
AVEVAWORLD

Understanding Utility Fire Risk

With AVEVA™ PI System™

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Presentation Overview

Brief intro and overview about Avista

- How we are leveraging **AVEVA PI System** to understand fire risk
  - Data imports, analysis & monitoring
  - District and individual feeder fire risk
  - Historical analysis walk through

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Northwest Service Area

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About Avista

Company History

- 1889: Washington Water Power
- 1890: hydroelectric
- 1958: natural gas
- 1983: biomass
- 1999: Avista Corp.
- 2009: Smart Grid Demonstration Project
- 2012: wind
- 2015: solar
- 2019: smart meter deployment

Northwest Service Area

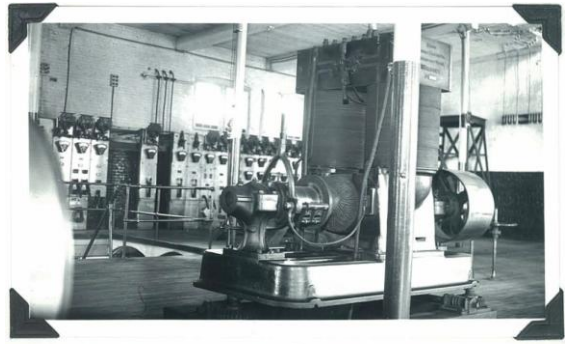
- Washington, Oregon, Idaho, Montana
- 422,000 electric customers
- 383,000 natural gas customers

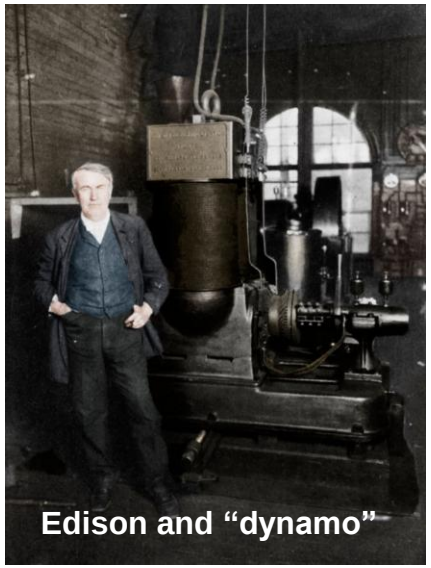
Supply Mix

- 48% hydroelectric
- 9% wind
- 2% biomass
- 33% natural gas
- 8% coal

By the Numbers

- 2,800 miles of transmission lines
- 19,700 miles of distribution lines
- 8,200 miles of natural gas distribution mains
- 8 hydroelectric facilities: 1,049 MW
- 7 thermal generation plants: 860 MW
- 1,858 employees


Old 80 KW Edison bi-polar unit. Has been disposed of in 1943.


Edison and “dynamo”

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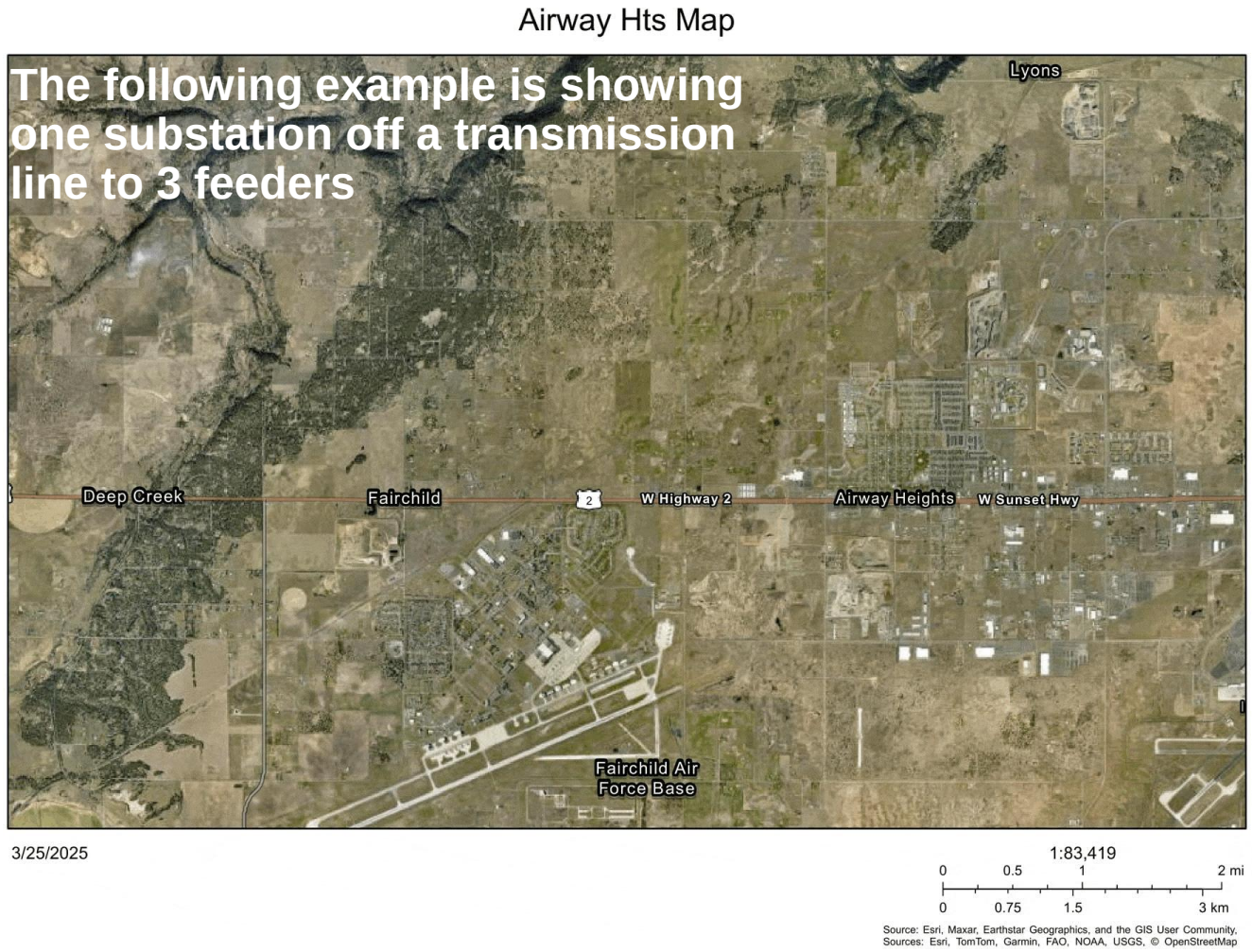
Northwest Service Area and AVEVA PI System



2,800 Miles Transmission Lines
19,700 Miles Distribution Lines
400 Feeders

- **6,844,153 Total PI tags**
- **Over 1,200 AVEVA PI Vision displays**
- **Operation Asset Framework**

  41,000 asset analytics
  33,000 AF elements
  650,000 event frames

- **Smart Meter Asset Framework**

  948,000 asset analytics
  1,050,000 AF elements
  43,108,434 event frames

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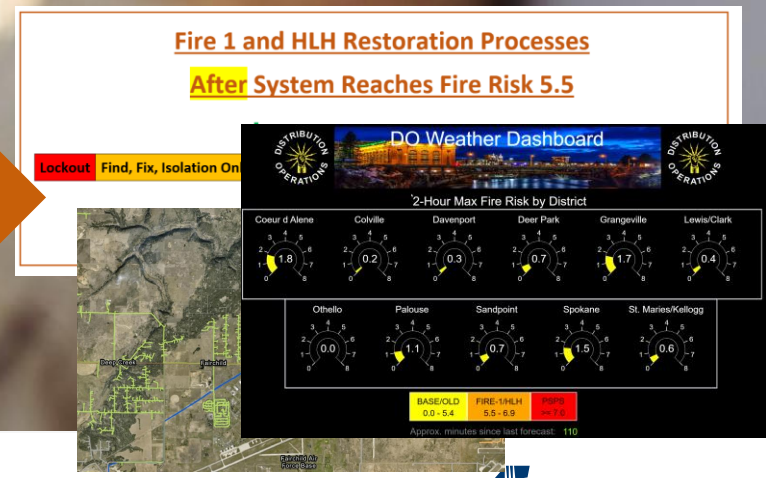
How We Leverage PI System to Understand Fire Risk

AVEVA PI Server's data archive and asset framework empower our teams with the insights needed to determine when actions are necessary.

For instance, enabling our distribution operations team to evaluate and respond.

data, inputs → **analysis, monitor, historize** → **deliver, display**



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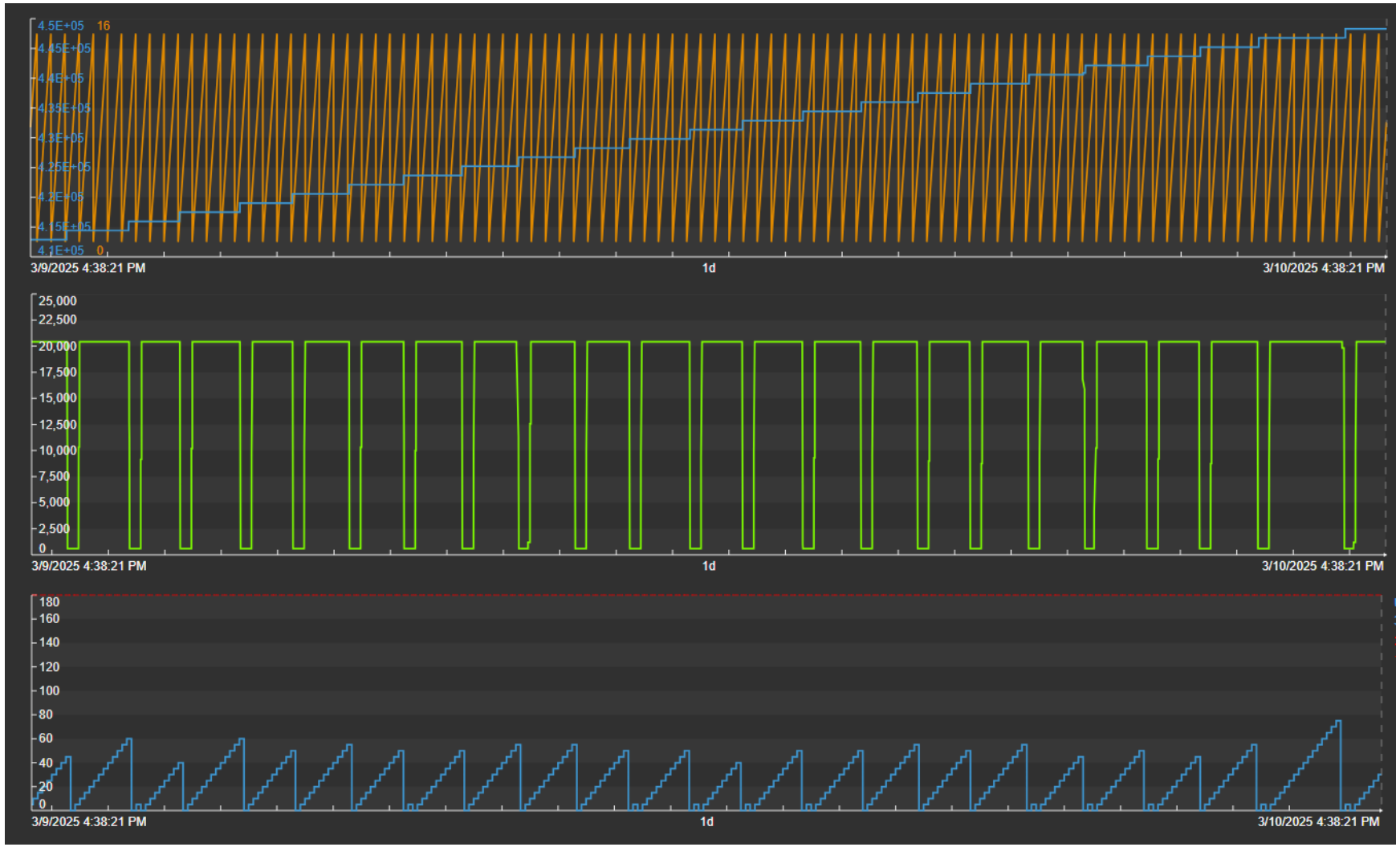
Data Imports & Monitoring



Log File Message Count

Heartbeat

Points Stale (10 mins)

3 Hours

Minutes Since Update

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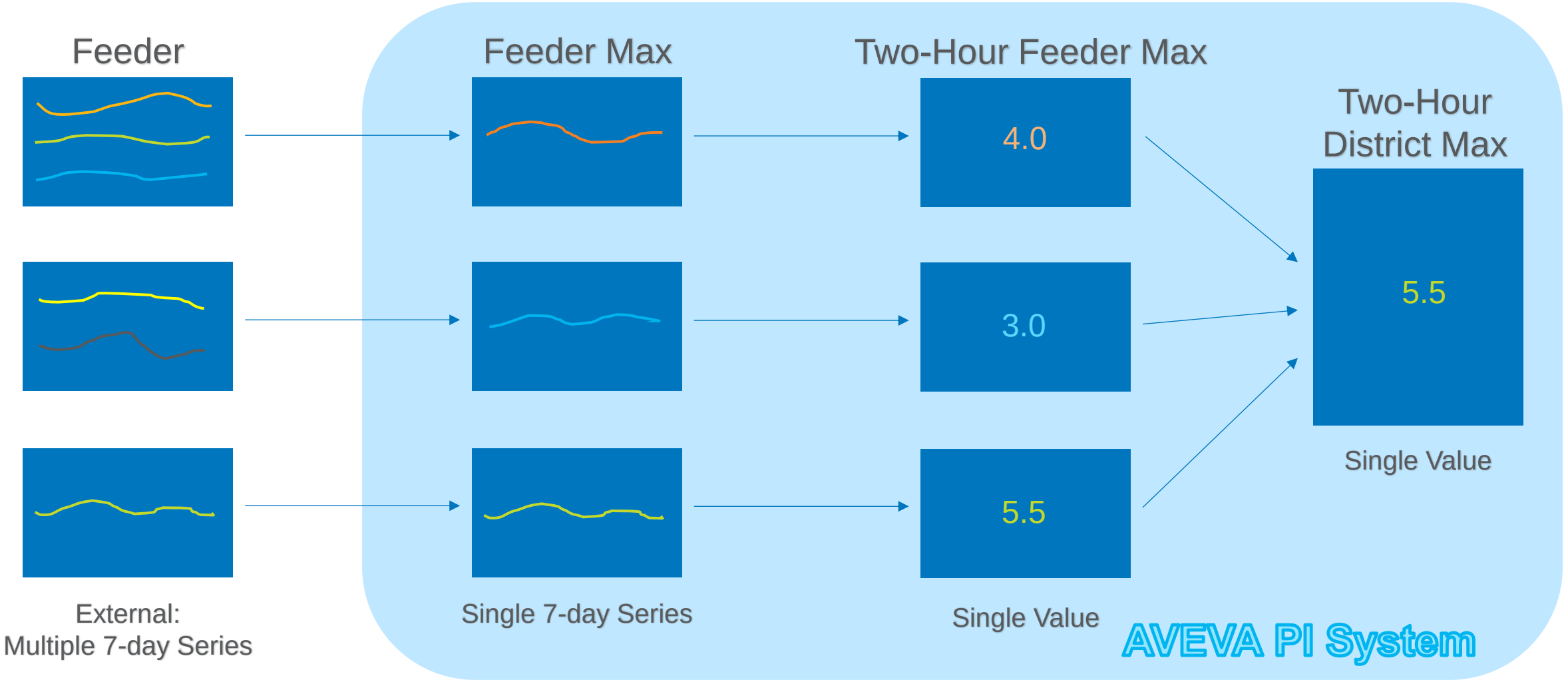
Fire Risk Data Flow



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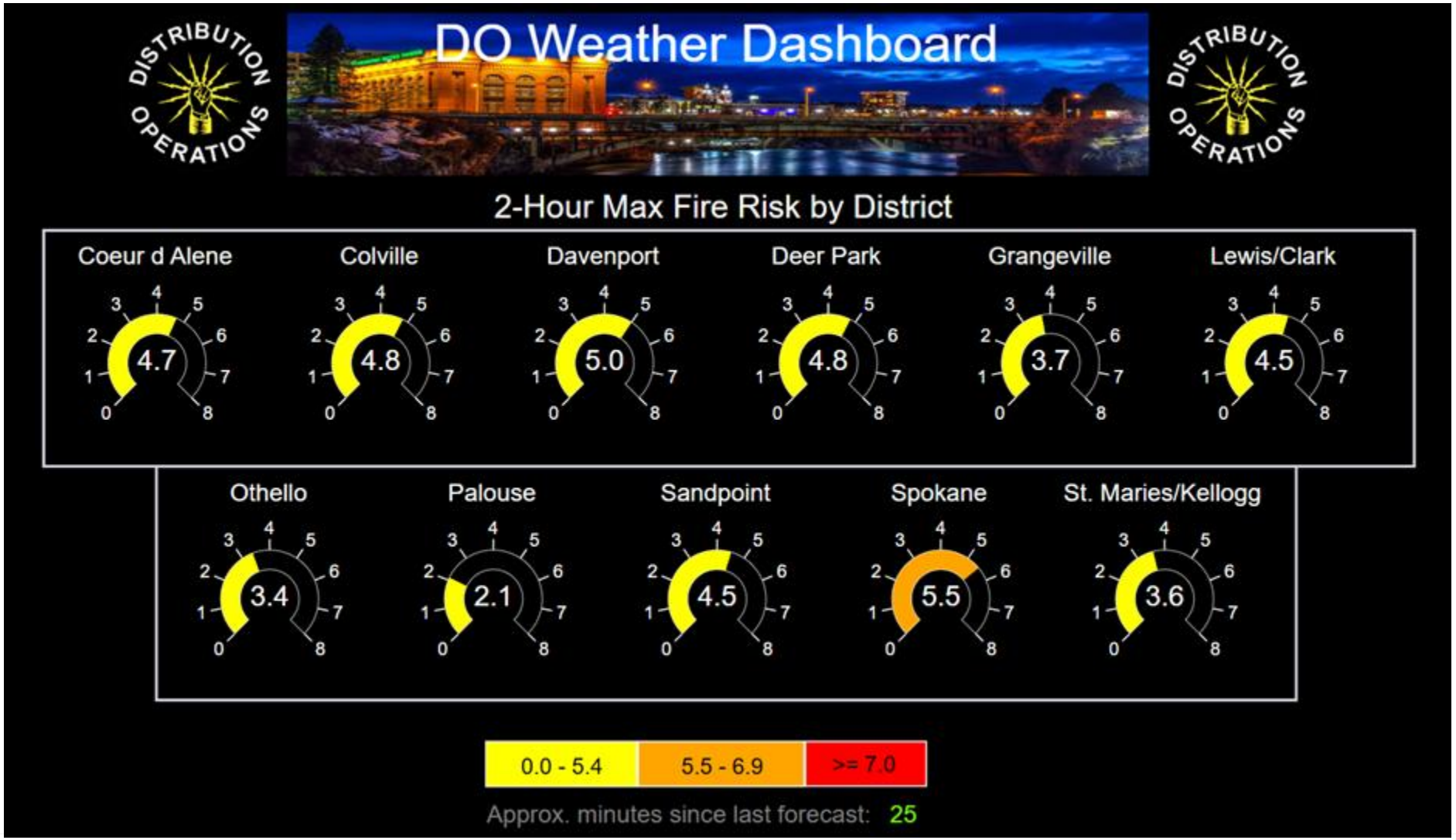
Two-Hour District Max

(Single Value)



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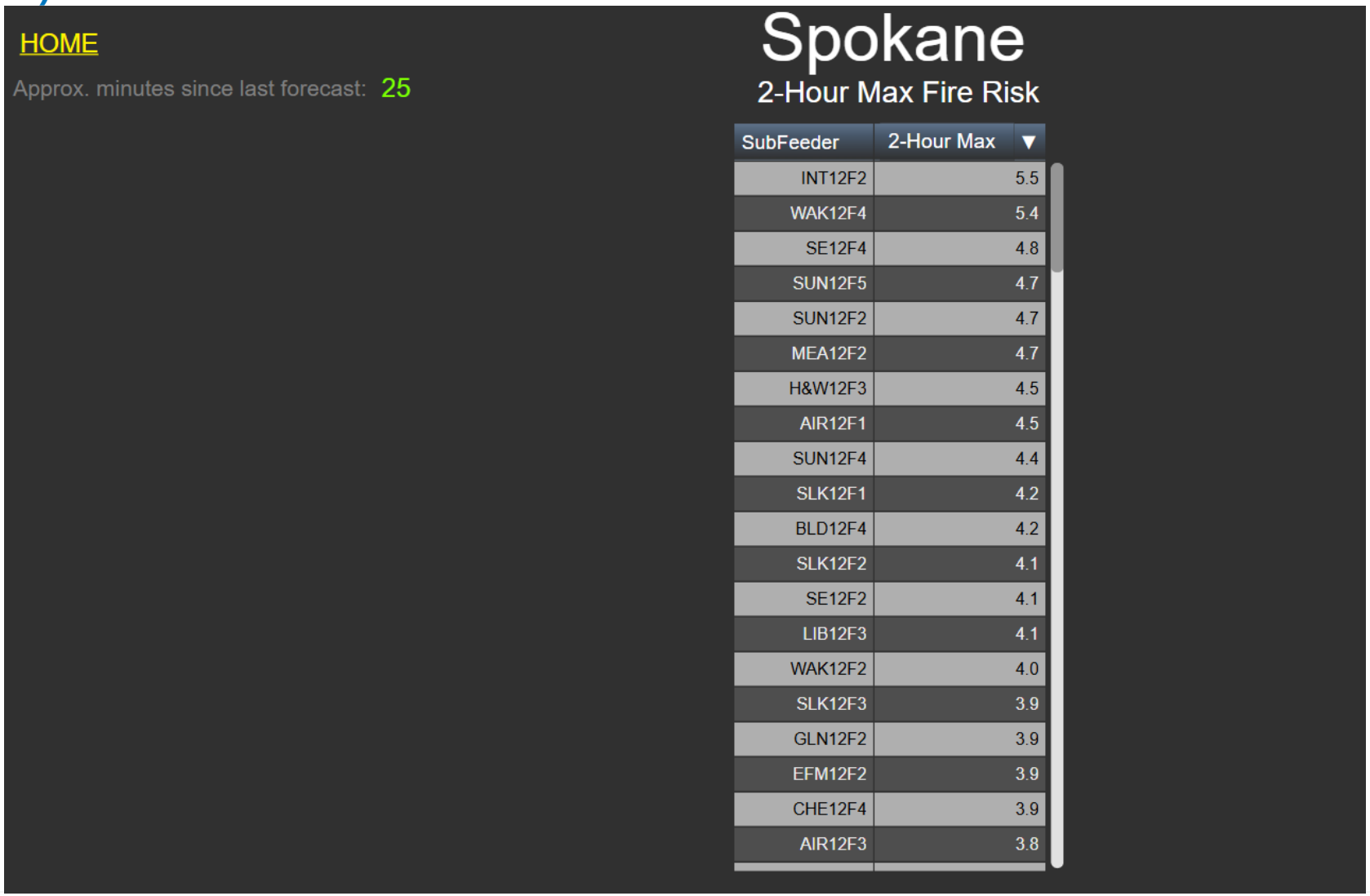
Two-Hour Feeder Max

(Single Value)



SubFeeder	2-Hour Max ▼
INT12F2	5.5
WAK12F4	5.4
SE12F4	4.8
SUN12F5	4.7
SUN12F2	4.7
MEA12F2	4.7
H&W12F3	4.5
AIR12F1	4.5
SUN12F4	4.4
SLK12F1	4.2
BLD12F4	4.2
SLK12F2	4.1
SE12F2	4.1
LIB12F3	4.1
WAK12F2	4.0
SLK12F3	3.9
GLN12F2	3.9
EFM12F2	3.9
CHE12F4	3.9
AIR12F3	3.8

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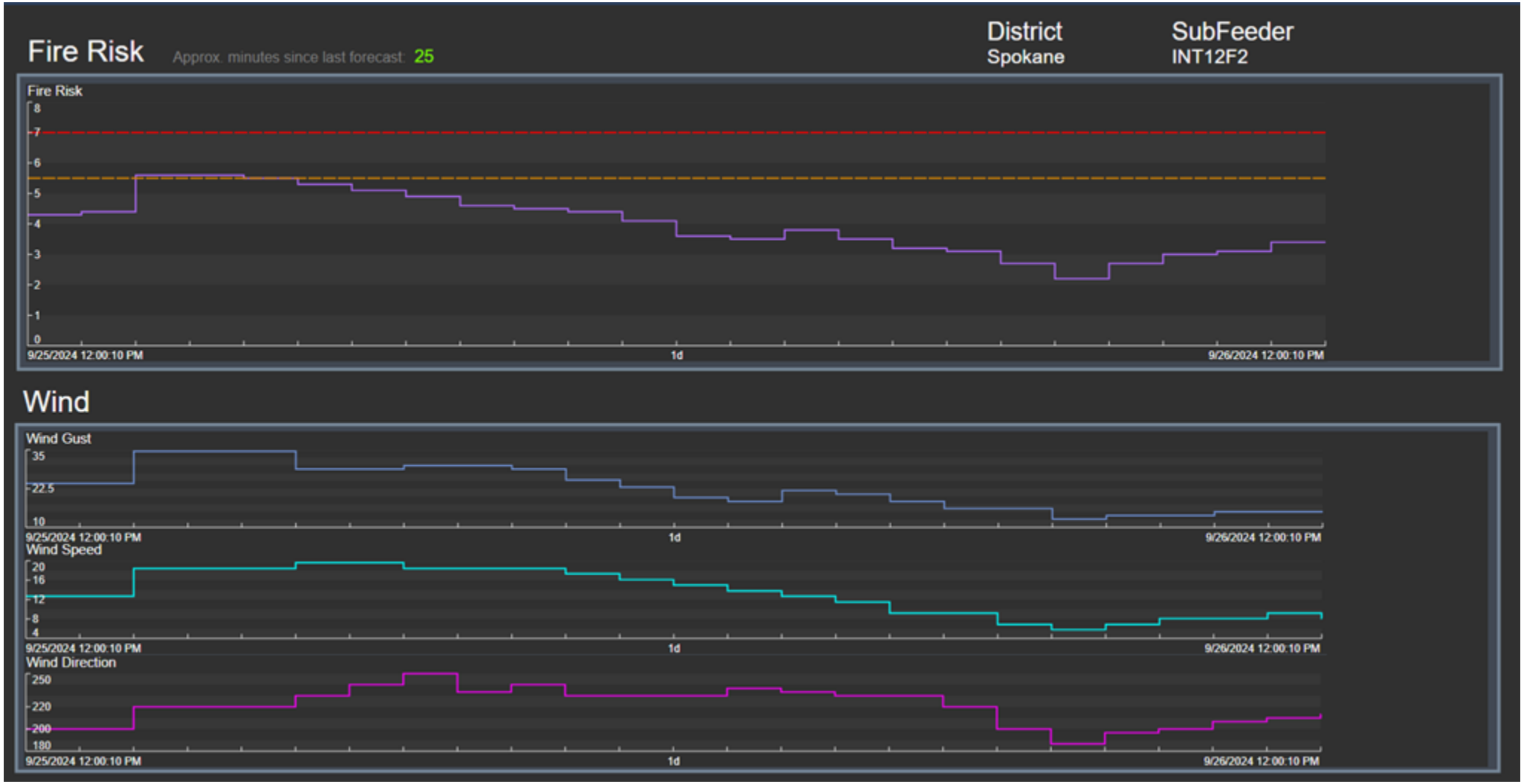
Feeder Max

(7-Day Series)



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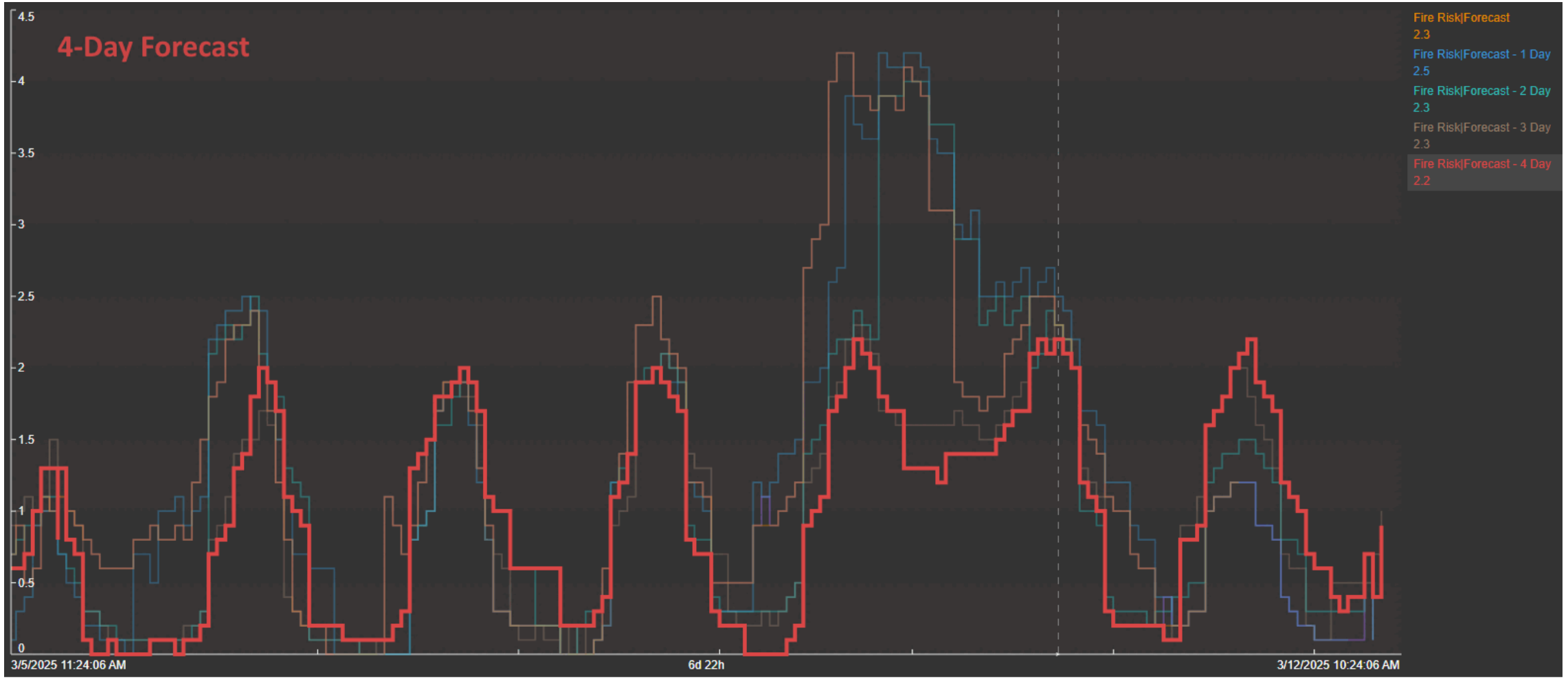
Historical Analysis



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UTILITIES | PACIFIC NORTHWEST USA

Avista Utilities understands fire risk data

Challenge

- Understanding complex set of fire risk metrics across several hundred feeders and devices
- Knowing when forecast fire risk was low enough to safely patrol and re-energize equipment
- Communicating how current the fire risk forecast data was for accurate decision-making

Solution

- Utilized AVEVA™ PI System™ portfolio to aggregate and report on fire risk data in our service territory

Results

- **Enhanced data availability to foster trust**
- **Streamlined essential data for a simplified view for our grid operators**
- **Minimized the risk of premature patrol and reenergization initiation**
- **Lowered likelihood of unnecessary delays in patrols and reenergization – reducing customer outage times**
- **Developed ability to review changing historical forecasts**

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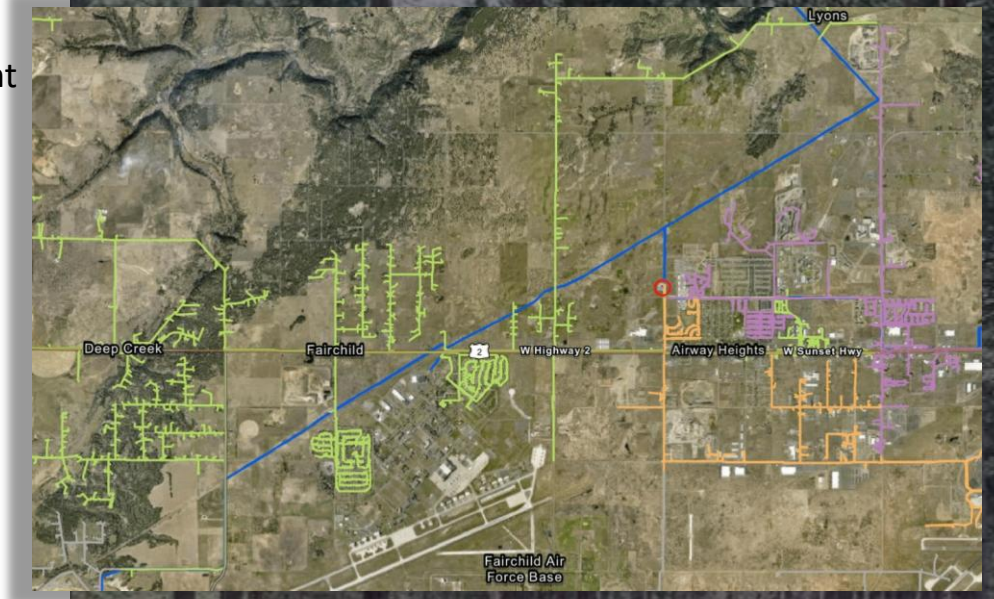

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