

EXHIBIT NO. _____

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the Matter of the 2016 Review of the)	
Distribution Investment Rider)	Case No. 17-38-EL-RDR
Contained in the Tariff of Ohio Power Company)	

In the Matter of the 2017 Review of the)	
Distribution Investment Rider)	Case No. 18-230-EL-RDR
Contained in the Tariff of Ohio Power Company)	

SUPPLEMENTAL TESTIMONY OF
THOMAS A. KRATT
ON BEHALF OF OHIO POWER COMPANY

Filed: July 15, 2019

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THOMAS A. KRATT

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BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO
DIRECT TESTIMONY OF
THOMAS A. KRATT ON BEHALF OF
OHIO POWER COMPANY

1 **PERSONAL DATA**

2 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

3 A. My name is Thomas A. Kratt. My business address is 700 Morrison Road, Gahanna,
4 Ohio 43230.

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

6 A. I am employed by Ohio Power Company (“AEP Ohio” or the “Company”) as Vice
7 President – Distribution Operations.

8 **Q. PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL**
9 **BACKGROUND.**

10 A. I received a Bachelor of Science degree in electronics engineering technology from the
11 Ohio Institute of Technology in 1983. I joined AEP Ohio affiliate Indiana Michigan
12 Power Company (“I&M”) in 1986 as a design engineer for I&M’s Cook Nuclear Plant,
13 where I worked in various capacities for 13 years. In 2000, I joined I&M Distribution,
14 where I eventually became the Manager of Distribution Systems for I&M’s Michigan
15 District. In 2010, I became the Manager of Distribution Dispatching for I&M, where I
16 was responsible for the operation of the electrical distribution grid. In July 2013, I was
17 named Vice President of Distribution Operations for I&M. I joined AEP Ohio in March
18 2019. In addition, I was a four year working member of the Nuclear Utility Group on
19 Equipment Qualification, and a contributing member to the EPRI Cable Aging and

1 Management white paper. Prior to joining AEP, I spent five years as an engineer in the
2 robotics industry.

3 **Q. WHAT ARE YOUR RESPONSIBILITIES AS VICE PRESIDENT –**
4 **DISTRIBUTION OPERATIONS FOR AEP OHIO?**

5 A. I am responsible for overseeing the planning, construction, operation, and maintenance of
6 the distribution system. My duties include the safe and reliable delivery of service to our
7 customers, the oversight and management of service extension to new customers, and the
8 restoration of service when outages occur. My responsibilities also include overseeing
9 AEP Ohio's distribution system, reliability programs, and vegetation management
10 program. I report directly to AEP Ohio's President, Raja Sundararajan.

11 **Q. HAVE YOU PREVIOUSLY TESTIFIED OR SUBMITTED TESTIMONY**
12 **BEFORE A STATE COMMISSION?**

13 A. Yes. I have previously submitted testimony in distribution rate case proceedings before
14 the Indiana Utility Regulatory Commission and the Michigan Public Service
15 Commission. I have also provided direct testimony in this proceeding.

16 **Q. ARE YOU SPONSORING ANY EXHIBITS WITH YOUR TESTIMONY?**

17 A. Yes, I am sponsoring the following exhibit as an accompanying document:

- 18 • Exhibit TAK-1 – Additional Reliability Data

19 **PURPOSE OF TESTIMONY**

20 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

21 A. The purpose of my supplemental testimony is to support the Stipulation and
22 Recommendation ("Stipulation") filed on July 2, 2019 in this proceeding for the Public
23 Utilities Commission of Ohio's ("Commission") consideration. Specifically, I provide

1 context for the Company’s danger tree program, which supports portions of Paragraph
2 III.B.6 of the Stipulation regarding Blue Ridge’s recommendation #1 in the 2017 Audit
3 (Case No. 18-230-EL-RDR):

- 4 • 6.a. Provide background information pertaining to Ohio Power Company’s (“AEP Ohio”
5 or the “Company”) danger tree program;
- 6 • 6.c. The Company’s commitment to work with Staff to update and coordinate the
7 Company’s danger tree program;
- 8 • 6.d. The Company’s commitment to provide baseline data for outside rights-of-way
9 (“ROW”) tree outages; and
- 10 • 6.e. The Company’s commitment to achieving an improvement in the outside ROW tree
11 outages based on danger tree removal work completed by the Company.

12 **DISCUSSION OF SUPPORTED STIPULATION PROVISIONS**

13 **Q. WHAT DID BLUE RIDGE RECOMMEND REGARDING THE COMPANY’S**
14 **VEGETATION MANAGEMENT POLICY?**

15 A. As part of the 2017 Audit, Blue Ridge’s first recommendation was that the Company, in
16 its vegetation management policy, better define capital and expense work associated with
17 clearing of ROW. Further, any vegetation management activity on an existing ROW,
18 other than activity due to storm restoration, should be expensed instead of capitalized.

19 **Q. HOW DOES THIS RELATE TO THE COMPANY’S RECENT DANGER TREE**
20 **REMOVAL ACTIVITIES?**

21 A. The Company removes danger trees as part of its vegetation management program and
22 capitalizes this activity. Danger tree removal provides long-term benefits as once the tree
23 is removed, a threat to outage and property no longer exists. Due to reliability issues that

1 the Company is facing caused primarily by trees outside the ROW, danger tree mitigation
2 has become a priority, necessitating an increased level of danger tree removal.

3 **Q. PLEASE PROVIDE MORE DETAILS RELATED TO DANGER TREES AND**
4 **WHY THEY ARE A RELIABILITY CONCERN.**

5 A. As per the Stipulation, a danger tree is a tree that is structurally unsound and could strike
6 the power lines when it falls. Stated another way, a tree may exhibit potential threats to
7 the Company's facilities due to disease, damage, physical location, growth characteristics
8 or environmental problems. The Company's danger tree program is primarily dedicated
9 to the threatening trees located outside of the ROW. Once trees have died, they are
10 susceptible to falling during not only wind, storm, or ice conditions, but also even on a
11 calm day.

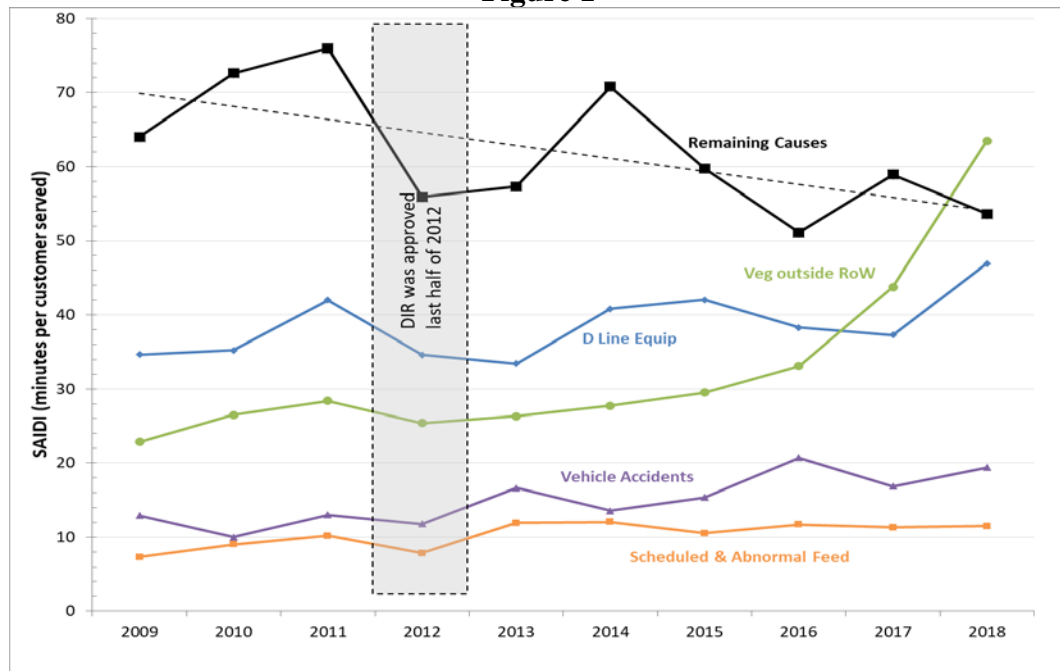
12 **Q. HOW DOES THE COMPANY IDENTIFY AND TRACK DANGER TREES?**

13 A. While performing work on a circuit, including circuit inspections, field personnel conduct
14 a visual assessment to identify danger trees. If a tree has been identified as a danger tree,
15 this information is recorded and reported to the Company's forestry personnel, who will
16 manage and schedule the danger tree mitigation.

17 **Q. HAS THE COMPANY SEEN THAT THE DANGER TREE IMPACT ON**
18 **CUSTOMER RELIABILITY HAS BEEN TRENDING NEGATIVELY?**

19 A. Yes. As shown below in Figure 1 (also Slide 2 of Exhibit TAK-1), the Company has
20 been experiencing an increase in outage minutes (System Average Interruption Duration
21 Index, or SAIDI) caused by danger trees since 2013, with a significant increase beginning
22 in 2017.

Figure 1



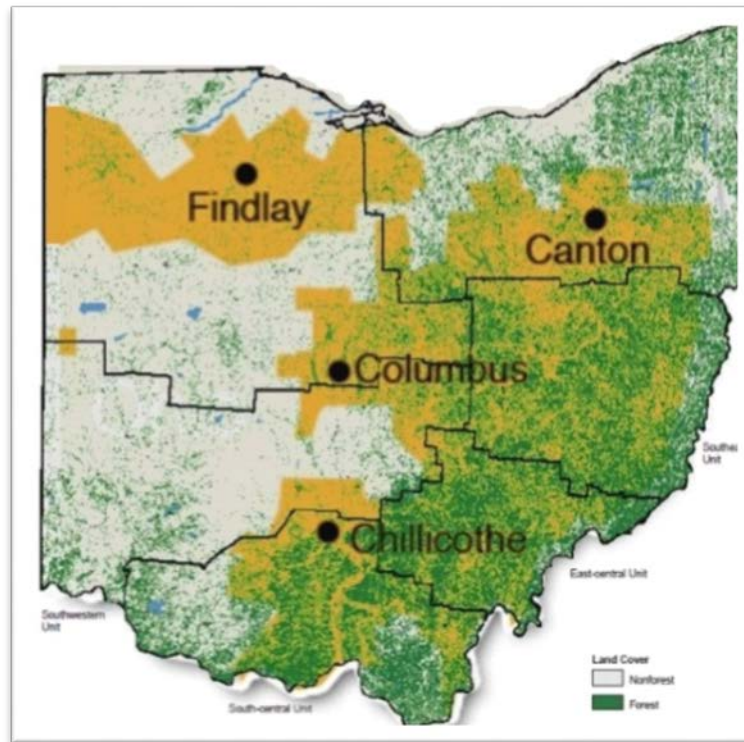
In fact, in 2018 trees outside of ROW were the number one cause of outages from a duration standpoint.

Q. WHY HAVE DANGER TREES BECOME THE NUMBER ONE CAUSE OF OUTAGES ON THE COMPANY'S SERVICE TERRITORY?

A. The main contributing factor is that the Company's service territory is located in heavily forested portions of Ohio. In fact, as compared to other investor owned utilities in Ohio, the Company's service territory resides in much more heavily forested areas (see Slide 9 of Exhibit TAK-1). Simply speaking, this means that the Company has many more trees and vegetation that it must address in order to maintain the reliability of its system.

Figure 2 below (also Slide 9 of Exhibit TAK-1) shows the Company's service territory (highlighted in yellow) superimposed over a forest density map of Ohio:

Figure 2



1 Additionally, the Company has experienced a growing issue with dead ash trees
2 due to the outbreak of the Emerald Ash Borer (EAB). This insect has been directly
3 attributed with the physical demise and eventual death of ash trees, and therefore
4 responsible for an increase of danger trees. Ohio is home to more than 3.8 billion ash
5 trees and approximately one in every ten trees in Ohio is an ash. As shown in Exhibit
6 TAK-1 (Slides 6-8), it wasn't until 2013 that the EAB began to proliferate throughout the
7 Company's service territory. However, since a tree infested by the EAB can take
8 between 3-5 years to die, it wasn't until the 2017 timeframe that the Company truly
9 began to experience outages related to the danger trees created by the EAB.

1 **Q. WHAT IS THE COMPANY DOING TO ADDRESS THE ISSUE OF DANGER**
2 **TREES?**

3 A. The Company is committed to improving reliability by focusing on reducing the number
4 of outages caused by trees outside of the ROW by aggressively addressing danger trees.
5 Specifically, the Company created a danger tree program in 2018 to remediate trees
6 outside of the ROW. In 2018, the Company spent approximately \$14.1 million on the
7 danger tree program. In 2019, the Company is projecting to spend up to approximately
8 \$50 million on the danger tree program. To-date, this increased spend has already shown
9 a SAIDI improvement of approximately four minutes (4) attributed to trees outside the
10 ROW.

11 The Company's commitment to improving reliability for our customers through
12 the reduction of outages caused by trees outside the ROW is further shown by the
13 Company's support of the Stipulation in this proceeding. Specifically, this commitment
14 is reflected in Stipulation Paragraphs III.B.6 c., 6 d., and 6 e., which I discuss below.

15 **Q. IS THE COMPANY COMMITTED TO WORKING WITH THE STAFF TO**
16 **UPDATE AND COORDINATE DANGER TREE PROGRAM ACTIVITY?**

17 A. Yes. The Company reiterates its commitment to work with the Staff, through a mutually
18 acceptable process, to update and coordinate danger tree program activity, including
19 anticipated funding levels. The Company appreciates the opportunity to work with Staff
20 in a collaborative effort to address the issue of danger trees in order to improve reliability
21 for our customers.

1 **Q. IS THE COMPANY WILLING TO PROVIDE BASELINE DATA RELATED TO**
2 **OUTSIDE ROW TREE OUTAGES IN A TIMELY MANNER?**

3 A. Yes. The Company is committed to providing timely and meaningful baseline data,
4 examples of which can be found in Exhibit TAK-1 (e.g., Slides 2, 3, and 4) during the
5 transition period. Additional data would include:

- 6 • production data - amount of danger tree work performed, circuits on which the danger
7 tree work was performed, and timing of the work;
- 8 • reliability data - circuit performance, such as SAIDI, at an aggregated level (i.e., the
9 individual circuit performance will be summed) to show total program impact; and
- 10 • resources utilized – forecasted, as well as actual dollars spent on the danger tree program.

11 **Q. IS THE COMPANY COMMITTED TO ACHIEVING AN IMPROVEMENT IN**
12 **THE OUTSIDE ROW TREE OUTAGES?**

13 A. Yes. As I have repeated throughout my testimony, the Company is committed to
14 reducing the number of outages caused by trees outside of the ROW in order to improve
15 reliability for our customers. The amount of improvement will be measured by
16 comparing the number of outages caused by trees outside of the ROW during the
17 transition period to the two years subsequent to the transition period, otherwise known as
18 the measurement period. As previously mentioned, the Company currently has a system
19 in place to track and monitor customer interruptions attributed to outside of the ROW,
20 and will work with the Staff to ensure a collaborative process for updating and
21 coordinating danger tree program activity.

22 **Q. DOES THIS CONCLUDE YOUR DIRECT TESTIMONY?**

23 A. Yes.

CERTIFICATE OF SERVICE

In accordance with Rule 4901-1-05, Ohio Administrative Code, the PUCO's e-filing system will electronically serve notice of the filing of this document upon the following parties. In addition, I hereby certify that a service copy of the foregoing was sent by, or on behalf of, the undersigned counsel to the following parties of record this 15th day of July, 2019, via electronic transmission.

/s/ Steven T. Nourse _____

Steven T. Nourse

E-Mail Service List:

steven.beeler@ohioattorneygeneral.gov

terry.etter@occ.ohio.gov

william.michael@occ.ohio.gov

christopher.healey@occ.ohio.gov

bryce.mckenney@occ.ohio.gov

Attorney Examiners:

sarah.parrot@puco.ohio.gov

greta.see@puco.ohio.gov



An **AEP** Company

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Additional Reliability Data

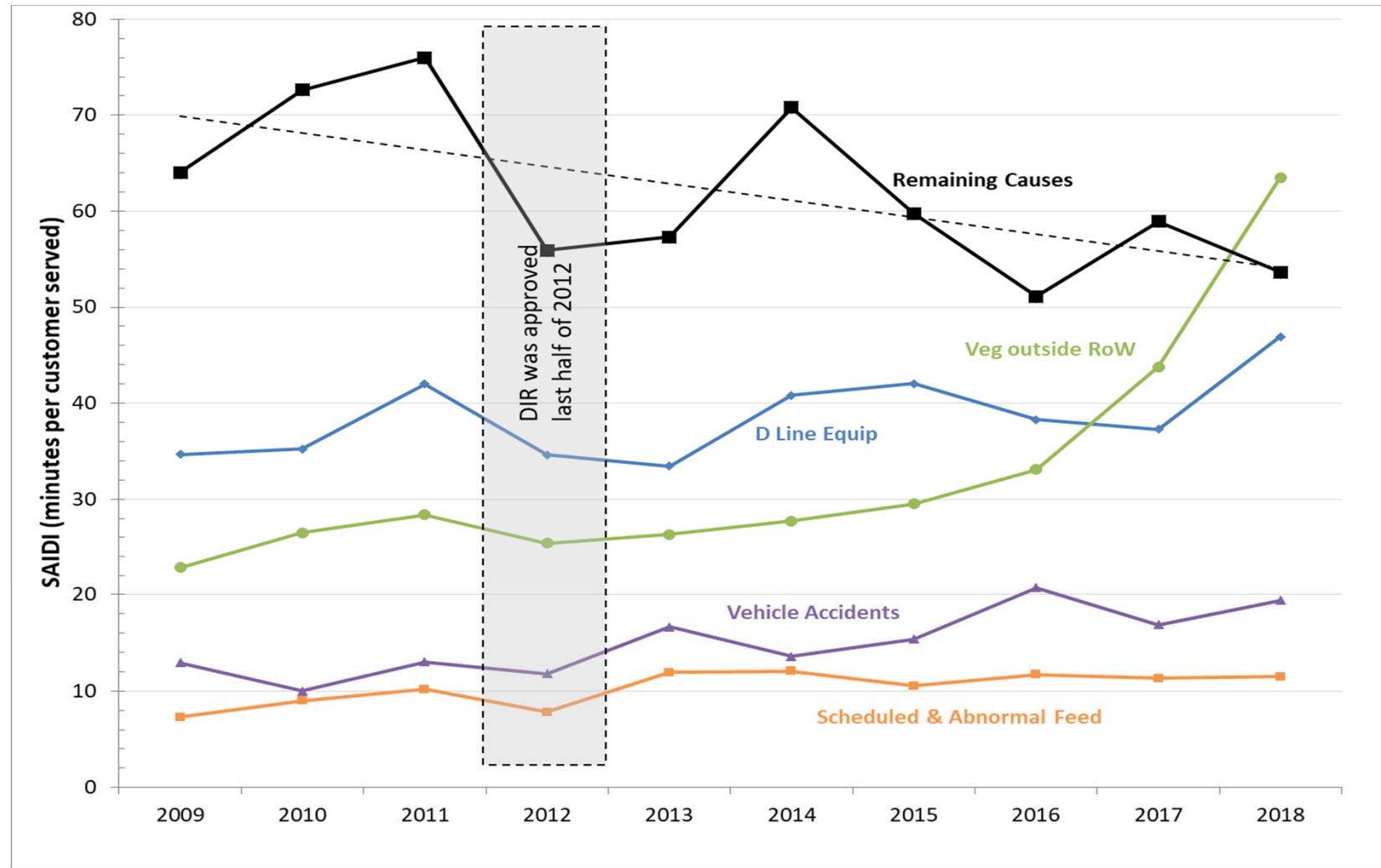


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Causes Excluding MEDs

(Note the general improvement)

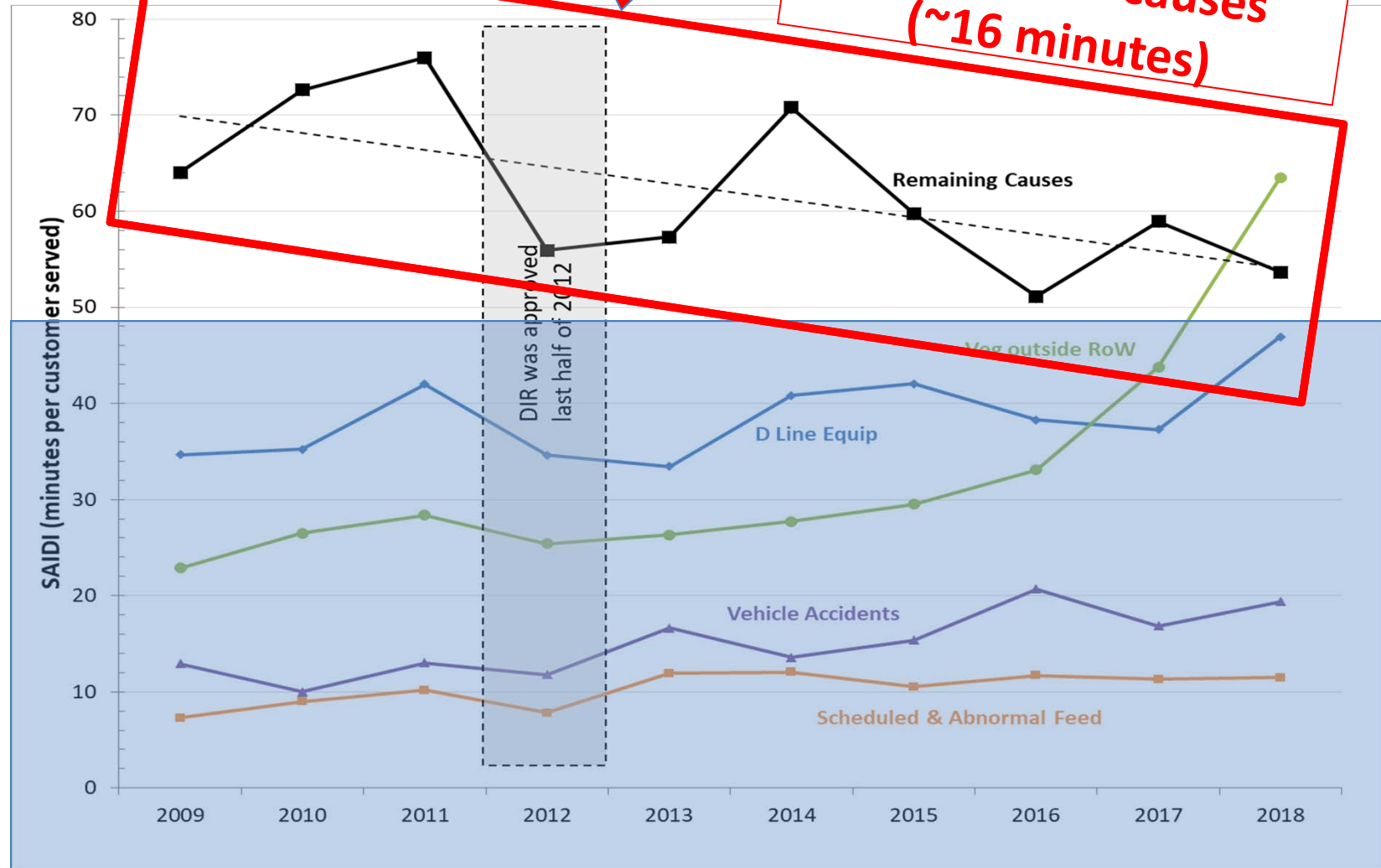




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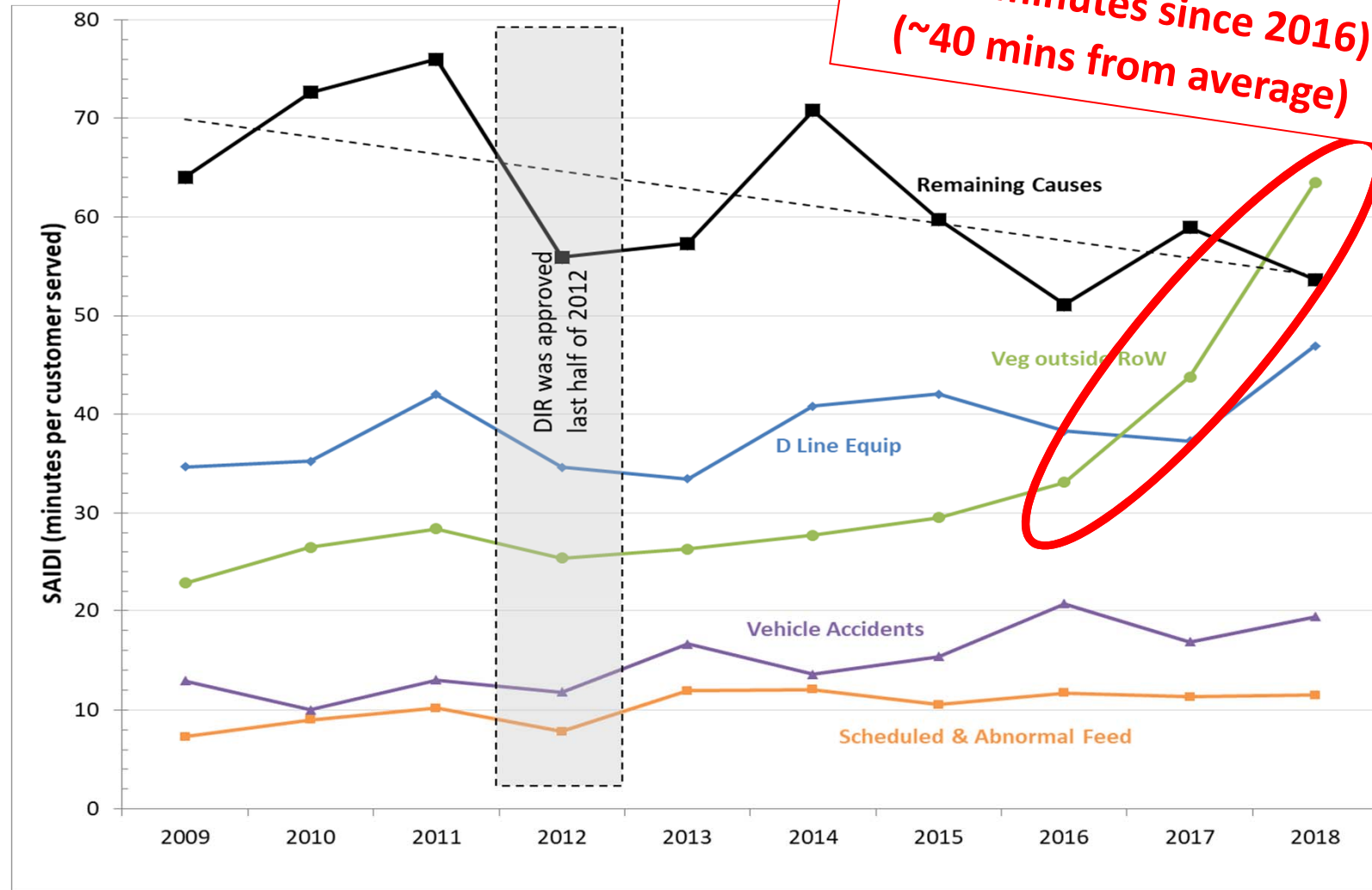
Note the overall trend
improvement for
majority of causes
(~16 minutes)





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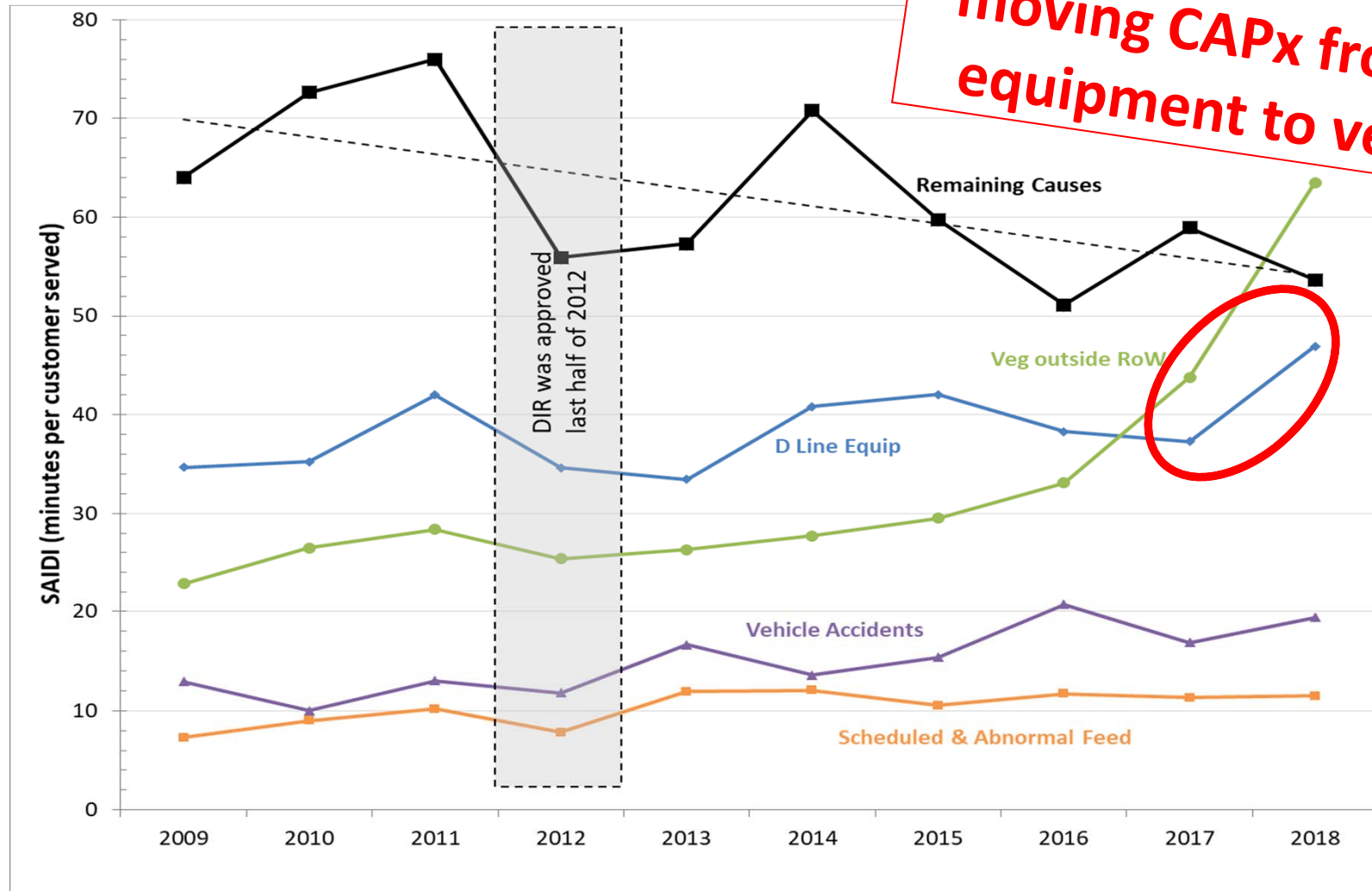
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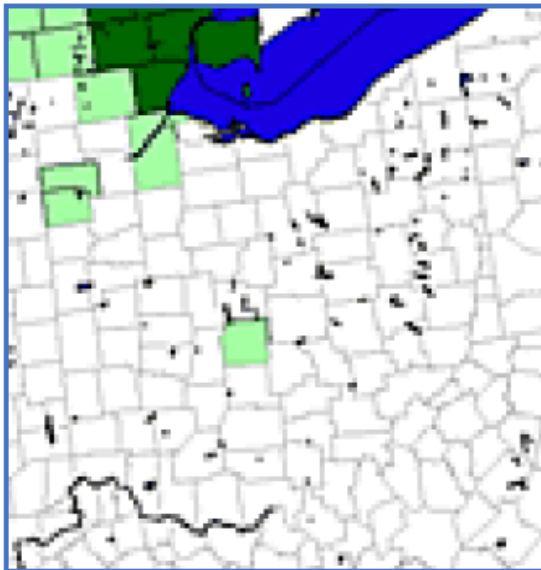




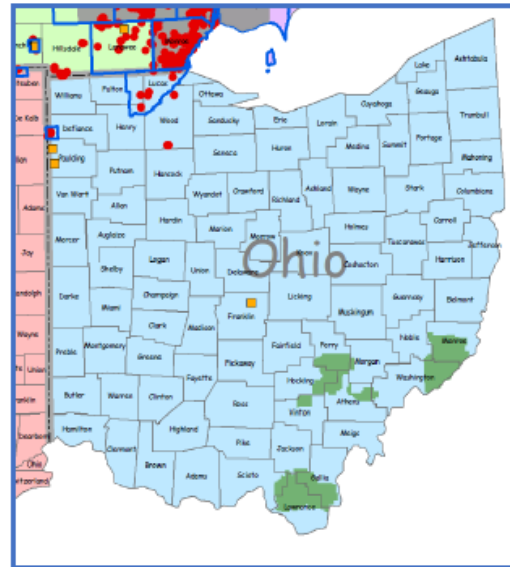
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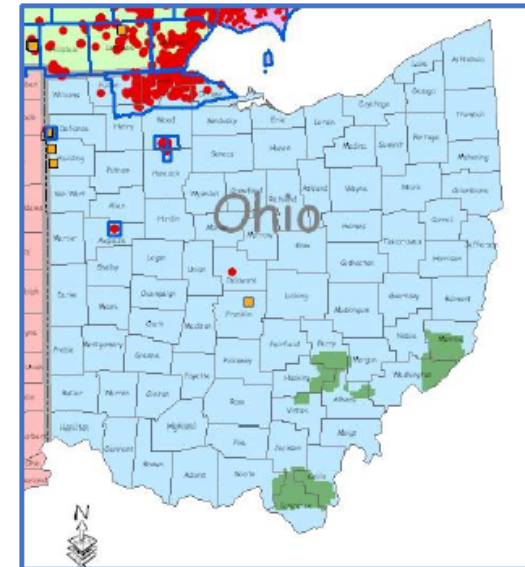
Chronology of EAB Detection in Ohio Counties Since Discovery in Lucas County in 2003



2003



2004



2005

Dr. Daniel A. Herms, vice president for research and development at The Davey Tree Expert Company, He received his B.S. in landscape horticulture from Ohio State University (OSU), He earned an M.S. in 1984 from OSU with dual majors in entomology and horticulture, conducting his research in the lab of Dave Nielsen. From 1984 to 1996, Herms worked at Dow Gardens, a public display garden in Midland, Michigan, directing the IPM and research programs. While working at Dow Gardens, he received his Ph.D. in 1991 from Michigan State University (MSU) in entomology and the ecology and evolutionary biology graduate program, where he was mentored by Bill Mattson and appointed as an adjunct faculty member in 1992. Herms joined the Department of Entomology at OSU in Wooster in 1997 and was promoted to full professor in 2008. In 2018, he was hired by The Davey Tree Expert Company, the world's largest full-service tree care firm, as vice president of research and development.

Herms has published 256 papers, including 96 articles in peer-reviewed journals, 31 book and proceeding chapters, and 129 outreach and extension publications and has garnered more than \$10 million to support his work. He has been major advisor to 18 graduate students, served on the advisory committee of 39 graduate students, and supervised nine post-docs.



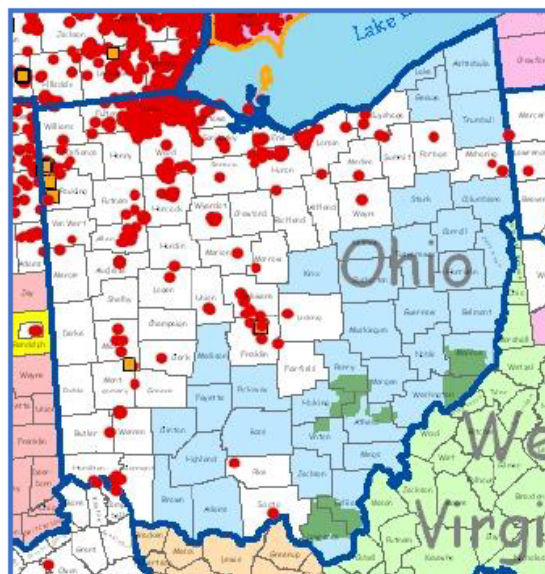
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Chronology of EAB Detection in Ohio Counties Since Discovery in Lucas County in 2003



2007



2009



2011



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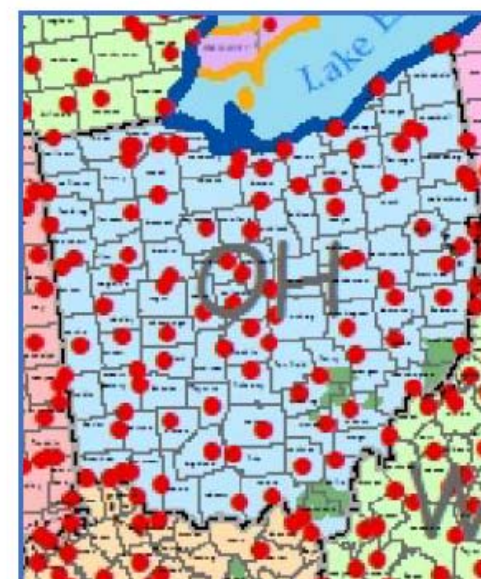
Chronology of EAB Detection in Ohio Counties Since Discovery in Lucas County in 2003



2013



2015



2017

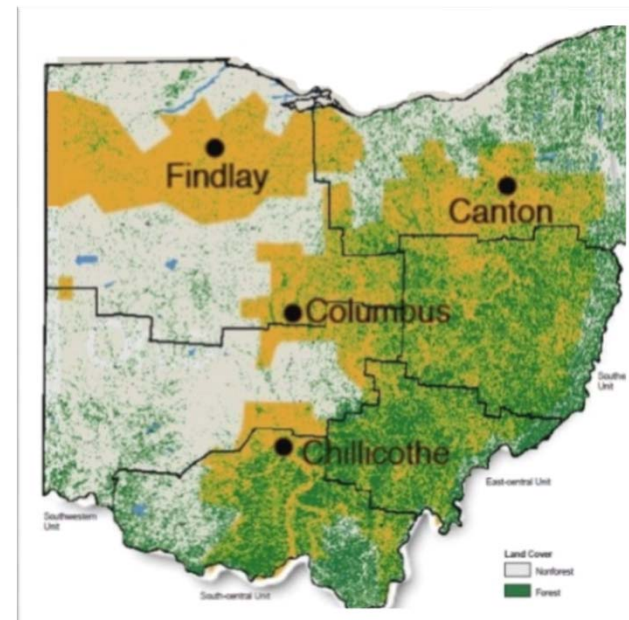
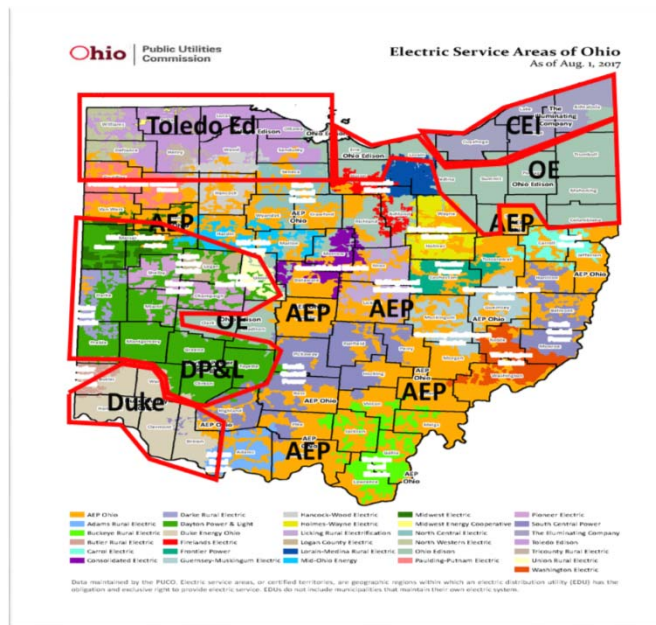


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Current Focus on Trees Outside of Right of Way

- In 2018, trees ***outside of ROW*** were the number one cause of outage from a duration standpoint
- Due to a heavily forested service territory, AEP Ohio saw a significant increase in outside of ROW outages
- AEP Ohio continues to focus on ***outside of ROW*** outages



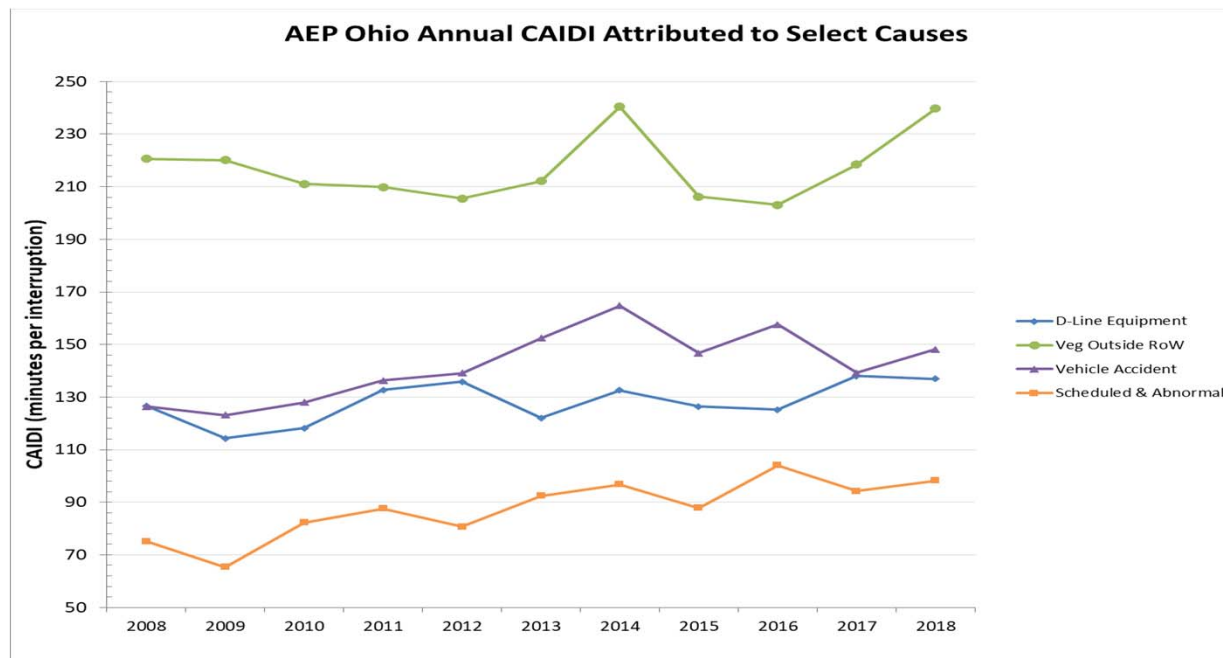


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Continued Focus on Trees Outside of ROW

- Outages attributed to trees outside of ROW last almost twice as long as other outage causes





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Reliability Changes Due to Trees Outside ROW

- If interruptions caused by trees ***out of ROW*** during 2018 were at the level experienced during 2013-2016 (the years in which the reliability targets were set) the Company's reported:
 - 2018 SAIFI would have been 1.166 interruptions and,
 - Its reported CAIDI would have been 137.3 minutes,
 - Both significantly better than the targets and both indicators of the Company's increased reliability



An **AEP** Company

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Focused Effort on Trees outside of ROW mitigation

- Company reacted swiftly in 2018 to remediate trees outside of ROW through the danger tree program
- Company continues to focus on trees outside of ROW forecasting \$50M in 2019 to danger tree mitigation
- Monitoring impacts of tree related outages

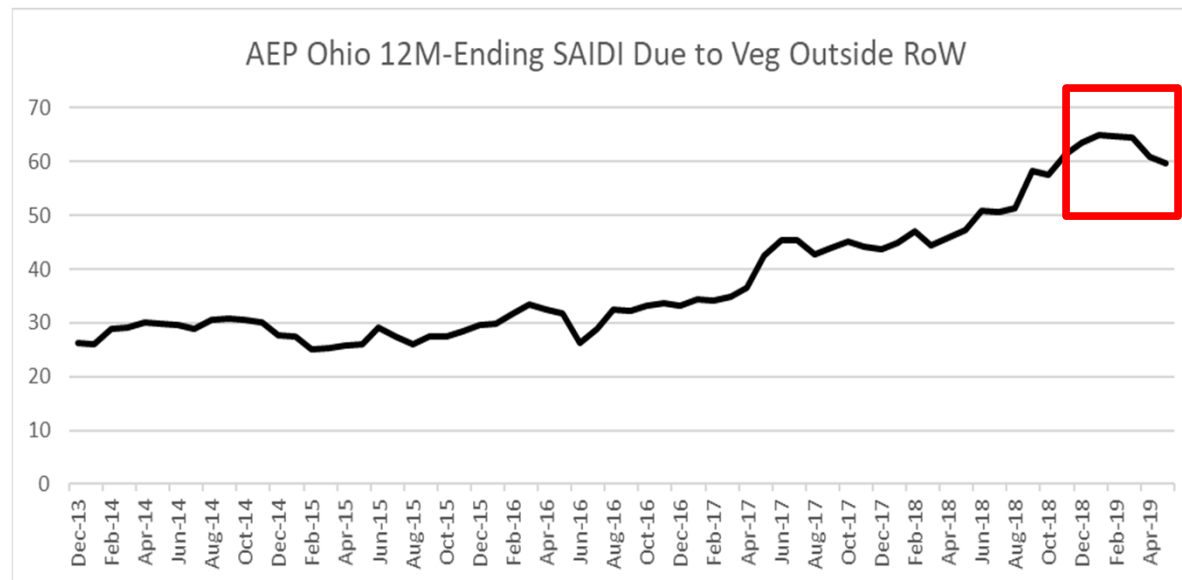


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Improvements to Date

- Improvement of 10 minutes in 12M-ending SAIDI from December through May. Four of those minutes are attributed to trees outside of ROW



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in

Case No(s). 17-0038-EL-RDR, 18-0230-EL-RDR

Summary: Testimony - Supplemental Testimony of Thomas A. Kratt on Behalf of Ohio Power Company electronically filed by Mr. Steven T Nourse on behalf of Ohio Power Company