160712

BEFORE THE STATE CORPORATION COMMISSION

OF THE STATE OF KANSAS

DIRECT TESTIMONY

OF

CAROLINE A. WILLIAMS

WESTAR ENERGY

DOCKET NO. 12-WSEE-112-RTS

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. Caroline A. Williams, 100 N. Broadway, Suite 800 Wichita, KS 67202.

Q. BY WHOM AND IN WHAT CAPACITY ARE YOU EMPLOYED?

A. Westar Energy, Inc., (Westar) Vice President, Distribution Power Delivery.

Q. PLEASE DESCRIBE YOUR EDUCATIONAL BACKGROUND AND PROFESSIONAL EXPERIENCE.

A. I received a BS degree in Human Resources in 1998 and an MS degree in Organizational Development in 2003 from Friends University. I began my career with Kansas Gas and Electric Company (KGE) in 1975. Positions I have held include Manager, Customer Services; Manager, Walk-In Services; Manager, Training

Services; Manager, Customer Relations; Director, Customer Account Services; Executive Director, Customer Service; and Vice President, Customer Service. I assumed the position of Vice President, Distribution Power Delivery in 2006.

Q. HAVE YOU PREVIOUSLY TESTIFIED BEFORE THIS COMMISSION?

A. Yes, on several occasions.

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I present our recommendation to implement and fund the ReliabiliTree® program across Westar's service territory. My testimony: (1) discusses the importance of vegetation management and the historical development of Westar's vegetation management program; (2) summarizes the recommendations Westar received from the Davey Resource Group (DRG) with respect to distribution vegetation management and Westar's implementation of those recommendations, including implementation of Westar's ReliabiliTree® program; (3) describes in detail Westar's ReliabiliTree® program and why that program should be fully funded and expanded across Westar's service territory; (4) discusses other efforts Westar has made to improve service reliability; and (5) reports on Westar's reliability metrics.

II. THE IMPORTANCE OF A VEGETATION MANAGEMENT PROGRAM AND THE HISTORICAL DEVELOPMENT OF WESTAR'S VEGETATION MANAGEMENT PROGRAM

Q. PLEASE DISCUSS THE IMPORTANCE OF A WELL-ESTABLISHED, SUCCESSFUL VEGETATION MANAGEMENT AND MAINTENANCE PROGRAM.

A. One of the significant obligations of providing electricity service is to manage growing vegetation around electric lines. Inexorably, growing tree limbs are a leading cause of outages and can also represent a safety hazard, as even trees and vines can conduct electricity. Virtually every electric customer has experienced the inconvenience of going without electric power as the result of some vegetation/weather-driven system outage. This is especially true in Kansas where weather extremes and high winds are frequent and these two elements of nature often combine to compound the frequency, cost, and length of time needed to restore service after tree-caused outages.

The impacts to individual customers depend upon when the outage occurs, the frequency of outages, and how long it takes to restore service. The longer an outage extends, the more likely it is that simple inconvenience can turn into an event having negative repercussions. In extreme heat or frigid cold, an extended outage can adversely affect our customers, particularly the very young and elderly, in ways that could jeopardize their health. Financially,

customers can experience food spoilage or lost revenues for home-based businesses.

Westar must have an effective vegetation management program in order to provide safe and high quality electric service. Such a program helps ensure reliable service to customers. It also protects customers from tree-related accidents involving the Company's electric power lines. Tree limbs can conduct electricity and electrocute persons who may come in contact with those branches. It also maximizes the Company's ability to restore service when outages do occur. Much of Westar's service territory has a high tree density. As previously noted, Kansas experiences frequent weather extremes and high winds, which increase the likelihood that tree-caused service interruptions will happen with some regularity. These conditions underscore the need for a well-funded and adequately supported vegetation management and maintenance program.

Westar is committed to a comprehensive, long-term, vegetation management and maintenance strategy that will position the Company to concentrate on both outage prevention and outage mitigation in advance of an extreme weather crisis. Our strategy includes customer and community education, pre-activity transparency, and a focus on best practices.

Q. PLEASE PROVIDE A HISTORIC OVERVIEW OF WESTAR'S OVERALL VEGETATION MANAGEMENT STRATEGIES.

A. Prior to 1997, Westar had a decentralized approach to vegetation management with 17 separate areas conducting line clearance work in their respective areas. We centralized the vegetation management into one department in 1997, which made it more efficient and consistent.

In 2007 we began focusing more on reliability pruning rather than on circuit pruning. Reliability pruning is defined as targeting and clearing a portion of the circuit where vegetation is causing the reliability issues. I directed this change to reliability pruning because the 10-12 year cycle utilized prior to 2007 was not sufficient to address the reliability issues that were occurring. As a result, we began specifically targeting the areas causing reliability problems.

We are now in a position where we need to transition back to circuit pruning in order to maintain and build on the improvements we have seen from reliability pruning. As long as we utilize a shorter cycle time, we will be able to provide the benefits that will result from the implementation of a well-established vegetation management and maintenance program to our customers. As a result, we are proposing in this case that the Commission approve implementation of and funding for our ReliabiliTree® program – a

circuit pruning vegetation management and maintenance program that I discuss in detail below – across our service territory.

III. DRG STUDY

Q. WHAT IS THE DRG STUDY?

A. In our last rate case, we requested additional funds to improve our vegetation management program. While there was keen interest in the subject, the Staff wanted to learn more about our overall program and proposals. As part of the settlement in that rate case, we agreed to fund a comprehensive study of distribution vegetation management by an independent consultant and to provide the study results to the Commission.

Utilizing a competitive request for proposal process in 2009, Westar hired DRG to provide a system review, workload analysis, and recommendations of best management practices to further improve Westar's distribution vegetation management program. DRG is an independent consulting firm, which specializes in this area. In March 2010, DRG submitted the Vegetation Management Program Review and Best Practice Recommendations Report dated March, 2010 (DRG Study) to Westar, and we submitted it to the Commission. At that time, we made a presentation regarding the DRG Study to the Commission Staff.

Mr. Mikulanis, Project Manager with DRG, is sponsoring the DRG Study, which is attached to his testimony as Exhibit VM-1.

Q. WHAT WERE DRG'S RECOMMENDATIONS?

A. DRG made eleven (11) recommendations with respect to steps to further improve our vegetation management program. Those recommendations are set forth in Exhibit CAW-1.

Q. HAS WESTAR IMPLEMENTED DRG'S RECOMMENDATIONS?

A. Yes. Westar's implementation plan for each of the 11 recommendations is also set forth in Exhibit CAW-1.

Q. WHAT WAS DRG'S MOST SIGNIFICANT RECOMMENDATION?

A. The most significant recommendation was for Westar to develop and maintain a cycle schedule for tree trimming. DRG identified the benefits relating to cycle tree trimming. DRG recommended an area be chosen so Westar could verify the benefits, as well as the costs, associated with a four-year urban and five-year rural cycle schedule for tree trimming in Westar's service territory.

Q. DID YOU IMPLEMENT DRG'S RECOMMENDATION WITH RESPECT TO THE CYCLE SCHEDULE TREE TRIMMING PROGRAM?

A. Yes. In May 2010, I presented to the Westar executives a program for Wichita and the surrounding communities. We approved the program and it began on July 1, 2010. The final equipment and crew were in place by September 2010. We "branded" the program "ReliabiliTree®." I describe this program and the preliminary results of the program in greater detail later in my testimony. Westar has

also incorporated several of the other DRG recommendations into its ReliabiliTree® program.

Q. IS WESTAR USING CONTRACTORS TO PERFORM THE TREE TRIMMING UNDER THE RELIABILITREE® PROGRAM?

A. Yes. By doing so we can obtain the benefits of competitive bidding from numerous qualified expert companies, thereby maximizing efficiency.

Q. HOW DOES WESTAR SUPERVISE THOSE CONTRACTORS?

A. We have procedures in place to supervise and monitor field work activity, audit contractor billings, and meet with the vegetation contractor management teams quarterly to discuss performance. We also provide specific guidance and work standard requirements to these contractors. For example, we provide our Westar Vegetation Management Manual Standard Practices and Procedures for distribution and subtransmission facilities (Manual) to contractors. The Manual provides instructions to the contractors. It outlines the productivity monitoring that the contractor can expect under Westar's program. It specifically sets forth the steps that will be taken to address any deficiencies in work quantity or quality. We require our own Vegetation Management Supervisors to spend a significant portion of their time performing field audits of work getting done. Our employees also conduct "Field Safety Observations Surveys" to help assure that work is being done in

compliance with policies and procedures and to help assure that proper safety precautions are being taken.

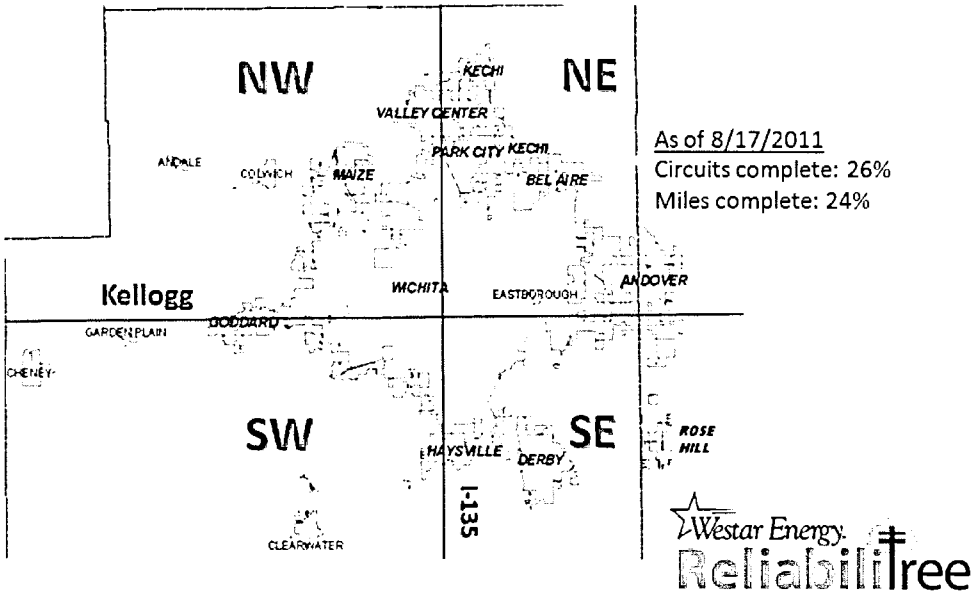
IV. WESTAR'S RELIABILITREE® PROGRAM

A. DESCRIPTION OF PROGRAM

Q. PLEASE PROVIDE AN OVERVIEW OF THE RELIABILITREE® PROGRAM.

A. ReliabiliTree® is a vegetation management and follow-up equipment maintenance program my team and I initiated in the Wichita metro area. This area was chosen for the first step of the ReliabiliTree® program because it represents 1/3 of our retail customer base, but only 1/8 of our overhead line miles. As a consequence, it allows us to maximize customer benefits from the initial program investment and activity. Cities included in the first step area are Wichita, Eastborough, Andover, Bel Aire, Kechi, Park City, Valley Center, Maize, Colwich, Andale, Cheney, Garden Plain, Goddard, Clearwater, Haysville, Belle Plaine, Derby, and Rosehill. Figure 1 below shows the area covered in step 1 of the program.

Figure 1: ReliabiliTree® Program Area



Under the ReliabiliTree® program, Westar clears (removes) or prunes trees through the program area and then maintains the vegetation by returning every four to five years for follow-up pruning and/or removal. This work is performed on a standard time cycle rather than being driven by specific reliability considerations. After a particular circuit is cleared of vegetation, Westar employees in my workgroup walk the circuit to identify any equipment and facilities needs and make necessary repairs.

ReliabiliTree® also includes extensive customer education regarding the importance of keeping lines cleared of trees and other vegetation to enhance both service reliability and public safety. Trees and power lines cannot coexist in the same space.

As I indicated earlier, they can pose hazards to public safety and cause outages during extreme weather events such as an ice storm or high winds. When this occurs, it jeopardizes not only our customers' safety and well being, but also our employees, who must work in the worst possible weather conditions. Public education regarding the importance of clearing the lines, as well as initially planting the right tree in the right place helps customers and communities understand the need for and the intent of the program in advance of the trimming activity.

Q. PLEASE EXPLAIN THE IMPORTANCE OF THE RELIABILITREE® CUSTOMER EDUCATION PLAN.

A. Customers want to be informed about programs that will affect them. Many have questions or concerns about why vegetation management is necessary, how it will affect their personal residence or neighborhood appearance, when it will commence, and what to expect. Therefore, in advance of any tree trimming activity, we lay out the components of the program to address any apprehension or concerns of our customers and their communities about the tree trimming activity.

Q. WHAT DOES THE RELIABILITREE® CUSTOMER EDUCATION PLAN INCLUDE?

A. The ReliabiliTree® customer education plan incorporates several different communication approaches including face-to-face

meetings with individuals and organizations and utilization of media outlets. For example, Westar representatives have met with mayors, city managers, city councils, county commissioners, homeowner/neighborhood associations, individual customers, and other stakeholders as part of its ReliabiliTree® program. The purpose of these meetings has been to present and explain ReliabiliTree®'s benefits and answer questions prior to line clearance activities occurring in the local neighborhoods and city/county districts. As of August 2011, Westar representatives had conducted 35 such meetings. Westar has also provided articles for homeowner association newsletters, including a Spanish language version when requested.

The City of Wichita, Park City, and City of Andover have supported ReliabiliTree® by running important ReliabiliTree® program information on their city cable channels. The ReliabiliTree® public education plan also includes a television campaign featuring a 30-second education segment on Wichita cable and broadcast stations, a quarter-page color ad in the Wichita Eagle, and ReliabiliTree® ads on digital billboards in the Wichita metro area. The outreach is to educate our customers through multiple media channels to assure that they are informed. Westar added an expanded three-minute video on our website that gives an enhanced overview of the ReliabiliTree® program. This video is

also used for homeowner's association presentations, community meetings, and individual customers who want to know more about the program.

In addition to these media education spots, ReliabiliTree® decals have been placed on company/contractor trucks operating in the program area. These decals include the ReliabiliTree® website address for customers who want to obtain additional information on the program. Notification packets with ReliabiliTree® information, including the purpose and goals of the program, are distributed to our customers approximately two weeks prior to line clearance activities occurring in a particular area. This information is presented and explained to our customers in person or left at their doors if they are not available. A contact telephone number that customers can call for additional information specific to their property is included in the customer information packet. Westar distributes quarterly newsletters inserted into customers' bills which have featured the ReliabiliTree® program. Examples of some of the written materials we provide to customers are attached as Exhibit CAW-2.

Q. DOES THE RELIABILITREE® PROGRAM INCLUDE ANY ACTIVITIES BEYOND VEGETATION CLEARANCE?

A. Yes. After the vegetation crews have completed the line clearance on the circuit, Westar employees in my workgroup inspect the

cleared circuit to determine if there are additional maintenance needs to further enhance service reliability and public safety. Our inspectors look for missing or loose pole grounds, damaged or deteriorated equipment such as anchor rods and guy wires, cross-arms, poles and transformers, and damaged meter boxes that may not have been evident before vegetation has been cleared. After we collect this information in the field, we create and distribute work packets to line crews to complete the necessary maintenance repairs. This follow-up maintenance activity, coupled with the clearing of the vegetation, significantly reduces high outage customer interruptions attributable to trees and failed equipment.

In addition, even though overhead service lines to customers' homes are the responsibility of the homeowners and not included in the vegetation clearing portion of the ReliabiliTree® program, we inspect overhead services and meter installations and notify customers if we see anything that they may need to address. In this way, we are, in effect, partnering with customers to assure safety and reliability.

Q. PLEASE DESCRIBE THE COMMUNICATIONS THAT YOU HAVE HAD WITH THE KCC STAFF ON THE RELIABILITREE® PROGRAM.

A. We have met formally with the KCC Staff to discuss our vegetation management program five times since the last rate case order was

issued. I personally participated in each of these meetings. The meeting topics included; the distribution vegetation management study vendor review (Apr. 14, 2009) (Exhibit CAW-3), the distribution vegetation management study vendor selection (Aug. 6, 2009) (Exhibit CAW-4), the distribution vegetation management study recommendations and implementation plan (Apr. 22, 2010) (Exhibit CAW-5), the ReliabiliTree® program introduction and overview (July 15, 2010) (Exhibit CAW-6) and a ReliabiliTree® program progress update (Mar. 22, 2011) (Exhibit CAW-7).

B. ANTICIPATED BENEFITS AND INITIAL RESULTS UNDER THE RELIABILITREE® PROGRAM

Q. WHAT BENEFITS WILL THE RELIABILITREE® PROGRAM PROVIDE TO WESTAR'S CUSTOMERS?

A. Westar's customers, like those throughout the United States, are more dependent than ever on reliable electricity for their homes and businesses. The anticipated dramatic reduction in excessive service interruptions to our customers due to tree related issues will be the greatest benefit of the ReliabiliTree® program. More specifically, based on available industry reports and our own data, our customers should see an estimated 70% reduction in tree-related outages and an estimated 30% reduction in all outages once the ReliabiliTree® program is implemented across the Westar territory.

Q. WHAT GIVES YOU CONFIDENCE IN THESE DATA?

A. On the circuits we have already completed under the ReliabiliTree® program as of August 1, 2011, we have documented a 73% reduction in customer outage minutes and a 56% reduction in customer interruptions due to tree-related causes.

Additionally, there are secondary benefits to customers as a result of the follow up walk down and maintenance program. By better maintaining and controlling vegetation, data currently available suggests that we will be able to reduce wildlife, lightning, and failed equipment caused outages, all of which can be impacted by vegetation. As we continue to clear more circuit miles, we will have additional information to verify the benefits obtained under this program with respect to system reliability.

Q. DO YOU HAVE ANY EVIDENCE OF THE EFFICACY OF RELIABILITREE® IN THE PROGRAM AREA?

A. Yes. In fact, Mother Nature gave us almost perfect test conditions this spring, against both our "test" and "control" areas. On April 15, April 29, and again over Memorial Day weekend this year (2011), Wichita experienced sustained high winds with gusts up to 50 miles per hour (mph) throughout the metro area. Specifically, on April 15, the Wichita metro area experienced winds up to 49 mph. Westar recorded nine tree-related incidents in the northeast quadrant, where ReliabiliTree® work was completed on the area's 41 circuits – in our "test area." By contrast, 104 tree-related incidents occurred

on the 164 circuits in the remaining three Wichita quadrants – our "control group." On April 29, the Wichita metro area experienced winds up to 50 mph. Westar recorded only four tree-related incidents in the northeast ReliabiliTree® quadrant compared with 112 tree-related incidents in the remaining three quadrants. During Memorial Day weekend, a time when many customers have family weekend plans that would be adversely affected by power outages, the Wichita metro area experienced winds up to 43 mph. Westar recorded three tree-related incidents in the northeast ReliabiliTree® quadrant compared with 75 tree-related incidents in the remaining three quadrants. Admittedly, these are limited experiences, but they seem to provide compelling evidence of the value of a comprehensive, circuit-based line clearing program like ReliabiliTree®.

Q. APART FROM THE WICHITA METRO RELIABILITREE® PROGRAM, HAS WESTAR HAD ANY EXPERIENCE WITH A CYCLE VEGETATION MANAGEMENT PROGRAM?

A. Yes. In accordance with requirements of the North American Electric Reliability Corporation, in 2006 Westar implemented a vegetation management program for its transmission facilities (34.5kV – 345kV). Under this program, those facilities are on a four-year trimming cycle. The initial trimming period under this program was completed in 2010.

Q. ARE COST REDUCTIONS BEGINNING TO BE REALIZED FROM THAT PROGRAM?

A. Yes.

Q. CAN YOU QUANTIFY THOSE COST REDUCTIONS?

A. Yes. The initial program required five years to complete because we staggered transmission voltages to get the most critical transmission lines trimmed first. The overall cost was $23.9 million, which averages $4.78 million per year. The program is now beginning its second four-year cycle. Now that the first cycle is complete and rights-of-way are clear, Westar has bid the transmission portion of the vegetation management program. As shown in Table 1 below, the 2011 annual cost for the transmission vegetation management program is $2.5 million to maintain the proper clearance zone, which is nearly half of what it has cost in previous years, proving out the thesis and merit of cycle trimming.

TABLE 1

Table 1- Transmission Vegetation Management Expenditures

2006	2007	2008	2009	2010	2011 Expectancy
$4.93M	$5.82M	$4.93M	$4.78M	$3.44M	$2.50M

Subject to the difference between performing vegetation management on Transmission and on Distribution systems as explained in my testimony below, Westar would expect to see

similar results for the distribution system once we have completed the second 4-year cycle of the ReliabiliTree® program.

Q. ARE THERE DIFFERENCES IN PERFORMING VEGETATION MANAGEMENT PROGRAM FOR TRANSMISSION AND DISTRIBUTION SYSTEMS?

A. Yes. There are at least two significant differences. First, the transmission system is clear cut of any encroaching vegetation in the rights-of-way on high critical transmission systems. However, the distribution system is pruned for four years of re-growth and we are more selective when removing trees in a customer's backyard compared to a transmission line that is located across a field.

Second, the distribution vegetation management study recommends that we should increase our proactive storm management by removing additional trees that overhang the primary conductor to reduce the number of outages from storm events. As set forth in recommendation No. 9 in Exhibit CAW-1, this additional tree removal is scheduled to be included in the second 4-year cycle of the ReliabiliTree® program.

Q. WHY IS IT IMPORTANT TO ACHIEVE A FOUR-YEAR URBAN/FIVE-YEAR RURAL TREE TRIMMING PROGRAM?

A. We understand our customers depend on us to provide safe and reliable electric service for comfort in their homes and energy to power their businesses. As indicated in the DRG Study and based

on what we have observed to date from the initial roll-out of the ReliabiliTree® program, achieving and maintaining line clearance improves system reliability by reducing outages caused by trees, animals and stress on equipment. These observations are also consistent with what Westar has experienced in two recent ice storms. Customers on circuits that we had recently cleared of vegetation experienced significantly fewer sustained interruptions. The interruptions that did occur were shorter in duration than experienced by customers on circuits where equivalent clearing has not been accomplished. The circuits that had not been cleared sustained heavy damage from trees falling from the weight of the ice. This not only increased the frequency and duration of outages, but also significantly increased the cost of restoring service.

As shown in the DRG Study and discussed in more detail in my testimony below, a four-year cycle tree trimming program not only reduces costs incurred due to ice storms and high wind outages, over the long run, it significantly reduces vegetation management costs.

C. EXPANSION OF AND FUNDING FOR THE RELIABILITREE® PROGRAM

Q. WHAT IS WESTAR RECOMMENDING WITH REGARD TO RELIABILITREE®?

A. We believe the ReliabiliTree® program should be funded and extended to our entire system.

Q. HAS WESTAR ESTIMATED THE COSTS AND BENEFITS OF IMPLEMENTING THE PROGRAM FOR ITS ENTIRE SERVICE TERRITORY?

A. Yes. We have estimated the costs and the benefits of implementing the program for the entire service territory. The costs and benefits are shown in Exhibit CAW-8. Having 100% of our customers and 100% of the overhead line miles on an industry best management four-year urban/five-year rural vegetation cycle program is the right goal. As described in the DRG Study, the initial cost projection of the program only included pruning work (Exhibit VM-1, pg. 37, paragraph 1). However, Exhibit CAW-8 includes the total cost of the ReliabiliTree® program including inflation, electronic data capture, additional pre-planners, future tree growth escalators, public education plans, and follow up maintenance as a result of post circuit trimming walk downs. While the ReliabiliTree® program is being implemented, our customers will see the benefit of greater service reliability. Once the entire system is completed, we expect that the cost of maintaining the improved service reliability will be less than we are spending today on vegetation management. Exhibit CAW-8 shows that the 2018 estimated $25 million is equivalent to the 2011 expenditures.

Q. ARE YOU REQUESTING PERMISSION TO REFLECT THE COST TO FULLY FUND THE EXPANSION OF ITS RELIABILITREE® PROGRAM SYSTEM WIDE IN THIS RATE CASE?

A. Yes. As indicated in Mr. Armstrong's testimony, we seek to recover $43,820,000 in this rate case to fully fund our ReliabiliTree® program system wide. This increases the test year vegetation management costs by $20,050,000. This amount is the average of the vegetation management costs for 2012 through 2016 as shown in Exhibit CAW-8. Prospectively, a key feature of Westar's ReliabiliTree® program will be to identify facilities that require additional maintenance or replacement prior to failure, thus reducing failed equipment outages. Westar's goal is to achieve a routine cycle for line clearance and this can be successfully accomplished by the implementation of the ReliabiliTree® program.

By meeting that goal, we can ultimately reduce ongoing costs for vegetation management over the long-term, reduce equipment failure, and improve customer service. To achieve this result will take the substantial additional investment in vegetation management and maintenance for the next few years that is reflected in our request in this rate case.

Q. HAVE YOU EVALUATED THE COSTS AND BENEFITS OF A MORE LIMITED EXPANSION IF THE COMMISSION DECIDES

NOT TO APPROVE EXPANSION OF THE RELIABILITREE® PROGRAM TO YOUR ENTIRE SERVICE TERRITORY?

A. Yes. We analyzed the costs and benefits of expanding the ReliabiliTree® Program to include Wichita and the larger, denser communities of Topeka, Lawrence, Manhattan, Junction City, Marysville, Shawnee, Leavenworth, Atchison, and Hiawatha (Incremental Plan). That cost benefit analysis is shown in Exhibit CAW-9.

Q. WHAT WOULD IT COST TO IMPLEMENT THIS INCREMENTAL PLAN?

A. As shown in Exhibit CAW-9, the cost to implement the Incremental Plan – the more limited expansion of ReliabiliTree® – is $34,680,000. This would increase the vegetation management costs in the test year by $10,910,000.

Q. HOW DOES THE COST/BENEFIT ANALYSIS FOR THE INCREMENTAL PLAN COMPARE TO THE COST/BENEFIT ANALYSIS FOR FULL IMPLEMENTATION?

A. The cost to implement the Incremental Plan is less than for full implementation of the ReliabiliTree® program. However, for the Incremental Plan, the cost of the non-ReliabiliTree® vegetation management program is higher than with full implementation and those areas outside the ReliabiliTree® program will not benefit from increased service reliability. As a result, we are recommending that

the Commission approve full implementation of the ReliabiliTree® program across our entire service territory.

V. OTHER RELIABILITY/EFFICIENCY INITIATIVES

Q. WHAT OBJECTIVES UNDERLIE WESTAR'S DISTRIBUTION POWER DELIVERY INITIATIVES?

A. Our objectives are stated in our Mission Statement which says "Westar Energy provides safe, reliable, high quality electric service at a reasonable cost to all customers."

Q. WHAT HAS WESTAR DONE TO IMPROVE RELIABILITY OF ITS ELECTRIC SERVICE?

A. From 2000 to 2003, Westar began implementing improvement projects, such as protective device coordination, for the circuits with the highest annual customer minutes of interruption. Additionally, we identified those customers experiencing more than 11 sustained interruptions in a 12-month period and initiated actions to eliminate the key, or repeating causes of those interruptions, where practical.

In 2004, Westar embarked on a five-year Reliability Strategic Plan to further improve customer service reliability. The Plan included increased focus on vegetation management, analyzing worst performing circuits, updating circuit protective device coordination, and performing visual and infrared inspection and repairs. As part of the focus, we sought increased vegetation management funding from the Commission in the past two rate reviews.

Also in 2004, Westar began a multi-year 34.5 kV wood pole ground-line inspection program to improve overall condition and reliability of these facilities. The purpose of this program is to inspect and identify issues with our pole structures and extend the life of our 34.5 kV system. This system is critical to serving our rural customers. To date, just over 50 percent of the system has been inspected and the repairs completed. This has greatly improved the reliability of this system.

Q. WHAT WAS THE DRIVER FOR IMPLEMENTING THESE INITIATIVES?

A. Improvement of customer service reliability. Customer satisfaction surveys confirmed that reliable service is important to our customers. At the time the program was implemented in 2000, Westar's service reliability performance as measured by the system average interruption frequency index (SAIFI) was in the fourth quartile relative to peers. Thus, our objective was to improve Westar's service reliability for our customers.

Q. DO YOU HAVE QUANTIFIABLE RESULTS THAT THESE PROGRAMS DIRECTLY IMPACT CUSTOMER RELIABILITY?

A. Yes. For instance, the installation of mid-circuit outage interrupters on high customer interruption circuits has reduced interruptions due to main line outages by more than 100,000 customer interruptions and 24 million customer minutes of interruption. Approximately 20

percent of the customer interruption reductions and more than 50 percent of the reduction in customer minutes outages were during major event days as defined by IEEE 1366-2003 reliability standards.

Since multiple programs have occurred simultaneously for many of the worst performing circuits, such as line clearance, mid circuit outage interrupters, visual and infrared inspection and repairs, the overall benefits have been realized.

Q. ARE THERE ANY OTHER INITIATIVES THAT WILL CREATE EFFICIENCIES FOR THE RELIABILITY PROGRAM?

A. Yes. As part of the SmartStar project in Lawrence, Westar is expanding the use of distribution automation, such as computerized fault location and isolation by line section. This will permit us to restore service on un-faulted line sections immediately and without dispatching a company employee. With the automated sectionalizing devices on the distribution system in Lawrence, Westar customers should realize improved overall service reliability in the area without increased labor expense.

The SmartStar project also includes an automatic meter infrastructure and a state-of-the-art outage management system. The smart meter will communicate outage and restoration information to the outage management system. Additionally, the new outage management system will provide valuable geographical

outage information that will be used to identify outage prone areas in Lawrence and throughout our service territory. Mr. Ludwig discusses our SmartStar program in greater detail in his testimony.

VI. REPORTS ON WESTAR'S RELIABILITY METRICS

Q. HOW DO YOU MEASURE WESTAR'S PERFORMANCE IN PROVIDING RELIABLE ELECTRIC SERVICE TO CUSTOMERS?

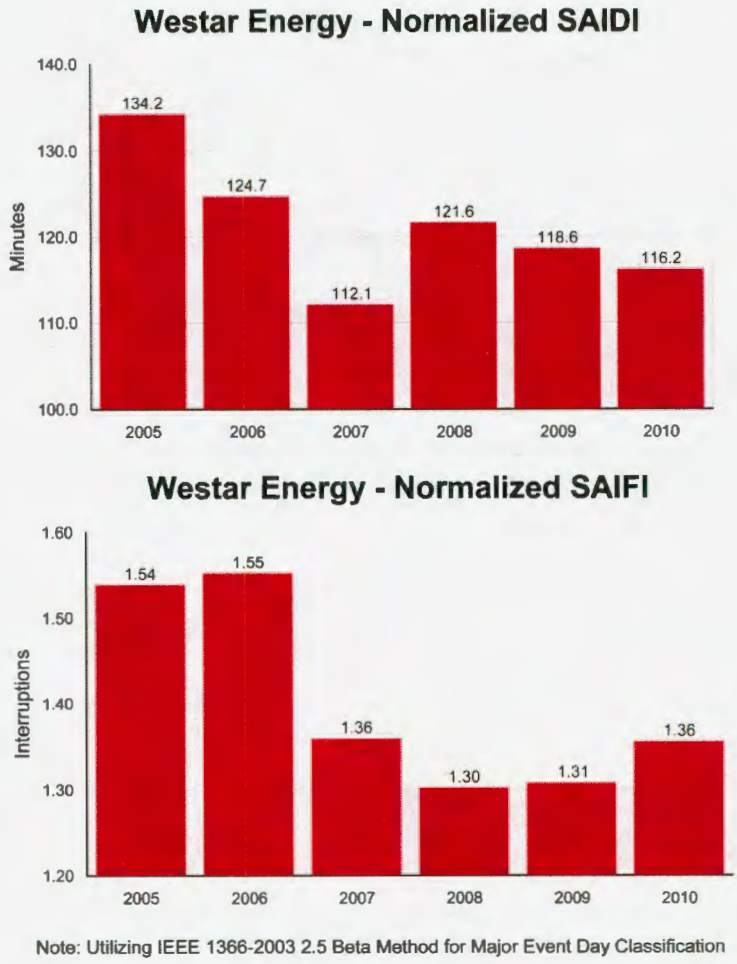
A. We utilize various metrics common to electric utility companies. Two industry-wide metrics are System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI). SAIDI reflects the time, measured in minutes, which customers, on average, are interrupted during the reporting period. It is calculated by dividing the sum of customer minutes of sustained interruption by the total number of customers served. SAIFI reflects the average frequency of sustained interruptions per customer during the reporting period. It is calculated by dividing the total number of sustained customer interruptions by the total number of customers served.

Q. HAS WESTAR IMPROVED RELIABILITY AS MEASURED BY THESE TWO METRICS?

A. Yes. In 2005, Westar's normalized SAIDI and SAIFI were 134.2 minutes and 1.54 interruptions, respectively. This is compared with Westar's 2010 year end performance of 116.2 minutes and 1.36 interruptions. This is a reduction of 13% for SAIDI minutes and

12% for SAIFI interruptions. Figure 2 below shows Westar's normalized SAIDI and SAIFI for the period 2005-2010.

Figure 2. Reliability Results 2005-2010



Note: Utilizing IEEE 1366-2003 2.5 Beta Method for Major Event Day Classification

Q. DO YOU USE OTHER MEASURES TO DETERMINE HOW RELIABLE WESTAR'S SERVICE IS TO ITS CUSTOMERS?

A. Yes. Another metric Westar tracks is CEMIs (Customers Experiencing Multiple Interruptions greater than n). In 2005, Westar had 1,135 customers who experienced more than nine sustained interruptions in a 12-month period (CEMI–9) and 18,636

customers who experienced more the five sustained interruptions in a 12-month period (CEMI-5). In 2010, Westar had 665 CEMI-9 customers, a 41% reduction from 2005 and 13,758 CEMI-5 customers, a 26% reduction from 2005. This success is a result of our focus on improving the worst performing areas and facilities.

Q. THANK YOU.

Recommendation Efforts

1. Develop and Maintain a Cycle Schedule

Westar has implemented a cycle schedule in its Wichita Division (ReliabiliTree). Once the first cycle is completed (June 2014), Westar will have 1/3 of its retail customer base on a cycle schedule.

2. Conduct an In-Depth Analysis of Outage Data for Circuits Pruned in 2007 and 2008

The results of the study requested in Item #2 have been completed and are provided in the "ReliabiliTree Improvement Study and Initial Results" on the Power Delivery Dashboard on the last page of the pdf.

3. Utilize an Electronic System for Vegetation Management Preplanning and Post Auditing

Not in place at this time. Initial internal discussions are underway. Funding for a vegetation management (VM) electronic system has not been included in Westar's current VM cost recovery request.

4. Alter Pruning Contracts for Westar Efficiency

Current VM contracts are in place through year 2011. The Company plans to bid future work in the latter part of 2011.

5. Set and Achieve Removal Goals

The Westar VM program has removal goals and guidelines in place and has for many years.

6. Further Develop Customer Education

A major ReliabiliTree Customer Education program started in the last quarter of 2010 and will continue into the foreseeable future.

7. Utilize ISA Best Management Practices Publication for Utility Pruning of Trees.

The ISA Best Management Practice (published in 2004) is fully incorporated into the Westar Energy Vegetation Management Manual and is required practice by our Contractors.

8. Work with Municipalities to Develop Tree Ordinances in Relation to Power Lines

The Company has discussed enhancing the City of Wichita Tree Ordinance to firm up the language and utility rights held within it, but due to the fact that other utilities have facilities on the poles, the City is not interested at this time to modify their language. Most of our Franchise

agreements with cities within our service territory have a paragraph in it that outline our rights to trim or remove vegetation to protect our facilities. Dialog with the City of Wichita will continue as opportunities for such discussions present themselves.

9. Increase Proactive Storm Management

The VM Department is an integral part of any major storm restoration effort. Our current VM program appears to be helping to hold down outages in certain areas.

10. Include Tree Growth Regulators in Maintenance Activities

Tree Growth Regulators are chemical that inhibits tree growth. They are effective on trees that have been recently pruned or are planned to be pruned. The cost per application (per tree) can average $100 or more if an efficient system to notify, apply and verify application and compliance are all in place. Because this is a chemical application, significant documentation is required. The applicators (crew members) all need to have State level Pesticide Certifications. In 2010 we averaged .6 units (trees) per man-hour. The cost of a three person crew averages approximately $100 per hour. That crew should prune on average 1.5 trees per crew hour and expending approximately $70 per tree. Westar is continuing to evaluate the possible use of tree growth regulators, but the use of such regulators is not included in the Company's current vegetation management plan.

11. Develop a Comprehensive Tree Failure Database

Westar Energy has a Tree Failure database in place that reviews and tracks tree caused circuit outages. This system has been in place for a decade. The VM department uses the data to know and understand tree caused outages on our system. Grow-in's are not much of a problem, however windblown limbs from soft wooded trees are a big share of our tree related outages at the circuit level. In the Department's opinion tree caused outages will be very similar on all down line primary system voltages.

RELIABILITREE WILL BE PRUNING TREES IN YOUR AREA SOON.

The National Arbor Day Foundation™ has named Westar Energy a Tree Line USA® Utility every year since 1999 for its nationally recognized proper tree-pruning practices.

Working to keep your lines clear and your lights on.

www.WestarEnergy.com/tree | 1-800-383-1183

YOUR LOCAL RELIABILITREE TREE-PRUNING CONTRACTOR IS:

Asplundh

If you have any questions, special circumstances or a tree that is near our utility lines that you would like removed, please call:

316-261-6581

Exhibit CAW-2
Page 1 of 2

RELIABILITREE. TRIMMING TREES TO KEEP YOUR LIGHTS ON.

Westar Energy ReliabiliTree works to keep your lines clear and your lights on. You might see our professional line-clearance contractors working in your neighborhood during the next few weeks. Pruning prevents power outages, so we're stepping in to ensure safe and reliable electric service to you and your neighbors. You will not be charged for any line-clearance work done for Westar Energy.

ReliabiliTree crews will prune and remove trees, as necessary, to obtain adequate clearance for overhead electric lines. Line voltage and tree species will determine the amount of space required between trees and the electric lines, and if they will be pruned or removed. Our crews will mark trees with a white dot if they are to be pruned and an orange dot if they are to be removed.

Tree branches that grow into and around overhead electric lines can create a safety hazard or a reliability issue for our customers and must be pruned. In some cases, it is better to remove a tree than to severely prune it. Some trees may be candidates for transplanting by the property owner.

ReliabiliTree crews will:

- *Remove tall-growing species of trees under the electric lines that were marked with an orange dot if the area was accessible.*
- *Remove those trees that are not under the line but, when pruned, may not be sustainable. These trees were marked with an orange dot if the area was accessible.*
- *Prune any remaining trees near the electric lines. These trees were marked with a white dot if the area was accessible.*
- *Remove the tree cuttings from the property.*
- *At the request of the property owner, we may leave firewood in the vicinity of the electric line.*

Westar Energy supports the Right Tree in the Right Place.
For more information, visit **WestarEnergy.com/tree**.

Westar Energy.

To our Valued Customers:

Our top priority is to provide consistent, quality electric service. But, we also understand the need to preserve the beauty of your neighborhood. That's why we're providing this packet of information regarding ReliabiliTree, Westar Energy's vegetation-management program.

The goal of ReliabiliTree is to ensure safe and reliable electric service while preserving the health and beauty of trees. When trees come into contact with power lines, electric service is hampered and a dangerous situation is created. Tree limbs that seem to clear electric lines in nice weather can take down power lines when they are blown by the wind or weighed down with snow and ice. But even in nice weather, some limbs are too close to the lines.

By managing the trees and vegetation around electric lines, we can eliminate potential problems and circumvent dangerous situations in which people, too, get too close to the lines.

We are currently clearing lines by electrical circuit, so you may see crews prune trees in your yard, but not in your neighbor's yard. You may also see several different crews working for several weeks due to their specific line-clearance function.

We will leave a notice on your door if we cannot pick up brush before the end of the workday. If we leave brush, we will pick it up the next business day, making an effort not to leave it in your yard over weekends or holidays.

Our contractors prune trees using the directional pruning method, which is recommended by the Tree Care Industry Association. When first pruned, trees may appear stark, but this method maintains tree health and allows the trees to attain normal regrowth.

Every year since 1999, the Arbor Day Foundation™ and the National Association of State Foresters have named Westar Energy a Tree Line USA® utility for meeting strict pruning, training and public education standards. We are honored to have earned this designation.

The enclosed tree-planting guide can be used for tree planting near the distribution lines that run throughout your neighborhood. Tree species that are allowed to exist adjacent to higher voltage transmission lines are very limited and are not covered in this brochure.

We appreciate your understanding as ReliabiliTree crews work to ensure a safe environment and reliable electric service. If you are not the property owner, please forward this information to the owner so he or she is aware of our scheduled work.

Sincerely,

Don Reinert

Don Reinert
Manager, Vegetation

818 S. Kansas Avenue | P.O. Box 889 | Topeka, Kansas 66601-0889

Westar Energy, Inc.:
Distribution Vegetation Management Study

Presentation to KCC Staff

April 14th, 2009

Docket No. 08-WSEE-1041-RTS

Presentation Agenda

- Rate Case Overview
- Vegetation Management Study Preliminary Project Scope
- Vegetation Management Consultant Profiles
- Vegetation Management Study Projected Timeline

1041 Docket S&A

- Westar agreed to fund a comprehensive study of its distribution vegetation management program by an independent consultant with extensive experience and provide a written report and study.
- Westar will consult with Staff prior to its election of the consultant.
- Study to be completed by year-end 2010
- To include office and field review and evaluation of
  - Operating procedures
  - Work practices
  - Vegetation workload
  - Overall system conditions
  - Clearance program progress

1041 Docket Order

- In addition to the S & A language the Order requires Westar to file compliance filings related to the Vegetation management program.
- Compliance docket 1
  - Updates on the comprehensive study or the comprehensive study by January 4, 2010.
- Compliance docket 2
  - Westar is required to report on any changes in vegetation management and the expected costs of such changes.
  - Westar's report shall be filed within 12 months of the Order date January 22, 2010.

Vegetation Management Study
Preliminary Project Scope

- Office and Field Review
- Operating Procedures
- Work Practices
- Vegetation Work Load
- Overall System Condition
- Clearance Program Progress

Office and Field Review

- Office Reviews
  - Review current vendor contracts and identify any improvements.
  - Review current VM program and identify performance improvement opportunities.
  - Review vendor labor pricing, equipment pricing and overheads and identify any pricing opportunities.

- Field Reviews
  - Review current field manual, its directives and identify any changes or improvements.
  - Review current equipment diversity and identify any new equipment and procedures to improve efficiency.
  - Review current contractor crew manpower makeup and types and recommend any improvements.

Operating Procedures

- Review current operating procedures and identify any enhancements that will improve program efficiencies.
  - Routine Line Clearance activities on prioritized circuits.
  - Hot Spot Line Clearance activities initiated by field operations.
  - Reliability Line Clearance activities initiated by system reliability.
  - Clearance activities associated with new construction.

Work Practices

- Complete a field review of all work practices and identify any enhancements that will improve the efficiency of the contractor work force.
  - Provide information on best practices from other leading utilities.
  - Review and make recommendations on our current work practices and procedures.
  - Review our current use of herbicides and recommend changes to enhance effectiveness of this program.
  - Review our current use of machines on rural distribution circuits.
  - Recommend any changes with our crew types and size.
  - Recommend changes to the type of equipment that is currently in use.

Vegetation Work Load

- Complete a review of the past and current workload and identify any enhancement that will improve production in the future.
  - Complete a comprehensive study of the size and density of vegetation on the floor of the clearance zone.
  - Complete a comprehensive study of the size and density of the vegetation adjacent to the floor of the clearance zone.

Overall System Condition

- Complete a review of the current distribution system vegetation conditions and provide a report to the condition of the vegetation on the distribution system.
  - Complete a tree growth / re-growth study by species in at least four geographic areas of the Westar property.
  - Provide a summary of the findings by species and by area.

Clearance Program Progress

- Review the progress of the VM line clearance program and provide a report with recommendations to improve the progress of the program.
  - Effectiveness of the line clearance activities prior to 2003 when most brush (small volunteer trees < 4 inches in diameter measured at 4.5 feet from surface) were left on the floor of the clearance zone.
  - Effectiveness of the line clearance activities from 2003 to 2006 when the vast majority of brush was removed from the floor of the clearance zone.
  - Effectiveness of the line clearance activities from 2007 to present when the brush and majority of small and medium size trees are / were removed from the floor of the clearance zone.
- Is the present line clearance program effective?
  - What additional enhancements should be made immediately to improve the line clearance program.
  - What long-term enhancements should be considered to the program to generate even more efficiencies in the future.

Vegetation Management Consultant Profiles

- ACRT Inc.
- Arbor Metrics Solutions, Inc.
- CN Utility Consulting
- Davey Resource Group
- Environmental Consulting Inc.

ACRT Inc.

- Headquarters: Akron, OH
- Staffing: 400+ employees
- Experience: 23 years
  - ACRT is the first and largest national vocational commercial urban consulting firm in the United States, and the first line clearance, tree care, urban forestry training organization.
  - Their utility division specializes in system assessments, total system management, contract utility foresters, pre-inspection/work planning and post auditing. ACRT's employees cover vast portions of the United States and are trained ISA Certified Arborists, ISA Certified Utility Specialists, and/or ACRT Certified Utility Foresters.
- Recent Activity:
  - ACRT was recently selected as the successful bidder to provide work planning services and a customized UVM Software application to FirstEnergy.

Arbor Metrics Solutions, Inc.

- Headquarters: Hendersonville, North Carolina
- Staffing: 100 employees
- Experience:
  - Their core business is providing contract personnel to support transmission and distribution vegetation management programs for electric utilities. Personnel are also contracted to serve gas companies, water management districts, and other local, state, and federal agencies.
  - Through an exclusive partnership with Utility Risk Management Corporation (URMC), ArborMetrics solutions can now provide utilities with best-of-class proprietary, patent-pending technology to define, analyze, and manage the risk that vegetation poses to electrical transmission lines.
- Recent Activity:
  - ArborMetrics was recently selected to provide both transmission and distribution vegetation management services to NiSource's Northern Indiana Public Service Company.

CN Utility Consulting

- Headquarters: Valley Ford, CA
- Staffing: 7 Utility Consultants, 2000 Field Employees
- Experience: 18 years
  - CN Utility Consulting Inc. was founded to provide peerless consulting and training services to the electric utility vegetation management industry. They offer a wide variety of services to electric utility companies, vegetation management contractors, and professionals in the legal and regulatory arena.

Davey Resource Group

- Headquarters: Akron, OH
- Staffing: 7,000+ employees
- Experience: 129 years
  - Davey provides tree, shrub and lawn care, large tree moving, grounds management, vegetation management, and consulting services throughout North America.
  - Subsidiaries include: Davey Tree Surgery Company, Davey Tree Expert Co. of Canada and Standing Rock Insurance Company.
  - The executive vice president and general manager in its residential/commercial service line is a 30 year veteran of Davey Resource Group.

Environmental Consulting Inc.

- Headquarters: Wisconsin (Operating), Pennsylvania (Admin)
- Staffing: Over 300 Vegetation Management Professionals
- Experience: 37 years
  - Each member of senior staff averages more than 25 years of experience in vegetation management consulting and utility operations.
  - ECI's Consulting Services specialize in utility vegetation management issues, including everything from high-level program assessments to workload surveys and development of site-specific work plans.
- Recent Activities:
  - Alliant Energy has contracted with ECI to evaluate vegetation conditions on their expansive transmission system.
  - ECI has been providing a variety of contract vegetation management personnel to FPL for several years.
  - ECI currently manages the KCP&L line clearance program under a Total Management Services agreement.

Vegetation Management Study Projected Timeline

- April 14, '09 – KCC Staff Presentation
- May 15, '09 – RFP sent to Vegetation Consultants
- June 8, '09 – RFP due from Vegetation Consultants
- July 3, '09 – Vegetation Consultant selected/Contracts finalized
- July – November '09 – Study, Consult & Review of Westar's VM Program
- January 4, '10 – Final report submitted to KCC

Thank you! Questions?

- Caroline Williams
  - VP, Distribution Power Delivery
  - Phone# (316) 299-7425
- Jeff Martin
  - Director, Reliability & Resource Scheduling
  - Phone# (316) 299-7550
- Dick Rohlfs
  - Director, Retail Rates
  - Phone# (785) 575-8082

Westar Energy, Inc.
2009 Storm Review

Presentation to KCC Staff

August 6th, 2009

Agenda

- Historical Weather Data
- 2009 Storm Review
  - Winter Storm, March 27th – April 1st
  - Spring Storm, May 8th – 12th
- Questions

Westar Energy 10 year storm history

- 2000-2009 stats

Year	# of Named Storms	# of storm eligible for reserve	Notes
2000	5	0	
2001	6	0	
2002	7	3	Extraordinary storm - 2002 Ice Storm
2003	5	2	
2004	11	4	
2005	8	5	Extraordinary storm - 2005 Ice Storm
2006	10	2	
2007	12	5	Extraordinary storm - 2007 Ice Storm
2008	14	8	
2009 (First half)	10	4	

  - 2000 to 2004: Avg. of 7 named storms per year
    - Avg. of 2 storms per year were storm reserve eligible
  - 2005 to 2009: Avg. of 11 named storms per year
    - Avg. of 5 storms per year were storm reserve eligible

2009 Storm Observations

- Higher wind speeds
  - Direct correlation between recorded wind speeds and customer outages.
  - We are coming out of a historically low wind speed period in our distribution territory.
  - The potential of additional damaging storms in the future if the pattern is cyclical.

2009 Westar Energy Storm Review

- Winter Storm: March 27th – April 1st
- Spring Storm: May 8th – 12th

PRESIDENT APPROVES FEDERAL DISASTER DECLARATIONS FOR LATE WINTER, EARLY SPRING STORMS

President Barack Obama has approved Governor Mark Parkinson's request for federal assistance to defray costs associated with the response and recovery activities during the severe winter storms that struck the state between March 26-29, 2009. The governor was also informed that the president approved a federal declaration for Public Assistance for damages resulting from severe storms, flooding, straight-line winds and tornadoes that occurred April 25 through May 16, 2009.

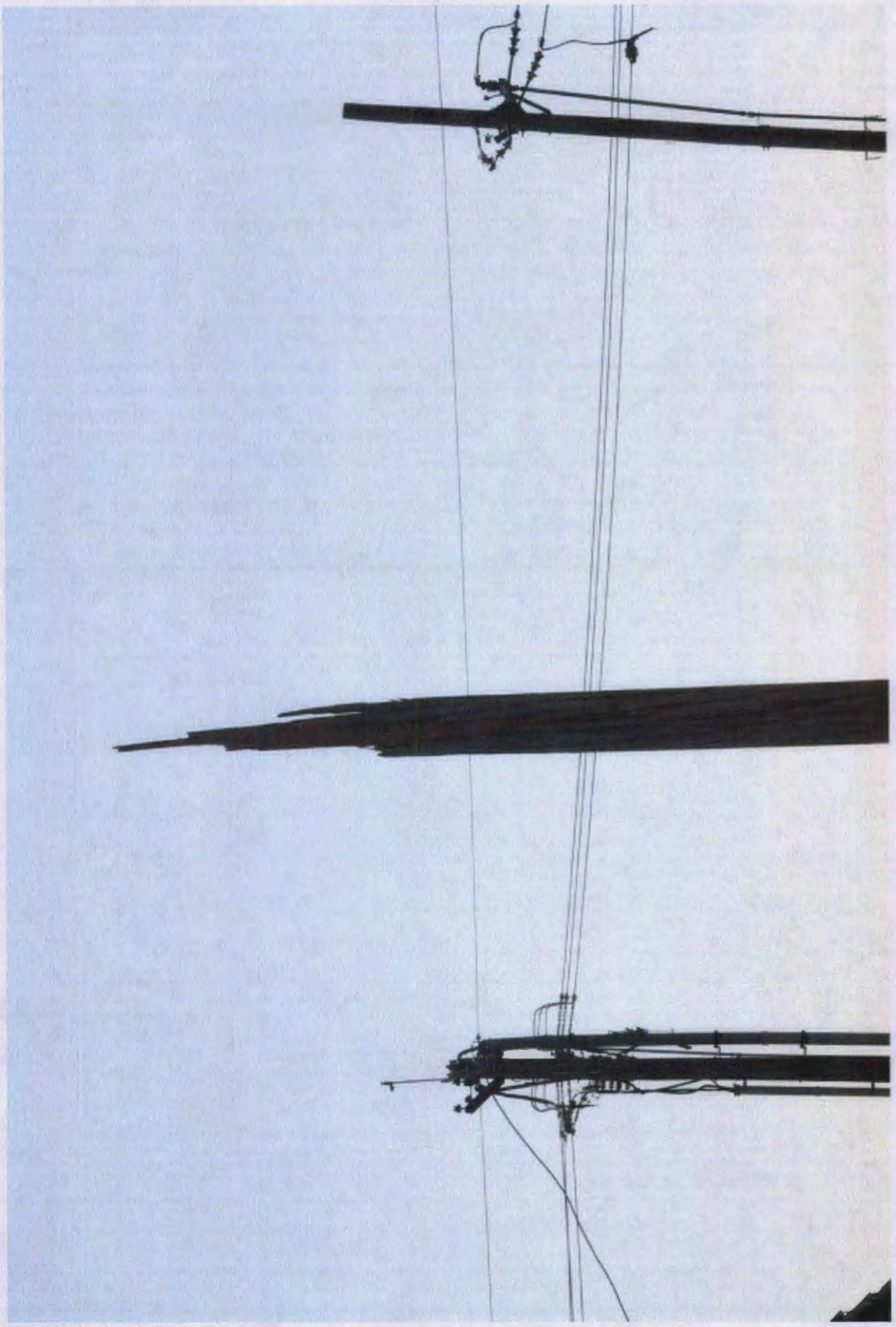
News from The Adjutant General's Department, June 25, 2009, No. 09-065

Winter Storm: March 27th – April 1st

- A winter storm that was predicted to produce large amounts of snow fall turned into a wind/ice storm that produced 45 mph wind gusts in the Newton, El Dorado, and Wichita areas and up to 2" of ice accumulation in the Arkansas City and Eureka areas.
  - Estimated Cost:
    - $16M ($11M Capital, $5M O&M)
  - Customers affected:
    - 58,000 unique customers lost power (~8% of Westar's customer base)
    - IEEE-1366 Normalized
  - Workforce
    - 260 Westar Energy Employees
    - 93 Line Contractor Crews (~300 FTE's)
    - 66 Vegetation Crews (~170 FTE's)
  - Asset Damage 385 Poles
    - 230 Distribution
    - 90 Sub-Transmission (34.5kV)
    - 65 Transmission (69kV – 345kV)

Spring Storm: May 8th – 12th

- A Spring storm produced a straight line wind event in El Dorado, Wichita, Eureka, and SE Kansas areas.
  - Estimated Cost:
    - $11.2M ($7.1M Capital, $4.1M O&M)
  - Customers affected:
    - IEEE-1366 Normalized
    - The storm met the KCC 10% rule (10% of the south or >31,000 customers were without power)
  - Workforce:
    - 335 Westar Energy employees
    - 77 line contractor crews (approx. 248 FTE's)
    - 46 vegetation crews (approx. 118 FTE's)
  - Asset Damage: 297 poles
    - 211 distribution poles
    - 86 transmission structures (69kV – 345kV)

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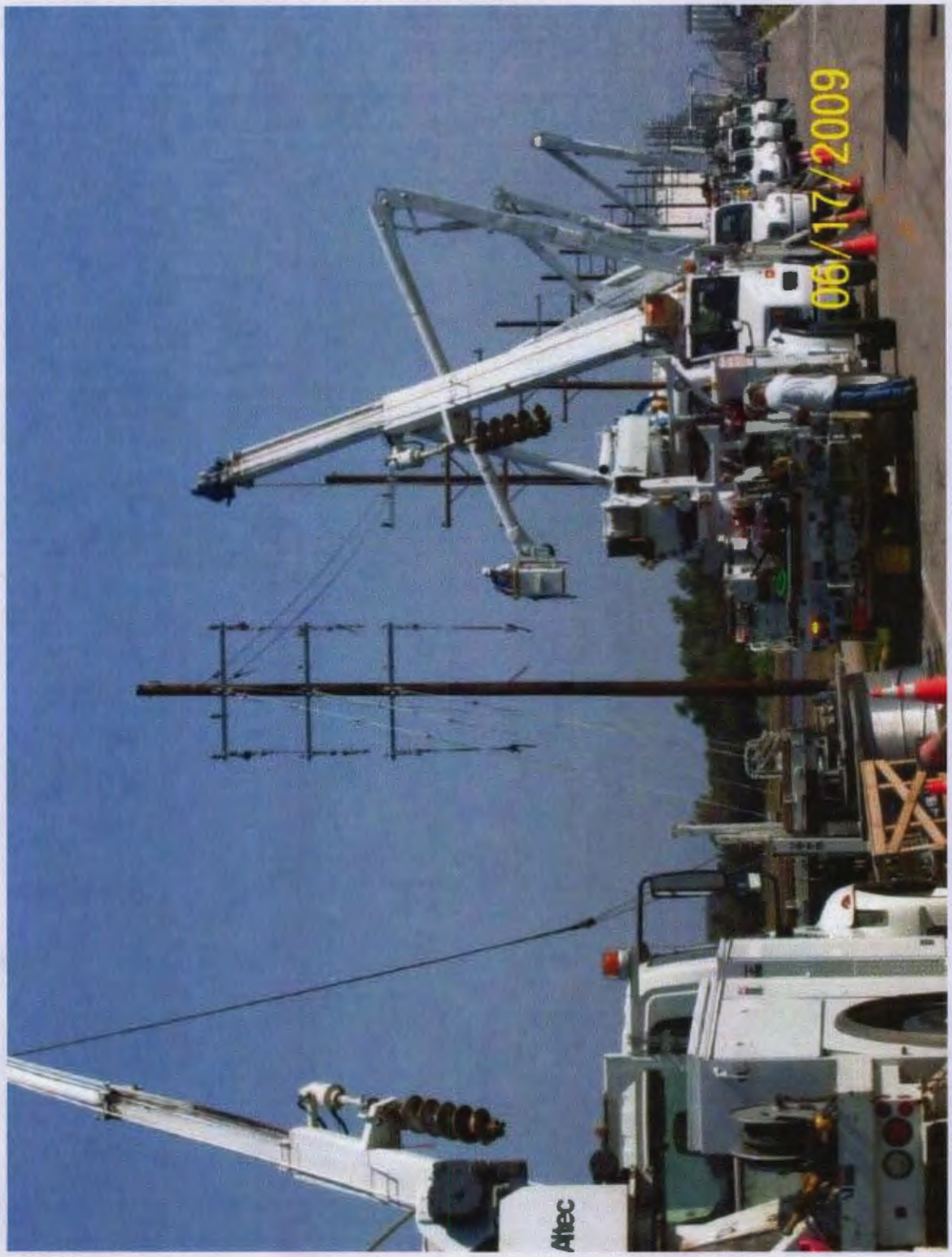

06/17/2009
Altec

Thank you! Questions?

- Doug Sterbenz
  - EVP & Chief Operating Officer
  - Phone# (785) 575-8174
- Caroline Williams
  - VP, Distribution Power Delivery
  - Phone# (316) 299-7425
- Jeff Martin
  - Director, Reliability & Resource Scheduling
  - Phone# (316) 299-7550
- Dick Rohlfs
  - Director, Retail Rates
  - Phone# (785) 575-8082

Vegetation Management Study

Update August 6th, 2009

Docket No. 08-WSEE-1041-RTS

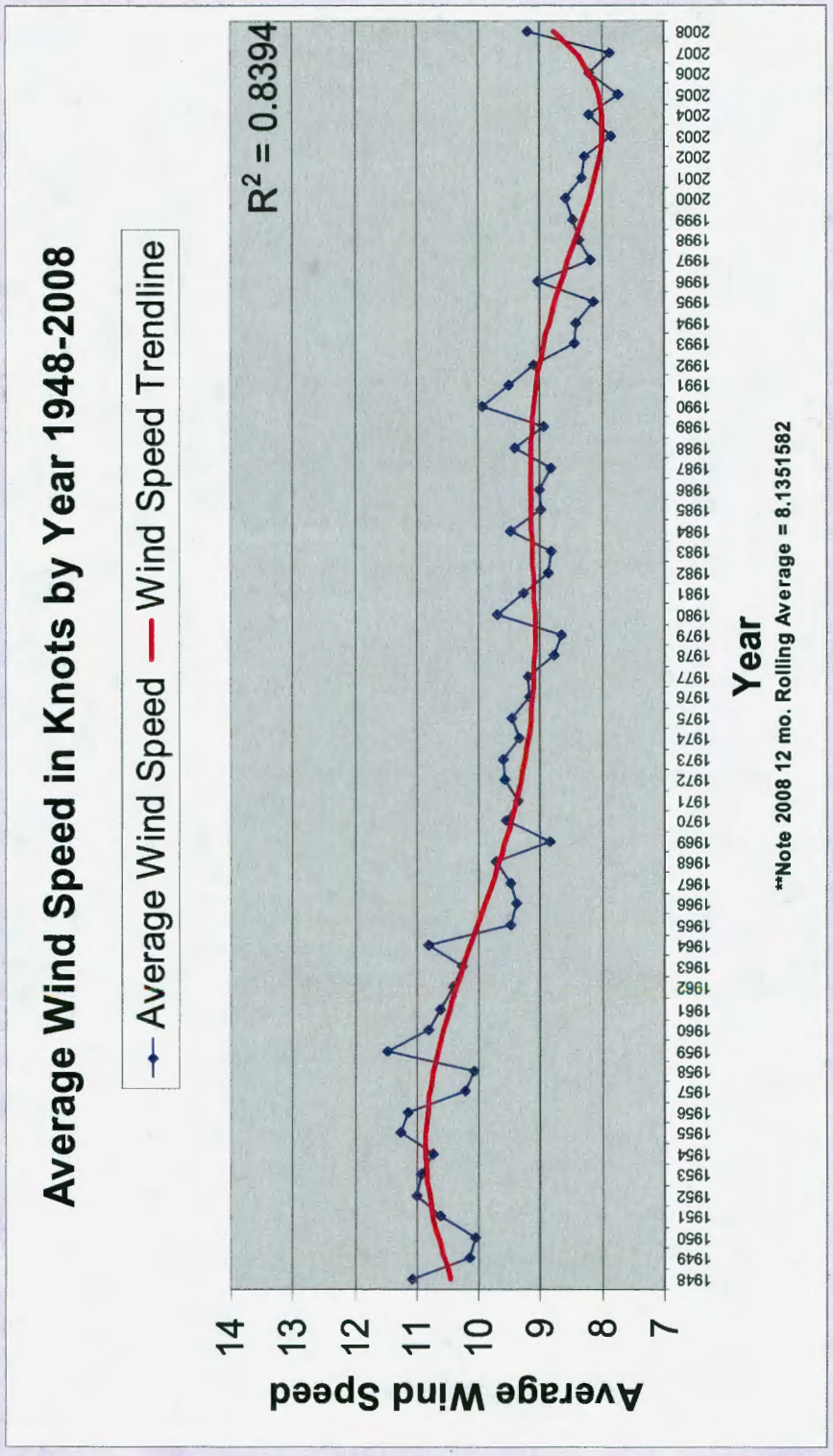
Vegetation Management Independent Consultant Profiles

- ACRT Inc.
- Arbor Metrics Solutions, Inc.
- CN Utility Consulting
- Davey Resource Group
- Environmental Consulting Inc.

Davey Resource Group

- Headquarters: Akron, OH
- Staffing: 7,000+ employees
- Experience: 129 years
  - Davey provides tree, shrub and lawn care, large tree moving, grounds management, vegetation management, and consulting services throughout North America.
  - Subsidiaries include: Davey Tree Surgery Company, Davey Tree Expert Co. of Canada and Standing Rock Insurance Company.
  - The executive vice president and general manager in its residential/commercial service line is a 30 year veteran of Davey Resource Group.

Historical Wind Speed Data Slide



Westar Energy, Inc.
Distribution Vegetation Management Study Recommendations

Presentation to KCC Staff

April 2010

Distribution Vegetation Management Study Recommendations:

1. Develop and Maintain a Cycle Schedule
2. Conduct an In-Depth Analysis of Outage Data for Circuits Pruned in 2007 and 2008
3. Utilize an Electronic System for Vegetation Management Preplanning and Post Auditing
4. Alter Pruning Contracts for Westar Efficiency
5. Set and Achieve Removal Goals
6. Further Develop Customer Education
7. Utilize ISA Best Management Practices Publication for Utility Pruning of Trees
8. Work With Municipalities to Develop Tree Ordinances in Relation to Power Lines
9. Increase Proactive Storm Management
10. Include Tree Growth Regulators in Maintenance Activities
11. Develop a Comprehensive Tree Failure Database

Distribution Vegetation Management Study Recommendations:

1. Develop and Maintain a Cycle Schedule
2. Conduct an In-Depth Analysis of Outage Data for Circuits Pruned in 2007 and 2008
3. Utilize an Electronic System for Vegetation Management Preplanning and Post Auditing
4. Alter Pruning Contracts for Westar Efficiency
5. Set and Achieve Removal Goals
6. Further Develop Customer Education
7. Utilize ISA Best Management Practices Publication for Utility Pruning of Trees
8. Work With Municipalities to Develop Tree Ordinances in Relation to Power Lines
9. Increase Proactive Storm Management
10. Include Tree Growth Regulators in Maintenance Activities
11. Develop a Comprehensive Tree Failure Database

Priority Order for the Highlighted Recommendations

1. **Conduct an In-Depth Analysis of Outage Data for Circuits Pruned in 2007 and 2008.**
2. **Utilize ISA Best Management Practices Publication for Utility Pruning of Trees**
3. **Develop a Comprehensive Tree Failure Database**
4. **Work With Municipalities to Develop Tree Ordinances in Relation to Power Lines**
5. **Utilize an Electronic System for Vegetation Management Preplanning and Post Auditing**

Conduct an In-Depth Analysis of Outage Data for Circuits Pruned in 2007 and 2008.

- Study the circuit and total system outages for the circuits trimmed in 2007 and 2008:
  - Compare 2 yrs prior and after trimming
- Compare Tree caused outages for the 2006 circuits trimmed
  - Compare Total company outages for the 2006 circuits trimmed
- Compare normalized, total actual and total actual less catastrophic ice storms in 2005 & 07
- Implementation Time: 90 days

Utilize ISA Best Management Practices Publication for Utility Pruning of Trees

- We will update our Line Clearance Manual to include the information from this publication. We will also require our contractors to follow all of the requirements in the publication when they receive our new manual.
- Implementation Time: 90 days.

Develop a Comprehensive Tree Failure Database

- We currently track tree contacts that cause circuit lockouts. We will expand our current spreadsheet to include all tree outages excluding major storms.
- Implementation Time: 60 days.

Work With Municipalities to Develop Tree Ordinances in Relation to Power Lines

- We will work with our legal department to prepare a draft ordinance that can be presented to each of our cities for their consideration and inclusion into law.
- Implementation Time: 180 days.

Utilize an Electronic System for Vegetation Management Preplanning and Post Auditing

- We recommend that once a 4/5 year cycle program is approved, that we purchase a vegetation management system to plan, schedule and provide the necessary audit information that can be used to complete the first cycle. More importantly this system would keep track of what vegetation was left behind that will have to be worked on the second cycle. We will use that information when we plan and bid future work.

Thank you! Questions?

- Caroline Williams
  - VP, Distribution Power Delivery
  - Phone# (316) 299-7425
- Jeff Martin
  - Director, Reliability & Resource Scheduling
  - Phone# (316) 299-7550
- Dick Rohlfs
  - Director, Retail Rates
  - Phone# (785) 575-8082

Westar Energy, Inc.
Distribution Vegetation Management Study and Recommendations

Presentation to KCC Staff

July 1, 2010

Historical Review

- Westar sought funds for VM review in 2007.
- KCC order 08-WSEE-1041-RTS required a Distribution VM Study.
- Met with KCC staff regarding VM Study.
  - Discussed vendor candidates on April 4, 2009
  - Discussed vendor selection on August 6, 2009
- Report with recommendations filed March 12, 2010.

Distribution Vegetation Management Study Recommendations:

1. Develop and Maintain a Cycle Schedule.
2. Conduct an In-Depth Analysis of Outage Data for Circuits Pruned in 2007 and 2008.
3. Utilize an Electronic System for Vegetation Management Preplanning and Post Auditing.
4. Alter Pruning Contracts for Westar Efficiency.
5. Set and Achieve Removal Goals.
6. Further Develop Customer Education.

Distribution Vegetation Management Study Recommendations: - Continued

7. Utilize ISA Best Management Practices Publication for Utility Pruning of Trees.
8. Work With Municipalities to Develop Tree Ordinances in Relation to Power Lines.
9. Increase Proactive Storm Management.
10. Include Tree Growth Regulators in Maintenance Activities.
11. Develop a Comprehensive Tree Failure Database.

Why do we need a VM cycle program?

Develop and Maintain a Cycle Schedule

- Implement pilot for Wichita for 4/5 year cycle.
- Wichita Urban 1,735 OH miles
  - 9.1% of total co. OH line miles
  - ~26% of total co. customers
- Wichita Rural 660 OH miles (see appendix)
  - 3.4% of total co. miles
  - ~7% of total co. customer

Requested Action/Results from the Officer presentation on May 24, 2010

- Approve initiating the 4/5 year cycle in Wichita
- 2010 funding from current WPD budget savings
- Budget separately in 2011-2014

Approved

Wichita Pilot Funding Requirements

Distribution (O&M $'s in 1000's)	2nd 1/2 2010	2011	2012	2013	1st ½ 2014	Total	Crews (Avg)
Total Program	2,475	5,562	6,099	6,691	4,992	25,819	26

Next Steps/Pilot Plan

- Vegetation Management – Pilot Area
  - Cities involved - Wichita, Eastborough, Andover, Belair, Kechi, Park City, Valley Center, Maize, Colwich, Andale, Cheney, Garden Plain, Goddard, Clearwater, Haysville, Belle Plaine, Derby, Rosehill.

Conduct an In-Depth Analysis of Outage Data for Circuits Pruned in 2007 and 2008

- Study the circuit and total system outages for the circuits trimmed in 2007 and 2008:
  - Compare 2 yrs prior and after trimming
    - (Jan '07 to May '08)
- Compare Tree caused outages for the 2006 circuits trimmed.
  - Compare Total company outages for the 2006 circuits trimmed.
- Compare normalized, total actual and total actual less catastrophic ice storms in 2005 & 07.
- **Implementation Time: Early 4th Quarter, 2010**

Utilize an Electronic System for Vegetation Management Preplanning and Post Auditing

- **Incorporate into the Wichita pilot project.**
- **Purchase a vegetation management system to plan, schedule and provide the necessary audit information that can be used to complete the first cycle.**
- **Assure that this system is capable of full system implementation.**

Alter Pruning Contracts for Westar Efficiency

- Recommendation states "With the current state of Westar distribution circuits it is difficult for pruning contracts to be set up on anything other than a time and material basis."
- Future lump sum contracts will be established as we achieve 4/5 year cycles on the distribution system.
  - Currently incorporated in to the Transmission system vegetation management program.
  - Wichita area pilot to follow upon completion of the pilot.

Set and Achieve Removal Goals

- Recommendation states "Westar has been successful with current method (mark tree for removal and notify home owner) will continue this method of tree removal."
- Recommends pre-planners to identify and secure signed permission from private property owner's for removal.
- Will pursue with each area as we achieve 4/5 year cycle.
- **Beginning post Wichita district pilot project.**

Further Develop Customer Education

- Recommendation States:
  - "Westar already has several customer education elements in place"
  - "The packets given to homeowners when notifying of work conducted on its property are of very high quality."
- Continue current level of customer education.
- Expand Customer Education Material and explore opportunities to host Arbor Day events.
- **Begin with Wichita district pilot project.**

Utilize ISA Best Management Practices Publication for Utility Pruning of Trees

- Update our Line Clearance Manual to include the information from study.
- **Implementation Time: September 1, 2010**

Work With Municipalities to Develop Tree Ordinances in Relation to Power Lines

- Work with our legal department to prepare a draft ordinance that can be presented to each community for their consideration and inclusion into local ordinances.
- **Implementation Time: December 1, 2010**

Increase Proactive Storm Management

- Recommendation is to identify and remove trees outside of our current authorized clearing zone such as trees capable of interrupting service due to extreme weather events.
- **Beginning after the entire system is on a cycle program.**

Include Tree Growth Regulators in Maintenance Activities

- Recommendation is to use Tree Growth Regulators (TGR) which are chemicals injected in the area around a newly trimmed tree to slow the natural growth of the tree.
- Westar will further research and explore the viability of TGR's.
  - Customer response/public education
  - Environmental issues
  - Chemical control
- **If viable, implement process with pilot program in Wichita district.**

Develop a Comprehensive Tree Failure Database

- We currently track tree contacts that cause circuit lockouts. We will expand our current spreadsheet to include all tree outages excluding major storms.
- **Implementation Time: August 1, 2010**

Thank you!
Questions?

Vegetation Management Progress Report
KCC Staff 3/22/2011

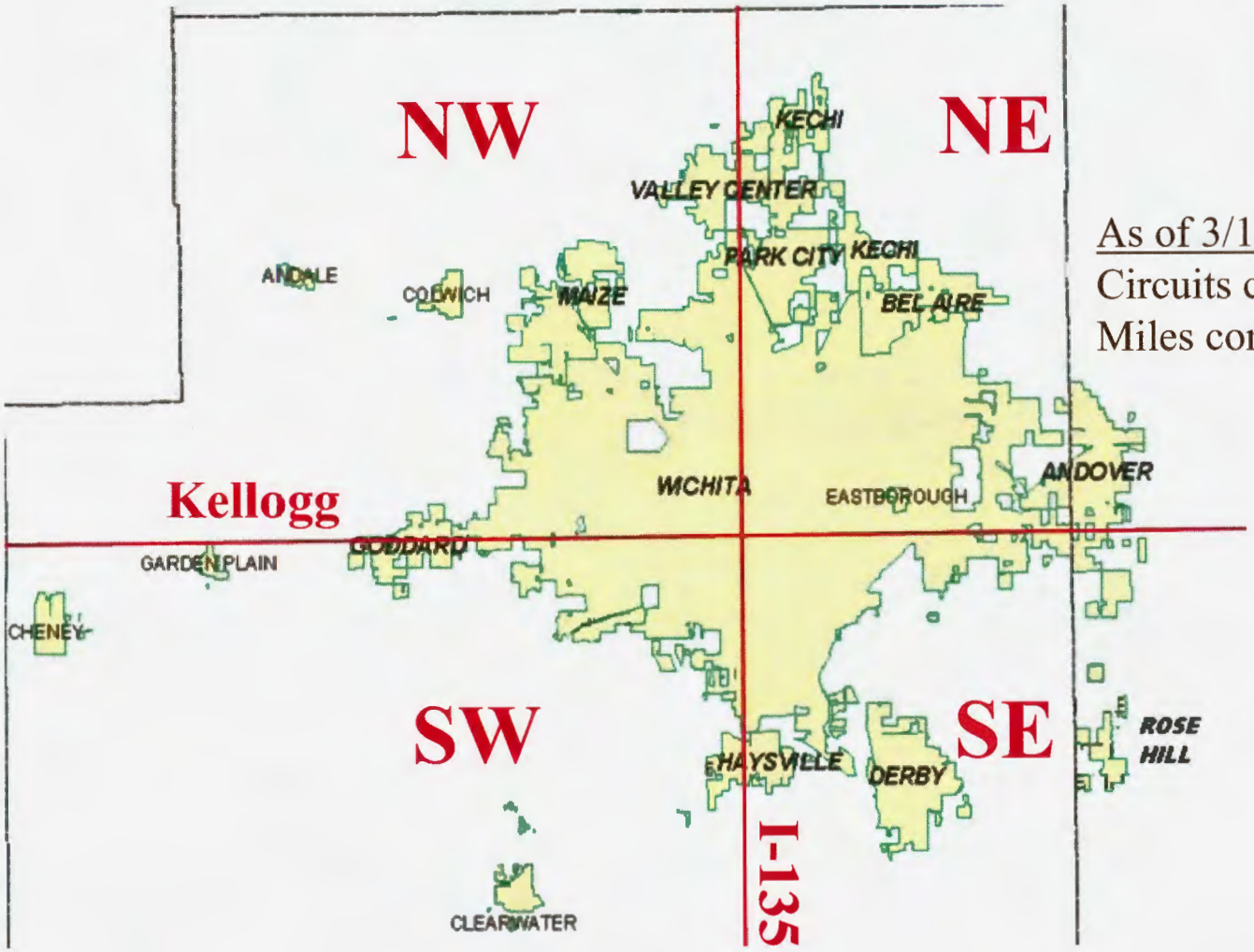
Pilot implementation

- Develop and Maintain a Cycle Schedule
- ReliabiliTree – Pilot program
  - 4/5 year clearance cycle
  - Wichita selected
    - 1/8 of Westar's distribution overhead line miles
    - 1/3 of Westar's total retail customers

Westar Energy ReliabiliTree

Westar Energy ReliabiliTree

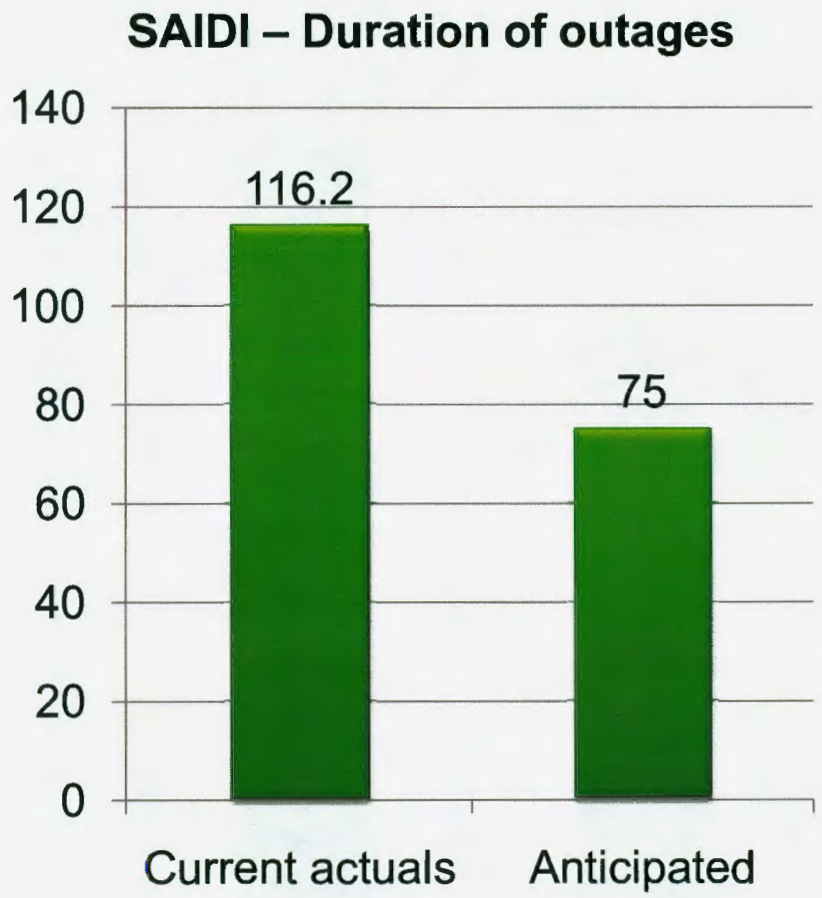
Program Area

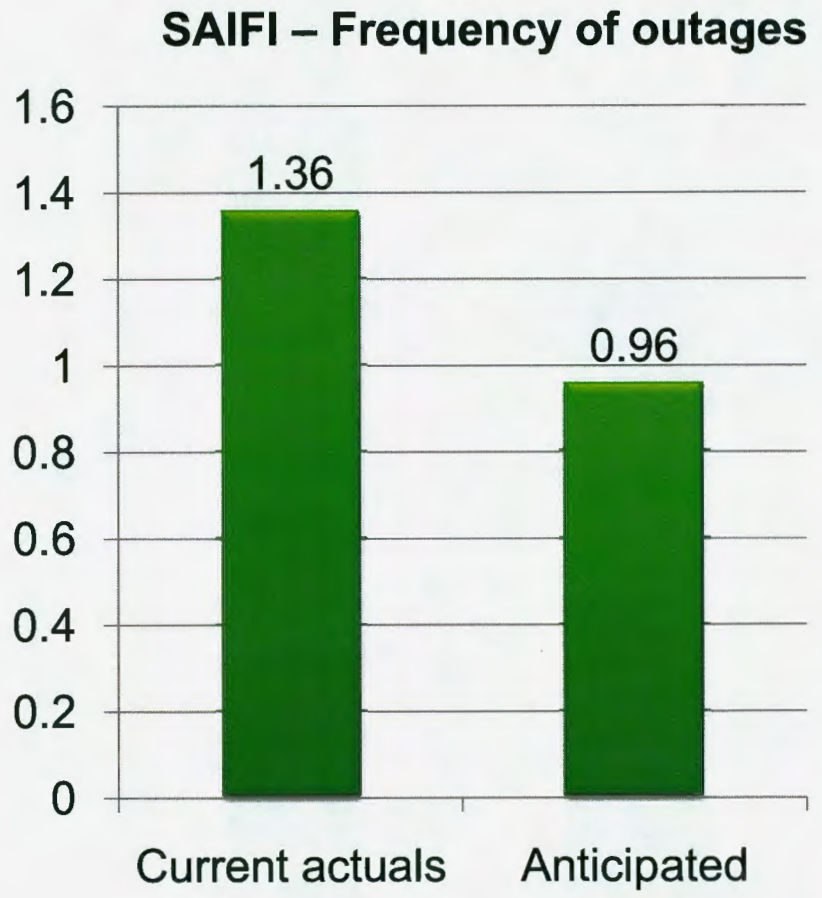


As of 3/15/2011
Circuits complete: 19%
Miles complete: 18%

Westar Energy
Reliabilitree

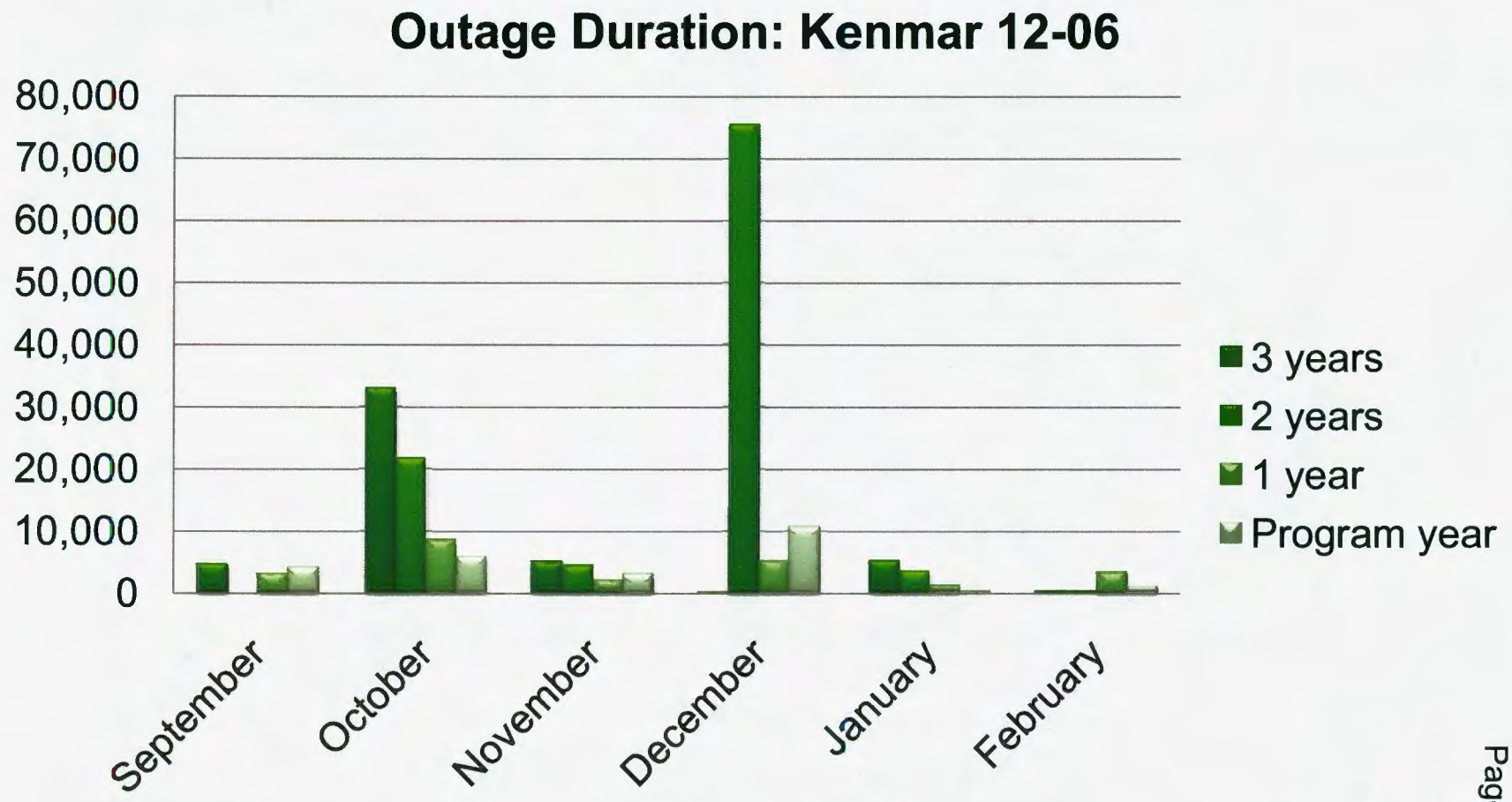
Anticipated Benefits





Westar Energy
ReliabiliTree

Example of improvement on one circuit



6.77 miles; 606 customers. Circuit trimmed September 2010.

Westar Energy. ReliabiliTree

Westar Energy
Reliabilitree

Composite 3yr. Average Comparison of Circuits Trimmed

(Distribution only: <23KV, overhead trimmed circuits in Wichita Serving Office
- excludes public damage, all customer caused interruptions,
and Ice Storm Major Event Days)

			2010-2011 trimmed circuits (128 days compared on avg.)				
			Improvement in Outages caused by:				
			Vegetation	Failed Equipment	Wildlife	Lightning	All causes
Count of Incidents	Actual (NoICE)	After	(84.5%)	18.3%	(44.7%)	(80.6%)	(26.2%)
Customers Interrupted	Actual (NoICE)	After	(97.3%)	38.0%	(57.8%)	(84.5%)	(20.5%)
Customer Minutes	Actual (NoICE)	After	(99.4%)	(24.7%)	(47.5%)	(92.6%)	(67.1%)

Public Education Video

Public Education

- Presentations:
  - 33 external
    - Includes HOAs, City, County, Legislators, etc.
  - 24 internal
- Contact Center Inquiries
  - Dec 2010 – 177
  - Jan 2011 – 169
  - Feb 2011 - 134

Westar Energy
ReliabiliTree

2010 Program Expenses

Project#	Amount	Notes
00B530 Wichita 4yr Urban	$2,838,499.18	
00B531 Wichita 4yr Rural	$410,630.25	
00B532 Wichita 4yr Herbicide	$45,143.65	
181210 Wichita Follow-up	$202,139.54	Maintenance follow-up expenses
Total O&M	$3,487,412.62	
181201 Wichita Follow-up	$110,927.55	Construction follow-up expenses
Total Construction	$110,927.55	

Westar Energy
ReliabiliTree

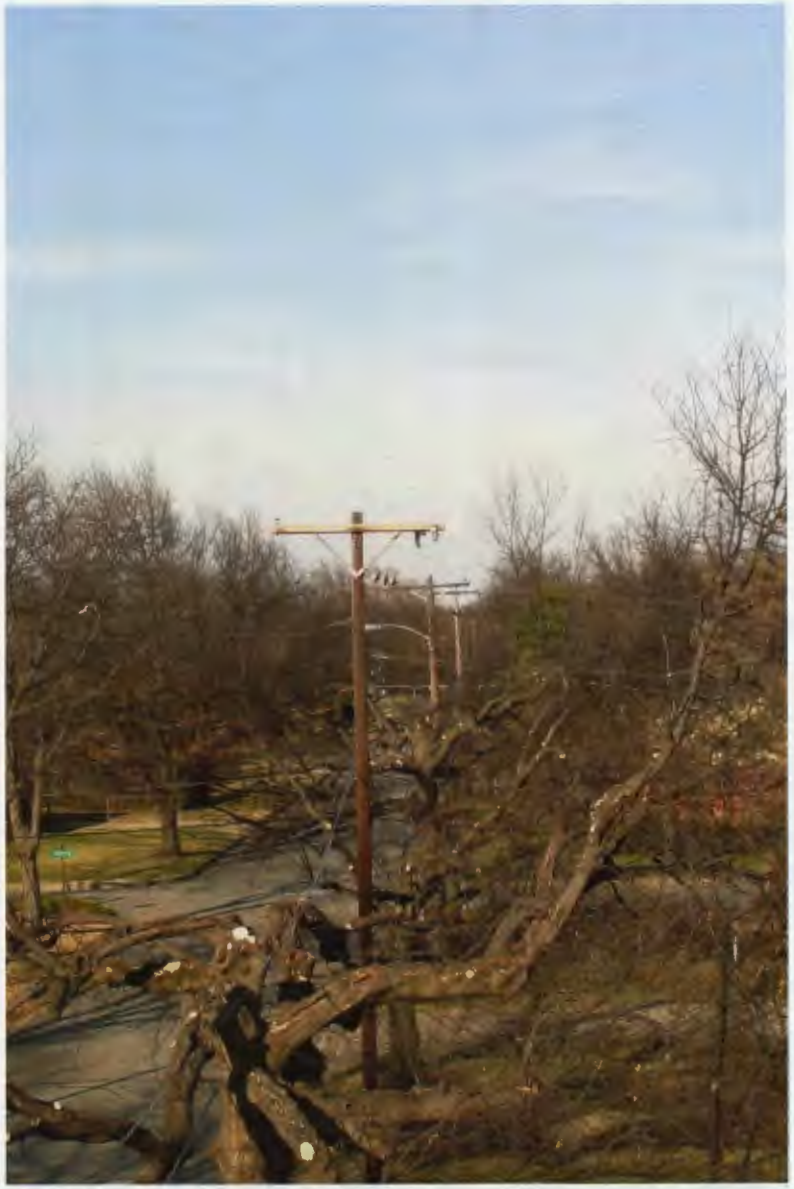
ReliabiliTree – Before and After

ReliabiliTree – Before and After

ReliabiliTree – Before and After

ReliabiliTree – Before and After

ReliabiliTree – Before and After



Thank you!
Questions?

Westar Energy
ReliabiliTree

Line No.	Program Area	% of customers	% OH line miles	Distribution O&M expenditures include ReliabiliTree Program (vegetation management, maintenance follow-up and media) and Other vegetation expenditures. $MM 2010	2011	2012	2013	2014	2015	2016	2017	2018	Anticipated outage reductions in Customer Interruptions (Normalized) CI
1	Wichita Metro	34%	14%	3.5	7.6	7.9	8.6	6.2	4.6	4.6	4.6	4.0	0.099
2	Central Region; Topeka, Lawrence	20%	18%	0.0	0.0	3.7	7.1	7.8	8.7	7.7	5.2	4.1	0.080
3	Manhattan, Junction City,Marysville	8%	6%	0.0	0.0	1.9	3.5	3.9	4.2	4.1	3.1	2.4	0.034
4	Shawnee,Leavenworth,Atchison,Hiawatha	11%	12%	0.0	0.0	2.3	4.3	4.8	5.3	4.8	3.1	2.4	0.046
5	Salina, Emporia	9%	15%	0.0	0.0	2.9	5.8	6.5	7.3	7.2	4.1	3.2	0.039
6	Hutchinson,Newton,El Dorado,Ark City	11%	22%	0.0	0.0	3.1	6.4	7.3	8.1	7.6	4.5	3.5	0.055
7	Ft. Scott,Pittsburg, Parsons,Independence	7%	13%	0.0	0.0	2.4	4.5	5.1	5.8	5.4	4.0	2.9	0.046
8	ReliabiliTree Total	100%	100.0%	3.5	7.6	24.2	40.2	41.6	44.0	41.4	28.6	22.5	0.400
9	Non-ReliabiliTree Work (Storms, Hot spot, CEMI mitigation, etc.)			16.7	16.4	11.8	8.0	3.3	2.3	2.3	2.4	2.5	
10			Total	20.2	24.0	36.0	48.2	44.9	46.3	43.7	31.0	25.0	0.96
													2010 Year-end#: 1.360

Prioritization of areas

	Area	Interruptions	Miles	Customers	Index	Rank	Tracker Funding	Average 2012-2016
11	Wichita Metro	25%	14%	34%	1.00	1	$7,900,000	$6,380,000
12	Central Region; Topeka, Lawrence	20%	18%	20%	0.56	2	$3,700,000	$7,000,000
13	Manhattan, Junction City,Marysville	9%	6%	8%	0.56	3	$1,900,000	$3,520,000
14	Shawnee,Leavenworth,Atchison,Hiawatha	12%	12%	11%	0.49	4	$2,300,000	$4,300,000
15	Salina, Emporia	10%	15%	9%	0.40	5	$2,900,000	$5,940,000
16	Hutchinson,Newton,El Dorado,Ark City	14%	22%	11%	0.34	6	$3,100,000	$6,500,000
17	Ft. Scott,Pittsburg, Parsons,Independence	11%	13%	7%	0.32	7	$2,400,000	$4,640,000
18	Total ReliabiliTree	100%	100%	100%			$24,200,000	$38,280,000
19	Non ReliabiliTree						$11,800,000	$5,540,000
20	Total Annualized						$36,000,000	$43,820,000
21	Less Test Year Actual						$23,770,000	$23,770,000
22	Adjustment						$12,230,000	$20,050,000

Exhibit CAW-8
Page 1 of 1

Line No.	Program Area	% of customers	% OH line miles	Distribution O&M expenditures include ReliabiliTree Program (vegetation management, maintenance follow-up and media) and Other vegetation expenditures. $MM									Anticipated outage reductions in Customer Interruptions (Normalized)
				2010	2011	2012	2013	2014	2015	2016	2017	2018	CI
1	Wichita Metro	34%	14%	3.5	7.6	7.9	8.6	6.2	4.6	4.6	4.6	4.0	0.099
2	Central Region; Topeka, Lawrence	20%	18%	0.0	0.0	3.7	7.1	7.8	8.7	7.7	5.2	4.1	0.080
3	Manhattan, Junction City,Marysville	8%	6%	0.0	0.0	1.9	3.5	3.9	4.2	4.1	3.1	2.4	0.034
4	Shawnee,Leavenworth,Atchison,Hiawatha	11%	12%	0.0	0.0	2.3	4.3	4.8	5.3	4.8	3.1	2.4	0.046
5	Salina, Emporia	0%	0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
6	Hutchinson,Newton,El Dorado,Ark City	0%	0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
7	Ft. Scott,Pittsburg, Parsons,Independence	0%	0%	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.000
8	ReliabiliTree Total	73%	50.6%	3.5	7.6	15.8	23.5	22.7	22.8	21.2	16.0	12.9	0.259
9	Non-ReliabiliTree Work (Storms, Hot spot, CEMI mitigation, etc.)			16.7	16.4	15.0	13.2	13.5	12.7	13.0	13.5	13.9	
10			Total	20.2	24.0	30.8	36.7	36.2	35.5	34.2	29.5	26.8	1.10
													2010 Year-end#: 1.360

Prioritization of areas

	Area	Interruptions	Miles	Customers	Index	Rank	Tracker Funding	Average 2012-2016
11	Wichita Metro	25%	14%	34%	1.00	1	$7,900,000	$6,380,000
12	Central Region; Topeka, Lawrence	20%	18%	20%	0.56	2	$3,700,000	$7,000,000
13	Manhattan, Junction City,Marysville	9%	6%	8%	0.56	3	$1,900,000	$3,520,000
14	Shawnee,Leavenworth,Atchison,Hiawatha	12%	12%	11%	0.49	4	$2,300,000	$4,300,000
15	Salina, Emporia	10%	15%	9%	0.40	5	$0	$0
16	Hutchinson,Newton,El Dorado,Ark City	14%	22%	11%	0.34	6	$0	$0
17	Ft. Scott,Pittsburg, Parsons,Independence	11%	13%	7%	0.32	7	$0	$0
18	Total ReliabiliTree	100%	100%	100%			$15,800,000	$21,200,000
19	Non ReliabiliTree						$15,000,000	$13,480,000
20	Total Annualized						$30,800,000	$34,680,000
21	Less Test Year Actual						$23,770,000	$23,770,000
22	Adjustment						$7,030,000	$10,910,000