

Audit Report

Austin Energy's Vegetation Management

September 2023



Austin Energy (AE) is responsible for trimming trees near the City's power lines to help prevent power outages. AE is behind on their current goal to trim trees on a seven-year cycle, a goal that is already two years longer than industry standard. In 2006, Council gave direction to AE to trim trees less than industry standards. In 2019, AE increased trimming to better align with standards. However, trimming less than industry standards for many years contributed to overgrowth, increased workloads, and has made it harder for AE to meet their trim goals. To address these challenges, AE should develop a long-term maintenance plan of which trees to trim that shows how to meet its current and future trim cycle goals. AE should also take steps to improve data reliability so that progress to meet trim cycle goals can be accurately assessed.

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Cover: Photo of crew trimming tree branches away from distribution power line, Austin Energy’s X (Twitter) account <https://twitter.com/austinenenergy/status/1489207063641219073/photo/1>

Objective

The objective of this audit was to determine the effectiveness of Austin Energy’s vegetation management to meet normal and emergency response needs, and how this approach compares to peer entities.

Background

The most common reasons for power outages are storms, trees, vehicles, animals, construction, and equipment failure.

After Winter Storm Mara in February 2023, the Austin City Council passed Resolution 20230209-081¹ directing the City Auditor to conduct an audit of Austin Energy’s (AE) vegetation management program and its implementation. Winter Storm Mara was a multi-day natural disaster beginning in late-January that caused a historic amount of damage to Austin’s urban tree canopy. The weight of ice buildup on trees, limbs, electrical lines, and poles caused trees and tree branches to sag or snap and come into contact with power lines resulting in power failure throughout the Austin service area. AE brought in more than 400 additional workers to restore power. AE executives reported to various media outlets that the damage and weather conditions led to prolonged outages for about 348,000 customers. The damage caused by this storm drew attention to AE’s vegetation management, also known as tree trimming.

AE’s Forestry Division is responsible for trimming trees along nearly 2,338 miles of distribution power lines across approximately 304 electrical circuits in the City of Austin service area. The purpose of tree trimming is to prevent tree branches from brushing up against or falling on distribution and transmission power lines.² This process also prevents animals from climbing onto lines, reduces fire risks, and decreases the risk of electric hazards to the public. Across the City of Austin, departments like Austin Water, Austin Transportation and Public Works, Austin Resource Recovery, and Austin Parks and Recreation also perform tree trimming activities.

¹ Resolution 20230209-081 <https://services.austintexas.gov/edims/document.cfm?id=402837>

² Transmission lines operate at high voltages and are used to transmit the power from the generating station to the substations, whereas distribution lines operate at low voltages and transport power from substations to customers.

A distribution circuit is an isolated section of line that delivers power to specific areas. Any disruption in energy flow can cause a power outage affecting every customer on the circuit.

AE is the only City department that performs tree trimming near power lines. Per Council Resolution, we focused only on AE's tree trimming around distribution power lines that carry power to customers.

AE's tree trimming near power lines is the result of collaboration between several different groups. AE owns the power lines and utility poles which distribution lines connect to. Contractors are hired by AE to plan, schedule, and perform tree trimming work. AE staff oversee and inspect the contractor's work. Customers are property owners who own trees on their properties and are responsible for collaborating with AE to ensure crews have access to their properties for tree trimming work. Also, telecommunication or telecom carriers often attach their telephone, cable, or internet wires³ to AE utility poles and are responsible for trimming the vegetation around their wires.

As of 2019, AE trims slow-growing trees such as cedar and live oak to a standard of 7 to 10 feet away from power lines and 11 to 15 feet for fast-growing trees such as pecan. AE's current goal is to trim all of the trees around power lines at least once on a seven-year cycle. AE considers several factors to plan their tree trimming cycle including when a circuit was last trimmed, circuit performance, environmental risk, wildfire risk, and growth patterns. In addition, AE has an extensive customer communication process which allows customers to participate in discussions about work planned for trees on their property.

³ Telephone, cable, or internet wires for telecom carriers such as AT&T, Google Fiber, and Spectrum.

What We Found

Summary

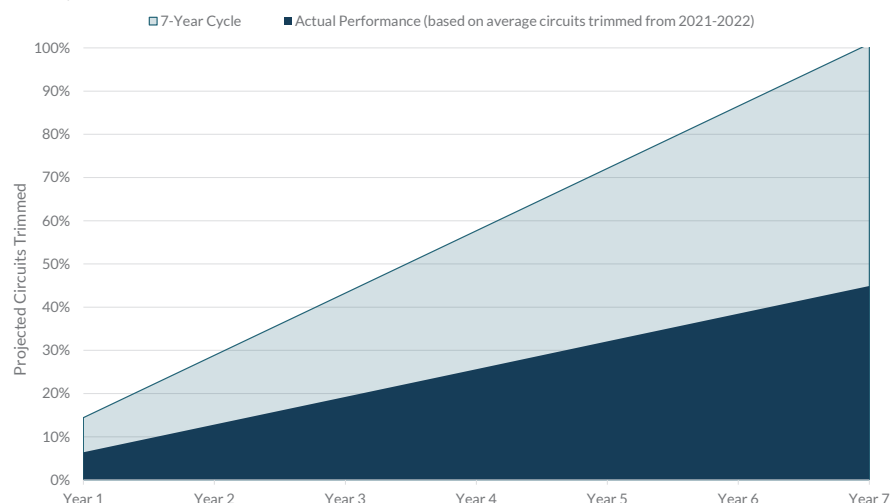
Austin Energy (AE) is responsible for trimming trees near the City's power lines to help prevent power outages. AE is behind on their current goal to trim trees on a seven-year cycle, a goal that is already two years longer than industry standard. In 2006, Council gave direction to AE to trim trees less than industry standards. In 2019, AE increased trimming to better align with standards. However, trimming less than industry standards for many years contributed to overgrowth, increased workloads, and has made it harder for AE to meet their trim goals. To address these challenges, AE should develop a long-term maintenance plan of which trees to trim that shows how to meet its current and future trim cycle goals. AE should also take steps to improve data reliability so that progress to meet trim cycle goals can be accurately assessed.

Finding

AE is behind on its current goal to trim trees around the City's power lines on a seven-year cycle because of several factors including Council direction in 2006 to trim trees less than industry standards. However, AE can do more to develop a long-term maintenance plan of which trees to trim and improve data reliability to assess progress.

AE Forestry Division's current goal is to trim trees around the City's distribution power line circuits on a seven-year cycle for fast growing trees. To meet a seven-year trim cycle, AE needs to trim about 44 circuits per year out of the estimated 304 circuits. We found that from 2018 to 2020, AE trimmed trees on an average of 13 circuits per year (or 4.3% of total circuits). We also found that from 2021 to 2022, AE increased tree trimming to an average of 19.5 circuits per year (or 6.4% of total circuits). However, trimming 19.5 circuits per year is still insufficient to meet AE's current goal to trim all circuits in seven years, translating to a cycle length that is more than double the seven-year goal. AE staff said it is not realistic to trim 44 circuits per year with the current resources available at this time. In 2023, AE hired four more tree trimming contractors with funding approved by the Council. These newly hired contractors have not started actual trim work and it is unclear at this time how these additional tree trimming contractors will impact AE's progress.

Exhibit 1. AE is trimming trees on a cycle more than double their current seven-year cycle goal.



Source: OCA analysis of AE's tree trimming performance based on average circuit trims compared to current seven-year trim cycle goal, August 2023.

While AE's Forestry Division is behind on its current seven-year trim cycle goal, industry best practices are to have a trim cycle goal of five years. We researched seven peer city utilities identified as comparable⁴ by AE executives. Austin is the only city out of the peer utilities we reviewed that has a current trim cycle goal of seven years. The other seven peer city utilities reported that their cycle is anywhere between one to five years. AE executives reported that they have a future goal to trim trees on a five-year cycle with a mid-cycle cut by 2028. See Appendix A for detailed comparison of peer city utilities tree trimming efforts.

Exhibit 2. Austin's current tree trimming cycle goal is longer than other peer city utilities.

City	Years for trim cycle*
Austin	7 years
Seattle	4.5 years
Nashville	3.5 - 4 years
Denton	3 - 5 years
Orlando	3 years
Jacksonville	2.5 years
Los Angeles	1 year
San Antonio	No Response

*Auditors did not look at tree trimming actuals for peer city utilities, only their goals.

Source: OCA summary of tree trimming cycles reported by peer city utilities surveyed, August 2023.

There are several factors that contribute to why AE's Forestry Division is behind their current seven-year trim cycle goal.

AE Forestry Division management said the longer tree trimming cycle is caused by many factors that are difficult for AE to control, including:

- Difficulty hiring qualified tree trimming contractors due to the City's lengthy contract approval process and contractor labor shortages.
- Lengthy communication process with customers to ensure they are aware of tree trimming efforts occurring on their property.
- AE's efforts to avoid trimming certain areas during certain parts of the year to prevent spreading oak wilt, a tree disease, and to protect bird habitats.

AE avoids trimming red oak and live oak from February to June when oak wilt is more likely to spread and all trees west of MoPac from March to September to protect bird habitats.

An additional factor is AE's effort to follow Council direction in 2006 to trim trees less than industry standards. In 2006, the Council passed Resolution 20060209-019⁵ directing the City Manager to create a task force to review, develop, and recommend to Council policies and procedures related to the AE's tree trimming and tree removal programs. This resolution was in response to Hyde Park, Hancock, and Eastwoods

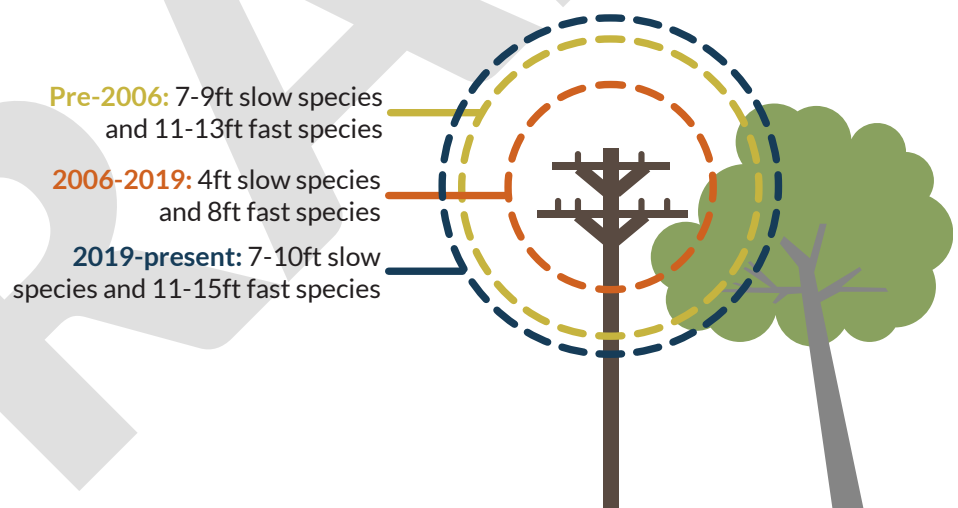
⁴ The peer city utilities identified have similar population size, tree canopy coverage, and use contracted vendors to trim trees compared to Austin.

⁵ Resolution 20060209-019 <https://services.austintexas.gov/edims/document.cfm?id=110150>

Neighborhood Associations' request to include managing and protecting the health, economic, ecological and aesthetic benefits of the urban tree canopy. As a result, AE modified their tree trimming clearances, or how much to trim trees around power lines, by more than three feet less than industry standards. The reduced tree trimming clearances were meant to be temporary while AE created a task force to conduct a Tree Growth Study to ensure clearances were aligned with best practices for tree health. However, reduced tree trimming clearances remained standard operating procedure despite recommendations from the Tree Growth Study to increase tree trimming clearances. In the years following, trees near AE power lines became overgrown. In 2019, AE increased tree trimming clearances to better align with industry standards. In 2021, the Council approved a 94% increase to the AE Forestry Division budget to help trim overgrown trees to the new 2019 standards. In 2023, AE hired four more tree trimming contractors with additional funding approved by the Council.

AE is currently working to trim trees to the updated 2019 clearances. Since 2020, AE has trimmed trees on 19% of circuits to the current clearances. See Appendix B for a map of Austin that shows where AE has trimmed trees around power lines.

Exhibit 3. AE's tree trimming clearance guidelines were reduced from 2006 to 2019.



Source: OCA analysis of AE's tree trimming guidelines from 2006 to present, August 2023.

Integrated Vegetation Management Best Practices state that the tree trimming process coordinates the program and the maintenance plans in a documented process designed in a continuous loop. The approach provides flexibility to adjust plans as circumstances evolve and new information becomes available.

These factors have impacted AE Forestry Division's ability to meet their current goal of a seven-year trim cycle. We found that AE can also improve their processes to better align with industry best practices to help meet their trim cycle goal.

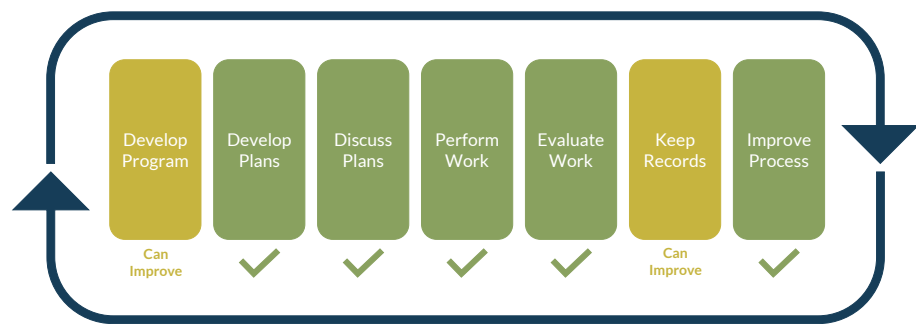
AE's tree trimming efforts align with most industry best practices. However, AE's Forestry Division can do more to develop a long-term maintenance plan of which trees to trim and improve data reliability to assess progress. We compared AE's tree trimming practices to industry best practices⁶

⁶ The International Society of Arboriculture developed the Integrated Vegetation Management Best Management Practices, which contains tree care standards and guidelines. This publication is a companion to the American National Standard for Tree Care Operations (ANSI A300, Part 7).

and found that AE has implemented most elements of a best practice tree trimming process. This includes developing short-term work plans, communicating with stakeholders, scheduling and performing work, and hosting meetings to discuss continuous improvement. However, a key element of managing tree trimming efforts to meet trim cycle goals is developing a long-term planning process to determine the progress of overall trimming efforts. Based on best practices, we noted two areas of improvement that could strengthen AE’s tree trimming program:

- Developing a long-term maintenance plan and goals for distribution lines
- Keeping complete, accurate, and reliable data records

Exhibit 4. AE meets most tree trimming best practices elements and can improve on other elements.



Source: OCA analysis of AE’s tree trimming efforts to best practices, August 2023.

AE contracts with Davey Resource Group to plan tree trimming work.

AE’s tree trimming program meets most best practice elements.

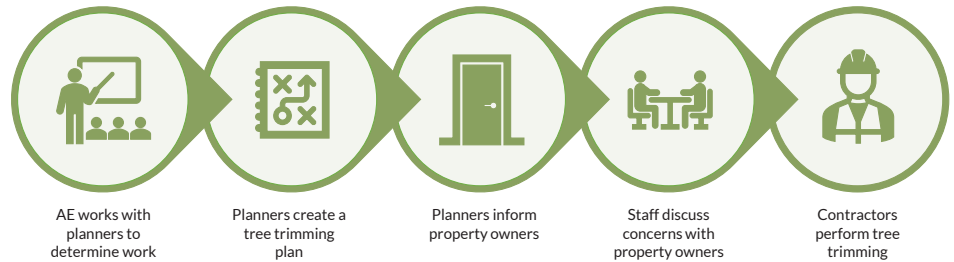
Develop plans - AE contracts with a third-party planner to develop project-based tree trimming plans which take into consideration site conditions and environmental factors. This process begins several months in advance of trimming. Plans are then given to other hired contractors who trim the trees. The contracted planners said that ideally it takes four to six weeks from planning of the trimming, although it can take longer than this. Generally, circuits are completely planned before trimmers arrive to complete the work.

Discuss plans – AE Forestry Division staff regularly review the contracted planners’ work and give feedback on any areas that may have been missed before the tree trimming work is performed. AE, the contracted planner, and other hired contractors communicate on a near daily basis. The contracted planner holds regular meetings four times per week between the contractors and AE to coordinate the work.

Electrical circuits do not match with street or neighborhoods grids so it is possible that neighbors could be on different circuits.

Contractors also communicate and engage with property owners before conducting tree trimming work. AE distributes door cards and brochures, discusses the property owners’ concerns over the phone, and may meet the property owner on site to discuss the process if trimming services are refused. Depending on the property owner, this communication process can take several weeks or months which is similar to other peer city utilities surveyed.

Exhibit 5. AE has an extensive process to communicate tree trimming plans to property owners.



Source: OCA analysis of AE's tree trimming efforts to best practices, August 2023.

AE contracts with Asplundh Tree Expert, Davey Tree Service, and Wright Tree Service to trim trees.

Perform work – AE has three contractors performing planned tree trimming work. As mentioned, AE hired four more contractors in 2023 based on increased funding approved by the Council. Contractors schedule and complete tree trimming with their own equipment.

Evaluate work – AE Forestry Division staff inspect work, provide feedback to contractors, and determine if any additional work is needed before closing work plans. AE inspects 100% of tree trimming for planned routine maintenance during and after the work has been completed. If a customer requests tree trimming services, the trimming work is only inspected by AE if the customer reports an issue with the work completed by the contractors.

Improve process - AE hosts weekly staff meetings internally and externally with contracted vendors to discuss continuous improvement.

AE can do more to develop a long-term maintenance plan of which trees to trim and to improve data reliability to accurately assess progress.

AE does not have a fully developed long-term maintenance plan that includes short-range, medium-range, and long-range schedules outlining which circuits to trim to meet trim cycle goals. This makes it difficult for AE to assess trimming progress across circuits, assess historical information such as timelines to make future estimates, and develop a way forward to meet trim cycle goals.

Texas Administrative Code requires many electric utilities to develop a tree trimming plan for their distribution assets including an estimate of circuits to trim each year and the amount of tree trimming the utility plans to accomplish to achieve its tree trimming goals. This requirement does not apply to electric utilities that are municipally owned and therefore does not apply to AE. However, this may be a good practice for AE to adopt to better assist in assessing AE's progress towards meeting its current trim cycle goal and assess what additional resources may be needed if trim cycle goals are unable to be met. Without a long-term maintenance plan for tree trimming on distribution lines, it may be difficult for AE to accurately assess progress and meet their current and future trim cycle goals because there is no roadmap to show how to realistically achieve goals.

Tree trimming data needed for program evaluation is not always complete, accurate, or reliable. Before Winter Storm Mara and this audit, the AE Quality Management Division identified tree trimming as a high-risk area due to its high impact on customer satisfaction. Specifically, this division identified inaccuracies in the tree trimming program goals and associated data.

During our review, we found that AE's tree trimming database does not accurately reflect all the information for each tree trimming job. Contractors are responsible for filling in the dates on the hardcopy work plans while both the contractors and AE staff are responsible for entering updates into AE's tree trimming database. Although AE staff work with and remind the contractors to enter the work plan dates and job status changes in the database, the contractors said that it is not uncommon for the status dates to be inconsistently reported. In addition, AE staff said it's hard to give exact totals on tree trimming work completed by phase because some work may take months to complete due to oak wilt, bird habitats, or multiple interactions with property owners.

We reviewed a sample of tree trimming data including customer-driven tickets and planned routine maintenance circuit work from January 2022 to May 2023.

We noted inconsistencies between the dates on the hardcopy work plan and the dates recorded in the tree trimming database, including:

- 90% (27 out of 30) of the dates reviewed for completion, assessment, and signature did not match the dates entered in the database. While we could not determine the average number of days due to missing data, we did note the number of days between the work plan and recorded varied as much as 1 day to 60 days. The difference in dates makes it hard to understand the correct work status to accurately assess progress.
- Some work plan status updates occurred multiple times on different dates. We often found multiple "work in progress" dates, multiple "field inspection" dates, or multiple "no work required" dates for one plan. This made it difficult to know when those steps took place when looking at the database.
- Some status updates appeared to occur in an unexpected order. For example, some "work in progress" dates occurred after a "no work required" date, which would indicate that work was still done on the property even after it was determined that no work should be done.

These inconsistencies may be the result of AE staff and contractors receiving inconsistent training on how to use the tree trimming database. This training is generic and may not be specific to how AE needs the information entered. Overall, it appears that AE Forestry Division staff have a clear idea of how work is progressing for tree trimming jobs on an individual level. However, these data issues make it difficult for AE to do accurate and reliable reporting at an aggregate level to assess overall progress.

We also noticed data issues for how customer-requested tree trimming information is recorded. AE tracks and retains this data in multiple systems, such as AE's tree trimming database and AE's customer care and billing system, and these systems do not automatically share information with each other. AE also uses an Access database to track historical information on tree trimming, which does not automatically share information with any system. Not having all tree trimming information captured in a single database or system makes it harder for AE to track activities. This may result in data inefficiencies and increases the chance for data errors. AE Forestry Division management said they have started to research how to connect their tree trimming database to the other City systems so information is automatically shared between systems.

Additional Observation

AE has limited ability to hold telecom carriers accountable for trimming trees around telecom wires that are attached to AE's utility poles.

Telecom carriers such as telephone, internet, and phone providers, attach their wires to AE's utility poles. There are at least 28 different telecom carriers that attach their wires to AE's utility poles. AE staff said telecom carriers are responsible for trimming the vegetation around their wires. However, there are limited enforcement mechanisms for AE to ensure telecom carriers perform regular trimming to industry standards. AE executives said should the need arise, enforcement of tree trimming by telecom carriers could include legal action, denial of future pole attachment applications, and removal of communication attachments from distribution poles.

AE staff and contractors said that most people do not know that the power lines are attached above the telecom wires on the same pole. If a customer calls AE about trees growing into telecom wires, and it is not an emergency situation, AE will inform the property owners that it is the telecom carriers' responsibility to trim the trees around the telecom wires. If vegetation on telecom wires becomes severe, AE contractors can go out to trim for them, but this is considered an emergency rather than a normal maintenance job. One contractor estimated about 10-15% of customer requests for trimming turn out to be requests for trimming on telecom wires. We could not determine the extent of this issue because AE does not track the number of customer requests that relate to telecom wires.

Our peer city utilities research showed that most cities do not coordinate with telecom carriers for tree trimming. Austin, Jacksonville, and Seattle were the only cities that had some coordination with telecom carriers. Working with telecom carriers to complete tree trimming timely and according to industry standards appears to be a challenge across many of the peer city utilities we reviewed.

Recommendations and Management Response

1

To ensure Austin Energy can effectively and accurately determine the progress of their overall tree trimming efforts, Austin Energy's General Manager should assign resources to develop a long-term maintenance plan to assess tree trimming performance for distribution lines. This plan should be reviewed annually and used to report tree trimming progress to stakeholders and the public. This should include, but not be limited to:

- Creating a plan that includes short-range, medium-range, and long-range maintenance schedules for trimming distribution circuits including an estimate of which circuits to trim to meet trim cycle goals.
- Assessing what improvements or added resources are needed if trim cycle goals are unable to be met.

Management Response: Agree

Proposed Implementation Plan:

To ensure Austin Energy can effectively and accurately determine the progress of its overall tree trimming efforts, Austin Energy will:

- Develop a:
 1. Short-range plan (12 months) based on the top 15 underperforming circuits and the top 15 wildfire Risk circuits for the trim cycle for the year. This focus aligns with our grid resilience goals and wildfire mitigation initiatives. Additionally, the plan is to work remaining circuits to meet our identified performance metrics;
 2. Medium-range plan (24 months) to review the next 15 underperforming circuits and 15 wildfire risk circuits to prepare for the following year. Additionally, the plan is to work remaining circuits to meet our identified performance metrics; and
 3. Long-range plan (5-7 years) based upon last trim cycle. We will develop a long-term maintenance plan for vegetation management to include, and not limited to, all distribution circuits that will be trimmed, trimming clearances used, scheduled approach, methods used to mitigate threats posed by vegetation, and budget estimates and actuals. This plan will be a document, or multiple documents, centrally located, and accessible and easy to use by Austin Energy staff involved in managing vegetation near or along Austin Energy infrastructure.
- Utilize the distribution reliability group and vegetation management group to create a procedure to conduct tri-annual meetings to review current tree trimming progress, the current plan, and the future work plan to ensure alignment and adjust as necessary.
- Add a Vegetation Management Plan section on its external facing vegetation web page to allow stakeholders and customers to review progress and current vegetation management plans while still adhering to critical infrastructure best practices.

Proposed Implementation Date: December 2025

To improve the accuracy and reliability of tree trimming data, Austin Energy's General Manager should improve how tree trimming data is entered, tracked, reviewed, and assessed to inform planning efforts. This should include, but not limited to:

- Training staff to enter tree trimming data consistently and in alignment with established policies and procedures.
- Ensuring management regularly reviews data entered into AE's tree trimming database to ensure it is correct and matches the information on the work plans.

Management Response: Agree

Proposed Implementation Plan:

To improve the accuracy and reliability of tree trimming data, Austin Energy will:

- Break these recommendations into a short-term goal (which we can enact currently) and a long-term goal (which involves budget and contractor assistance).
 - Short-term goal will be to consolidate reporting locations for data and to train employees and contract workers to consistently use the same data programs to ensure data accuracy and reporting. Austin Energy will develop and document a training process for all employees and contract workers involved with vegetation management data entry to assist them with improving how tree trimming data is entered, tracked, reviewed, and assessed to inform planning efforts. The training will be for the current system and will be role specific based on work responsibilities. After delivering training, Austin Energy will initiate regular management reviews to check the accuracy of data entered and implement changes as necessary.
 - Long-term goal will be to review the current vegetation management software program, which is currently not meeting business needs for the Austin Energy Vegetation Plan. The manager responsible for Austin Energy's Vegetation Management Program will consider other software programs to support Austin Energy's needs. This long-term goal will begin after we complete the short-term goal for data clean-up and training.

Proposed Implementation Date: Short-term: December 2024; Long-term: December 2025

Management Response



**Customer Driven.
Community Focused.™**

MEMORANDUM

TO: Corrie Stokes, City Auditor

FROM: Bob Kahn, General Manager, Austin Energy

DATE: September 21, 2023

SUBJECT: Management Response – Austin Energy’s Vegetation Management Audit

We appreciate the work of the Office of the City Auditor regarding Austin Energy’s Vegetation Management Program. Thank you for the audit and the two recommendations you made. We agree with the recommendations and plan to implement them according to the attached timelines.

The audit report highlights areas that need improvement, yet it is important to note Austin Energy has never stopped trimming trees. In 2006, several neighborhoods raised many concerns about Austin’s tree canopy and the effects of tree trimming practices. That same year a Tree Task Force was created at the direction of City Council (Resolution 20060209-19) which led to a significant reduction in Austin Energy’s tree trimming clearances compared to industry standards. These reduced clearance levels remained in effect for 13 years, encompassing fully two tree trimming cycles.

As a result, Austin Energy is now in “catchup” mode. In addition to our existing contract crews, we are bringing on additional crews where possible. However, Austin Energy faces significant challenges acquiring these resources due to the limited availability of qualified contractors willing to work in Austin given the rising cost of living. Our contract companies tell us they cannot compete with salary offers of companies in surrounding areas due to the lower cost of living. Comparable electric utilities are experiencing the same challenges, even with offering significant cash signing incentives.

Austin Energy began trimming trees to industry standards in 2021, and our target date to be caught up is by end of the year 2028. Despite the challenges noted above, we are on track to

Management Response - Continued

have 94 out of 304 circuits trimmed by the end of 2023. With the resources available, we believe we can have all trees on the system trimmed to industry standard by our 2028 goal date. At that point, we intend to implement a five-year trim cycle with a mid-cycle trim for fast growing species.

While this audit directly follows Winter Storm Mara, Austin Energy emphasizes that more aggressive tree trimming would not have prevented much of the extensive damage from the ice storm.

The recommendations from the audit report will help us improve our processes and tools to monitor tree trimming progress according to short-, mid-, and long-range plans and to adjust as necessary to best meet customer and utility needs.

Management Response to Audit

The attached management response addresses the Office of the City Auditor's recommendations regarding Austin Energy's Vegetation Management Program.

Appendix A: Summary of Peer City Utilities Research

	Austin	San Antonio	Denton	Seattle	Los Angeles	Nashville	Jacksonville	Orlando***
Population	961,855	1,434,625	139,869	737,015	3,898,747	689,447	949,611	307,573
Number of utility customers	520,757	884,811	53,000	460,000	1,546,000	430,000	488,000	274,082
Municipally owned?	✓	✓	✓	✓	✓	✓	✓	✓
Length of tree trimming cycle	7 years	No Response	3-5 years	4.5 years	1 year	3.5-4 years	2.5 years	3 years
Trim clearances	10-15 feet	10 feet	3-10 feet	10 feet	6 feet	6-12 feet	10 feet	10-15 feet
Service area (square miles)	437	1,515	88	131	465	700	900	419
Canopy cover	41%	38%	30%	28%	25%	47%	48%	28%
All distribution line clearance jobs inspected?	✓	✗	✓	✓	✗	✓	✓	✓
Number of contractor companies used	4*	5**	1	3	1	4	2	1

*Austin has 4 contractors and hired 4 additional contractors in 2023.

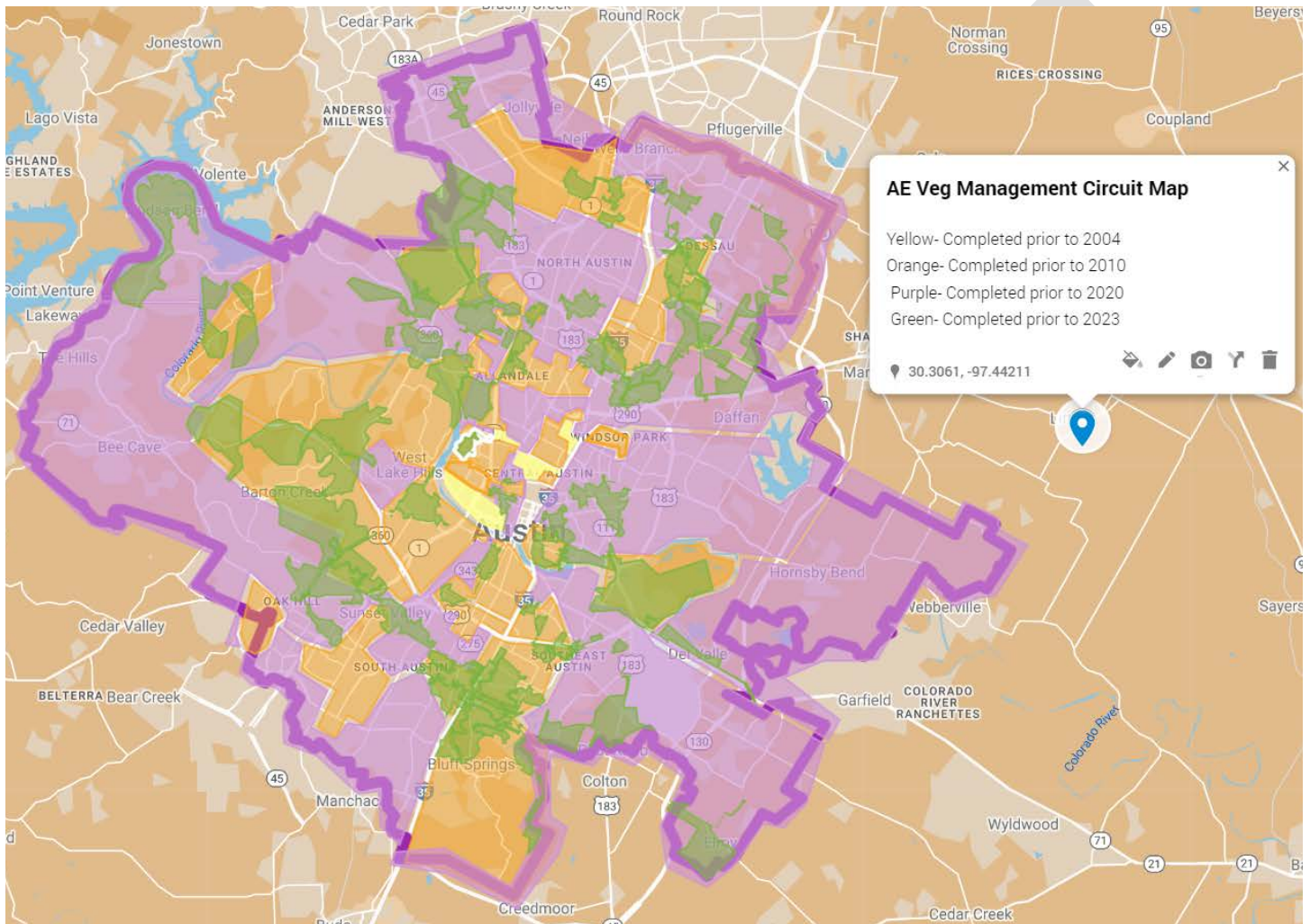
**San Antonio has 4 additional vendors to assist with chemical weed control and border construction.

***Orlando stated they were a commission-led utility.

Source: OCA's summary of peer city utilities research, August 2023.

Appendix B: Map of Austin Energy's Tree Trimming Efforts

Note: The areas in green represent where Austin Energy has completed tree trimming to 2019 standards while the other colors represent the areas that still need to be trimmed to the current standards



Source: Austin Energy Forestry Division analysis of tree trimming completed prior to 2023, August 2023.

Scope

The audit scope includes Austin Energy's vegetation management goals, efforts, and practices per Council Resolution No. 20230209-81.

Methodology

To complete this audit, we performed the following steps:

- Interviewed staff from Austin Energy and the Law Department, and tree trimming contractors hired by Austin Energy
- Reviewed federal, state, and local laws and regulations on vegetation management
- Researched vegetation management guidelines and best practices provided by International Society of Arboriculture, American National Standards Institute, and Occupational Safety and Health Association
- Reviewed plans, policies, procedures, and other relevant documentation related to Austin Energy's vegetation management practices
- Reviewed contracts, agreements, performance measures, and funding information related to vegetation management
- Reviewed after-action reports and corrective action plans from past emergency events
- Analyzed communication, education, and outreach information used during normal and emergency operations specific to vegetation management
- Analyzed open and closed vegetation management customer-driven tickets and planned routine maintenance work from January 2022 to May 2023 to understand the process and determine the amount of time it takes to complete tree trimming work
- Surveyed other city utilities and compared Austin Energy's vegetation management operations to Denton, San Antonio, Jacksonville, Los Angeles, Nashville, Orlando, and Seattle
- Evaluated internal controls related to Austin Energy's vegetation management practices
- Evaluated the risk of fraud, waste, and abuse for Austin Energy's vegetation management practices

Audit Standards

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The Office of the City Auditor was created by the Austin City Charter as an independent office reporting to City Council to help establish accountability and improve City services. We conduct performance audits to review aspects of a City service or program and provide recommendations for improvement.

Audit Team

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