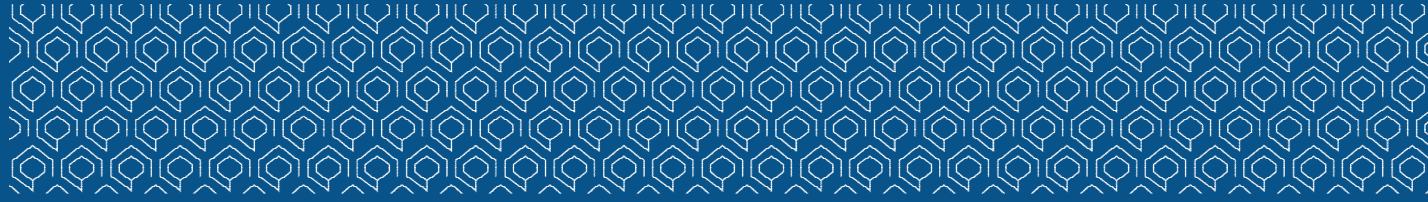




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Tri-State's Wildfire Mitigation Efforts

John Hansen – Maintenance Technical Support Manager

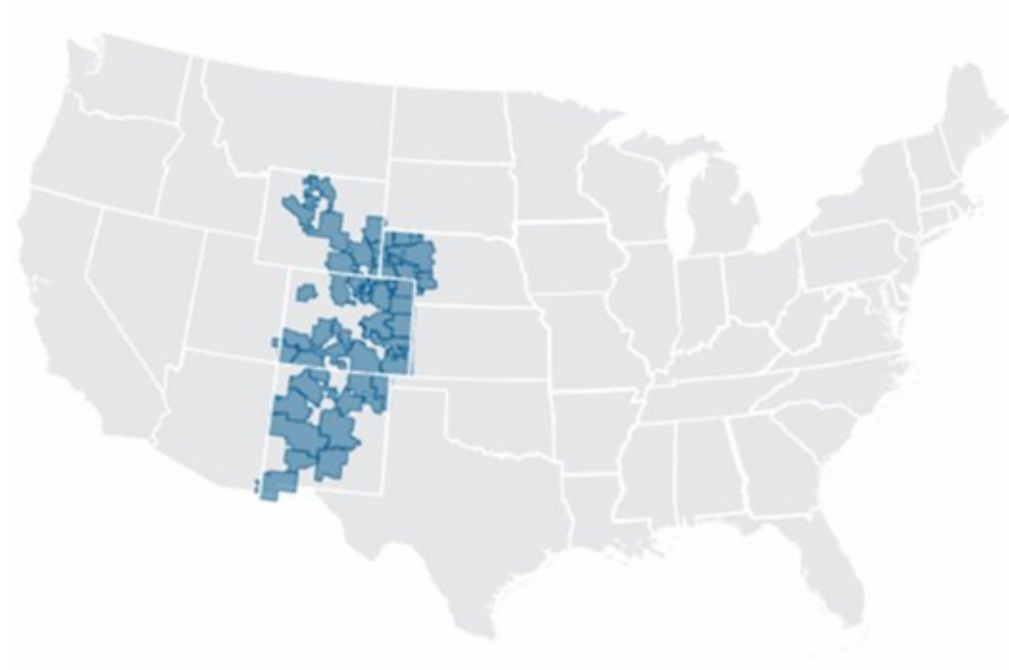
WHATEVER THE FUTURE HOLDS,
WE'LL POWER IT.



Background Information

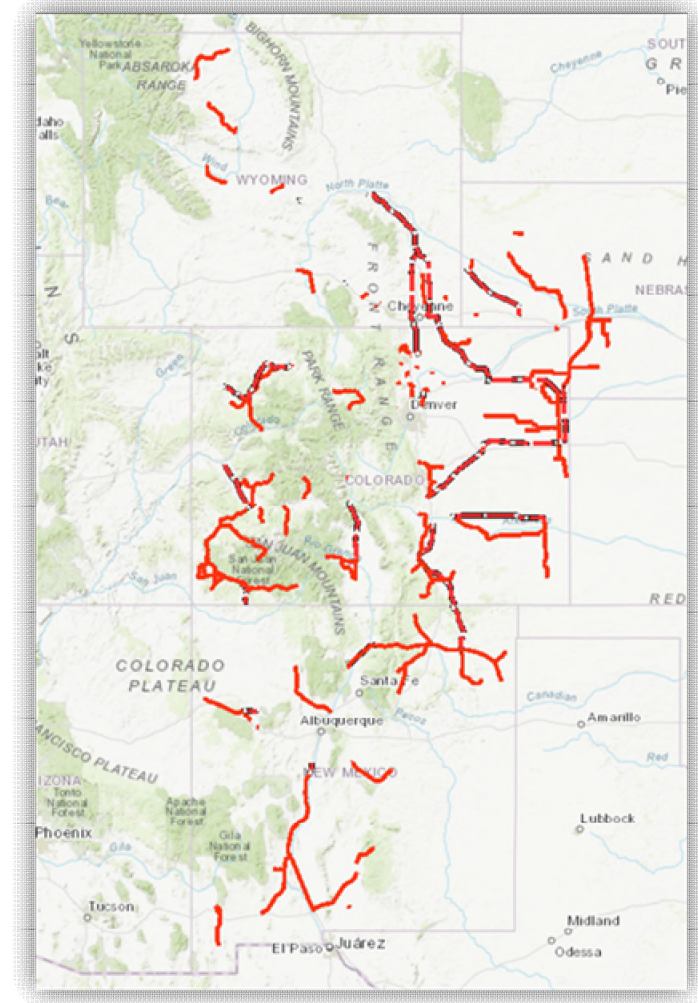
Tri-State Background

- 200,000 square mile service territory
- 5,000+ miles of high voltage transmission lines serving our 42 distribution cooperatives
- Maintain 36,000 structures
 - 6,000 steel structures
 - 30,000 wood structures



Tri-State Background

- Geography plays a major factor in our wildfire mitigation practices
- What works in one area might not work in another



Historical Mitigation Practices

- Transmission Vegetation Management Program (TVMP)
 - FERC FAC-003 became mandatory in July 2007
- Field Operations & Maintenance Program for Transmission Lines
- Technical Specification for Inspection and Treatment Services of Existing Wood Structures

A. Introduction

1. **Title:** Transmission Vegetation Management
2. **Number:** FAC-003-4
3. **Purpose:** To maintain a reliable electric transmission system by using a defense-in-depth strategy to manage vegetation located on transmission rights of way (ROW) and minimize encroachments from vegetation located adjacent to the ROW, thus preventing the risk of those vegetation-related outages that could lead to Cascading.

Tri-State Generation & Transmission
Association, Inc.

Transmission Vegetation Management Program (TVMP)

System Integrity and Reliability through a Dedicated Maintenance Team

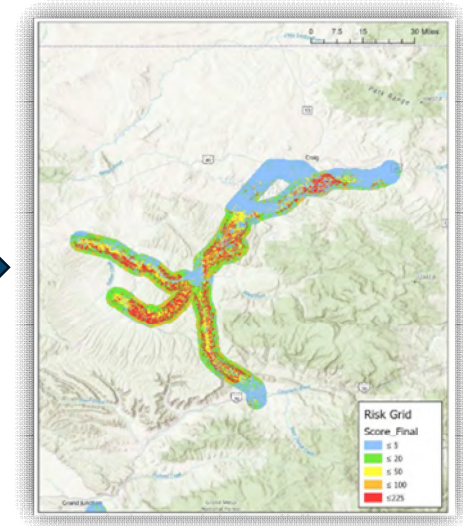
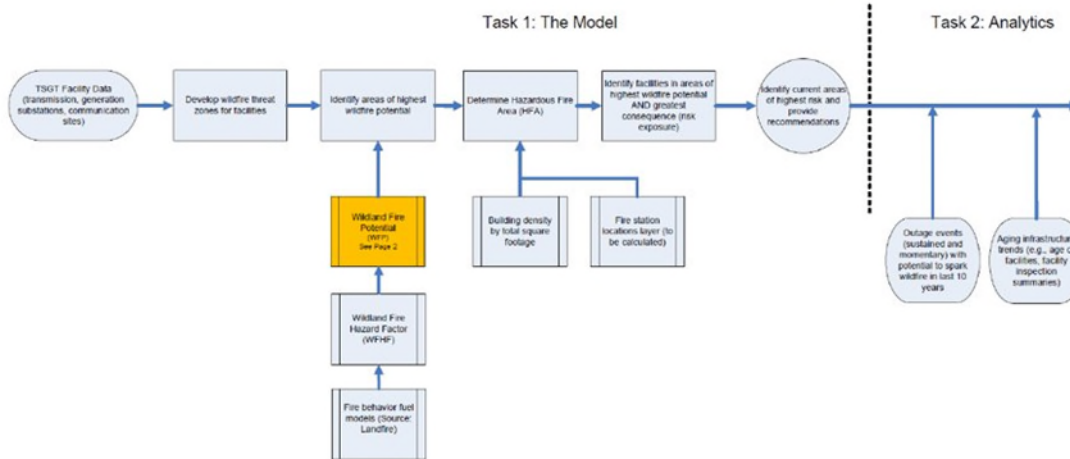


Expanded Efforts

Fire Risk Assessment Completed - 2021

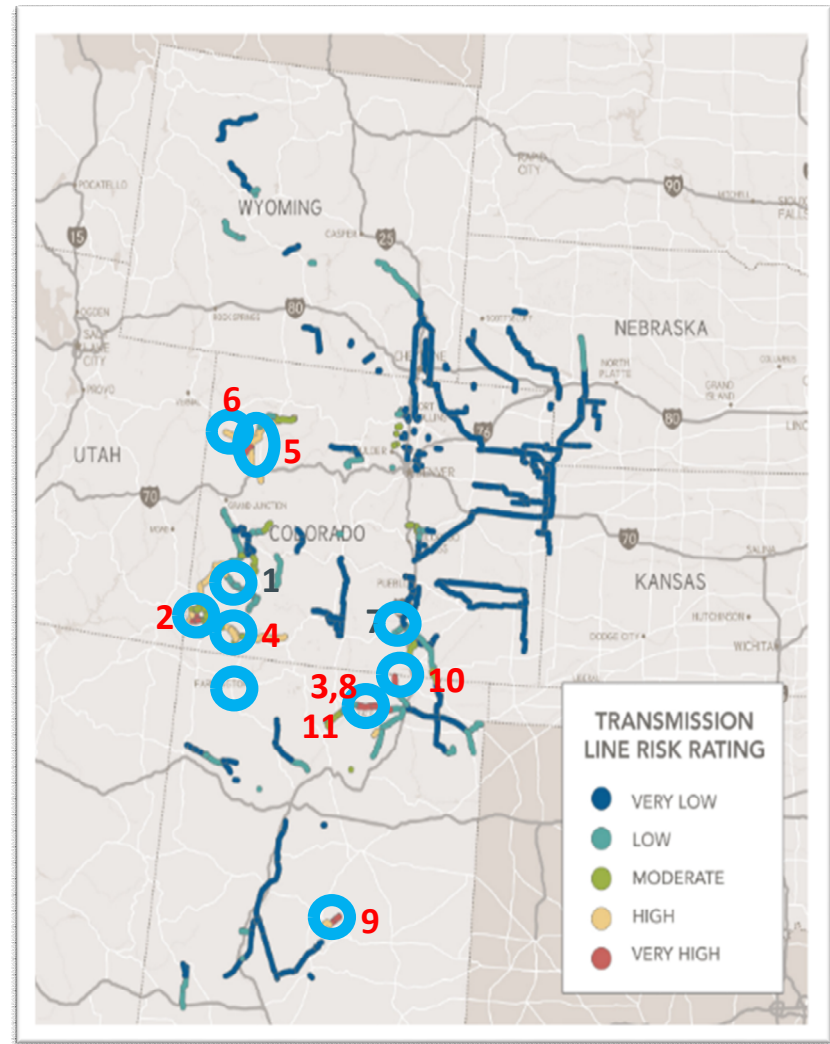
- Assessment 1: Studied the likelihood of TSGT asset being the ignition source of a catastrophic wildfire
- Assessment 2: Study the survivability of TSGT assets in the event of a catastrophic fire.

Wildfire Mitigation Risk Assessment Model- Information Flow



Fire Risk Assessment Completed - 2021

- Approximately 10% of lines defined as “Very High and “High” fire ignition risk:
- Gave us a starting point to focus on additional vegetation removal and system hardening work



Wildfire Mitigation Plan

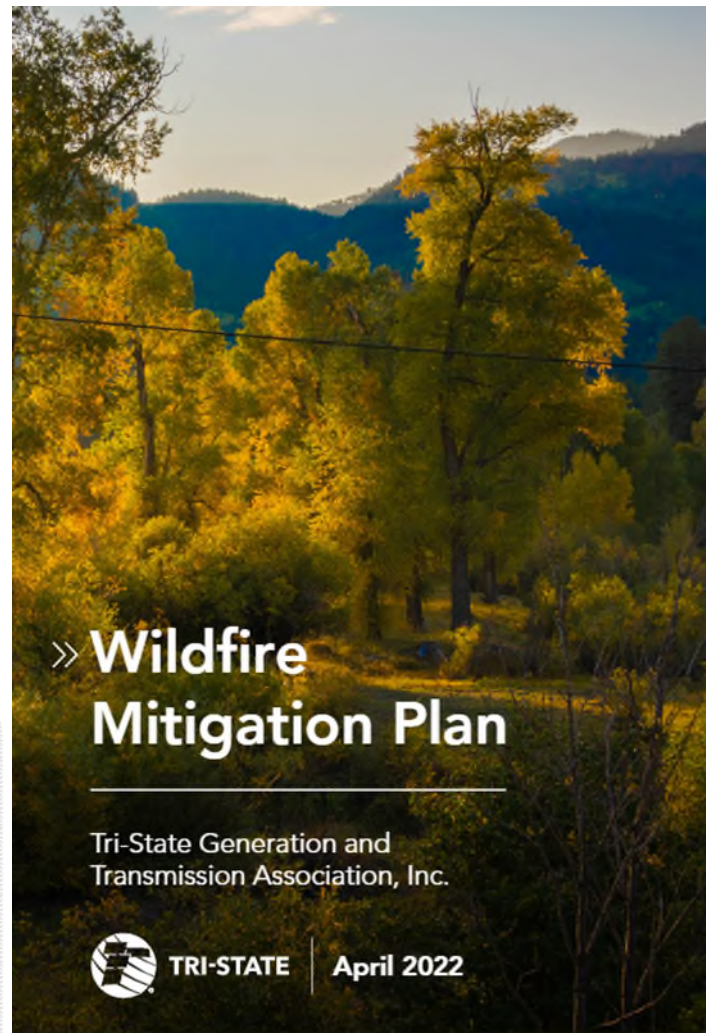
- Provides Tri-State with a playbook for efforts moving forward



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» Wildfire Mitigation Plan

Tri-State Generation and Transmission Association, Inc.



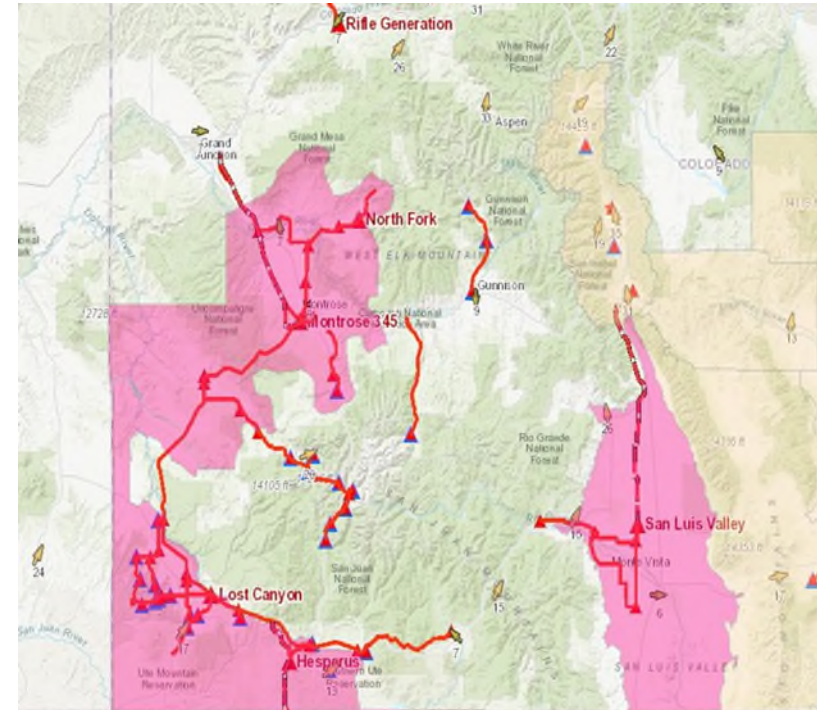
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April 2022



Situational Awareness Program

- System Operations standing order for fire weather
 - Red Flag and Fire Weather Watch information
 - Wind
 - MODIS Thermal Activity
 - NC4 Risk Center
- Transmission Maintenance Fire Weather Watch and Red Flag Warning procedures
 - Notification to field crews
 - Use of vehicles
 - Use of potential ignition sources (grinding, welding, blasting)



UAS (Drone) Program

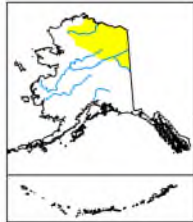
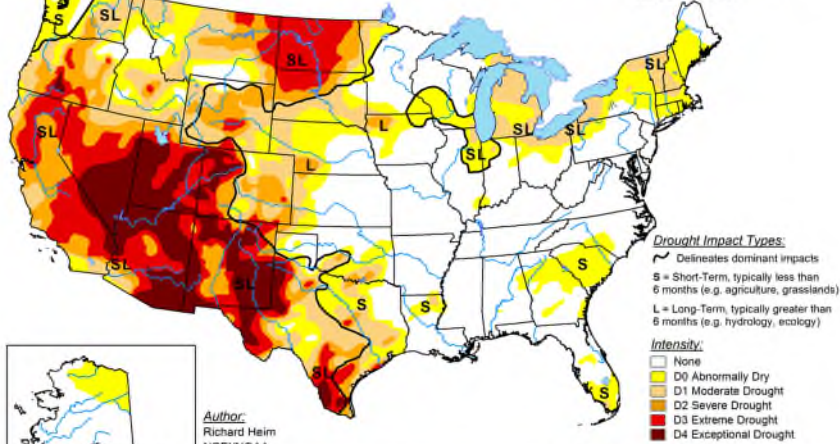
- Rapidly developing our UAS/Drone program to enhance our transmission line and substation inspection program
- Currently 30+ FAA certified pilots available for inspection and damage assessment



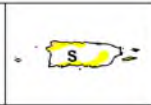
Wildfire Threat is Always Changing

U.S. Drought Monitor

April 20, 2021
(Released Thursday, Apr. 22, 2021)
Valid 8 a.m. EDT



Author:
Richard Heim
NCEI/NOAA



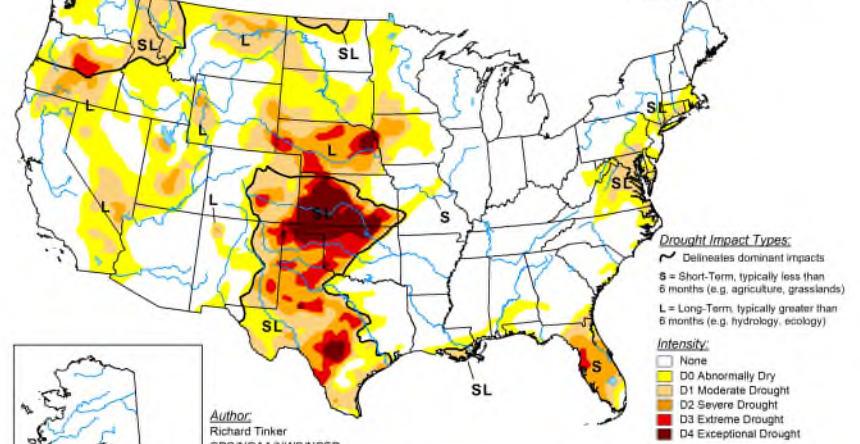
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>



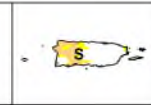
droughtmonitor.unl.edu

U.S. Drought Monitor

April 18, 2023
(Released Thursday, Apr. 20, 2023)
Valid 8 a.m. EDT



Author:
Richard Tinker
CPC/NOAA/NWS/NCEP



The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>



droughtmonitor.unl.edu

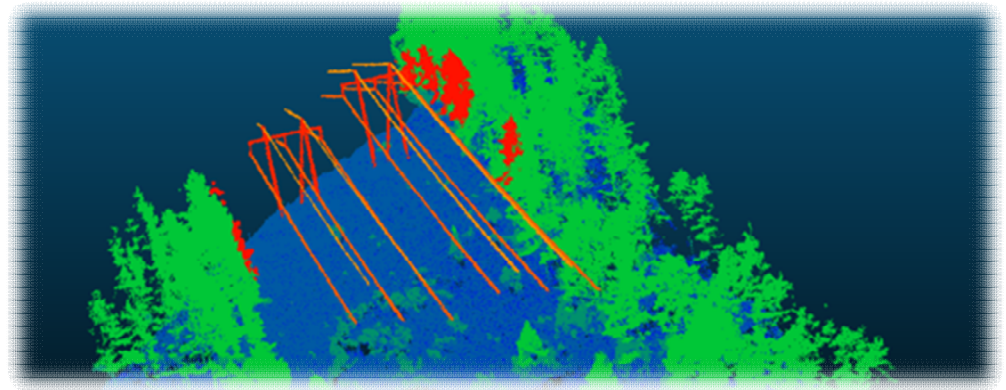
Investigating the use of Vegetation Management Systems

■ Satellite Data Collection

- Working with NCAR to develop near real time condition assessments
- Allows for rapid collection of data looking for changes in fuel moisture content
- Monitoring vegetation heath and growth rates

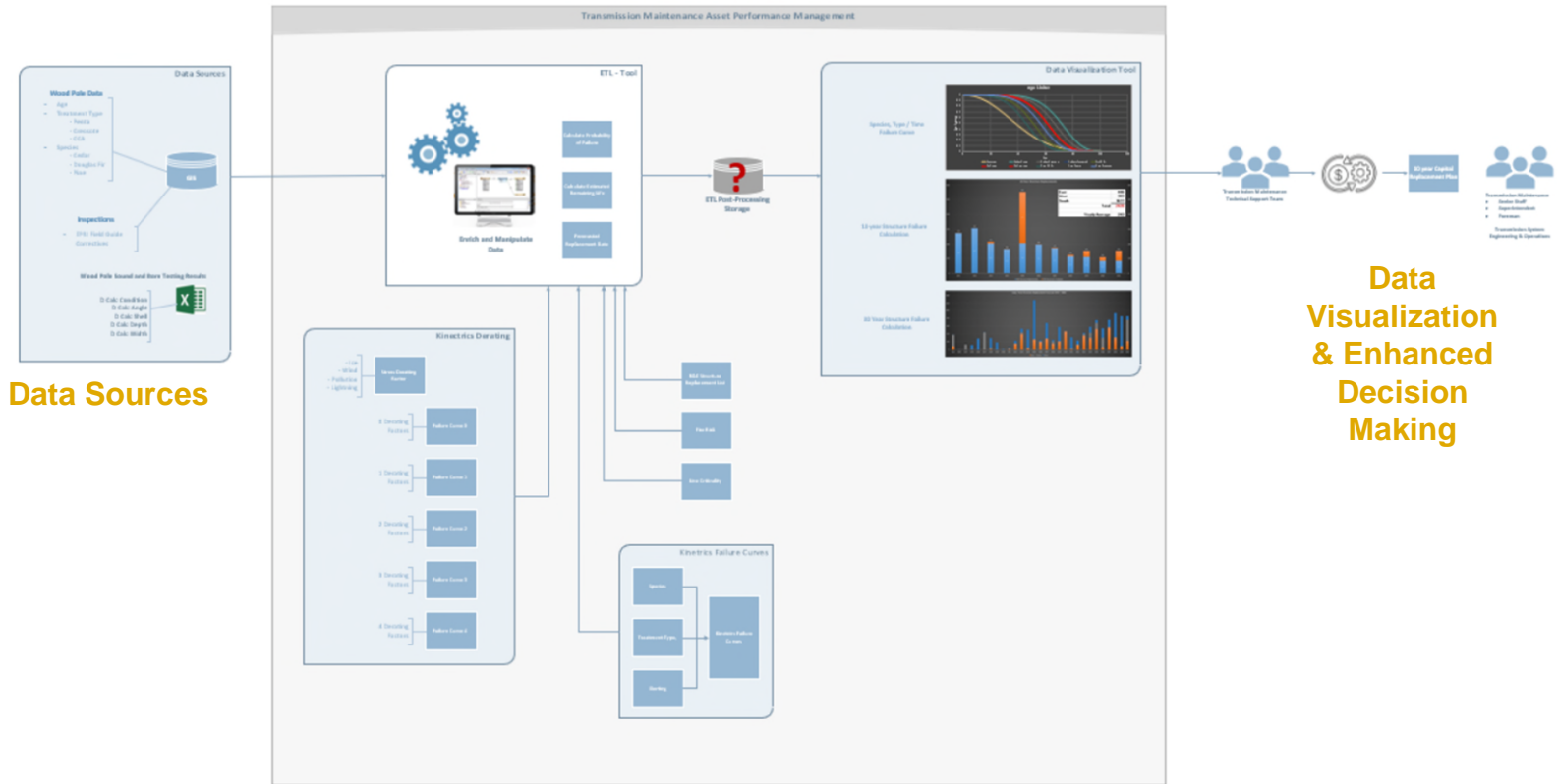
■ Drone LiDAR Data Collection

- Danger Trees
- Strike Potential
- Off ROW Tree's



Building an Asset Performance Program

Data Analytics - Processing



Data Sources

Data Visualization & Enhanced Decision Making

Outreach

Partnerships:

- Colorado Wildfire Summit
- NRECA
- ESCC
- Western governors
- Statewide organizations
- USFS and BLM
- Local wildfire mitigation groups





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