benefits include medical, dental, vision, 401(k), and much more. We provide allowances for work boots, prescription safety glasses, and a complete assortment of personal protection equipment to keep them safe on the job. Our customers agree that by paying better wages and better benefits, we have higher quality services. This results in lower total costs of ownership to them because of reduced turnover and more productive personnel.

As we have updated what ACRT believes, we have also updated what we stand for, literally: the ACRT acronym now stands for Assessments, Consulting, Representation, and Training. Mixing in our past with our future, this helps define what we do and lights our path for future growth and evolution in our industry. Our primary objective is to be an end-to-end solution provider for our customers, so they can promote safe and reliable rights-of-ways.

We were the first, and remain the largest, independent national vegetation management consulting firm in the United States, and the first national line clearance, tree care, and urban forestry training organization. This history follows us into our future endeavors. The equity our brand has built with our customers and the communities they serve helps us expand our organization into new opportunities and industries.

Industry Involvement

Silver Shield Winners make us proud. We were recently honored with two of our employees receiving the Utility Arborist Association's (UAA) Silver Shield safety champion award. ACRT Arborist Training Supervisor, Kevin Myers, received the inaugural UAA Silver Shield safety champion award in 2016. ACRT Operations Manager, Keith Pancake, received the award in 2018 and he was in good company that year. These individuals are just some of the many employees in our organization that continuously work to influence and promote a safety culture at every turn.

Public speaking is encouraged. ACRT believes in sharing, teaching, and giving back. One way we foster this is to support anyone to speak publicly on safety and other industry related topics. We are active participants of the UAA's regional safety summits and sponsor events across the country. We partner with utilities, provide leadership, and often dig in to organize these events. We have many subject matter experts within our company that are available to help develop employees around the country.

We support the Utility Arborist Association. For decades we have purchased a UAA membership for every employee in our company. This provides insights, opportunities for CEUs, and to learn about the industry. Our employees enjoy volunteering their time to causes like the UAA. We are also Partners in Excellence (PinE) Award winners.

- UAA Editorial Committee: Renee Bissett, John Wasmer
- UAA Finance Committee: Brad Schroeder
- UAA Partners in Excellence (PinE) Committee: Renee Bissett, Kevin Gamble, Bob Urban
- UAA Professional Development Committee: Maegan Mullinax
- UAA Research Committee: Dr. Anand Persad
- UAA Safety Committee: Jerry Staton, Keith Pancake, Bob Urban
- UAA Executive Director: John Wasmer
- Trees & Utilities Planning Committee: Renee Bissett
- UAA Stewardship on Rights-of-Way (ROWs) Committee: Dr. Anand Persad
- Environmental Concerns in Rights-of-Way (ROWs) Management Steering Committee: Carly Harrower

Volunteerism is celebrated. We are active supporters of Saluting Branches, encouraging our employees to pass along their skill set to serve the greater good. Safety is paramount in organizing an event on that massive scale. Besides being sponsors and doing the heavy field work, we have been site leaders ensuring everything goes on without a safety incident.

Articles & Webinars

At ACRT we have averaged 40 industry published articles annually over the past few years. This is another way that we are committed to sharing and growing along with the industry as a whole. We also produce free monthly webinars that offer ISA CEUs not only to our employees but available to all who wish to access them via our website.

- https://acrt.com/resources/

3.2 Relevant Qualifications

ACRT is proud to have over 38 years of experience in pre-inspection, working planning, public relations, customer notifications, auditing, quality control, total VM management, regulation/compliance, integrated vegetation management, and arborist training, over 22 years of experience in preparing and responding to natural disasters such as, ice, tornado, hurricane, and wildland fires, and over 17 years of workflow VM software development experience.

Pre-Inspection / Working Planning

At ACRT, we partner with our customers to monitor and assess their systems for vegetation liabilities, storm preparedness and more. This creates a vegetation management program that is proactive and not reactive. Over time, this helps save time and money, and better manage vegetation on their systems.

An effective vegetation management program cycle begins with a thorough pre-inspection or work plan. Our arborists examine rights-of-way for hazard trees, encroachment, and potential encroachment, as well as evaluate clearances. This data is then used to create detailed work plans for documenting

vegetation species, locations, and growth rates, as well as specifying the most effective remediation methods.

Our roots in and passion for arboriculture mean that our customers can rely on ACRT for a strategic solution to their vegetation issues. It is the difference between one-time quick fixes and a comprehensive, proactive program that ups dependability.

Public Relations / Customer Notifications

At ACRT, we know how much you value your public relationships. You deserve a partner who will be able to effectively communicate with to the public on what you are doing without damaging your reputation.

In the field, customer relations activities are conducted by our arborists, often simultaneously with Pre-Inspection. Our arborists will accurately answer the public's questions, address concerns, and resolve potential conflicts. ACRT always has been, and always will be, about one thing: people. It is about our employees, our customers, and the communities our customers serve.

Post Audit / Quality Control

Our team begins their vegetation management auditing as soon as the job is completed. ACRT arborists patrol the rights-of-way again — inspecting each work unit and evaluating clearance, pruning cuts, hazards, cleanup, safety, herbicide application, and ensuring overall compliance with the work plan. Any work not completed to specification is resubmitted to the tree crews. Post-auditing is a simple technique with a profound effect and one you cannot afford to leave out of your vegetation management program.

We also offer comprehensive safety auditing. Our safety auditing addresses quality, clearance, or compliance. It mitigates incidents and accidents, adhering to safety rules and practices of the utility as part of compliance.

Consulting Utility Foresters

Our consulting utility foresters (CUF) identify, inspect, and evaluate trees and brush along utility lines and submit inspection results to the client with our recommendations. CUFs work as your utility's eyes and ears in the field. From planning and directing the activities of assigned tree clearance crews to work with customers on your behalf along the way, our foresters are up to the task of servicing your community. When the work is complete, we can aid the City in maintaining a high quality of work with comprehensive audits.

At ACRT, we put safety first, always, so you know that everything from our patrols and approach to outage investigations follows a practice that ensures the job is done correctly.

We encourage our CUFs to attain certifications through the International Society of Arboriculture and provide memberships to the Utility Arborist Association. We also offer guidance and support through our internal study guides and additional training modules. ACRT's Arborist Training team is the largest licensed arboriculture training organization in North America. They help keep ACRT well-informed on techniques and regulations, maintain accuracy in reporting, and provide adaptable training opportunities in the field. ACRT was the first and remains the largest national commercial vegetation management consulting firm in the United States and the first nationwide line clearance, tree care, and urban forestry training organization. This history follows us into our future endeavors.

Professional Services

As the leading national independent vegetation management consulting firm, our experts have decades of experience in various fields beneficial to vegetation management. Integrated vegetation management, consulting forestry, federal and state regulations, safety standards, and significant weather event incidents are a few areas we can provide subject matter experts. ACRT Professional Services can be customized to various tasks, such as risk mitigation planning, RFP development, regional benchmarking, and a wide-range consultation vegetation management services to get projects up and keep them running efficiently with unbiased advice.

Our experts back up their knowledge with nationally recognized certifications that speak to their proficiency in the area. Many of our experts have certifications through the International Society of Arboriculture as Certified Arborists, Utility Specialists, and Master Arborists. Others include Tree Risk Assessment Qualified (TRAQ), Certified Tree Safety Professionals (CTSP), Register Professional Forester (RPF), Pesticide Control Advisors, and many other areas.

Total Management

A complete and multifaceted vegetation management program can be a massive undertaking. We can develop and enact a complete UVM program and manage it on a continuing basis, enabling you to handle this entire task with a single point of contact.

We can take our core services and wrap them in highly effective and systematic management procedures. We take care of personnel, choose contractors and negotiate contract types and payment schedules, and construct and manage your vegetation program from top to bottom.

Regulation / Compliance

Keeping up with compliance is a job full of constant challenges due to continuous updates and changes to laws and regulations. At ACRT, we know that you are under scrutiny from regulators at the local and federal levels. That is why we make it our job to understand all the rules and regulations surrounding vegetation management and ensure that you are complying.

Our success in compliance reviews, audits, and field assessments means you can depend on us as your partner for every regulatory requirement. Our ongoing dedication to training our team on compliance means you count on us to proactively keep you in front of future compliance issues and updates.

Integrated Vegetation Management

An integrated vegetation management (IVM) plan could be the long-term strategy you need to keep hazardous plants and trees under control and resist invasions by more unwanted plant species. Beyond its safety applications, ACRT's unique approach to IVM can also reduce your future costs and work requirements.

Our IVM approach is crafted around the types of plants and pests in your area that we identify to be hazards, and what can be done to encourage safer native species in your region and climate. Developing an effective herbicide program takes time and planning and is based on following core best practices. Based on the density, height, and location of the vegetation, and the timing of the project, we will be able to determine what sections would best benefit from spraying herbicides and what should be cut down. Done correctly, IVM provides peace of mind when chemicals are sprayed, as it provides a natural refuge for bees and other insects that pollinate.

The spraying of herbicides not only takes care of vegetation up front, but it also manages the problem long-term. You will be able to save money by having less maintenance done in the future while promoting a stable plant community.

Arborist Training

ACRT Arborist Training is a licensed proprietary center of learning, operating internationally. It's the largest licensed arboriculture vocational training organization in North America. This training is performed by an experienced and highly qualified staff of full-time instructional, management and support personnel.

ACRT is the premier trainer for line clearance techniques and safety in the United States and is the only one to offer the Line Clearance Arborist Certification. If you are interested in line clearance, there is no better place to go—period. Our training is independent and unbiased. Typically, training offered by equipment manufacturers is geared toward increasing their sales. Our training is unbiased and focuses on increasing your skills, regardless of the type of equipment you use. You will also get unbiased advice and recommendations from people with real-world experience.

We provide entry-level through advanced arborist classes and certifications for line clearance companies, government agencies, tree care companies, municipalities, and individuals around the nation. ACRT Arborist Training arms crews with the right knowledge to perform their work safely, properly, and effectively.

We offer classes in:

- Line Clearance Arborist Certification
- Basic Arborist Training
- Electrical Hazard Training Certification
- Advanced Arborist Training
- Electrical Hazard Recognition for Substation Grounds Maintenance
- Herbicide Applicators Course
- Customized Workshops:
    - Chainsaw safety
    - Pruning
    - Rigging, basic and advanced
    - Cabling and bracing
    - More options available upon request

ACRT was founded on training and education. It was so important to our founders that it became the "T" in our name. We believe in sharing practical knowledge. We're the experts and we're proud to extend that expertise to those who seek it. We offer training opportunities in areas where they are needed to help empower the people around us.

BIOaudit™

A biodiversity analysis to empower your vegetation management

More than ever, utilities and associated organizations are being called upon by stakeholders and the public alike to explain their efforts in promoting pollinator and vegetation health throughout their

territories. Historically, this has been difficult to quantify, making it even harder for utilities to justify their IVM efforts and communicate their importance.

That's why ACRT Services launched the BIOaudit™ assessment — to evaluate ROW corridor health and biodiversity over time and provide quantifiable data that vegetation management leaders can act upon and communicate with the world.

BIOaudit™ provides system-based ecological metrics for comprehensive, data-driven planning in managing right-of-way (ROW) vegetation. Our ROW Science Advisors assess multiple aspects of biodiversity in your corridors and green spaces — vertebrates, invertebrates, vegetation, soil, water, and more — to help quantify your integrated vegetation management (IVM) efforts, improve overall planning, and communicate impact with the public.

How BIOaudit™ Helps Vegetation Management Leaders

- Informs the public via a tailored educational website
- Enhances pollinator health and native species in ROWs
- Supports rare, threatened, and endangered species
- Identifies invasive species impacting ROW ecosystems
- Enables more proactive vegetation management
- Ensures in-depth analysis via field collection software
- Provides easy access to data via client portals
- Supports environmental compliance efforts
- Improves biomechanical understanding of tree zones
- Evaluates and confirms IVM practices and results

The data from many right-of-way plant surveys often miss the value that each component in the plant community contributes to the overall habitat quality and the resulting sustainability efforts already present in many vegetation management programs.

A better solution is to engage individual plant species by quantifying the value of each plant species characteristics (PSCs) of each plant type. These may include growth rates, plant reproduction, bloom, mature plant size, and compatibility level. By incorporating these attributes when evaluating the overall ecosystem in the right-of-way, we can better highlight the vital role that plants may play in wildlife habitats. These characteristics are also essential in understanding seasonal dynamics and succession in plants. They may include incidental and dependent invertebrates; for example, we can predict the biological health of pollinators with plants that may bloom in staggered windows over time. They may also include vertebrate populations; for example nesting songbirds, gamebirds, etc.

Bioaudit uses geospatial mapping of these traits during the growing season and aid in measuring a plant's worth to the right-of-way ecosystem as well as the benefits of habitat quality observed in each species. By coupling these maps with artificial intelligence (optical imagery from drones and other sources like spectral imagery from satellites) we can better develop predictive models for calculating plant species dynamics and site habitat quality over large tracts of corridors.

BIOaudit allows for more accurate biological evaluations of right-of-way sites because they are sampled in person by qualified right-of-way specialists. Over time we can improve integrated vegetation

management practices, increase pollinator health assessments, and confidently report environmental benefits to shareholders. Economic returns from standardized habitat value assessments coupled with the ability to use software to track trends over time will mean fiscally responsible and data-driven planning can occur. This can ultimately reduce maintenance costs while high-quality habitats and habitat-compatible areas are clearly identified.

BIOaudit works hand in hand with standard approaches supported by integrated vegetation management and industry best management practices. Collected data will be used to track and catalog management tactics to provide records of the biological end results obtained over time. Other valuable benefits may include data that can contribute to right-of-way accreditation, provide management history, and aid in demonstrating 'due diligence' with respect to the MBTA, WHC, the Monarch CCAA, and other environmental initiatives.

Protocol for BIOaudit

Belt Transects (BT 100m) are an advanced form of plant sampling along selected areas in a right-of-way and provides key information on those species. This offers quantifiable and repeatable data points for sampling and tracking vegetation and can be mapped and GPS marked for easy reference. This data builds on itself over time by allowing for advanced planning leading to more efficient management practices.

Figure 1: Example of a Belt Transect (BT 100 m x 3 m= 300 sq m) on a ROW corridor approx. rate of 3- 5 lines per mile based on terrain and topography and site homogeneity

Part 4 – Required Documents

4.0 Drug-Free Workplace

DRUG-FREE WORKPLACE FORM

The undersigned bidder in accordance with Florida Statute 287.087 hereby certifies that

ACRT, INC does:

(Name of Bidder)

1. Publish a statement notifying employees that the unlawful manufacture, distribution, dispensing, possession, or use of a controlled substance is prohibited in the workplace and specifying the actions that will be taken against employees for violations of such prohibition.

2. Inform employees about the dangers of drug abuse in the workplace, the business's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for the drug abuse violations.

3. Give each employee engaged in providing the commodities or contractual services that are under bid a copy of the statement specified in subsection (1).

4. In the statement specified in subsection (1), notify the employees that, as a condition of working on the commodities or contractual services that are under bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, or plea of guilty or nolo contendere to, any violation of Chapter 893 or of any controlled substance law of the United States or any state, for a violation occurring in the workplace no later than five (5) days after such conviction.

5. Impose a sanction on, or require the satisfactory participation in a drug abuse assistance or rehabilitation program if such is available in the employee's community, by any employee who is so convicted.

6. Make a good faith effort to continue to maintain a drug-free workplace through implementation of this section.

As the person authorized to sign the statement, I certify that this bidder complies fully with the above requirements.

C. Troy Ross (Jun 19, 2023 12:57 EDT)

Bidder's Signature

Jun 19, 2023

Date

In the event of a tie bid, bidders with a Drug Free Workplace Program will be given preference. To be considered for the preference, this document must be completed and uploaded to DemandStar.com with your Submittal.

Drug Free Worplace Form

Final Audit Report 2023-06-19

Created:	2023-06-19
By:	Kathleen Madden (kmadden@acrtinc.com)
Status:	Signed
Transaction ID:	CBJCHBCAABAApe1Ss2ee70srsR6Uz2RRkO1I0I73J-43

"Drug Free Worplace Form" History

Document created by Kathleen Madden (kmadden@acrtinc.com)
2023-06-19 - 4:44:33 PM GMT

Document emailed to troy-r@acrtinc.com for signature
2023-06-19 - 4:45:31 PM GMT

Email viewed by troy-r@acrtinc.com
2023-06-19 - 4:54:13 PM GMT

Signer troy-r@acrtinc.com entered name at signing as C. Troy Ross
2023-06-19 - 4:57:32 PM GMT

Document e-signed by C. Troy Ross (troy-r@acrtinc.com)
Signature Date: 2023-06-19 - 4:57:34 PM GMT - Time Source: server

Agreement completed.
2023-06-19 - 4:57:34 PM GMT

Adobe Acrobat Sign

4.1 Bidder Verification Form

BIDDER VERIFICATION FORM

LOCAL PREFERENCE (Check one)
Local Preference requested: ☐ YES ☒ NO

A copy of your ***Business Tax Receipt*** must be included in your submission if you are requesting Local Preference:

QUALIFIED SMALL BUSINESS AND/OR SERVICE DISABLED VETERAN BUSINESS STATUS (Check one)
Is your business qualified, in accordance with the City of Gainesville's Small Business Procurement Program, as a local Small Business? ☐ YES ☒ NO

Is your business qualified, in accordance with the City of Gainesville's Small Business Procurement Program, as a local Service-Disabled Veteran Business? ☐ YES ☒ NO

REGISTERED TO DO BUSINESS IN THE STATE OF FLORIDA
Is Bidder registered with Florida Department of State's, Division of Corporations, to do business in the State of Florida?
☒ YES ☐ NO (refer to Part 1, 1.6, last paragraph)

If the answer is "YES", provide a copy of SunBiz registration or SunBiz Document Number (# P11895)

If the answer is "NO", please state reason why: _____

ACRT, Inc.
Bidder's Name

Maegan Mullinax, Business Development Manager
Printed Name/Title of Authorized Representative

Signature of Authorized Representative

6/27/2023
Date

This page must be completed and uploaded to DemandStar.com with your Submittal.

4.2 References Form

REFERENCE FORM

Name of Bidder: ACRT, Inc.

Provide information for three references of similar scope performed within the past 3 years. You may include photos or other pertinent information.

#1 Year(s) services provided (i.e. 1/2015 to 12/2018): 2015 to present

Company Name:	Calaveras Public Utility District		
Address:	506 W St Charles St		
City, State Zip:	San Andreas, CA 95249		
Contact Name:	Bret Beaudreau		
Phone Number:	(209) 754-9442	Fax Number:	N/A
Email Address (if available):	bbeaudreau@cpud.org		

#2 Year(s) services provided (i.e. 1/2015 to 12/2018): 2017 to present

Company Name:	Ada County - Roadside Maintenance		
Address:	318 E 37th St		
City, State Zip:	Boise, ID 83714		
Contact Name:	Heather Friddle		
Phone Number:	(208) 509-2031	Fax Number:	N/A
Email Address (if available):	hfriddle@achdidaho.org		

#3 Year(s) services provided (i.e. 1/2015 to 12/2018): 2017 to present

Company Name:	Fresno County – Parks and Recreation Department		
Address:	770 N San Pablo Ave		
City, State Zip:	Fresno, CA 93728		
Contact Name:	Linda R. Brosi		
Phone Number:	(559) 600-4500	Fax Number:	N/A
Email Address (if available):	lbrosi@co.fresno.ca.us		

This page must be completed and uploaded to DemandStar.com with your Submittal.

Calaveras Public Utility District (California) – 2015 to Present

In 2015, and 2016 Pacific has performed the tree inspections for the Calaveras Public Utility District (CPUD). Pacific provided a TRAQ certified arborist to perform the assessment on the fire impacted trees along the hydro and private electric assets as part of the aftermath of the Butte fire for FEMA and CAL OES recovery. In-addition we also managed their routine inspections to maintain compliance for the utility commission regarding PRC 4293. Most recently in 2017 Pacific has entered into an agreement to manage their Tree Mortality Program. A TRAQ certified arborist and Pacific operations manager to provide the inspection of drought affected trees, developing a financial need statement, and acting as the liaison between CAL OES and CPUD. Pacific will also solicit competitive bids and provide timber operator oversight and cost containment during the removal of dead trees and clearing operations. The CPUD Tree Mortality Management project is currently active.

Ada County - Roadside Maintenance, October 2017 to Present

In October of 2017 ACRT was contracted to Ada County to perform the tree inspections along a maintenance zone that will be undergoing tree and road improvements in 2018's maintenance cycle. ACRT employees inspected tree clearances for chip seal trucks and encroachment. Our inspectors used GIS integrated GPS capable data collection hardware and ACRT data collection software to input tree species, location, clearance requirements, hazard conditions as they existed and hardscape conditions along the county-maintained road ROW. This projected was completed in 4 weeks and included over 13,000 trees in zone 1 of their territory.

Fresno County – Parks and Recreation Department, 2017 to Present

ACRT, Inc. provided International Society of Arboriculture Certified Arborist's to Fresno County Public Works and Planning, Parks section, to assess trees located in designated County Parks to determine the trees' general health conditions and designate dead or dying tree ten inches in diameter or greater for removal.

Trees deemed dead or dying were labeled with a metal tag and a stamped unique identifier by the arborist/forester and the geographic coordinates of each dead or dying tree was gathered and recorded. A written report and accompanying spreadsheet were submitted to the County of Fresno containing the following information regarding the dead or dying trees: general health, species, geographic data (longitude and latitude coordinates) for each tree and park location. County staff then used the data to plot each dead or dying tree on a Geographic Information Systems (GIS) map. A contracted Licensed Timber Operators then removed identified trees using the map and geographic coordinates.

ACRT, Inc. provided a team lead by a California Registered Professional Forester (RPF) to count, identify, mark, and GPS, if conditions permit, all dead and dying trees that are reasonably accessible

by equipment and machinery, and are within 200 feet of serviceable roadways and posed a structural threat. The RPF assisted the County in obtaining general environmental clearance.

It is the responsibility of the RPF to provide the following information in Microsoft Excel (two certified hard copies and non-certified digital copy):

- The number of trees that are identified for removal within Auberry, CA.
- GPS coordinates of trees identified for removal if requested by the County.
- Approximate GPS coordinates, address, or assessor parcel number of each tree identified for removal located on private property. Trees deemed dead or dying were labeled with a metal tag and a stamped unique identifier by the arborist/forester and the geographic coordinates of each dead or dying tree was gathered and recorded. A written report and accompanying spreadsheet were submitted to the County of Fresno containing the following information regarding the dead or dying trees: general health, species, and geographic data (longitude and latitude coordinates) for each tree and park location. County staff then used the data to plot each dead or dying tree on a Geographic Information Systems (GIS) map.

Tree population managed: 40,000

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4.3 Copy of W9

Please see our copy attached with ACRT's response in Demand Star.

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4.4 Exceptions

ACRT is confident in our ability to meet the total scope of work as it is defined in the RFP. Below are the redlines we applied to the sample contract. Please note that we consider these to be suggestions, and we are open to discussing our reasoning behind them and/or editing the language to satisfy both parties.

6. INDEMNIFICATION.

Contractor shall indemnify the City, its officials, agents and employees, and hold it harmless from suits, actions, damages, liability, expenses, losses and costs, including, but not limited to reasonable attorney's fees in connection with loss of life, bodily or personal injury, or property damage to extent caused and arising from or occasioned by any act or omission or negligence or intentional wrongdoing on the part of the Contractor and other persons employed or utilized by the Contractor. Contractor does not supervise or train other contractors performing work on the City's behalf and shall not be responsible or liable for their work activities or safety in any manner. Neither party shall be liable for consequential, incidental, indirect, loss of profits, or punitive damages. Contractor's liability for any claim shall be limited to the revenue derived from this agreement or the required insurance limits, whichever is greater.

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Anand Persad

Education:

University of Florida, *Gainesville, FL*, Post-Doctorate - Invasive species and Insect Molecular Genetics, Hi-Fidelity PCR

University of the West Indies, *St. Augustine, Trinidad,* Bio-Ecology/ Entomology Effect of a new pest in agriculture, forestry, and urban green spaces. MSc. Level accreditation in Applied Entomology and Advanced Statistics BSc. Natural Sciences, Department of Life Sciences

Director of Research and Science Innovation, *ACRT Services*, 2020 **-** Present
Oversee aspects of Artificial Intelligence in the VM workspace and Benefit analyses of IVM in ROW. Special focus is on the continued development of biological metrics and building the BioAudit team of ROW Science Advisors (RSA). Help utilities quantify the amount of habitat and biodiversity in ROW and also uses optical imagery (drones and other) to provide data driven management plans that assist in proactive planning. Assist utilities achieve and maintain high Safety standards through onsite and remote training programs and development of targeted training materials. Advise Wildlife Habitat Certification (WHC), ROW Environmental Stewardship accreditation and promotes land practice initiatives towards establishing corridors better aligned with conservation goals including the CCAA monarch butterfly and NWTF guidelines for habitat improvement. Work with the 'community' and human element and addresses concerns in ROW considerations often assisting with science backed solutions. Influence safety and environmental programs. Promote effective interaction with agencies that share ROW corridors with the utility clients especially in urban and peri-urban regions that span the utility geographic region (s). Work on projects with NERC and FERC compliance in maintenance and new construction build outs.

Principal, *Tetra Energy Sciences,* 2020
Lead for science-based, technologically advanced industry practice that encourages a multidisciplinary team approach in promoting sound arboricultural methodologies and sustainable ecological principles. Assist utilities in enhancing reliability and building safety and technology transfer programs geared toward improving the knowledge base and versatility of contractors towards effective implementation of VM Bmp's including the FAC-003.
Gave Science and Technical advising to Transmission Foresters nationally include biomechanics study in Transmission corridors and outage investigations, corridor and off-corridor trees and correlations to weather and other emerging factors (standing water, decay fungi on trees etc.) impacting on ROW trees. Advised transmission foresters nationwide on enhanced and smart use of artificial intelligence and incorporation into risk mitigation in thousands of miles of ROW in many geographies and site types.

Director of Arboriculture and Energy Client Programs, *Davey Tree Experts Company,* 2003 - 2020
ROW vegetation management sustainability initiatives and outreach: led a team of multidisciplinary focused researchers/ advisors on studies (*IVM economics, herbicide analysis, pollinator health) pertaining to ROW corridors (electric and gas) and presented this data to participating utilities/ energy companies in the north, mid-Atlantic and mid- west regions of the USA and Canada and at ROW utility industry events nationally and internationally. Supervised and contributed to innovation in outage reporting, transmission forestry staff training in safety, tree growth rates, hazard tree identification, abiotic and biotic effects on trees in Transmission corridors leading to risk mitigation. Ecological

Consultant to Energy companies including Orlando Utilities Commission, Exelon group and Dominion Energy. Led Pollinator initiatives with several partner utilities including evaluation, economics and herbicide analyses in ROW is an industry/ utility level benchmarking of what are we doing now- where should we be and how do we fill the gap if and as identified. Performed wildlife habitat assessment and management under varying land practices. Developed a Safety and Utility focused certification program (DIUS 2018) using Inquiry -based teaching and learning: Assessing metrics for the retention and efficiency of safety programs that utility contractors should aspire to for a changing industry.

Post-Doctoral Researcher, *University of Florida,* 2001 - 2003
Research invasive species management.

Assistant Professor, *University of the West Indies,* 1997 – 2000
Taught Plant Sciences courses including plant physiology, plant identification, genetics, and crop protection.

Biologist/Aviculturist, *Wildfowl Trusts,* 1995 – 1997

Industry Activities:

- Chair of the Research Committee of the Utility Arborist Association 2018 - Present
  Brought enhanced collaboration initiatives forward and helped link the UAA to other entities including CEATI and the natural areas association (NAA); led a UAA member team of scientists and practitioners, coordinated and presented a symposium for the first time ever at the NAA national meeting 2019 Pittsburgh PA. Leads two sub-committees one on outreach and transfer of technology and the other on research funding programs.
- President (2017) - Arboriculture and Research Education Academy (AREA) of the International Society of Arboriculture (ISA)

- Adjunct Professor: Kent State University Department of Biology 2012

- Entomologist: University of Florida, Gainesville, FL., 2001 to 2003.
  Studies on Insect molecular genetics/ Developed novel techniques using High Fidelity PCR Assays/ Biological control of invasive species

- Research Entomologist, 1999. University of Florida/ USDA, Orlando, FL
- Contributor to field publications including Arborist News and UAA Newline

Selected Peer Reviewed Publications:

Persad, A. B, Gregory Dahle, Oscar Rocha, Jason Grabosky 2019. Optical and Acoustical Evaluation of Ash Trees infested with Emerald Ash Borer. Arboriculture and Urban Forestry. Arboriculture and Urban Forestry.

Persad, A. B and P. Tobin. 2015. Early Detection of the Emerald Ash Borer. Arboriculture and Urban Forestry. Arboriculture and Urban Forestry 41 (2) 103-109.

Persad, A.B., J. Siefer, R. Montan, S. Kirby, O.J. Rocha, A.W. Jones, C. Ranger, and M. Redding. 2013. Effects of emerald ash borer on the structure and material properties of ash trees. Arboriculture and Urban Forestry 39:11−16.

Redding M. and A.B. Persad. 2009. Systemic insecticides for control of black Vine Weevil in container and field-grown nursery crops. Journal of Economic Entomology. 102 (3): 927-933.

Persad, A. B. and M. A. Hoy. 2007. Establishment of Lipolexis oregmae against Brown Citrus Aphid in Florida. Florida Entomologist. 12(2): 12-16.

Persad, A. B. and M. A. Hoy. 2004. Predation by Solenopsis invicta and
Blattella asahinai on Toxoptera citricida parasitized by Lysiphlebus testaceipes and Lipolexis oregmae on citrus in Florida. Biological Control. 30(3): 531-537

Persad,A. A. Jeyaprakesh and M. A. Hoy,2004. Molecular assays for the detection of immature stages of Lysiphlebus testaceipes and Lipolexis scutellaris in Toxoptera citricida. Florida Entomologist 87 (1): 18-24

Persad, A. and M. A. Hoy 2003. Manipulation of female parasitoid age enhances laboratory cultures of Lysiphlebus testaceipes reared on Toxoptera citricida. Florida Entomologist 86 (4): 429-436

Persad, A. B. and M. A. Hoy. 2003 Intra- and inter-specific interactions
between Lysiphlebus testaceipes and Lipolexis scutellaris on Toxoptera citricida. Journal of Economic Entomology. 96: 564-569

Gumbs, F.A., A. Khan, and A. Persad (2003). Evaluation of Blighia Sapida as a botanical pesticide against three pests of stored products- F.A.O.-U.N. Tropical Agriculture

Persad, A. and A. Khan (2003). Comparison of Life Table Parameters: Maconellicoccus hirsutus Green and its natural enemies Anagyrus kamali Moursi,
Cryptolaemus montrouzieri Mulsant and Scymnus coccivora Ayyar. Biocontrol 47: 137-149

Persad, A. and A. Khan (2003). The effect of five insecticides on Maconellicoccus hirsutus Green (Homoptera: Pseudococcidae) and its natural
enemies Anagyrus kamali Moursi (Hymenoptera: Encyrtidae),
Cryptolaemus montrouzieri Mulsant (Coleoptera: Coccinellidae)
and Scymnus coccivora Ayyar (Coleoptera: Coccinellidae). International Pest Control U.K. 42

Certifications:

- Board Certified Entomologist: Entomological Society of America (ESA) in Plant Insect Interactions
- Member of the Continental Dialogue of Invasive Species
- International Society of Arboriculture Certified Arborist # OH 5204A
- Ohio Pesticide Applicator Licensed
- Peer reviewer for international journals: Medical Entomologist, Environmental Entomology, Arboriculture and Urban Forestry (ISA), Florida Entomologist (USA) and Biocontrol (Netherlands).

Credential Verification via https://www.treesaregood.org/findanarborist/verify

This tool allows you to verify if an individual currently holds an ISA credential. It includes all individuals who are currently credentialed through the ISA credentialing program.

Credential Verification

Name search 'Anand Persad' returned 1 records

Back to Search

First Name	Last Name	City	State \ Province	Country	Credentials
Anand B.	Persad	Streetsboro	OH	UNITED STATES	ISA Certified Arborist®

Cliff Benedict

Education:

Louisiana Tech University, *Ruston, LA*, BS – Forestry
Bossier Parish Community College*, Bossier City, LA*, AS – Natural Sciences

Senior Operations Manager, *ACRT, Inc* 2020 - Present

Planning, directing, coordinating, and managing day to operations for ACRT for assigned region.

Operations Manager, *ACRT, Inc* 2013 – 2020

Work directly with Director of Operations, other Operations Managers, foresters, and Utility staff. Serve as liaison between field personnel, corporate office, and clients. Ensuring that the operational corporate objectives are being met through safety, productivity, and work quality. Supervise and train employees. Monitor job costs and stay within budget. Prepare reports as needed for the project.

Utility Forester/Auditor, *ACRT, Inc* 2006 - 2013

Prepare and issue planned manifest work to contracted tree trimmers. Perform quality assurance audits on circuits trimmed in assigned area. Work with utility customers on resolving conflicting interests for individual properties. Perform planning audits on ACRT fieldwork planners to ensure that assigned work is accurate. Perform accurate detailed invoicing for work completed in the field by crews.

Utility Forester/Work Planner, *ACRT, Inc* 2006 - 2013

Plan all tree trimming work in accordance with the utility line clearance specifications.

Qualifications:

- ISA Certified Arborist
- ISA Utility Specialist
- Utility Arborist Association Member
- Utility Arborist Association Training Board Committee Former Member
- Working in Trees and Line Clearance Certification
- National Arborist Association-Arboriculture I and II Certification

Senior Forester, *Pacific Gas and Electric Company,* 1996 - 2000
Project Manager for integrated vegetation management services provided to the Vegetation Management Services, Electric Transmission and Maintenance, Hydro Generation, Telecommunications, and Substation departments. Responsibilities include supervision of contractors and contract administration (preparing bid prospectus, record of bids, bid analysis, and contract work authorizations), on Company timberlands, and for the removal and/or trimming of hazard trees, brush removal, and application of herbicides along Company facilities. Managed 64 tree removal projects for various clients between 1991 and 1999. Manage 6 timber sales in 1999 and into 2000 that involve supervising 4 professional services contractors and 6 contract loggers, for a total contract value of $7,100,000.

Forester I and II, *Pacific Gas and Electric Company,* 1979 - 1996
Managed company lands (120,000 acres) for multiple use and resource management. Developed and implemented comprehensive Timber Harvesting Plans, prepared Land and Timber Resource Inventories, Timber Sale preparation and supervision, and timber value appraisals. Responsible for developing the Superior Tree Program (South Area) for the continued production of high quality and valuable, timber resources. Vegetation management responsibilities included herbicide recommendations and supervision of herbicide and reforestation contractors.

Certifications and Associations:

- ISA Certified Arborist/Utility Specialist SO-5567AU
- California Licensed Forester Association – RPF
- California Qualified Pesticide Applicator (past)
- California Licensed Forester Association – Director 1993 – 1995
- Society of American Foresters – Chairman 1987 – Sacramento-Tahoe Chapter
- California State Board of Forestry ad hoc committee member – Old Growth/Utility Exemptions
- UAA member

Credential Verification via https://www.treesaregood.org/findanarborist/verify

This tool allows you to verify if an individual currently holds an ISA credential. It includes all individuals who are currently credentialed through the ISA credentialing program.

Credential Verification

Certification ID search 'SO-5567AU' returned 1 records

Back to Search

First Name	Last Name	City	State \ Province	Country	Credentials
Cliff A.	Benedict	Hurricane Mills	TN	UNITED STATES	ISA Certified Arborist® ISA Certified Arborist Utility Specialist™