



# MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

*Rely on us.*

TO: Commissioners Carlson, Mital, Helgeson, Schlossberg and Brown  
FROM: Rod Price, Chief Operating Officer; Julie Nuttall, Vegetation and Electric Meter Shop Supervisor  
DATE: August 26, 2019  
SUBJECT: Current EWEB Vegetation Program Overview and Change Impacts  
OBJECTIVE: Information Only

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## **Issue**

Recent focus on the impact of vegetation to electric reliability due to major weather events, as well as wildfire concerns, have raised questions about EWEB's Right of Way (ROW) vegetation program and options to adjust the program.

## **Background**

Trees that grow on or adjacent to power line rights-of-ways are a common cause of outages, damage to facilities, fires, injury, or damage to public and private property. EWEB has an obligation to maintain those electrical facilities to minimize interruptions of service and to provide a safe and continual supply of electricity to our customers. Beyond this obligation, EWEB needs to comply with various state and federal regulatory requirements. Our current program is based on best management practice (BMP) guides and ANSI standards. For complete program details on clearance distances, trimming methods other program guidelines, please refer to EWEB document DR.100.PRG.01-03, Right of Way Vegetation Management Program: Procedures, Clearances, and Technical Specifications.

EWEB maintains vegetation clearances for approximately 1400 miles of transmission and distribution circuits, which accounts for about 400,000 trees pruned. Based on experience, EWEB has adopted a 5-year vegetation management cycle to optimize compliance, cost and electric reliability. This backgrounder will give an overview of how the 5-year cycle works and potential effects of making changes to this programs.

## **Discussion**

The primary purpose of the ROW vegetation management program is to prune trees over a 5-year cycle in a manner that meets regulatory requirements and maintains electric reliability on a normal grow cycle basis. The 5-year cycle has been refined over time to optimize costs to prune vegetation based on historical experience ranging from not having an organized cycle to running a 4-year cycle. It's worth noting, the program is meant to manage clearances by pruning trees, not removing them. Our current process and equipment is not set up to remove trees larger than 4 inches. Wood larger than 4 inches in diameter will be left on site; in no more than 3-4 foot lengths and is the responsibility of the property owner to clean up. This means complete tree removal is the exception,

and is done in collaboration with the property owners.

The vegetation department has the third largest budget in the Electric and Water Operations Division, with an annual budget of \$3.8 million while consisting of only six EWEB full time employees (FTE). It is a bit unique in that most of the work is directed by three EWEB foresters but accomplished through contracts for around 31 equivalent FTE, including 11 crews for tree trimming service, a separate landscape contractor for cleanup and a separate contractor for flagging.

A 5-year cycle means that every circuit mile is visited and brought to minimum clearance every five years. Minimum clearances are prescribed to account for voltage levels and expected 5 year growths. For primary distribution voltages, vegetation must be kept at least 3 ft. from conductors and 5 ft. for climbable trees. For 115 kV transmission lines, the regulations state that the utility must maintain at least 7.5 ft. between trees and vegetation and the conductors. Typically, clearances are trimmed to 12-14 feet on the 5-year cycle.

The program divides the total line miles up evenly over each year, with a target of inspection and trimming 280 miles (56,000 trees) per year. Routes are organized by feeder and transmission circuits to meet the yearly targets. Once the routes are organized, the Foresters do a complete visual inspection and make a record of tree type, location and amount of clearance needed and if it's climbable. When the Foresters return to the office, they organize the field observations into work packets for the contract tree crews to go out and prune. The tree contractor typically organizes the flagging and removal contractors to help them complete the prescribed work packets.

As trees grow at different rates and not always predictably, each route is inspected half way between its 5-year cycle. This inspection is referred to as the mid-cycle and is aimed at pruning only the fast growing trees that will likely violate the minimum clearance before the five year return. Mid-cycle pruning also results when customers call in concerns or other EWEB employees report clearance issues. Typically one contract tree crew is always focused on the mid-cycle and troubleshooting type work.

Customers and land owners along the way are contacted by the Foresters to let them know that EWEB will be along in the near future to trim trees. If there are trees identified as hazardous and need to be removed, the Foresters will work with the property owner to educate the owner about removal options. EWEB and its contractors are currently not equipped to routinely remove large wood, therefore the large wood removal is the responsibility of the property owner.

### **Potential Program Changes**

Our program is set up to manage clearances on trees we can control in our ROW's, not to remove any chance of trees from causing outages. As we have reported in the recent past, the program has made dramatic reductions in the number of outages due to controlled tress including a reduction to the number of outages in minor wind events.

Recent statistics around major wild fires in California indicates about 40% are started by electric utilities with vegetation contacting conductors being a major ignition source. Our vegetation program is well suited to preventing tree contacts. For relatively little cost we can target mid-cycle inspections and pruning to areas where wild fire threats are high. Recognizing this, the Foresters scheduled mid-cycle inspections in high risk areas this spring and early summer to help insure minimal chance of contact by trees to electrical equipment. This activity of 132 additional line miles

was noted in the recent quarterly report, almost doubling our planned line miles for Q2.

A more complicated problem is major storm events that bring trees and big limbs down, from both within the EWEB ROW and from outside the ROW. There are typically two options to address these trees, prune to a greater minimum clearance and remove trees completely.

Increasing the pruning clearances will have several limitations. Our current practices have proven to be just within the tolerance of most customer's threshold of acceptance for visual impact. In the last decade we have pruned trees more aggressively and had strong customer pushback. One other major limitation to increased pruning is the health of the tree itself. There are limits to how much a tree can be trimmed and stay in good health, typically no more than 1/3.

Another option is to shorten the cycles to maintain greater clearances. Reducing the cycle time will require more tree crews, as well as associated clean up and flagging crews we would need. It would also mean more work for our staff Foresters, meaning reduced time with customers for them. This will increase yearly costs by estimated 25-30% (\$650k-\$780k). We do not have enough data at this point to determine how a reduced cycle would impact our major event resiliency, but we do know the current 5-year cycle has nearly eliminated controlled tree outages for non-major events.

There are a number of limitations to complete tree removals, including our current program limitations and landowner resistance. Our current practice is to recommend tree removal where the tree (Hazard Tree) is not healthy or otherwise would be a problem to our facilities in the judgment of the Forester. Trees are removed in partnership with the property owners. Meaning we cut the tree down and remove the limbs but the main trunk is responsibility of the property owner. Property owners are typically resistant to having their trees removed, especially at some expense to them. To remove more trees, EWEB will need more legal support, increased public support and likely need to increase funding to support complete removal. Study work has not been done on financial impacts of a more aggressive removal program, but it's likely to be a significant increase from present budgets. However, overall storm event resiliency would improve.

Overall, the current ROW vegetation management program is optimized for minimum cost to obtain regulatory compliance, keep EWEB facilities and public safe and maintain overall reliability. Implementing a more aggressive program will impact costs significantly with unknown reliability impacts. It may be we target certain areas more aggressively to maximize resiliency improvements while keeping costs to a minimum overall. In the coming year, Staff will be evaluating options for the ROW management program around the financial and reliability impacts. Findings will be communicated to the Board for input.

**TBL Assessment**

NA at this time

**Requested Board Action**

None at this time.

If you have any questions or wish to discuss please contact Rod Price, Chief Operations Officer at 541-685-7122 or email [rod.price@eweb.org](mailto:rod.price@eweb.org).