

The United Illuminating Company
Vegetation Management Plan
Distribution Planned Cycle

11/01/2013

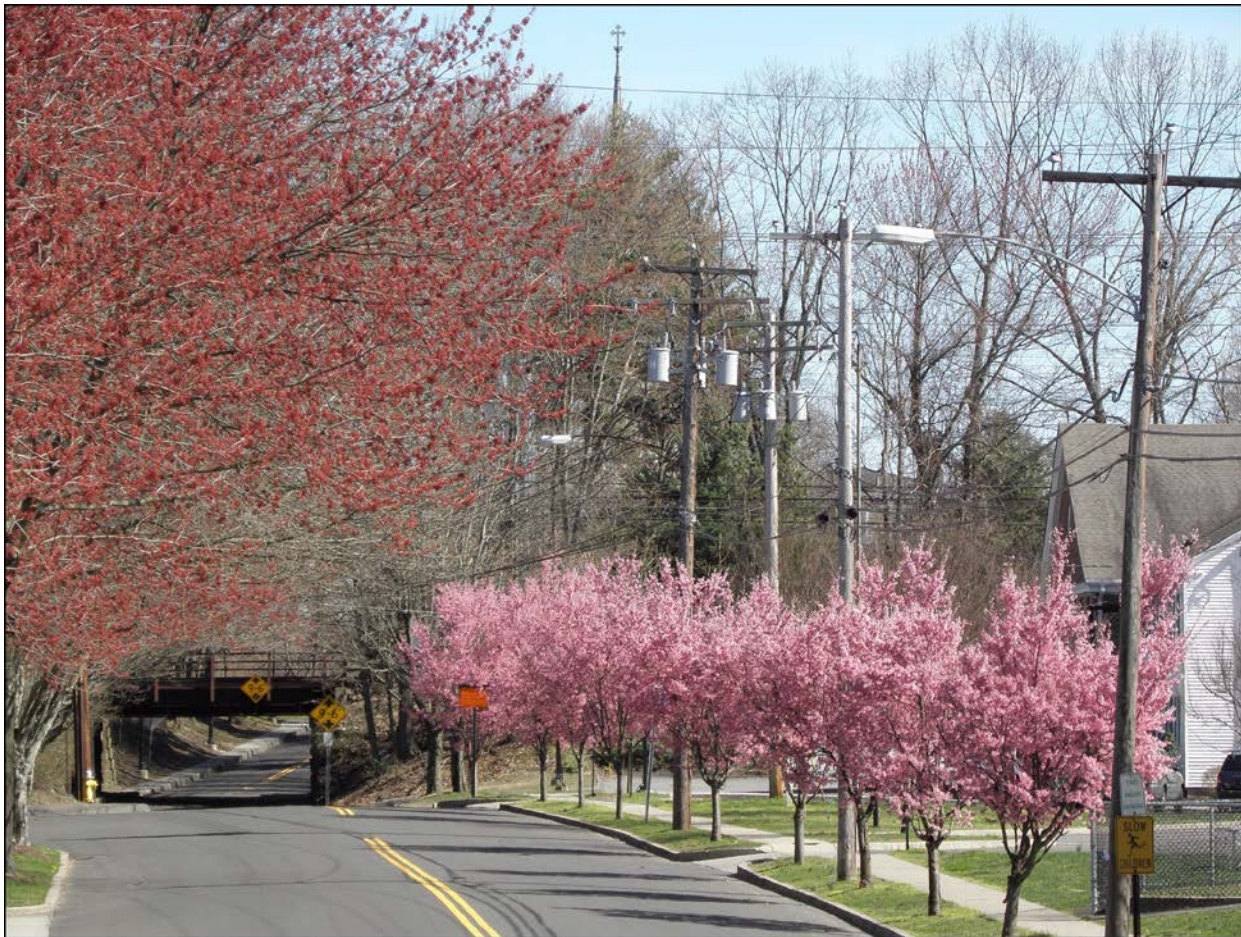


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UI Vegetation Management Plan

Distribution Planned Cycle

Executive Summary

In March 2010, August 2011, October 2011 and October 2012, the State of Connecticut experienced severe weather that resulted in damage to the electric infrastructure resulting in the loss of essential electric power and communications for days for most of Connecticut residents - an unacceptable hardship that must be corrected.

As detailed in many of the reports and testimonies, the root cause of the vast majority of the power related outages was trees, both healthy and unhealthy trees and tree parts that came down due to the high winds, torrential ground saturating rains, and heavy wet snow. A new specification must be implemented that will lessen the impacts of extreme weather by reducing the probability of damaging tree contacts to the electric infrastructure.

To this end, The United Illuminating Company (UI) presented to the Connecticut Public Utilities Regulatory Authority ("PURA") a new UI Distribution Line Clearance Specification (DLCS) in its last rate case (*Application of The United Illuminating Company to Increase Rates and Charges*, Docket 13-01-19). This system hardening is based on Enhanced Tree Trimming (ETT) practices as presented in the State's Vegetation Management Task Force (SVMTF) report. The proposal focused on a four-year plan costing approximately \$100 Million. The major components of UI's proposed program were:

1. ETT will be UI's new specification, DLCS, creating an eight-foot side clearance ground to sky, retaining desirable low height or ornamental trees within the zone or those that are planted under the Right Tree – Right Place program. Additionally, the Company will identify and remove whole or parts of hazardous trees that could fall causing damage to utility infrastructure, facilities or equipment outside of the zone.
 - a. UI will also consider on a case-by-case basis performing stump grinding and replanting using Right Tree – Right Place techniques when done in the public interest
2. UI will document and track all objections and decisions made through the full execution of Section 60 of Public Act 13-298 (*An Act Concerning Implementation of Connecticut's Comprehensive Energy Strategy and Various Revisions to the Energy Statutes*) (the "Energy Act") that cause nonconformities, or areas where UI is not able to meet these specifications within and outside of the Utility Protection Zone (UPZ).
3. Instances of outages caused by nonconforming trees will be documented and considered a reportable performance attribute.

DLCS will not prevent all outages; only the elimination of all trees that have the potential to impact the electric infrastructure will result in the complete elimination of tree related outages. However, the negative environmental and public impact would be too great to go to this extent. Therefore, the objective of the DLCS is to reduce the potential or probability of vegetation caused outages. Please note that any areas of nonconformity will erode UI's ability to achieve reductions in future outages, maintenance costs and restoration costs associated with an Irene or Sandy type event.

PURA, in the UI rate case decision, acknowledged that, "The notion of an Enhanced Tree Trimming (ETT) Program has firmly caught hold in Connecticut and has widespread support as evidenced by numerous independent reviews." The Authority went on to say that, "... the affordability of ETT as proposed is an issue for the Authority ..." (PURA 13-01-19 Decision p14). Therefore, PURA directed that:

The \$100 million ETT program should be carried out over eight years (at \$12.5 million per year), as opposed to the UI proposal of four years. (PURA 13-01-19 Decision p14).

Providing further direction in the rate case decision, PURA stated:

Accordingly, the Company will be directed to develop and submit to the PURA for review, a more carefully considered, optimized plan for ETT before UI is allowed to begin the program that is now scheduled for 2014. The plan shall specifically address how the work is being packaged and prioritized for optimum effectiveness. In addition, the plan should contain reporting requirements to UI management and the PURA, the latter of which will include spending, miles trimmed, and impacts on reliability of the program on a circuit and annual system basis.

UI indicated that an added benefit of the ETT initiative is lower long-term operation and maintenance (O&M) costs for tree trimming. Tr. 5/13/13, p. 1978. UI will be directed to submit a supporting analysis to the Authority that includes quantification of those savings and a demonstration of how that commitment will become a reality in future years ... (PURA 13-01-19 Decision pp. 14-15).

To this end, UI prepared this plan using Reliability Centered Maintenance principles and the following considerations:

1. Prioritized the worst performing circuits based on vegetation related outage performance (SAIFI)
2. Incorporated a focus on State and municipality priority locations
3. Made adjustments to the plan to accommodate excessive vegetation growth based on the timing of the previous cycle
4. Made additional adjustments to meet yearly budget targets.

In this plan, UI proposes ramping up the full program over the first half of 2014 as shown in the timeline below. UI's main strategy is to obtain abutting property owner consent

for all work far enough in advance to optimize the use of the line clearance crews. This will require UI to begin the notification process at least three months in advance to achieve this strategy and fully implement the requirements of the Energy Act. UI is requesting expedited approval of this plan by PURA so UI can begin and work towards full implementation by June 2014 as shown in the timeline below.

Distribution Line Clearance Implementation Timeline

October 2013 – November 2013

Complete Prioritize Reliability Schedule

Complete Vegetation Management Plan for submission to PURA

Identify approximately 40 circuit miles for program pilot using approximately 15 crews

November 2013 – January 2014

UI Board of Directors resolution authorizing program

Submit and obtain approval of plan from PURA

Award line clearance contract(s)

Develop RFP for Vegetation Management Tracking and Reporting System

Develop Communications Materials

Develop Pilot Communications

Develop Work Permit Template

Hold meetings with Tree Wardens and Municipal Officials

Begin Pilot Permissions process

January 2014 – June 2014

Begin Pilot Distribution Line Clearance

Release Vegetation Management Tracking and Reporting System RFP

Select and implement Vegetation Management Tracking and Reporting System

Execute full communications plan for 2014 affected municipalities

Begin ramp up of notifications of abutting property owners for 2014

Begin ramp up of crews for 2014 scheduled work

June 2014

Full Distribution Line Clearance Begins

UI also outlines the full communications plan in this report. The communications plan will remind the Tree Wardens of their role under the new requirements of the Energy Act, as well as help PURA, the municipal leadership, the property owners and special interest groups understand their roles and responsibilities. This includes their right to file an objection under the Energy Act and appeal the Tree Warden's decision to PURA.

Under the Energy Act, Tree Wardens are now required to hear the objections and issue decisions. The Tree Warden's decision can be appealed to PURA and PURA can issue a decision on the objection. If the objection is upheld by PURA and UI cannot achieve full DLCS compliance, the objection would be reviewed, tracked and documented. All outages caused by nonconformance to the DLCS will be reported separately in post storm reviews. UI is planning to track pre and post program reliability as well as include additional categories of outage causes in order to evaluate the program's impact.

In addition, this plan explains how UI intends to track the objections and appeals to the DLCS. All trees and vegetation restricted from meeting the DLCS will be considered nonconforming. UI will investigate all vegetation related outages, during reportable events to determine if an outage was caused by nonconforming vegetation. If nonconforming vegetation is found to be the cause, then UI will document the damage and resulting outages as information to support UI's performance evaluation. This information will allow for an informed decision to be made and UI contends that a certain level of accountability should be transferred away from UI.

Finally, the Plan discusses the benefits to achieving full compliance. UI forecasts that with the DLCS fully implemented, the total number of customers affected will be reduced by 25-50% for a Tropical Storm Irene and Hurricane Sandy like event.

Complying with the DLCS will cause future vegetation management costs to be reduced. The proposed savings are based on the removal of incompatible trees within the UPZ and the removal of the canopy overhanging the UPZ as well as hazard trees just outside of the UPZ; thereby reducing the cost of maintaining these trees in the future. The reduction in workload will result in an overall future equivalent reduction in Distribution Planned Cycle maintenance of approximately 40% - 50%. Any cost saving calculations would need to look at comparable cycles before and after the program and factor in time escalators and areas in which UI was prevented from being able to achieve full compliance. To reiterate, all nonconformities would offset the reduction in workload and reduce any potential savings. Similarly, outages caused by vegetation nonconformities would reduce the anticipated reliability improvements.

Background

UI's current distribution line clearance specification includes trimming the three-phase portions of the Company's circuits on a four-year cycle and trimming single-phase portions on an eight-year cycle with additional follow-up performance based criteria. Any single-phase line that has not been trimmed in six years and has had two or more tree related outages would receive follow up trimming. UI's current trim zone obtains a vegetation-to-conductor clearance 12-15 feet above, 6-10 feet to the side and 5-8 feet below the conductor at the time of trimming. This program has been in place for over 15 years and has worked well for average New England weather. This specification essentially opens a clearance window through the trees; a window that closes very rapidly and destructively during extreme weather events.

When the region was struck by tropical storm, hurricane force winds and a Nor'easter in 2011 and 2012 the vulnerability of tree related damage to the electric system became evident. Tropical Storm Irene produced 1,751 locations on the UI distribution system that were damaged by trees. In Hurricane Sandy, there were 3,819 locations damaged by trees. During Sandy these trees also blocked 1,132 roads. These storms demonstrated the vulnerability of Connecticut's electric system infrastructure to extreme weather.

These types of events are not isolated to Connecticut. It is also a national issue. The Executive Office of the President states damage to the electric grid caused by storms like Tropical Storm Irene and Hurricane Sandy cost the nation \$25 to \$70 Billion annually, (Executive Office of the President, 2013). This report identified the need for decreasing the vulnerability of the electric grid due to weather related events.

Furthermore, Puget Sound Electric (PSE) began working on decreasing vulnerability due to wind in 2011 when it studied the effect of wind related electric outages (Guggenmoos, 2011). The PSE study analyzed ten years of wind related data. They were able to create a model that showed an increase of tree-related outages as sustained winds and wind gusts increased. The author concluded that, "... it is logical that tree-caused service interruptions are exponential to wind speed." (Guggenmoos, 2011)

As a result of this study, PSE embarked on an Enhanced Tree Trimming (ETT) or "Blue Sky" program. Even closer to UI, Northeast Utilities has already implemented an ETT program. Likewise, UI plans to revise the current program to create greater distance between the vegetation and conductor in order to reduce the likelihood that vegetation would impact the electric system during extreme weather events. This new specification would reduce vegetation that may come in contact with the electric infrastructure and cause an outage during periods of extreme winds. It should also improve the overall performance of the electric system. Left unchecked, Connecticut could be headed to a more catastrophic event such as a major hurricane or a mid-winter ice storm followed by very cold weather. For the example of an ice storm, the weight of the ice could bring the tree canopy down into the wires creating outages such as were experienced in the last three years. A recent thunderstorm that passed through Connecticut shows how vulnerable the system is to

vegetation caused damage. On October 7, 2013, a thunderstorm passed through Connecticut and caused the tree shown in Figure 1 to fall. This “V” notched tree took down two utility poles and left 24 customers without power for 12 hours. It also crushed a truck parked on the street and could very well have caused more property damage and potentially seriously injured a resident in this neighborhood. The DLCS targets trees like this one for removal.



Figure 1: Tree Blown Over by High Winds in Bridgeport, October 7, 2013

While regular tree maintenance focuses primarily on pruning trees that grow under or into power lines, the enhanced tree trimming also known as “ground to sky or Blue-sky trimming,” involves removing all overhanging branches above the lines as well as the removal of incompatible trees from within the UPZ.

UI is replacing its current vegetation management specification with an ETT based specification, which will be the only UI vegetation management specification from January 1, 2014 forward.

The new DLCS initially targets critical electric lines and will result in the removal of incompatible trees and branches that are within 8 feet to each side of the infrastructure, creating a “blue sky” clearance zone—i.e., no branches overhanging the wires. DLCS also involves removing brush under the lines, as well as dead, weak, or diseased trees outside of the UPZ.

The Distribution Planned Cycle of UI’s Vegetation Management Plan also addresses the new notification requirements added by the Energy Act and the implications associated with the new act.

The Vegetation Management Program

UI Proposed Vegetation Management Program Overview

The UI proposed Vegetation Management Plan (VMP) – Distribution Planned Cycle is designed to reduce the total number of customers affected by a Tropical Storm Irene or Hurricane Sandy. As illustrated in Figure 2 below, UI's DLCS proposes vegetation management within the UPZ resulting in a rectangular area extending horizontally for a distance of eight feet from any outermost electrical conductor or wire installed from pole to pole and vertically from the ground to the sky. Desirable low height or ornamental trees that are already in the zone or those that are planted under the Right Tree – Right Place program will remain.

The Company anticipates that the new VMP will have a variety of benefits including a reduction in safety risks associated with high tree/brush density/canopy along the roadside forest as well as a reduction in Operations and Maintenance expense for future maintenance trimming as the cycle maintenance requirements will be reduced to branch trimming. The new trim specification is set forth below as well as a vision of the future state (Figure 3) of the roadside forest as depicted in the State's Vegetation Management task force report.

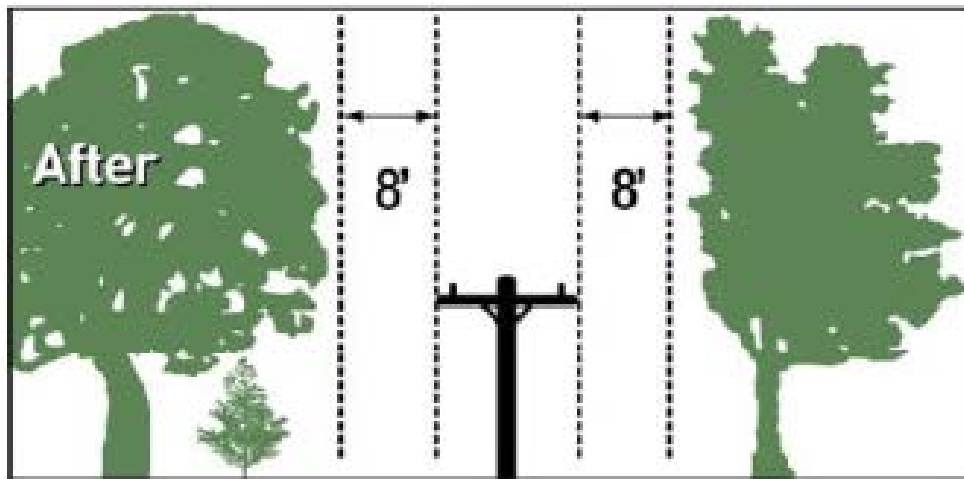
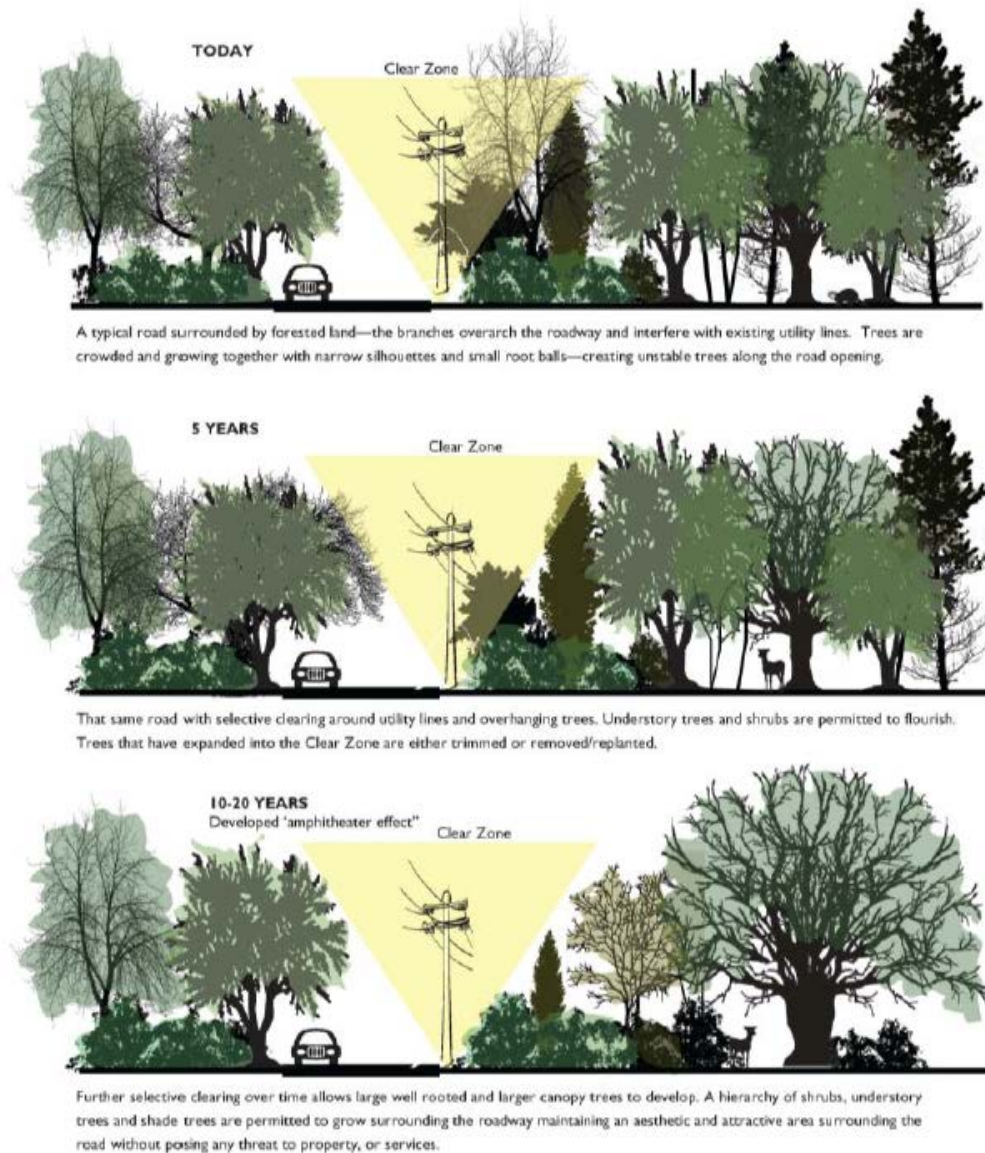


Figure 2: UI's New Vegetation Management Trim Specification



THE PROGRESSIVE DEVELOPMENT OF THE FUTURE ROADSIDE FOREST OVER TIME

An illustration of a thin slice of a sample suburban/rural road

Figure 3: Planned Cycle to Achieve DLCS Compliance

What is Trimmed or Removed – What is Not

The DLCS is based on the ETT specification as defined in the State's Vegetation Management Task Force Report. Trees are the main focus of the trimming and removal, however also included is the removal of other vegetation such as vines that

climb the poles or guy wires and, if left in place will extend onto the electrical wires, eventually causing outages.

Trees that will die due to the extent of this clearing are to be removed in accordance with ANSI Standard 300.

Trees that grow into the UPZ will also be subject to trimming and removal, even though they may be on private property. Some of the trees with parts in the UPZ may end up having too much of the canopy to survive or with the removal of limbs too big to heal causing a future problem. In these cases the trees will need to be removed. UI plans on obtaining property owner consent for any and all removals. Trees or other vegetation found to be hazardous as defined below, while working in the designated area for trimming in a given year will be removed.

Hazardous Trees

"Hazardous tree" means any tree or part of a tree that is:

- Dead
- Diseased
- Extensively decayed
- Structurally weak, which, if it falls, would endanger life or property, including utility infrastructure, facilities or equipment

Trees or other vegetation that is at risk of falling into the UPZ and causing an outage due to its height and growth pattern will also be designated for removal. This is and will continue to be a tree-by-tree evaluation based on a number of factors considered by the UI staff and the Tree Warden, where jurisdiction applies.

Trees planted in the UPZ that are consistent with the Right Tree – Right Place program will not be removed, even if they are directly beneath the utility infrastructure. That is because these trees and bushes can be trimmed and maintained readily and their mature height is not high enough to interfere with existing electrical infrastructure.

In support of the Right Tree – Right Place program, UI will examine working with the municipalities to replace some of the removed vegetation where it is in the public's best interest, such as on municipal land, parks or along public road ways.

Annual VMP Line Clearance Planning

Prioritization

The proposed annual line clearance planning begins with a review of reliability and other prioritizing data. The following factors are the determinants in identifying the lines for trimming.

1. **Reliability Performance** – Vegetation related reliability performance is the first factor used in the development of the annual line clearance planning process. UI has reviewed the last four years of reliability data using individual circuit System Average Interruption Frequency Index (SAIFI) by tree contacts. This data identifies the worst performing circuits, specifically those with high levels of outages due to vegetation.
 - a. Additional Reliability Centered Maintenance Analysis - UI will also apply Reliability Centered Maintenance (RCM) principles to specific worst performing circuits on an off-cycle basis. The worst performing circuits are identified as those experiencing two or more tree related outages in a 36-month rolling period. The circuits, meeting this criterion, not in the current year maintenance plan will be reviewed for potential action. Line clearance, reliability enhancements, spot trimming, and removal projects will be used to support maintaining circuit reliability.
2. **Priority Line** – Following Tropical Storm Irene, UI established State and town priority sites within its service territory. The priority sites include such facilities as local Emergency Operations Centers, emergency services buildings, shelters and other emergency related locations. To limit the effect of vegetation on the circuits supporting these locations, UI is giving them a priority status when developing the vegetation management schedule.
3. **Customers per Line** – The customers per line are also a major consideration in identifying the lines for trimming in a given year. Circuits with a higher customer count will be given a higher priority than those circuits with lower customer counts. The three-phase circuits will be maintained on a four-year cycle. The single-phase circuits will remain on an eight-year cycle through the program. Once DLCS is achieved, at the end of the eight-year project, UI will maintain all circuits on a four-year cycle.
4. **Time Since Last Trimming** – The number of years since the last trimming is a consideration on the selection of the circuits to be trimmed each year.
5. **Cost** – UI must adhere to the approved annual spending plan.

All of these factors are used to balance the number of miles of vegetation management that can be accomplished within a given year. The goal is to ensure all three-phase lines are trimmed every four years and the reliability of the single-phase lines is maintained through adherence to the schedule.

Another consideration is the electric infrastructure construction projects requiring tree and vegetation trimming or removals. All vegetation management activities

in support of these projects will be completed using the new DLCS. The amount of trimming performed for construction projects in terms of circuit miles will defer the lowest priority circuits originally scheduled for the same year. Simply stated, for every mile of infrastructure work, a mile of the lowest priority planned work will be pushed to the next year. These displaced circuits will automatically become the highest priority for the next year's line clearance plan.

Packaging

UI plans to stage crews geographically and package the work to maximize their efficiency by limiting their movement throughout the region. UI's work planners will review any other off-cycle work and incorporate it into the master schedule where possible

Vegetation Management Strategy

The strategy UI is employing to manage the eight-year program is to create the UPZ in the first eight years and then move to a four-year maintenance cycle beginning in 2022. Vegetation Management under the program will be conducted in two-4 year passes (explained in the subsections that follow) incorporating pruning and removal to obtain the clearance for the UPZ, identification and removal of hazard trees, reliability analysis, and promoting Right Tree – Right Place.

UI intends to use a 4/8 year model ("4/8 model") to develop a reliability based circuit VMP schedule. The program will have:

- Three-phase portions of circuits on a four-year maintenance cycle
- Single-phase portions on an eight-year maintenance cycle

The 4/8 model will only be used during this project. At the end of the project, UI will move all maintenance trimming to a 4/4 model where all circuits are maintained every four years.

Two-Pass Method

UI is proposing to use a two-pass method to create the initial UPZ. The two-pass method is used to ensure that all three-phase circuits are trimmed twice in the eight years of this project. Due to the number of removals projected in the UI Distribution Utility Vegetation Management Assessment, completed in 2013, approximately 50% of the trees will be able to be removed in the first pass while adhering to the approved annual spending plan. The trees not removed during the first pass would be removed during the second pass.

UI will obtain abutting property owner consent for all work far enough in advance to ensure full use of the line clearance crews and be fully compliant with the Energy Act.

The time between the first pass and the second pass should allow for completion of the objections and appeals process. The appeals process of the Energy Act allows the parties to appeal a Tree Warden's decision to PURA. This process may take longer than the trimming season within a given location.

To allow for the appeals to proceed and not incur unnecessary expenses by excessive relocation of vegetation management crews throughout the UI territory, UI will plan on completing these cases on the second cycle. The exception would be if there was a hazardous situation that would require immediate action.

Appeal processing by UI will be discussed further in the Appeals Process section below. A high level process flowchart for the notifications and objections processing is found in Appendix B.

First Pass

In the first pass, UI will apply the DLCS to all three-phase portions of circuits to increase clearance through pruning and removal within the UPZ only. The annual planned circuit miles will be based on an average of 300 miles of three-phase and 182 of single-phase miles. The goal is to achieve DLCS compliance, which is:

- A. Creating a minimum of 8 feet conductor side clearance from ground to sky, leaving desirable low height or ornamental trees that are already in the zone or those that are planted under the Right Tree – Right Place program
- B. Remove all over hang.
 - a. Pruning will adhere to ANSI A300.
 - b. Not all removals will be done in the first pass. The cost of removals makes up the largest cost factor in the budget. With the eight-year requirement, UI will not be able to complete all of the removals in the first pass.
- C. Hazard Tree removals outside the UPZ.

Second Pass

In the second pass, UI will continue to work to achieve DLCS compliance. In this phase of the project, all three-phase portions of circuits will be revisited to maintain DLCS compliance and to remove noncompatible trees, which are any trees that can grow into UI lines. The intent of the second phase is to fully achieve the UPZ clearance and to move to a four-year maintenance cycle beginning in 2022.

Detailed Prioritization Process

UI used a series of criteria, listed below, in development of the new annual VMP schedule. The starting point for the new schedule was the current 2014-2021 Circuit Trim Schedule (CTS). The average tree related SAIFI for 2009-2012 was used to prioritize the circuits based on reliability. This created a Reliability Circuit Trim Schedule (RCTS). While this represents SAIFI for all circuit miles, only the three-phase portions of the circuits are being reprioritized based on reliability. The following changes were made to the RCTS.

1. Adjustments were made to the RCTS to delay the trimming of less vulnerable three-phase portions of circuits; i.e., those circuits of less than one mile to coincide with the "Second Pass," which begins in 2018.
2. The municipal Tier 1 & 2 priorities and State priorities were then incorporated into the RCTS. While the modified RCTS had included the majority of these priorities, it was noted that several circuits (with priorities) would be delayed up to four years relative to the baseline RCTS. In consideration of this undesired outcome, the following adjustments were made:
 - a. All circuits with Tier 1 priorities were rescheduled back to the baseline CTS. In other words, these circuits were placed back to their normally planned schedule.
 - b. All Tier 2, circuits were rescheduled back to the baseline CTS if the result was an extension to its trim cycle of three or more years.
3. Since the single-phase portions of circuits are currently on an eight-year trim cycle, UI is concerned about delaying these circuit miles beyond the planned trim year. As such, the single-phase portions will remain on the current eight-year cycle, which is approximately 182 miles per year.

The new annual VMP for the next eight years is summarized in the table below based on circuit miles trimmed per year:

Table 1: 2014-2021 Vegetation Management Plan Circuit miles trimmed per Year

Year	Three Phase	Single Phase	Total
2014	140	182	322
2015	331	182	513
2016	331	182	513
2017	331	182	513
2018	283	182	465
2019	283	182	465
2020	283	182	465
2021	283	182	465

Communicating the Distribution Planned Cycle Trimming Plans

The Energy Act requires that UI provide notice to all abutting property owners 15 days prior to the start of any vegetation management.

UI is planning a full communications process to support its VMP - Distribution Planned Cycle. UI's Corporate Communications and Account Management personnel are assisting in developing this program. Special communications are being developed for:

- **Tree Wardens** – to assist them with understanding their new role as well as provide them with a foundation on the distribution line clearance specifications. UI already has a good working relationship with these municipal officials and will use this opportunity to build on and strengthen that relationship. In addition, pursuant to Connecticut General Statutes Section 23-65, UI will obtain required permits from the Tree Wardens or DOT to perform pruning or removal of trees and vegetation.
- **Municipal and State Officials** – UI sees the importance of ensuring that the State Officials, Mayors and First Selectmen have a good understanding of the program and how it will affect their communities. UI needs to work with these officials so that they understand the program and can effectively communicate it to their constituents. They also have to understand the impact of their decisions to not trim or remove certain vegetation.
- **Public Information Sessions** – Within each of the municipalities where trimming will occur, Public Information Sessions will be held. The goal of

these sessions is to make the citizens aware of the new trimming standards, vegetation management priorities within the community, overall visual effects, notification requirements and objection procedures. In addition, the role of the Tree Warden and the responsibilities of the property owner in vegetation management will be explained.

- **Billing Stuffers** – Each billing account will receive with the bill an insert explaining the DLCS as well as information on the Right-Tree – Right-Place program.
- **Notification Letters** – In accordance with Energy Act, each property owner will receive a letter explaining the vegetation management program trimming and removals expected to take place within their neighborhood. These letters may be mailed or hand delivered by the UI VMP planners or their contracted representatives.
- **Verbal Communications Package** - UI will have VMP planners visit each abutting property owner within the VMP plan area. They will explain what pruning or removals is required, review the objection procedures and obtain written consent for any vegetation removals that will take place. If necessary, the VMP planner will also provide the abutting property owner with an objection form.
- **Door Hangers** – If the abutting property owner is not present during this visit, the planner will place a door hanger with additional information on the door. The door hanger will also serve as a permission/objection notification form.
- **Web Based Communications** – UI will be updating their website to provide information on the UI website.
- **UI Internal Communications** – UI also needs to prepare its staff to handle and process calls from customers about the VMP. To this end, training and job aids such as talking points and frequently asked questions for the customer service representatives to use are being developed.

While UI is only required to provide the abutting property owners with notification of the pending vegetation management work, it believes that with enhanced and early communications UI will establish and maintain community support for this important work.

Appeals Process

The process by which a property owner can object to proposed work begins with the property owner informing UI and the Tree Warden in writing of their objection. This must be done within ten business days of receipt of notification. As discussed above, one of the communications documents the VMP planners will have with them during

the face-to-face meeting is a prepared permission/objection form. The planner will leave with the property owner with a copy to be mailed or delivered to the Tree Warden and a copy for their own records. The third copy will be retained by the planner.

It is anticipated that some property owners will call UI to object to the work. UI will train its customer service representatives to provide information to the property owner and to collect appropriate contact information so that a UI VMP planner can contact and meet with the property owner.

Once the abutting property owner files an objection it goes to the Tree Warden for a decision. This process can take a several days, depending on if the abutting property owner requests a consultation with the Tree Warden. If this is the case, a decision cannot be issued until after the consultation is completed.

If UI or the property owner does not agree with the Tree Warden's decision, they can appeal the decision to PURA. During the appeals procedure, UI will work with PURA in order to assist in reaching a decision. However, UI will consider anything less than meeting the full DLCS as a documented nonconforming area to be used as part of storm performance evaluations.

UI will track the objections and their status on a tree-by-tree level. This is required to adjust work orders for the Distribution Planned Cycle work. Furthermore, since the appeals process may take longer than the work crews are in the area, UI will need to track the trees and locations so that the trimming or removals can take place after the final decision is reached.

UI has only one specification and any objections upheld by PURA or litigation procedures in which UI cannot achieve full DLCS compliance will be clearly documented as noncompliant and will reduce UI's ability to obtain stated reliability goals of 25% to 50% reduction as well as O&M savings.

In the case where PURA rules that UI is exempt in meeting complete DLCS or the case is still in process when an event occurs that causes an outage, UI will send investigators to the site of the outage to determine if it was caused by nonconforming vegetation. If the vegetation is the subject of an appeal, UI will include in its performance reporting, all customer outages and damage associated with that site.

Vegetation Management System

Today's vegetation management, with the need to track trees and other vegetation down to the property and in some cases the tree level; requires the automation of a vegetation management system. As part of the VMP, UI is developing the standard and unique requirements of a distribution utility working in Connecticut including the ability to track the objections.

Reporting

The vegetation management system will need to accommodate a number of reports. Reports will be produced to meet the requirements PURA placed on UI during the eight-year VMP project. These requirements include tracking of the following:

- Miles trimmed
- Impacts on reliability of the program on a circuit
- Objections by customers, municipality and regulators
- Spending

To meet these requirements, the VMP team will report quarterly to UI management on the progress towards meeting the annual vegetation management goals, including the above information. Annually, a summary report will be forwarded to PURA on the completion of the annual vegetation management plan.

Budget

In the rate case, UI proposed a \$100 million budget for the project spread over four years. PURA responded by changing the project from four years to eight and spreading the total budget over the eight years. In developing this detailed proposal and in conjunction with other events, UI is proposing a variation to the straight line budget distribution proposed by PURA in order to initiate the program in a cost effective manner. UI plans to take the first six months of 2014 to reach a full complement of program staff and initiatives, and will carryover any first year ramp-up shortfalls to the next year. Additionally, changes to the budget will be caused by a number of variables. These include; the number of tree removals, traffic control requirements, the objection and appeal process, communication protocols and outreach including meetings with stakeholders, implementation of a vegetation management system, and associated electric system infrastructure construction costs.

Vegetation Management Plan Benefits

DLCS has two major benefits. First, it removes the vegetation that has been growing in close proximity to the infrastructure that is prone to falling on to the wires during high wind events. By increasing the distance of the vegetation from the wires, the number of vegetation related outages during a major storm would decrease. To this point, UI estimates a reduction of outages, in the range of 25% to 50%, during an Irene or Sandy type event. This is dependent on achieving full compliance.

Second, as compliance with the DLCS is achieved across the entire system, the cost of maintenance should also decrease. The post project maintenance is limited to maintaining the eight-foot clearance on the sides and below. These savings are based on the removal of incompatible trees within the UPZ and the removal of the canopy

overhanging the UPZ as well as hazard trees just outside of the zone. This will enable future maintenance cost savings of 40% - 50% assuming full compliance.

Conclusion

UI has compiled in this document the logic and roadmap for its proposed Vegetation Management Plan based on an eight-year project life cycle as directed by PURA. Through approval of this plan, UI will be implementing a new vegetation management standard going forward. UI is taking into consideration the reliability performance of the circuits along with the State and municipal priorities in structuring the schedule in which the VMP work will be accomplished. UI will focus on the major three-phase lines first since they service the most customers. The single-phase lines will be based on years since last trim.

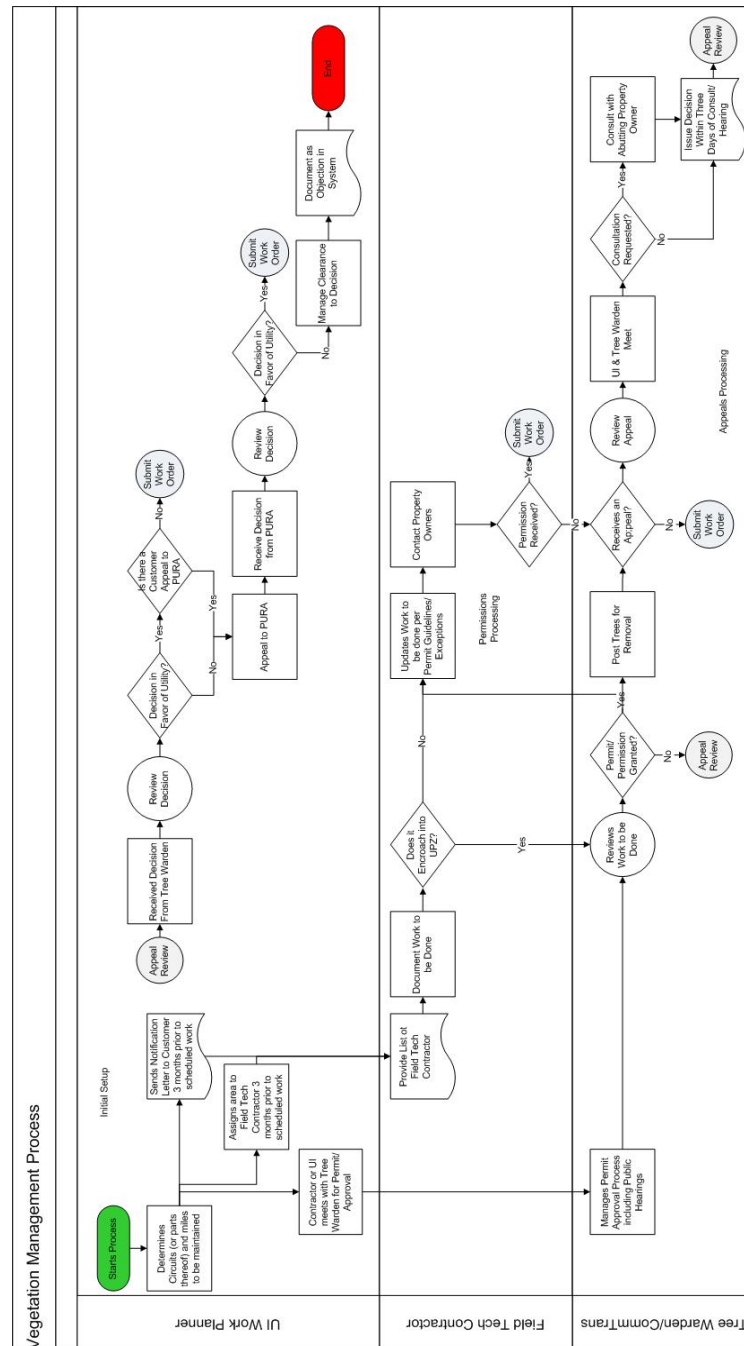
UI will also be focusing an increased effort on communications in accordance with the Energy Act. Through its communications, UI will help to educate the various stakeholders on their roles in helping to maintain the utility infrastructure in all situations.

Finally, UI stands by its estimates of reducing the outages in a major storm by 25% - 50%. In addition, there should be a decrease in the number of vegetation related outages in normal weather conditions as well, reducing the cost of repairs. UI also stipulates that there should be a decrease in equivalent annual vegetation maintenance after achieving the DLCS when comparing similar maintenance cycles before and after the program and factoring in time escalation and costs related to maintaining objection areas.

Appendix A: Glossary of Terms

Utility Protection Zone	Any rectangular area extending horizontally for a distance of eight feet from any outermost electrical conductor or wire installed from pole to pole and vertically from the ground to the sky
Hazardous Tree	Any tree or part of a tree that is (A) dead, (B) extensively decayed, or (C) structurally weak, which, if it falls, would endanger utility infrastructure, facilities or equipment
Vegetation Management	Pruning or removal of trees, shrubs or other vegetation that pose a risk to the reliability of the utility infrastructure and the retention of trees and shrubs that are compatible with the utility infrastructure.
SAIFI	System Average Interruption Frequency Index is measured in units of interruptions per customer.

Appendix B: High Level Notification and Appeals Process Flowchart



Appendix C: References

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