Report on State Funding of Oregon Hazards Lab

- Governor's 2018 Policy Agenda
  - Recommended $12M for statewide emergency warning system
  - August 2020 special session awarded $7.5M for ShakeAlert and telemetry improvements
  - February 2022 short session awarded $4.5M for ALERTWildfire
- Progress and the plan ahead
- Leveraging $12M state investment to create new opportunities for Oregon
- Expanding ALERTWildfire in Oregon is coupled with statewide coordination

STATE OF OREGON
Office of the Governor
KATE BROWN

Resiliency 2025:
Improving Our Readiness for the Cascadia Earthquake and Tsunami

The Governor has directed the State Resilience Office to implement a statewide emergency warning system by 2023 that ties multi-hazard events: **earthquakes, wildland fires, landslides, and flooding events** into one alerting and monitoring system.

- The urgency of societal needs is building infrastructure to support resilience monitoring and alerting
- Success requires collaboration with regional stakeholders, policy makers, and public/private partners
- The resulting infrastructure and social networks better serve the public and provide a just future
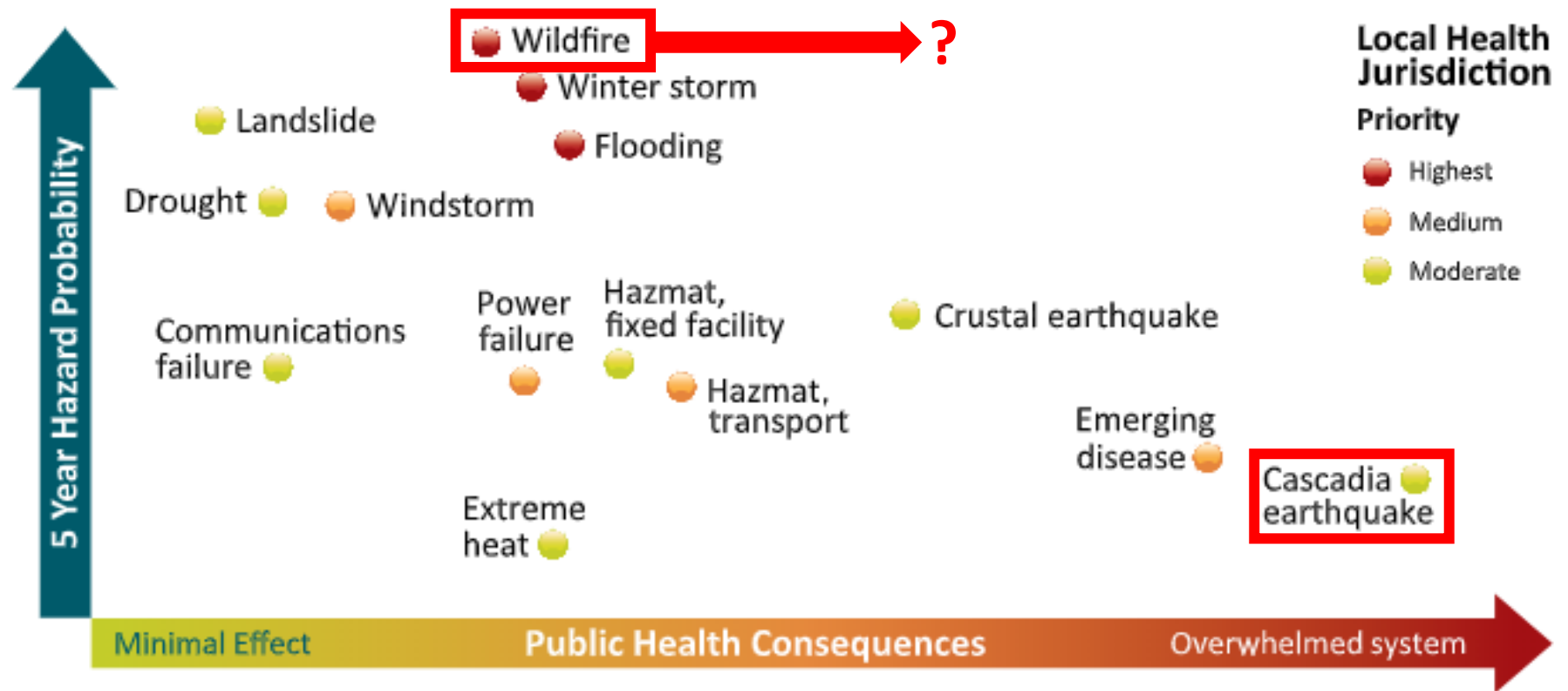
The Really Big One

Earthquake & Tsunami, Japan

The Really Frequent Ones


Eagle Creek Wildfire, Cascades Locks, OR

Figure 1 Oregon's Public Health Hazard Vulnerability Assessment (PH-HVA)

Earthquake Early Warning System

- **Public safety project** for west coast of North America

- State support will complete buildout of ShakeAlert by 2023 (including networking upgrades)

- **Public alerting** began March 11, 2021

- USGS currently provides ~$1.8M/year to UO for support of system
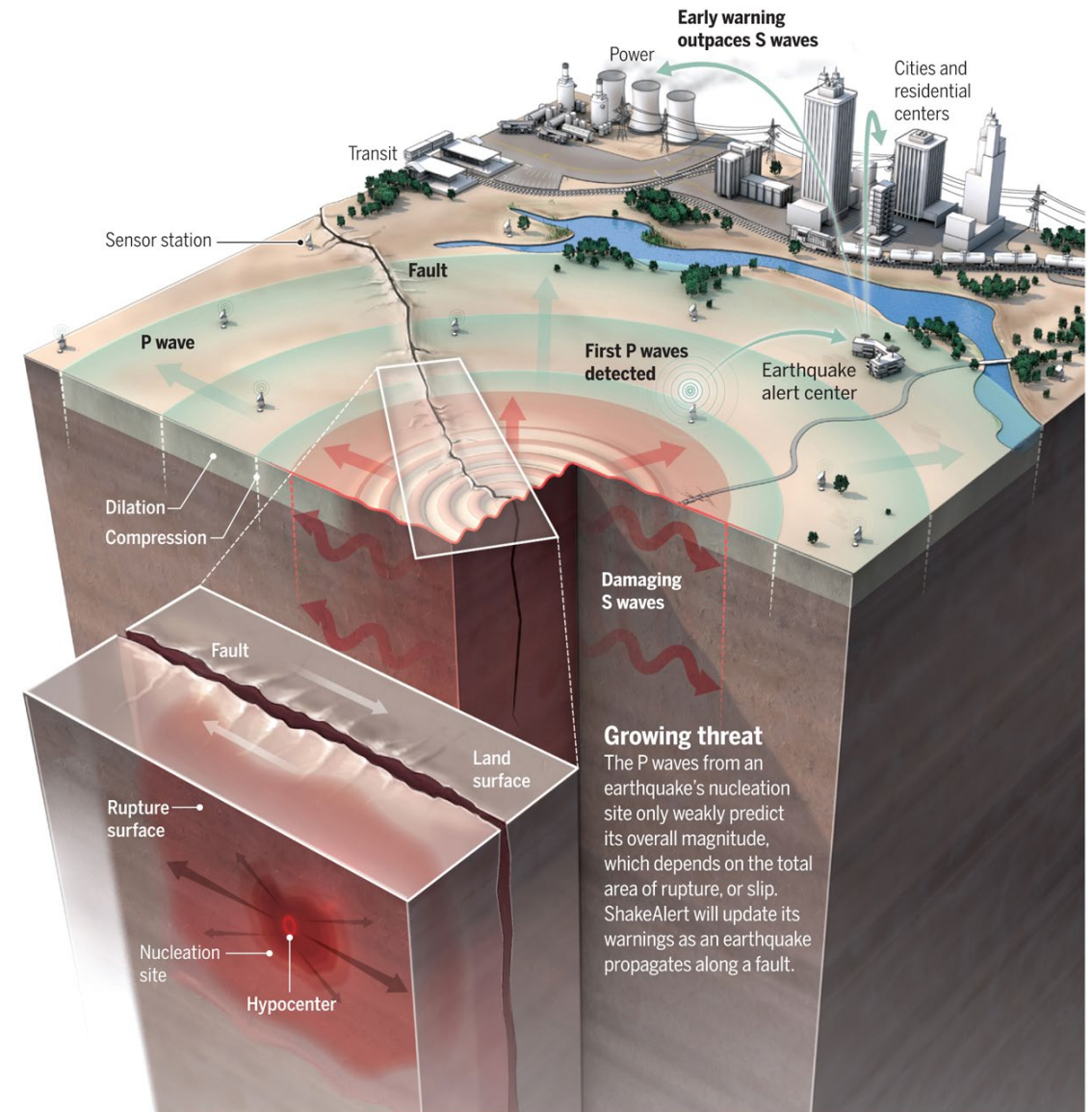
State Bond Project: Progress

- New UO project personnel hired

- Rapid progress on shovel-ready sites

- Seismic and telemetry site buildouts establish and hone processes and procedures

- Telemetry planning: coordination is key — social networking before IT

- Staging of multiple contractors well underway

- Bond project accelerates current and future work

- Complete station array by 2023 (250 seismic sites in OR)

UO rooftop microwave receive hub
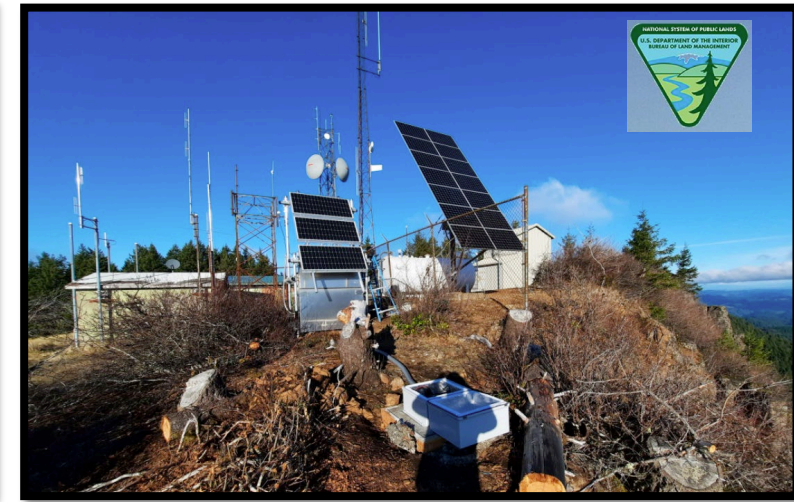
Roman Nose: Collocated at Douglas County comms site, BLM land

Buck Mountain ODOT hub: link between UO and Lane County Sheriff's Office

Euchre Mountain: Collocated at ODOT-SRP site, state microwave

ALERTWildfire: A unique wildfire detection and monitoring system

- Only camera system accessible by both **firefighters** and **public**

- **Firefighters:** Direct access to pan-tilt-zoom features, geolocation of fires, real-time information critical to response

- **Public:** Does not control cameras, but has real-time view of their risk

- **Distributed:** control via phone, laptop

- **Hardened:** for emergency and public access
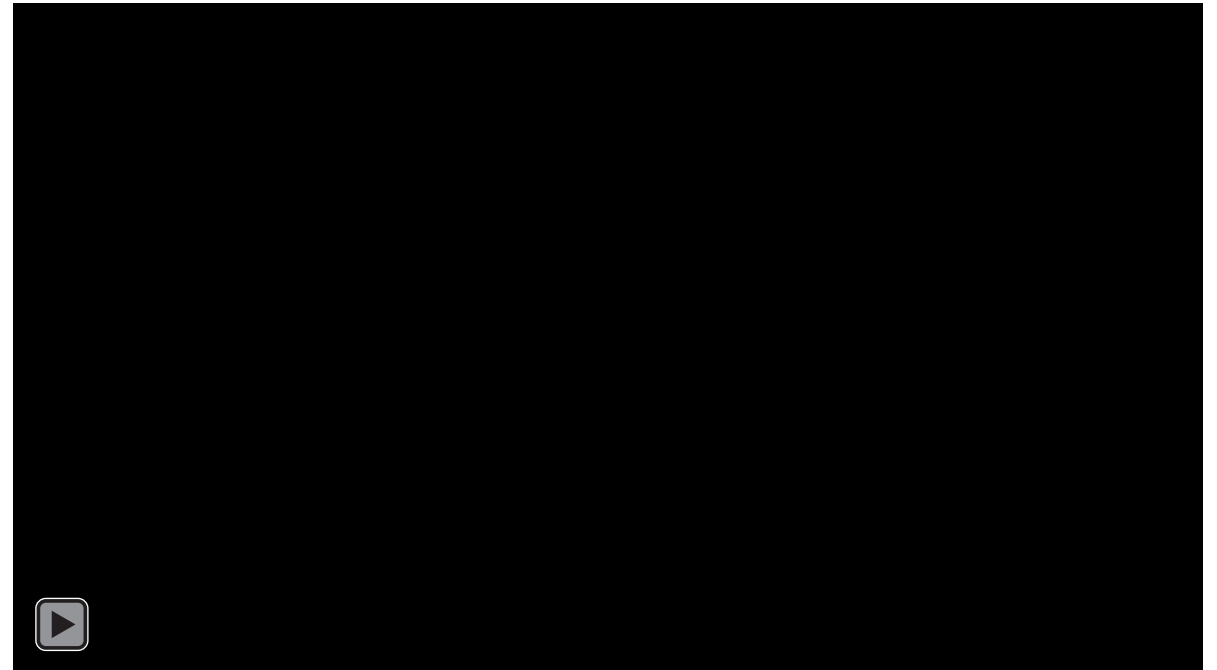
Axis-SantiagoEast X:+91.16 Y:-6.93 Z:1.0 SCE:twhitman:1.9h UCSD 2018/08/08 11:45:55.71

State Project: Progress

- February 2022 short session awarded $4.5M for ALERTWildfire

- UO provided loan to jumpstart project prior to arrival of state funds

- Project benefits from prior telemetry planning
  - Nine sites built thus far
  - 35 sites is target number

- Currently 28 sites total in Oregon

- Projected growth to 75+ sites by 2024

- Coordination with ODF, other agencies, and development of charter leverages opportunities

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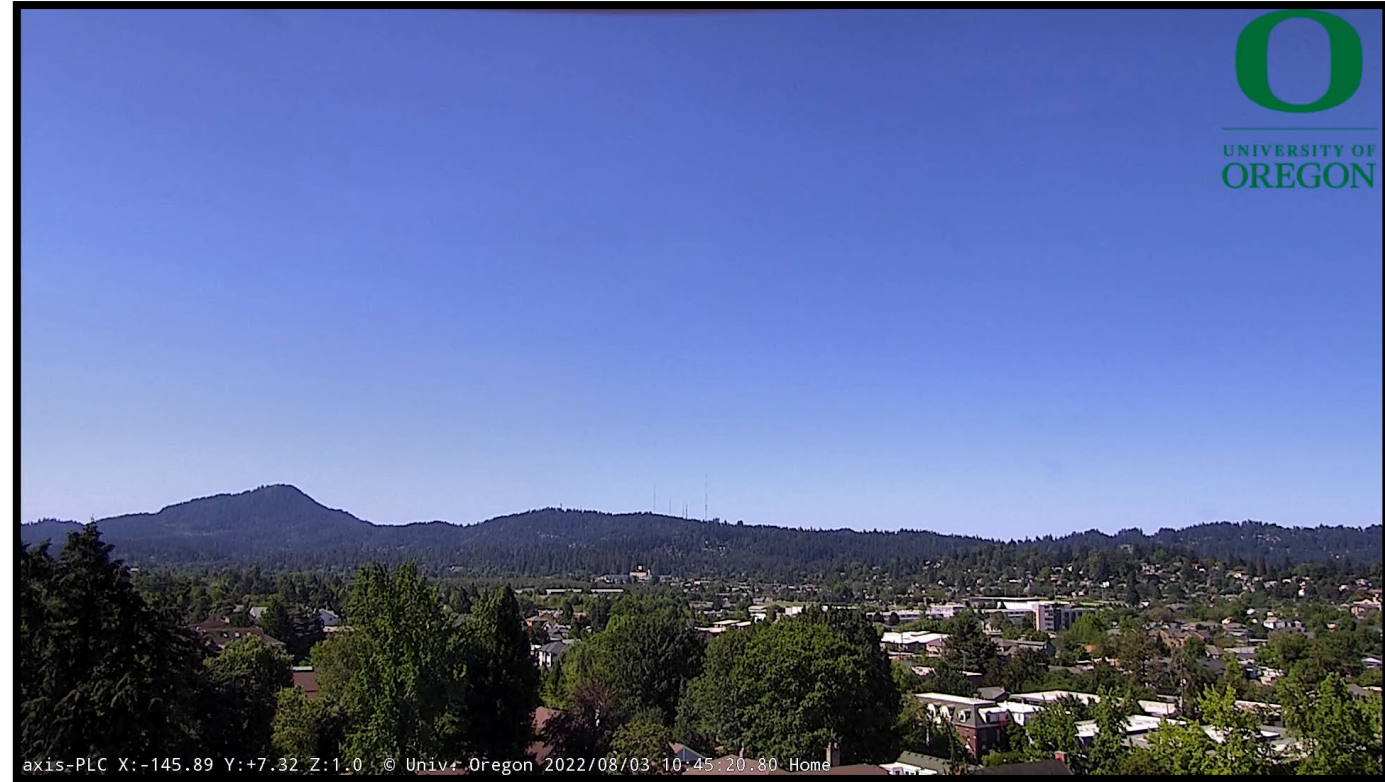
View of Eugene south hills from UO-hosted site.
Also, a data receive hub for regional hazards network

ALERTWildfire functionality: Public access
www.alertwildfire.org

- Present in 8 western States with over 1000 operational sites and growing

- Open and free access to public focuses on issues of equity and social justice

- Saves lives through improved situational awareness
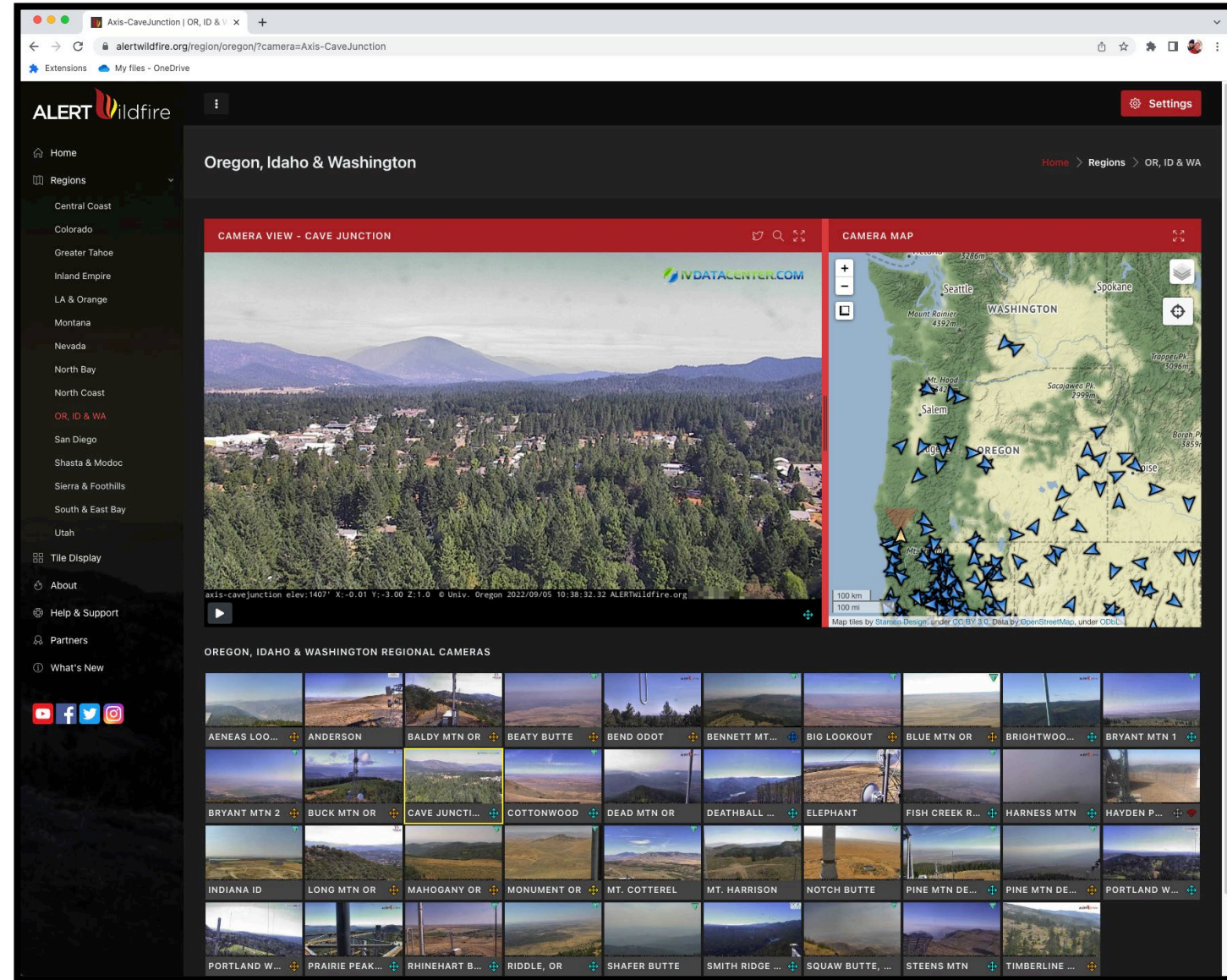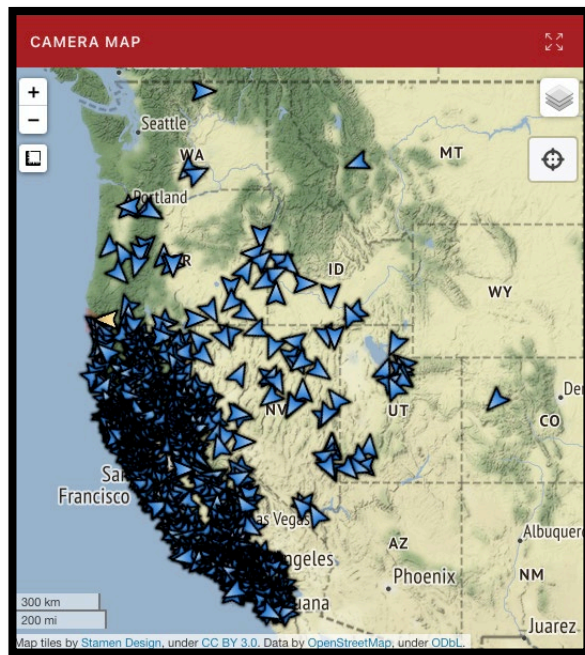
ALERTWildfire functionality: Public map features

Public map view,
With camera targets

inset

IRWIN fire perimeter

Map point
selection

41.99583, -120.53244

Live camera viewshed (red)
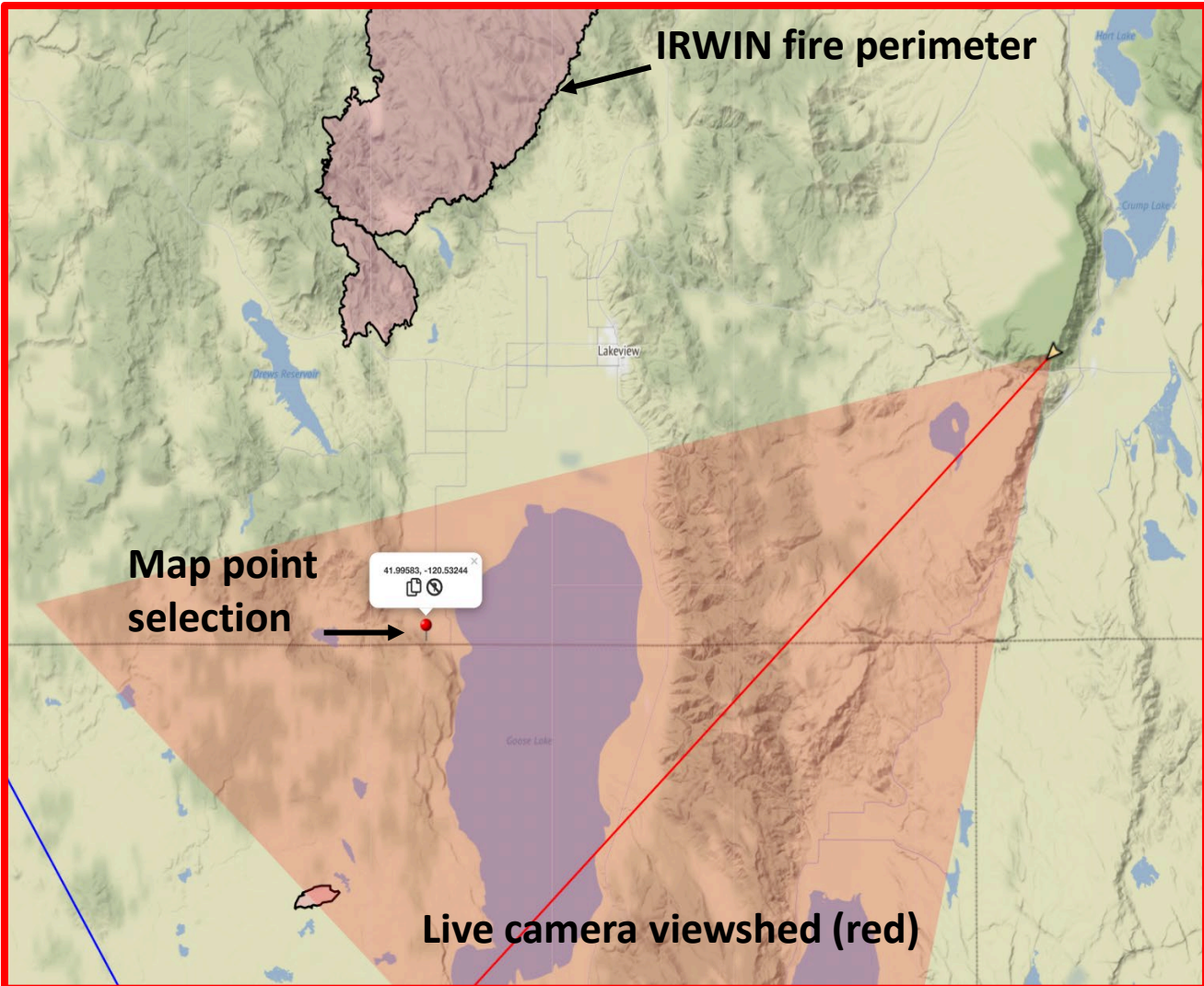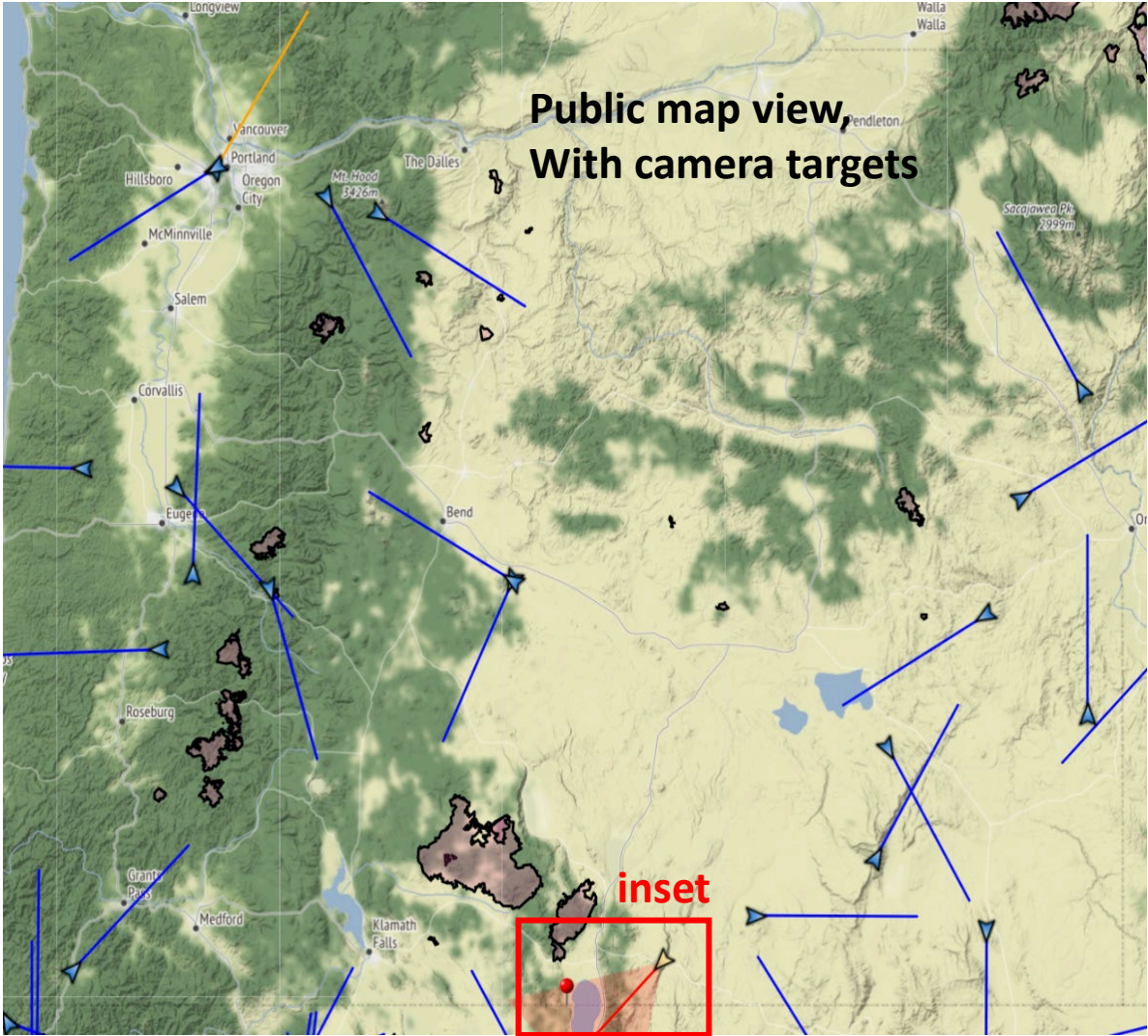
ALERTWildfire functionality: Private login and control

- Credentials provided to all responsible stakeholders and sponsors
    - ODF, BLM, NFS, Fire Chiefs, emergency managers, etc.
    - Utilities, internet service providers

- Uniform touch space and functionality across 8 western US states improves coordination between agencies

- Uses extend beyond fire response, for example, evaluation of fuels, vegetation management, controlled burns, weather conditions

Public camera view

CAMERA VIEW - MONUMENT OR

CAMERA MAP

Public map view

Direct login camera view

Pan-Tilt control

Zoom control slider

Active user banner (name/time)

Blue Mountain, Malheur Co.
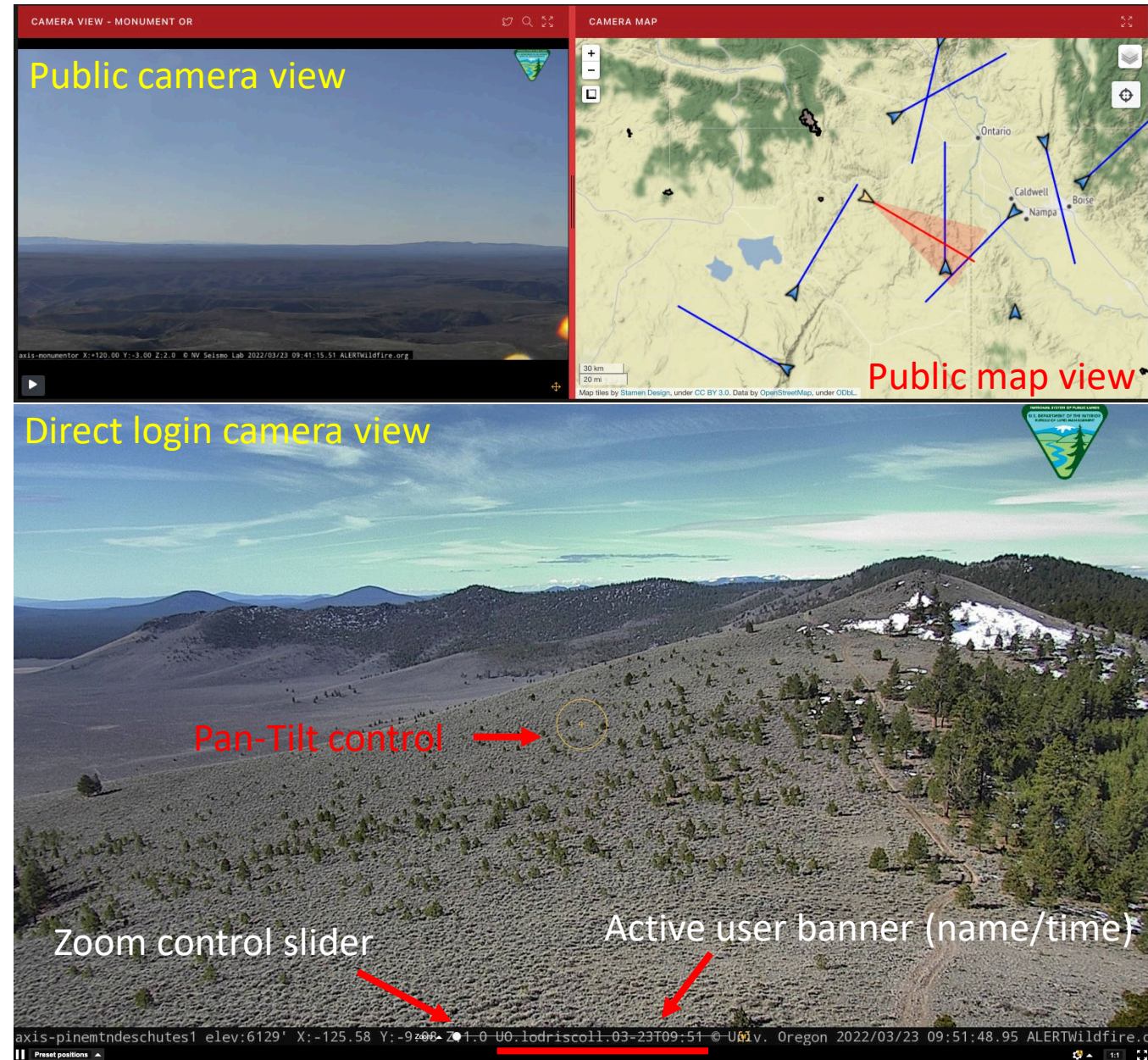
Benefits of linking ALERTWildfire and ShakeAlert programs

- **Hardens** data communications of **ShakeAlert**, improving state resiliency

- Wireless, IP-based high-speed backbone **supports a multi-hazards system**; not a one-off alerting/detection system

- **Leverage funding sources** that amplifies investments

- Pulls together technical and human resources within the state to **improve coordination** and response.

Slide used in JWMCC testimony, **May 2019**
We are realizing this vision in just 3 years

LEVERAGING FUNDING SOURCES: FEDERAL

- ShakeAlert
  - USGS; recurring line item; decadal scale
  - Sustains trained personnel
- ALERTWildfire
  - DOI-BLM Financial Assistantship Agreement
    - Five years, includes OR and WA
  - USDA-FS via bipartisan infrastructure bill
- Intersection of Broadband and Hazard mitigation
  - Historic investments in broadband
  - NTIA NOFO: Ziply, ODOT, LinkOregon, OHAZ coordination
- DHS Science and Technology
  - Chemical air sensors for AI detection of wildfire — OHAZ testing sensors for DHS
  - An open platform attracts other opportunities and investments
- Inflation Reduction Act

Beaty Butte: Remote SW Oregon site — BLM funded

LEVERAGING FUNDING SOURCES: FEMA

- In response to the 2020 wildfire season, OHAZ proposed several FEMA projects.
  - State funds leverage via match
- Willamette watershed emergency communications and multi-hazards alerting — McKenzie and Santiam corridors
  - Funded (~$800K) — Scoping, planning feasibility study
  - Under development (~$20M) — fiber, wireless, and hazards arrays
- Rogue Valley Wildland-Urban Interface ALERTWildfire camera network
  - In review ($1.8M)
  - Dozen+ cameras
  - AI Detection of fire starts (Alchera)
  - Connect to OR-Alert, local responders
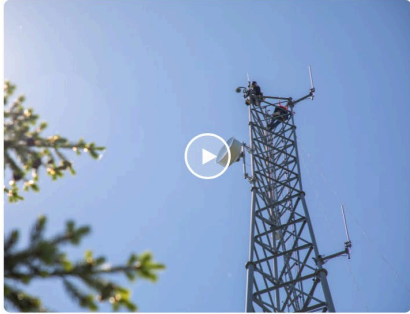
Build fiber where there isn't an existing commercial network. (96 Mi. of Backbone)

Commercial providers will be interested in asset trades for fiber diversity to complete paths.
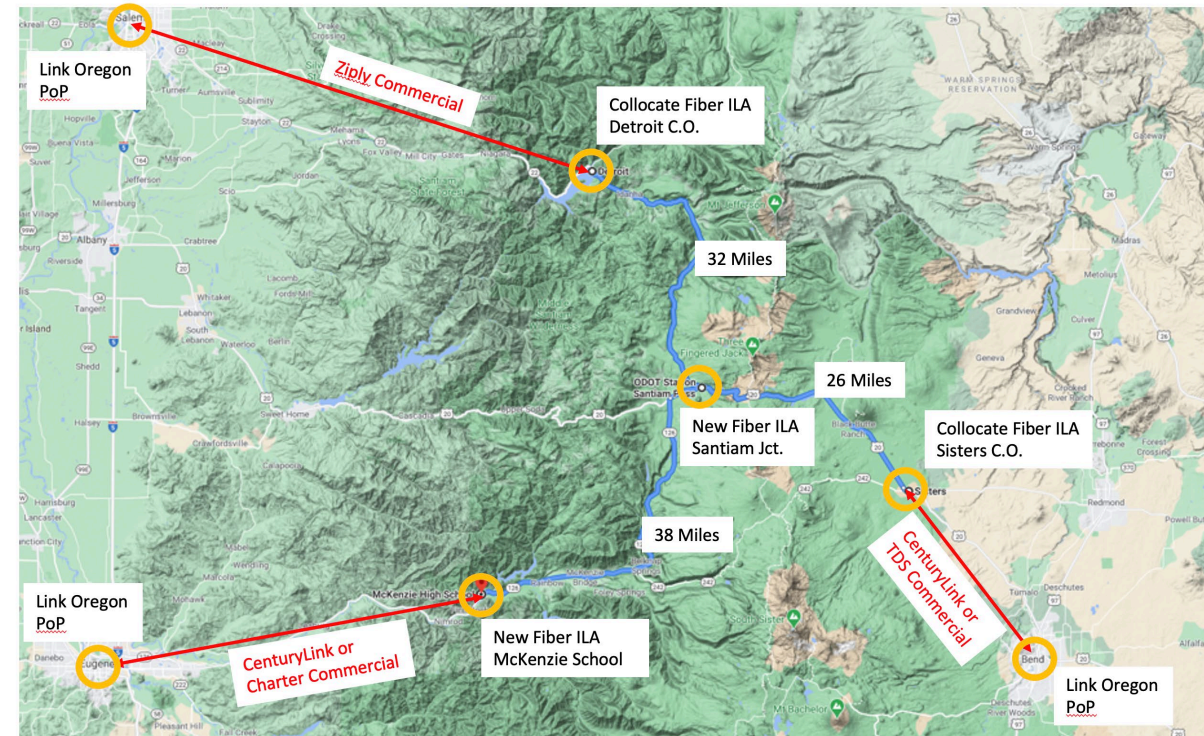
LEVERAGING FUNDING SOURCES: UTILITIES

- Investor-Owned Utilities
  - Several IOUs owned by Berkshire Hathaway committed to ALERTWildfire
  - In CA (PacifiCorp)
  - In Utah (Rocky Mountain Power)
  - In Oregon, SOW and scoping underway (PacifiCorp)
- Public Utilities
  - Consumer Power
  - EWEB
  - Meetings with NWPPA
- Shovel-ready solutions now available
  - Variety of IOUs feed progress with increasing request for information

New camera atop EWEB tower will bolster wildfire early detection capabilities
06/28/2022
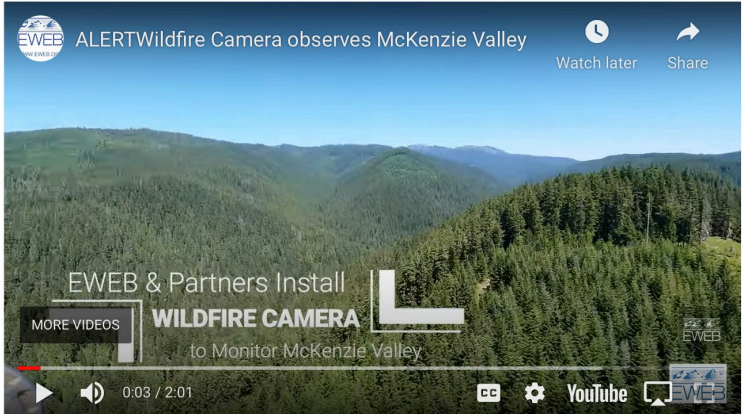
A new digital fire lookout tower will soon be able to spot small fires before they threaten communities and infrastructure in the upper McKenzie River Valley, thanks to a new ALERTWildfire camera installed Monday on a communications tower owned and operated by EWEB.

The camera, which is mounted on an EWEB communications tower that provides radio communication for EWEB's Carmen-Smith hydroelectric project, will provide a live feed viewable by anyone at www.alertwildfire.org. This is the first ALERTWildfire camera in the area impacted by the 2020 Holiday Farm Fire.

ALERTWildfire is a project led by three universities, including the Oregon Hazards Lab at the University of Oregon, to provide cameras in wildlands that can help firefighters discover, monitor and contain wildfires. The first ALERTWildfire camera was installed in 2013 in Nevada, and the project now has more than 1,000 cameras across the American West.

"Early detection, especially in remote areas with steep terrain, is important for both emergency responders and the public, so they have time to make plans to stay out of harm's way," said Jeannine Parisi, EWEB's resiliency manager. "That's why we're working with the University of Oregon to provide the kind of long-distance visibility that any community member can access and quickly report if they see a wildfire."

Leveraging In-Kind Sources: Partnerships & Coordination

- OR-Alert
  - Issue timely and informative alerts, warnings and notifications
  - ShakeAlert/ALERTWildfire
- Link Oregon
  - High-speed Fiber Broadband for Oregon's Public and Non-profit Sectors
- ODOT — IGA for site access
- State Radio Project
- Wireless internet service providers (WISPs)
- Councils of Government
- Fire Districts
- Growing list of partners, e.g., Hood River community, Curry County, …

IMPROVING COORDINATION & RESPONSE: SB762 AND HB5202

Legislative actions are the main catalyst for improved coordination

The Oregon Department of Forestry and University of Oregon are committed to coordination and are dedicated partners with a shared goal of statewide coordination. As Oregon moves forward on wildfire mitigation and prevention through policy and investments, we stand ready to work for all of Oregon.

Cal Mukumoto
State Forester
Oregon Department of Forestry

Doug Toomey
Director, Oregon Hazards Lab
University of Oregon

02/25/2022

Joint Committee on Ways & Means
900 Court St. NE
Salem, Oregon 97301

RE: Statewide Wildfire Camera Coordination

Co-Chairs Steiner Hayward, Sanchez, and Members of the Committee,

The State of Oregon has experienced increasingly extreme fire seasons with devastating impacts, both rural and urban. In response, Oregon has shown a commitment to mitigation and response strategies with the passage of recent policies and funding over the past several years. As we continue to discuss policies and consider investment strategies, statewide coordination for fire detection cameras are essential components to the mitigation efforts.

The Oregon Department of Forestry (ODF) and University of Oregon are working together on a coordinated statewide approach to camera coverage to provide critical monitoring of Oregon's vast and diverse landscape, from our Southern Oregon forests to our wheat fields in Umatilla County. ODF operates a camera system that currently covers ODF jurisdictions as well as neighboring federal partner and WUI lands (roughly one-third of the state). That leaves a significant portion of federal, state, county, private, urban, WUI and other lands in need of coverage. Deployment of ALERTWildfire in conjunction with ODF's system to achieve a shared goal of reliable, transparent, and efficient monitoring and response is paramount for the sake of fire resiliency in Oregon.

The Oregon Department of Forestry and University of Oregon are committed to coordination and are dedicated partners with a shared goal of statewide coordination. As Oregon moves forward on wildfire mitigation and prevention through policy and investments, we stand ready to work for all of Oregon.

Cal Mukumoto
State Forester
Oregon Department of Forestry

Doug Toomey
Director, Oregon Hazards Lab
University of Oregon

ENVIROVISION SOLUTIONS FORESTWATCH SYSTEM
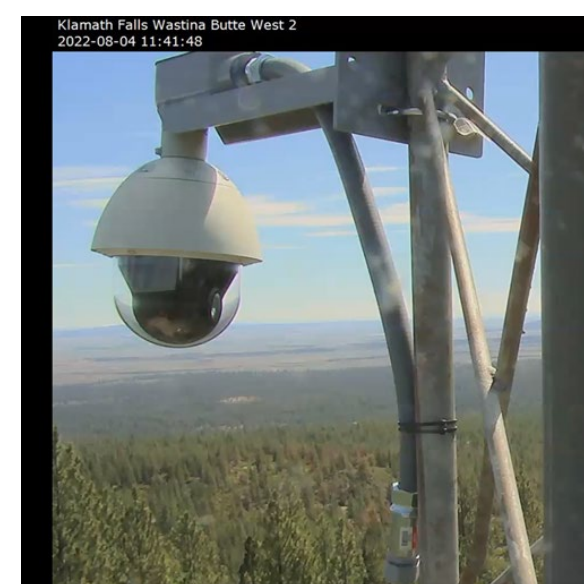
- Comparable to the ALERTWildfire platform
- Piloted by Douglas Forest Protective Association since 2006
- Adopted by Oregon Dept. of Forestry in SW Oregon in 2013
- Adopted in Eastern Oregon in 2019
- 16 years of effective use

✓ Currently 85 cameras on 63 mountaintop sites (5 of these cameras are SB762 funded)
✓ Features pan-tilt-zoom, geo-location, smoke alert system
✓ Camera system controls available to camera operators, initial attack dispatchers and fire managers
✓ Access to camera imagery via credentialed access to fire service and emergency responders
✓ Distributed via phone, laptop, tablet
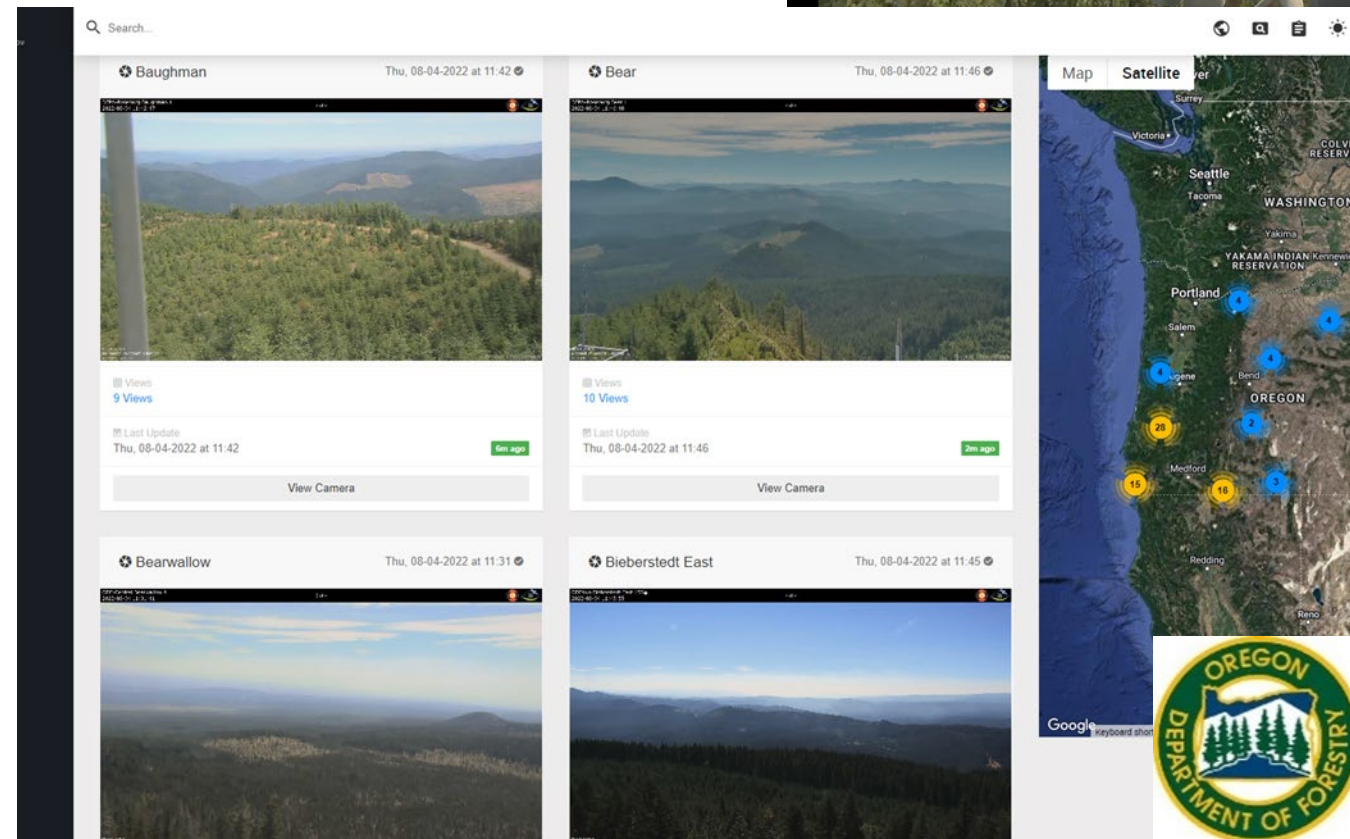
EVS Forest Watch

Tied directly to detection monitoring and initial attack response

- 5 Detection Centers
  - Douglas FPA (Roseburg)
  - ODF Southwest Oregon (Medford)
  - ODF Klamath-Lake (Lakeview)
  - ODF Central Oregon (Redmond)
  - ODF Northeast Oregon (La Grande)
- System alerts and geo-locates – tied to the FireWeb service
- All detection centers are co-located in initial attack dispatch centers
- A FLIR camera is being piloted in Douglas FPA for night detection
- Last year caught 25% of fires within the system viewshed as the initial detection
- An effective tool in the detection toolbox

A STATEWIDE SOLUTION

Oregon Wildfire Detection Camera Interoperability Committee

Established at the request of the Governor's Office

Oregon Hazard Lab and Oregon Dept of Forestry co-chair

Focused on collaboration in
- Policy
- Technology
- Funding
- Interagency relationships

Recent efforts include
- Cooperative planning, site locating and permitting
- Shared media and legislative communication
- Joint discovery and solution-based efforts towards data sharing, data integration, shared monitoring & response
- Collaborative reporting and mapping

STATEWIDE DETECTION CAMERAS:

Combined mapping:
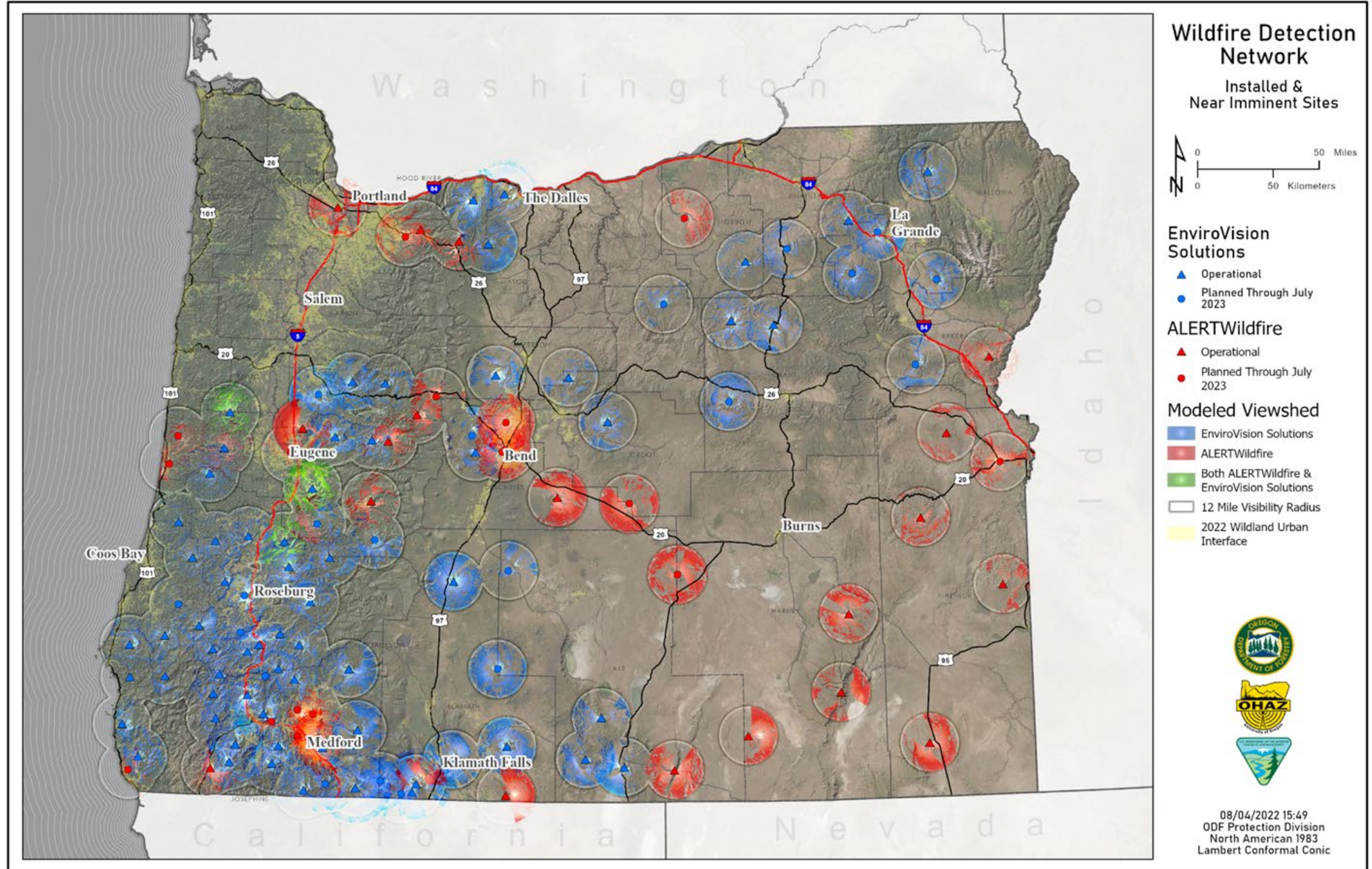EVS ForestWatch
and ALERTWildfire

➢ Currently
   operational sites

STATEWIDE DETECTION CAMERAS:

Combined mapping:
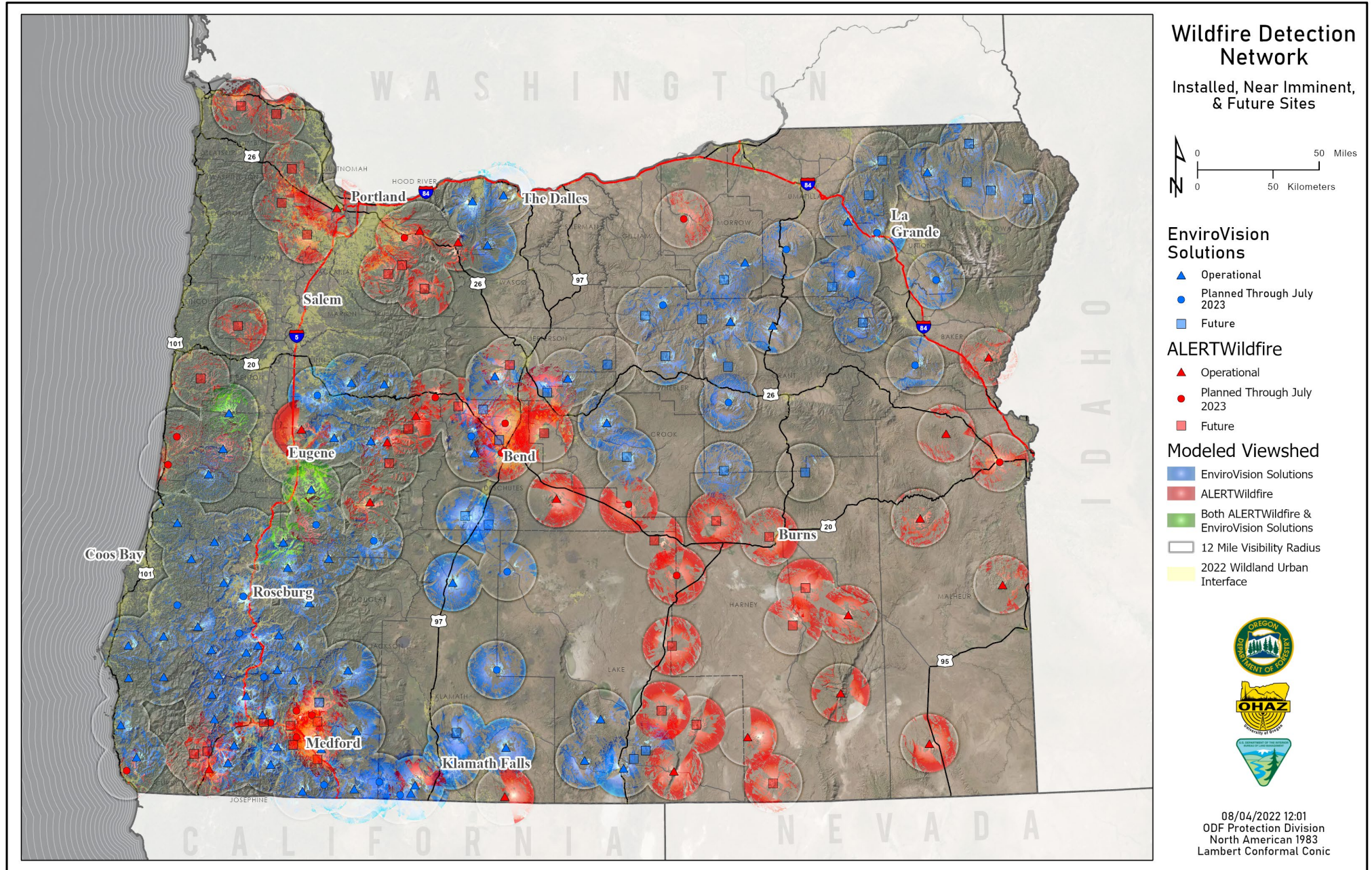EVS ForestWatch
and ALERTWildfire

➢ Currently
   operational sites
➢ Planned through
   June 2023

Statewide Detection Cameras:

Combined mapping:
EVS ForestWatch
and ALERTWildfire

➤ Currently
   operational sites
➤ planned through
   June 2023
➤ Future sites

Presentation for the
Joint Legislative Committee on Information Management and Technology
September 23, 2022