



RAPTOR

**(Real-Time Assessment and Planning
Tool for Oregon)**

SYSTEM OVERVIEW

**Oregon Military Department
Office Of Emergency Management**



Agenda

RAPTOR Overview

Capabilities

Recent Events

Steps Forward

Demonstration



The State of Oregon Initiated the RAPTOR Project in 2010 to "operationalize" the GIS-enabled Common Operating Picture (COP) capabilities deployed as part of the 2009-2010 U.S. Department of Homeland Security Virtual USA Pilot program.

RAPTOR enables authorized users real-time information in combination with 'traditional' GIS layers to create a comprehensive picture.

RAPTOR Mission Statement - Implementation of a sustainable, effective statewide situational awareness tool to support emergency planning, response and mitigation.



RAPTOR is a web mapping application (based upon ESRI's JavaScript API) that allows users to display spatially enabled information (georeferenced data) from various resources into a common operating picture.

Notable resources include:

- **National Interagency Fire Center (NIFC)**
- **Northwest Interagency Coordination Center (NWCC)**
- **National Oceanic and Atmospheric Admin (NOAA)**
- **Federal Emergency Management Admin (FEMA)**
- **U.S. Geological Survey (USGS)**
- **Various Transportation Agencies**
- **Oregon Department of Geology and Minerals Industries**

RAPTOR Mission Statement - Implementation of a sustainable, effective statewide situational awareness tool to support emergency planning, response and mitigation.



RAPTOR

(Real-Time Assessment and Planning Tool for Oregon)

RAPTOR consumes data in a variety of formats to display onto a common platform.



RAPTOR Mission Statement - Implementation of a sustainable, effective statewide situational awareness tool to support emergency planning, response and mitigation.



RAPTOR

(Real-Time Assessment and Planning Tool for Oregon)

System requirements

- **No software or hardware purchases necessary**
- **Accessible from any device with internet or cellular access**

Event configurable and customizable

Secure and public access

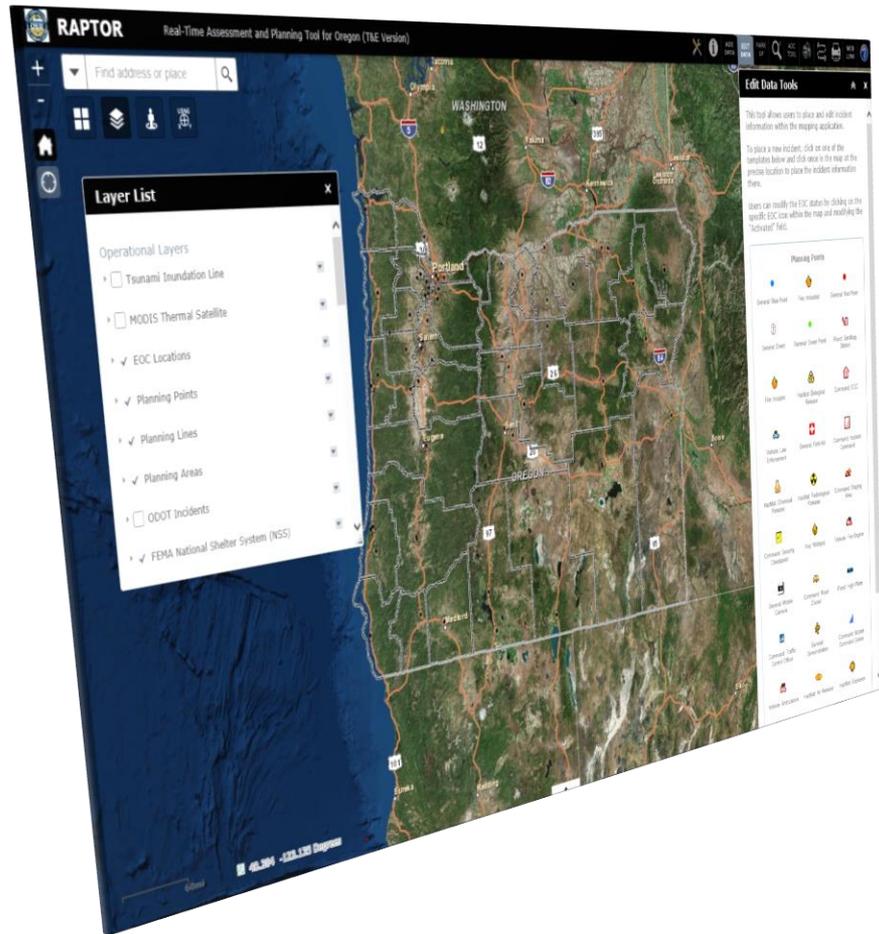


RAPTOR Mission Statement - Implementation of a sustainable, effective statewide situational awareness tool to support emergency planning, response and mitigation.



RAPTOR

(Real-Time Assessment and Planning Tool for Oregon)



- **Supports the Emergency Operations Plan**
 - **Shares information, before, during, and after an incident**
 - **Develop, implement, and operate information-sharing and communication processes with stakeholders**
 - **Enhances overall readiness**

RAPTOR Mission Statement - Implementation of a sustainable, effective statewide situational awareness tool to support emergency planning, response and mitigation.



RAPTOR

(Real-Time Assessment and Planning Tool for Oregon)

Access To Data

**Local
State
Tribal
Federal
Public/Private Partners**

Data Services

**Live feeds
Weather
Stream flows (Gage Stations)
Shelters**

Available Tools

**Attribute Table Dashboard
RAPTOR Event Switcher
Driving Directions
Add ArcGIS Online Data
Edit Data Tools
StreetView
Area of Concern Report
Search Utility
Draw and Measure**





Data Services Weather

RAPTOR Real-Time Assessment and Planning Tool for Oregon

PCII DATA TRIS DATA ADD DATA EDIT DATA MARK UP AOC TOOL WEB LINK

NWS Watches/Warnings

Current Warnings

- Flash Flood Warning
- Special Marine Warning
- Severe Thunderstorm Warning
- Tornado Warning

Watches/Warnings

- Air Stagnation Advisory
- Areal Flood Advisory
- Areal Flood Warning
- Areal Flood Watch
- Ashfall Advisory
- Blizzard Warning
- Blizzard Watch
- Blowing Dust Advisory
- Blowing Snow Advisory
- Brisk Wind Advisory
- Coastal Flood Advisory
- Coastal Flood Statement
- Coastal Flood Warning
- Coastal Flood Watch
- Dense Fog Advisory
- Dense Smoke Advisory
- Dust Storm Warning
- Excessive Heat Warning
- Excessive Heat Watch
- Extreme Cold Warning
- Extreme Cold Watch
- Extreme Wind Warning
- Fire Weather Warning
- Fire Weather Watch
- Flash Flood Statement
- Flash Flood Warning
- Flash Flood Watch

Find address or place

(1 of 2)

Small Craft Advisory

ISSUANCE 2016-07-28 21:24:00
EXPIRATION 2016-08-01 06:00:00
URL [More info](#)

[Zoom to](#)

60mi 44.763 -126.611 Degrees



Data Services River Gages

RAPTOR Real-Time Assessment and Planning Tool for Oregon - Flood Configuration (T&E Version)

(2 of 4)

Philomath

location	Philomath
waterbody	Marys River
state	OR
forecast	4.26
fcsttime	2015-11-15 18:00:00
fcsttissunc	2015-11-13 16:54:34
units	ft
action	16
flood	20
moderate	0
major	20.7
url	More info

[Zoom to](#)

National Weather Service
Advanced Hydrologic Prediction Service

Home News Organization

National Observations WFO Observations Hydrograph

Notice: New features, functions, and enhancements to AHPS pages as of 8/11/2015. [Click here for details](#)

Weather Forecast Office Portland, OR Northwest River Forecast Center

Special Weather Statement

Hydrograph River at a Glance Download Probability Information

Auto Refresh: OFF

MARYS RIVER NEAR PHILOMATH
Universal Time (UTC)

23Z	23Z	23Z	23Z	23Z	23Z	23Z	23Z	23Z	23Z
Nov 8	Nov 9	Nov 10	Nov 11	Nov 12	Nov 13	Nov 14	Nov 15	Nov 16	Nov 17
12									1506.6
11									1294.5
10									1095.4
9									894.2
8									712.3
7									545.8
6									396.1
5									264.3
4									153.0
3									65.4
2									9.5
1									

Stage (ft) on left y-axis, Flow (cfs) on right y-axis.

Latest observed value: 2.87 ft at 3:00 PM PST 13-Nov-2015. Flood Stage is 20 ft

3.01 ft (observed), 4.75 ft (forecast)

Site Time (PST)

Nov 8 Sun 3pm, Nov 9 Mon 3pm, Nov 10 Tue 3pm, Nov 11 Wed 3pm, Nov 12 Thu 3pm, Nov 13 Fri 3pm, Nov 14 Sat 3pm, Nov 15 Sun 3pm, Nov 16 Mon 3pm, Nov 17 Tue 3pm, Nov 18 Wed 3pm

PHI03(plotting HGIRG) "Gage 0" Datum: 224.02' Observations courtesy of US Geological Survey

Printable Image About this graph Tabular Data (UTC)

NOTE: Forecasts for the Marys River near Philomath are issued routinely year-round.

Default Hydrograph





Data Services Shelter Information

FEMA National Shelter System (NSS)

Open Shelters

+ Open

Active Hurricanes

Forecast Position

-  Tropical Low
-  Tropical Depression
-  Tropical Storm
-  Hurricane
-  Major Hurricane

Observed Position

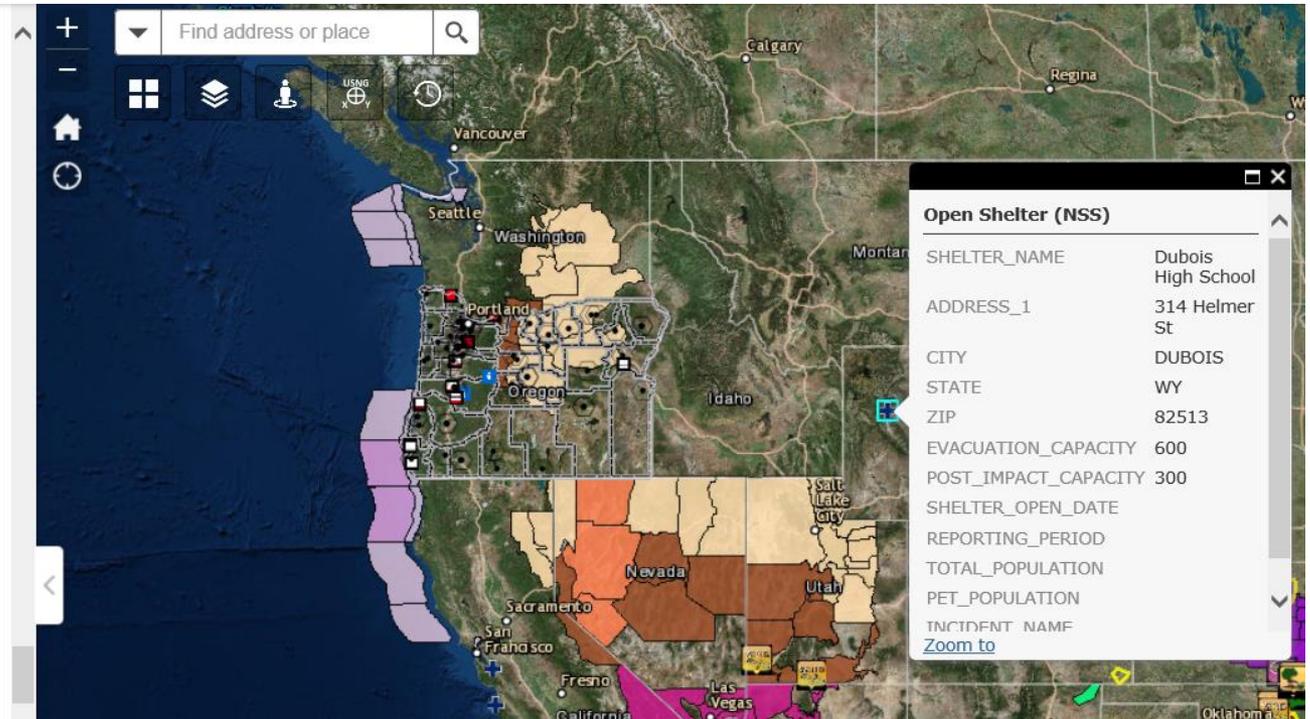


Forecast Track



Observed Track

-  Low
-  Remnant Low
-  Disturbance
-  Subtropical Storm
-  Tropical Wave
-  Tropical Depression





Data Services Traffic Cameras

RAPTOR Real-Time Assessment and Planning Tool for Oregon (T&E Version)

Find address or place

Traffic Cameras

OPTIONS Results
Number of features found: 315

Traffic Cameras

This tool allows the user to view traffic camera information within the mapping application.

Click one of the following listings to view the traffic cameras.

- Oregon Traffic Cameras
- City of Salem Traffic Cameras
- California Traffic Cameras
- Washington Traffic Cameras
- Idaho Traffic Cameras

US101 at Lincoln City
Updated: Nov 13 2015 3:50 PM

ODOT
Elevation 120 TrinCheck.com Miles

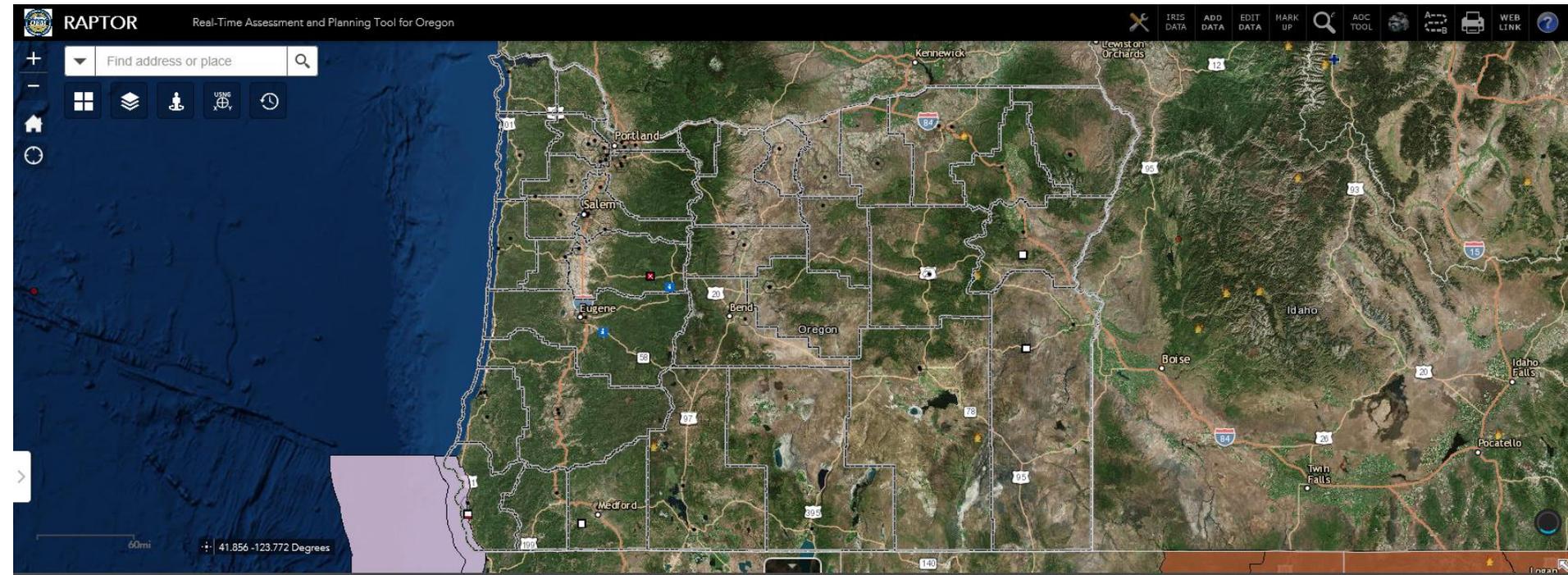
217green
device_name: 217green
cctv_url: <http://www.TripCheck.com/roadca>

Clear Results

6mi 44.460 -124.176 Degrees



Attribute Table Dashboard



Name	Address	City	State	Zip	EOC_Phone	EOC_Fax	EOC_NAWAS_	Activated
Baker County Emergency Services	1995 3rd St	Baker City	OR	97814	541-523-8200	541-523-8201	None	No
Benton County Emergency Management	180 NW 5th	Corvallis	OR	97330	541-766-6046	541-766-6052	via comm center	No
Clackamas Emergency Operations Center	2200 Kaen Rd	Oregon City	OR	97045	503-650-3342	503-650-3387	next door in CCOM	No
Clatsop Emergency Operations Center	33168 Patriot Way	Warrenton	OR	97146	503-338-3788	503-861-5649	Yes (extension)	No
Columbia Emergency	230 Strand St	St Helens	OR	97051	503-366-3931	503-397-4904	None	No

68 features 0 selected



RAPTOR Event Switcher

The image shows a screenshot of the RAPTOR (Real-Time Assessment and Planning Tool for Oregon) interface. The interface is divided into several panels. On the left, there are three vertical panels showing different map configurations: a purple and yellow map, a purple and blue map, and a purple and white map. The main central panel is titled 'Event Switcher' and contains the following text:

RAPTOR Event Switcher

The links listed below will switch the configuration of RAPTOR to highlight data relevant to a particular type of incident. Simply click on the appropriate link below to open RAPTOR in that configuration.

- [Default Configuration](#)
- [Earthquake/Tsunami Configuration](#)
- [Fire Configuration](#)
- [Flood Configuration](#)
- [Nuclear Configuration](#)

On the right side of the interface, there are two larger map panels. The top one shows a map with a yellow and green overlay, and the bottom one shows a map with a blue and white overlay. The interface also includes a search bar at the top left and a toolbar with various icons.



Driving Directions

RAPTOR Real-Time Assessment and Planning Tool for Oregon

Find address or place

Directions with Barriers

This tool allows users to find directions from one location to many locations within the mapping application. Features of this tool also include the placement of barriers for routing around known/perceived obstructions.

Directions Evacuation Areas

1 3225 state st, salem

2 dallas, oregon

ADD DESTINATION
SHOW MORE OPTIONS

ADD BARRIER CLEAR BARRIERS

GET DIRECTIONS CLEAR

17.55 miles - 27 minutes

ZOOM TO FULL ROUTE

1. Start at 3225 state st, salem
2. Go west on State St toward Kettle Ct SE/Kettle Way SE
1.51 mi - 3 minutes
3. Turn right on 14th St NE
0.24 mi
4. Turn left on Center St NE
0.04 mi
5. Take ramp on the right to 13th St NE
0.04 mi
6. Turn right on 13th St NE
0.07 mi
7. Turn left on Marion St NE
1.15 mi - 2 minutes
8. Go on SR 22

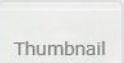


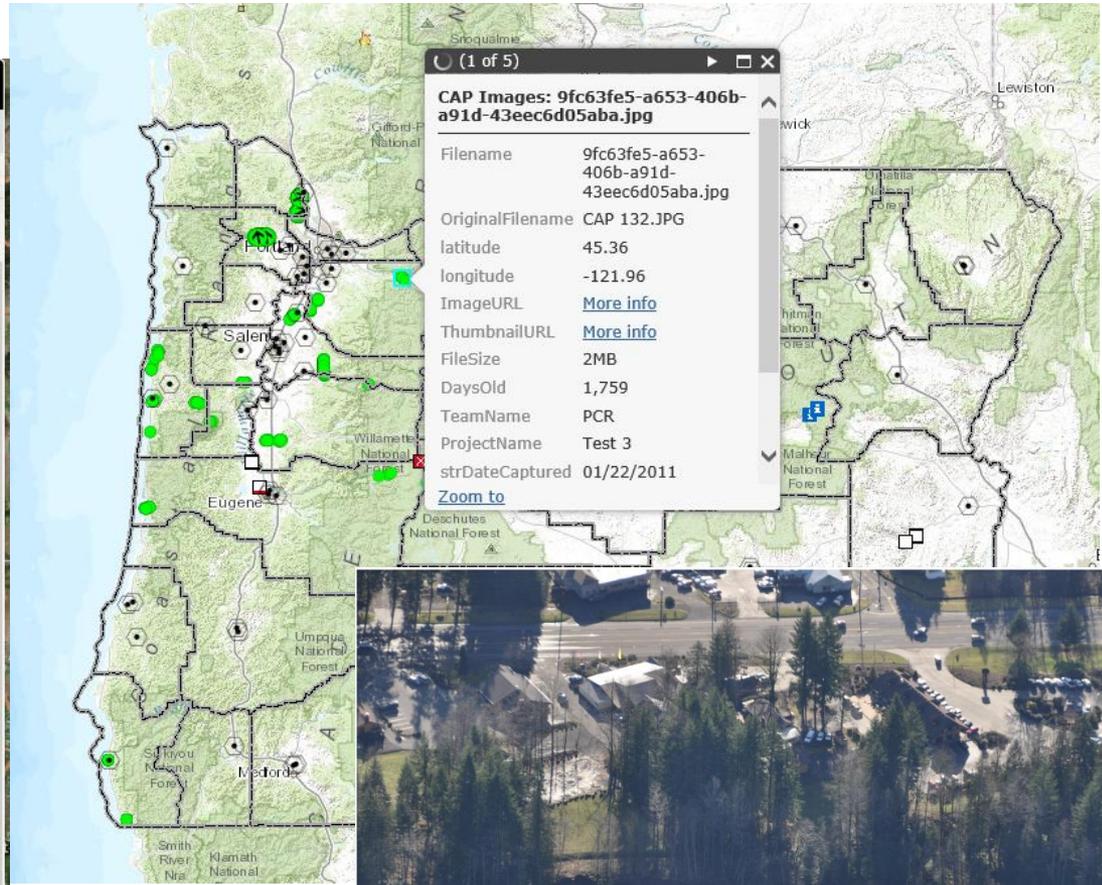
Add ArcGIS Online Data

Add Data Tools

Add ArcGIS Online

Public My Content

- Cascadia Rising**
Thumbnail: Not Available
by daniel.stoelb
6/9/2016 1:41:43 PM
[More Details](#)
- Civil Air Patrol Images**
Thumbnail: 
by daniel.stoelb
9/29/2015 10:04:17 AM
[More Details](#)
- Fire Information Map**
Thumbnail: 
by daniel.stoelb
9/29/2015 9:16:31 AM
[More Details](#)
- HIFLD Open Data**
Thumbnail: 
by daniel.stoelb
2/26/2016 3:51:30 PM
[More Details](#)
- Oregon Landslide Susceptibi...**
Thumbnail: 
by daniel.stoelb
3/7/2016 8:05:32 AM
[More Details](#)
- Zip Codes Oregon**
Thumbnail: 
by daniel.stoelb



(1 of 5)

CAP Images: 9fc63fe5-a653-406b-a91d-43eec6d05aba.jpg

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OriginalFilename	CAP 132.JPG
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longitude	-121.96
ImageURL	More info
ThumbnailURL	More info
FileSize	2MB
DaysOld	1,759
TeamName	PCR
ProjectName	Test 3
strDateCaptured	01/22/2011

[Zoom to](#)





StreetView

The image shows a screenshot of a web browser displaying Google Maps. A 'StreetViewPopup' window is open, showing a street-level view of a park area. The popup window has a title bar that says 'StreetViewPopup' and a close button. Below the title bar, there is a red instruction: 'Click on the map to see the streetview for that location'. The popup window contains several elements: a 'Full Page' link, checkboxes for 'Map', 'Street View', and 'Bird's Eye', and an 'Info' checkbox. There is also a 'Reset' button and a 'Find Address' input field. The main map area shows a satellite view of a park with a yellow pegman icon on a path. The popup window shows a street-level view of the same location, with a yellow pegman icon on a path. The background map shows a satellite view of a park area with a yellow pegman icon on a path. The popup window shows a street-level view of the same location, with a yellow pegman icon on a path. The background map shows a satellite view of a park area with a yellow pegman icon on a path.



Area Of Concern Report

Area of Concern Report

Click on the map to search for features potentially impacted within the distance (in miles) specified below.

Enter Number Here

Area of Concern Report

Click on the map to search for features potentially impacted within the distance (in miles) specified below.

1

Results:

- Number of Area Population selected: 10
- Number of Child Care Facilities: 3
- Number of Correctional Facilities: 1
- Number of Elderly/Disabled Care Facilities: 3
- Number of Electrical Facilities: 0
- Number of Hazardous Substance Facilities: 463
- Number of Health Department Service Sites: 1
- Number of Hospitals: 1
- Number of Medical Providers: 3
- Number of Military Facilities: 3
- Number of Schools: 3

Export Data Clear Results

OBJECTID = 71
(1 of 4)

OBJECTID = 71
ORG_NAME = OMD
FAC_Type = Readiness Center
FAC_NAME = Anderson Readiness Center
COUNTY =
PHONE = 503-584-2800
STREET_ADD = 3225 State Street
CITY_1 = Salem
STATE_1 = OR
ZIP = 97309
ZIP4 =
Data_Sourc =
http://www.oregon.gov/OMD/Unit_Address
Source_Dat = 1280707200000

Zoom to



Area Of Concern Report

	A	B	C	D	E	F	G	H	I
1	Object ID	ID	NAME	State Abbr	Land Area	Total Popu	Population	Sq Ft Per P	Ft Per Person
2	163134	41047000	41047000	OR	0.2726	1621	5946.4	4688.282	68.47103
3	163136	41047000	41047000	OR	0.3958	2918	7372.4	3781.455	61.49354
4	163137	41047000	41047000	OR	0.6367	2867	4502.9	6191.21	78.68424
5	163138	41047000	41047000	OR	0.1316	1145	8700.6	3204.193	56.60559
6	163139	41047000	41047000	OR	0.1181	1040	8806.1	3165.805	56.26549
7	163143	41047000	41047000	OR	0.0872	799	9162.8	3042.563	55.15944
8	163145	41047001	41047001	OR	0.5613	1040	1852.8	15046.63	122.6647
9	163147	41047001	41047001	OR	4.0406	1547	382.9	72808.56	269.8306
10	163189	41047001	41047001	OR	0.4542	1874	4125.9	6756.926	82.20052
11	163190	41047001	41047001	OR	0.2997	2212	7380.7	3777.203	61.45895
12									
13									
14									
15									
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									
26									
27									
28									
29									
30									
31									

Area of Concern Report ⤴ ✕

Click on the map to search for features potentially impacted within the distance (in miles) specified below.

Results:

- Number of Area Population selected: 10
- Number of Child Care Facilities: 3
- Number of Correctional Facilities: 1
- Number of Elderly/Disabled Care Facilities: 3
- Number of Electrical Facilities: 0
- Number of Hazardous Substance Facilities: 463
- Number of Health Department Service Sites: 1
- Number of Hospitals: 1
- Number of Medical Providers: 3
- Number of Military Facilities: 3
- Number of Schools: 3

Export Data

Clear Results



Search Utility

Enhanced Search

This tool allows the user to search for particular items of interest within a given area or by a specific name.

By Shape

By Value

Results

Search layer

Dams Search

Specify parameters for this search

Dam Name contains

(Detroit)

Search

Limit results

- Dams Search
- Fire Stations
- Hazardous Substances (OSFM)
- Hospitals
- Law Enforcement

Enhanced Search

This tool allows the user to search for particular items of interest within a given area or by a specific name.

By Shape By Value Results

[Zoom All](#) [Clear](#)

Features selected: 1

```

AREA: 0
PERIMETER: 0
ORDAMS_: 4
ORDAMS_ID: 4
NATNL_ID: OR00004
DAM_NAME: Detroit Res
STATE_ID: R-1625
LONG: -122.25
LAT: 44.7167
T_R_S: T10S/R5E/Sec7
COUNTY: Linn
RIVER: North Santiam River
OWNER_NAME: DAEN/NPP
OWNER_TYPE: F
DAM_TYPE: PG
PURPOSES: HCRINO
    
```

AREA	PERIMETER	ORDAMS_	ORDAMS_ID	NATNL_ID	DAM_NAME	STATE_ID	LONG	LAT	T_R_S	COUNTY	RIVER	OWNER_NAME	OWNER_TYPE	DAM_TYPE	PURPOSES	YEAR
0	0	4	4	OR00004	Detroit Res	R-1625	-122.25	44.7167	T10S/R5E/Sec7	Linn	North Santiam River	DAEN/NPP	F	PG	HCRINO	1,953

1 features 0 selected



Edit Data Tools

RAPTOR Real-Time Assessment and Planning Tool for Oregon (T&E Version)

Find address or place

Edit Data

Select a template to create features. To change the EOC activation status, click on the appropriate EOC location.

All

Search Templates

Incident Resources

- Air Ops, Helibase
- Air Ops, Helispot
- Air Ops, MediVac
- Airstrip or Airport
- Area Command Post
- Barrier Traffic Check Post...
- Barrier, Emer Access Only
- Barrier, No Access
- Barrier, Security Check P...
- Base
- Bomb, Containment
- Bomb, Detonate

60mi 45.317 -124.895 Degrees

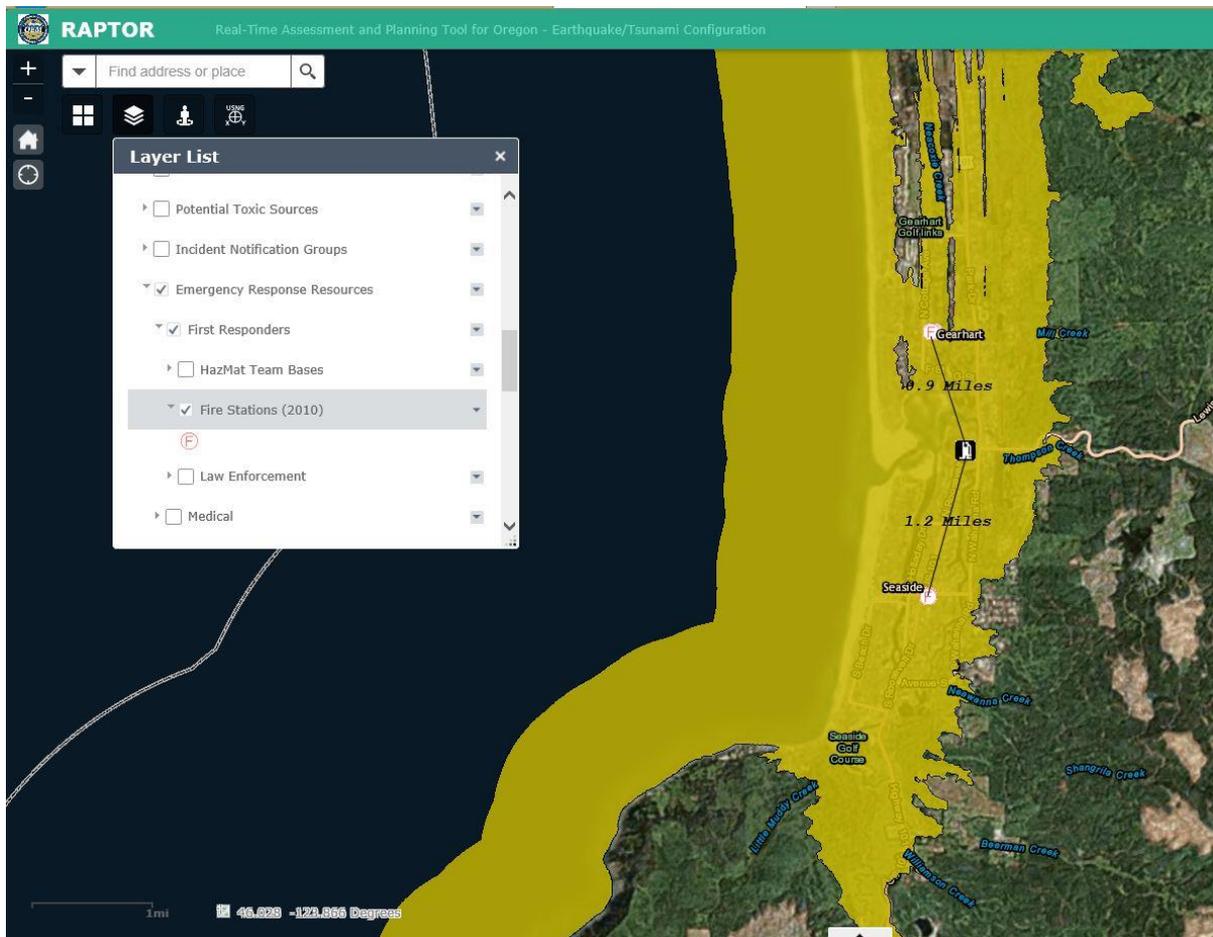


Edit Data Tools Symbology

- Based upon the NAPSG Symbology Standard
- Nationwide standard
- Selection set based upon the following symbology categories:
 - Incident Resources
 - Infrastructure
 - Manmade Hazards (listed as Human Caused Hazards in symbology standard)
 - Natural Hazards
 - Public Alert
- All items placed in the map are labeled based upon their type



Draw and Measure



Markup Tools

Measure

This tool allows the user to conduct measurements. These can be conducted using the measure tools below to indicate area and/or length.

Select measure style

Preview

Text

Font Color

Font Size

Draw

Hide drawings

This tool allows the user to mark up the map with drawings and/or text. Any items drawn using these tools will only show on the local system. Users also have the ability to view and modify the drawings, hide them from view, and export/import drawings to/from a file for use on another system.

+ ≡ ↕

Add a drawing

Select drawing mode



Recent Events

- **2014 SR 530 Landslide**
 - **Snohomish County GIS data**
 - **Structure Locations**
 - **Landslide Area**
- **2015 Drought**
- **2015 Tsunami Debris**
- **2015 Earthquakes**
- **2015 Extreme Heat**
- **2015 Wildfires**
 - **Air Quality**
 - **Evacuation Areas**
 - **Critical Infrastructure & Key Resources**
- **2015 Severe Winter Storms**



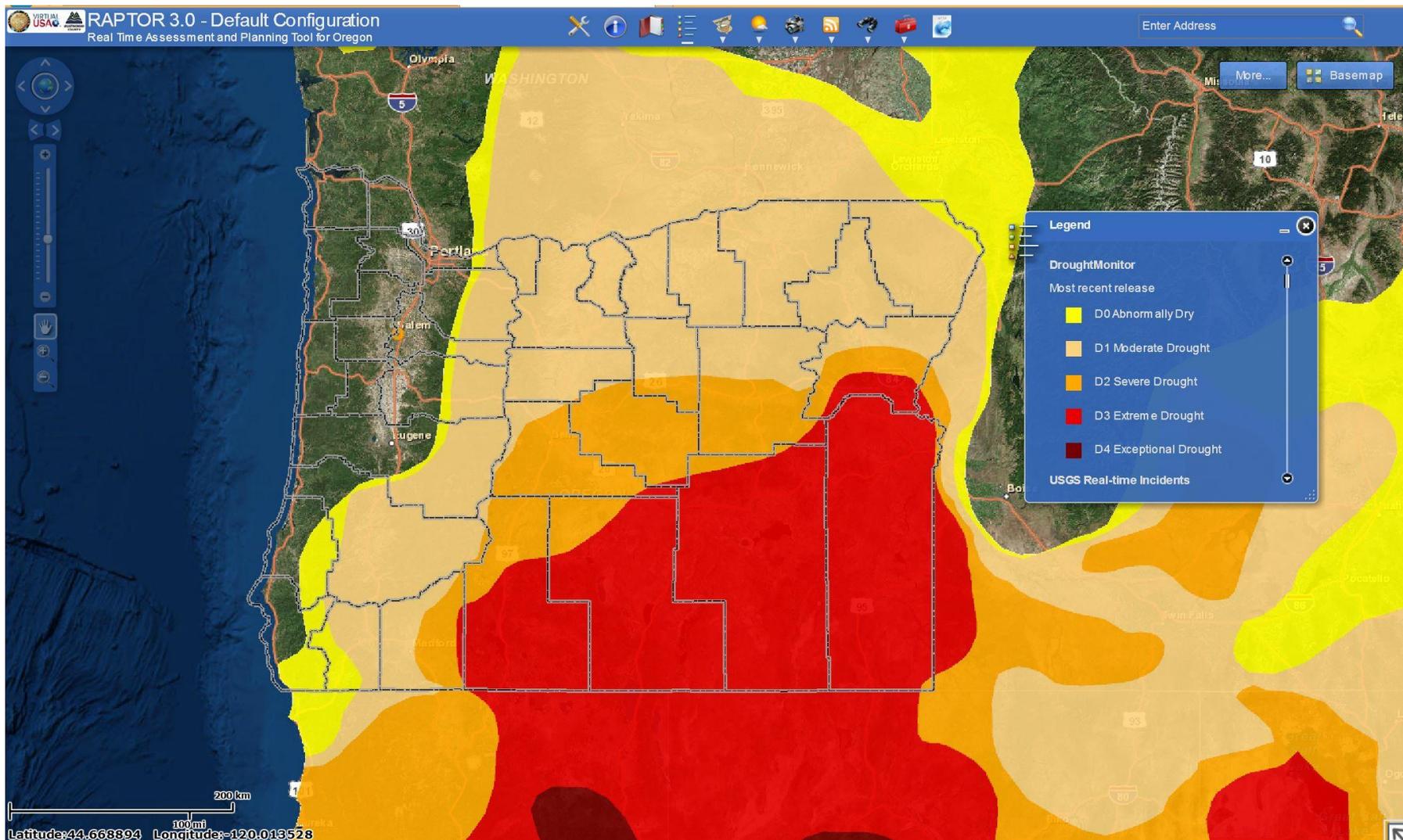
2014 SR 530 Landslide

Structure Locations Landslide Area



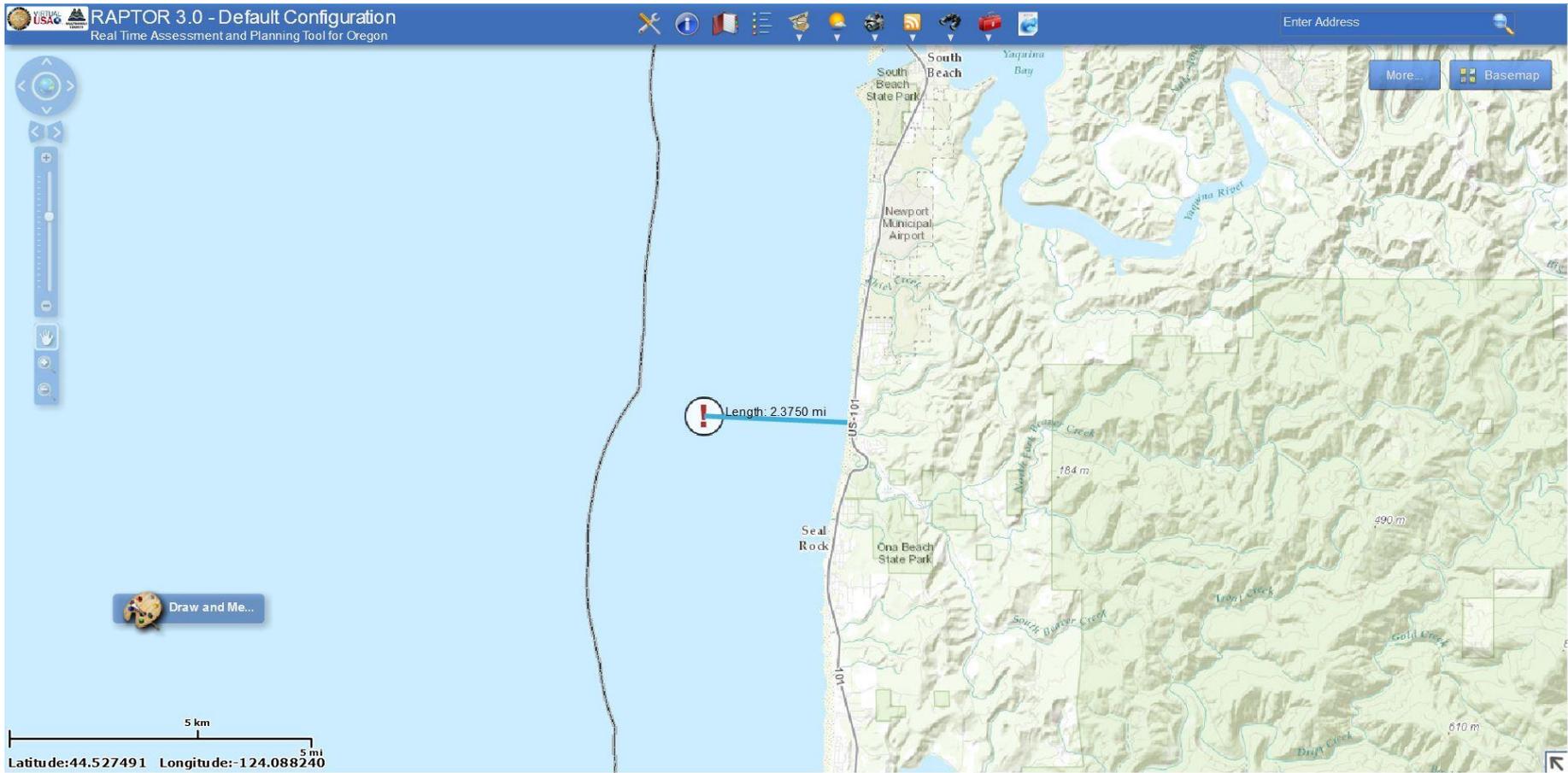


2015 Drought Monitor



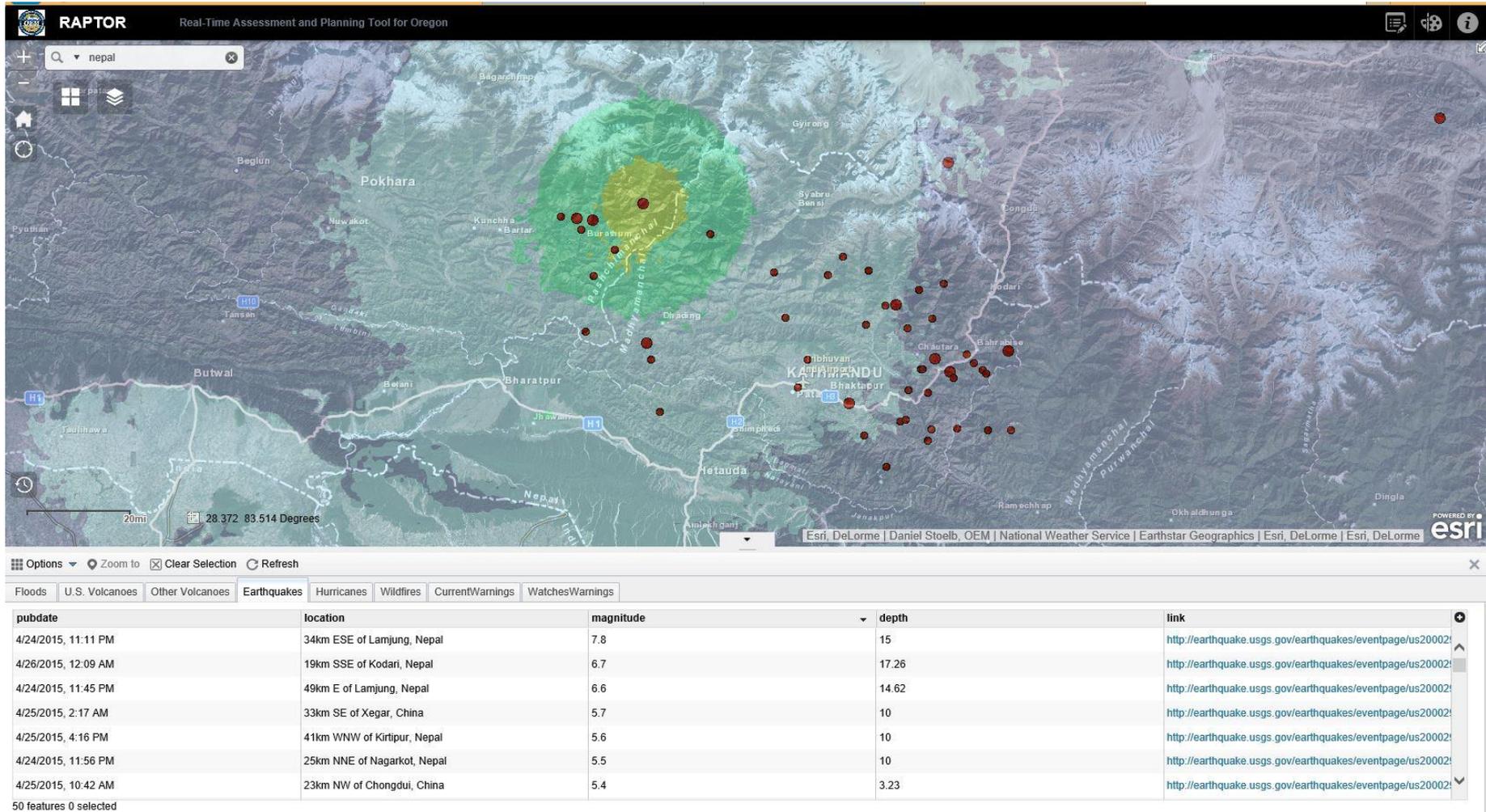


2015 Tsunami Debris



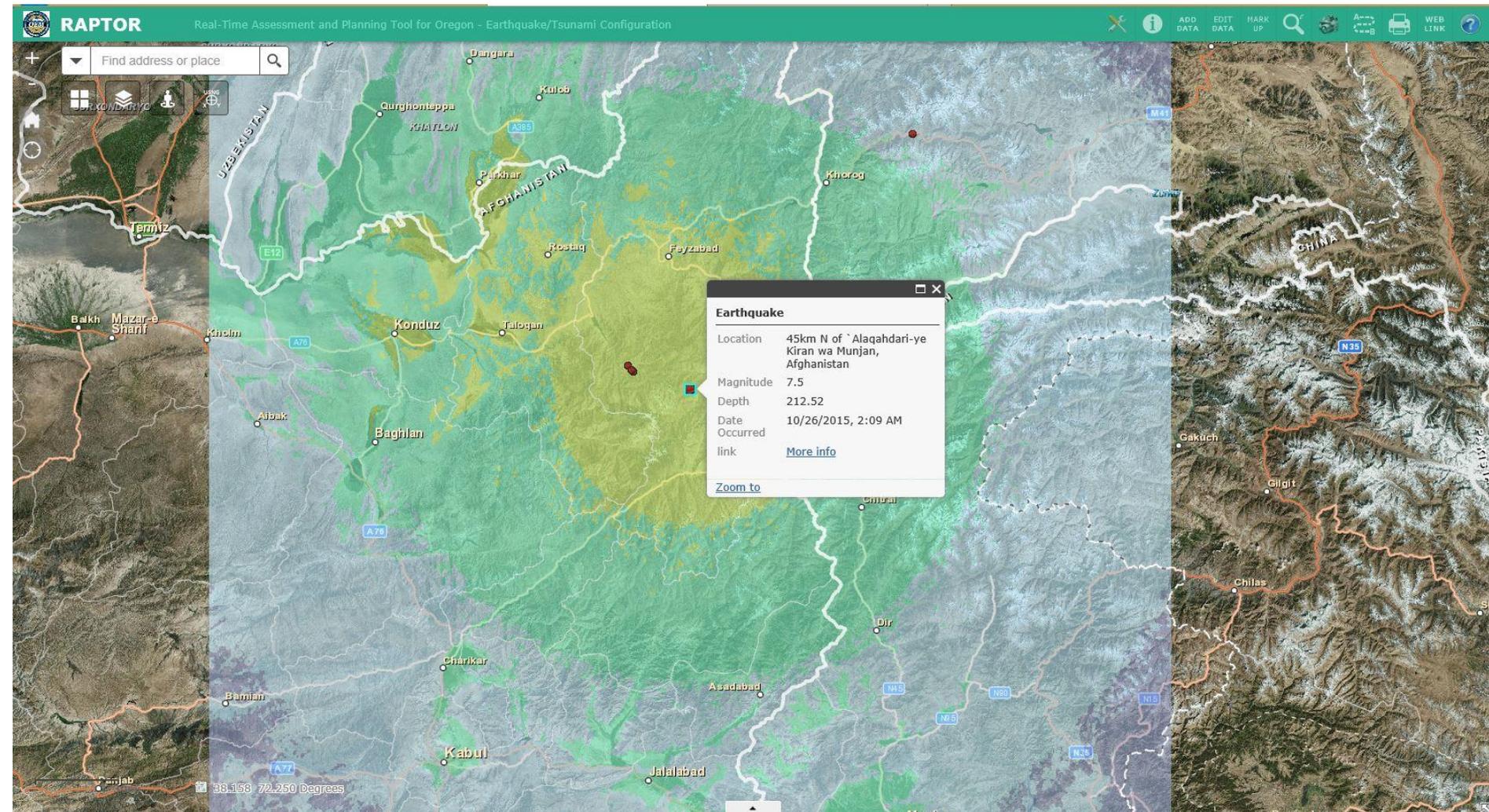


2015 Nepal Earthquake



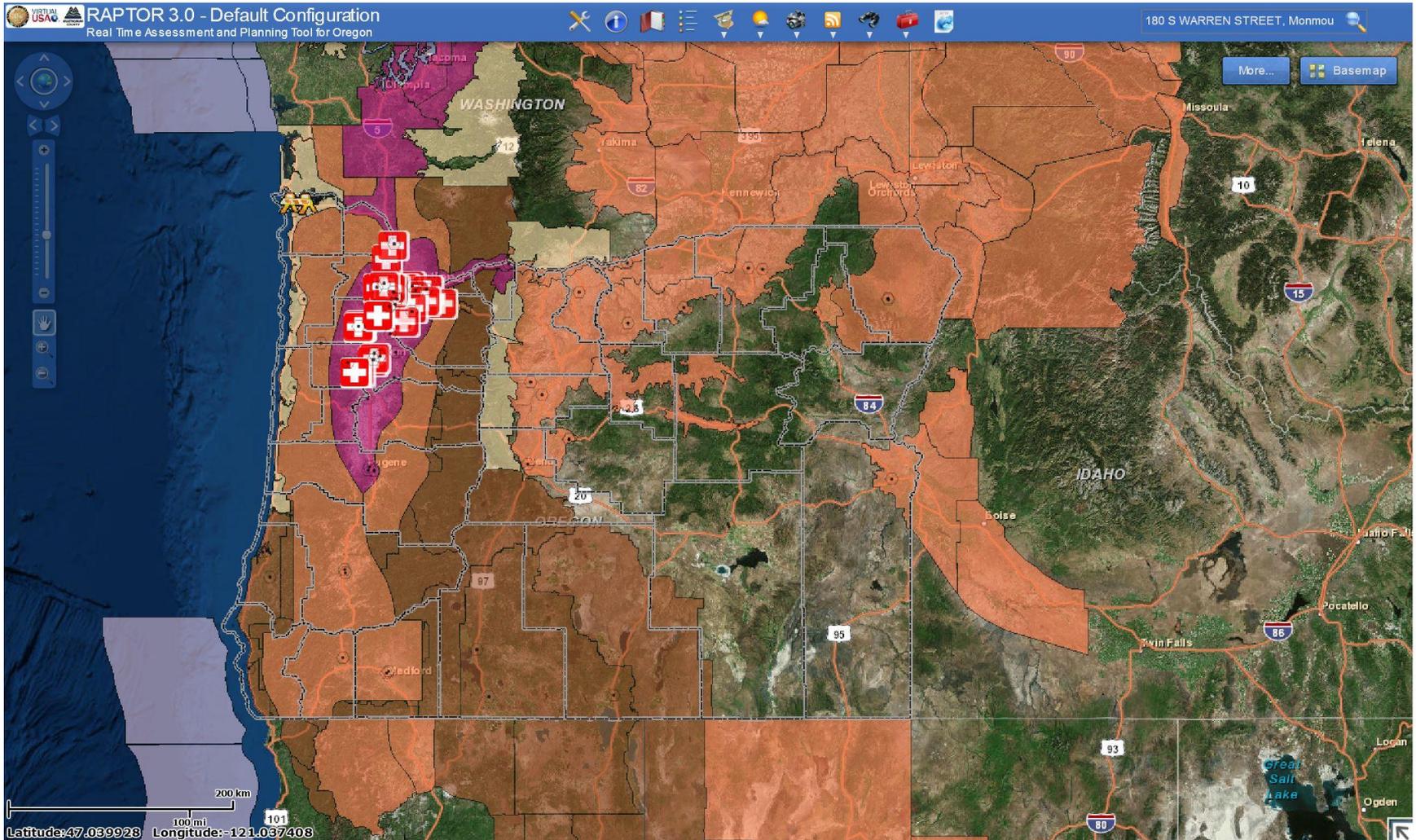


2015 Afghanistan Earthquake





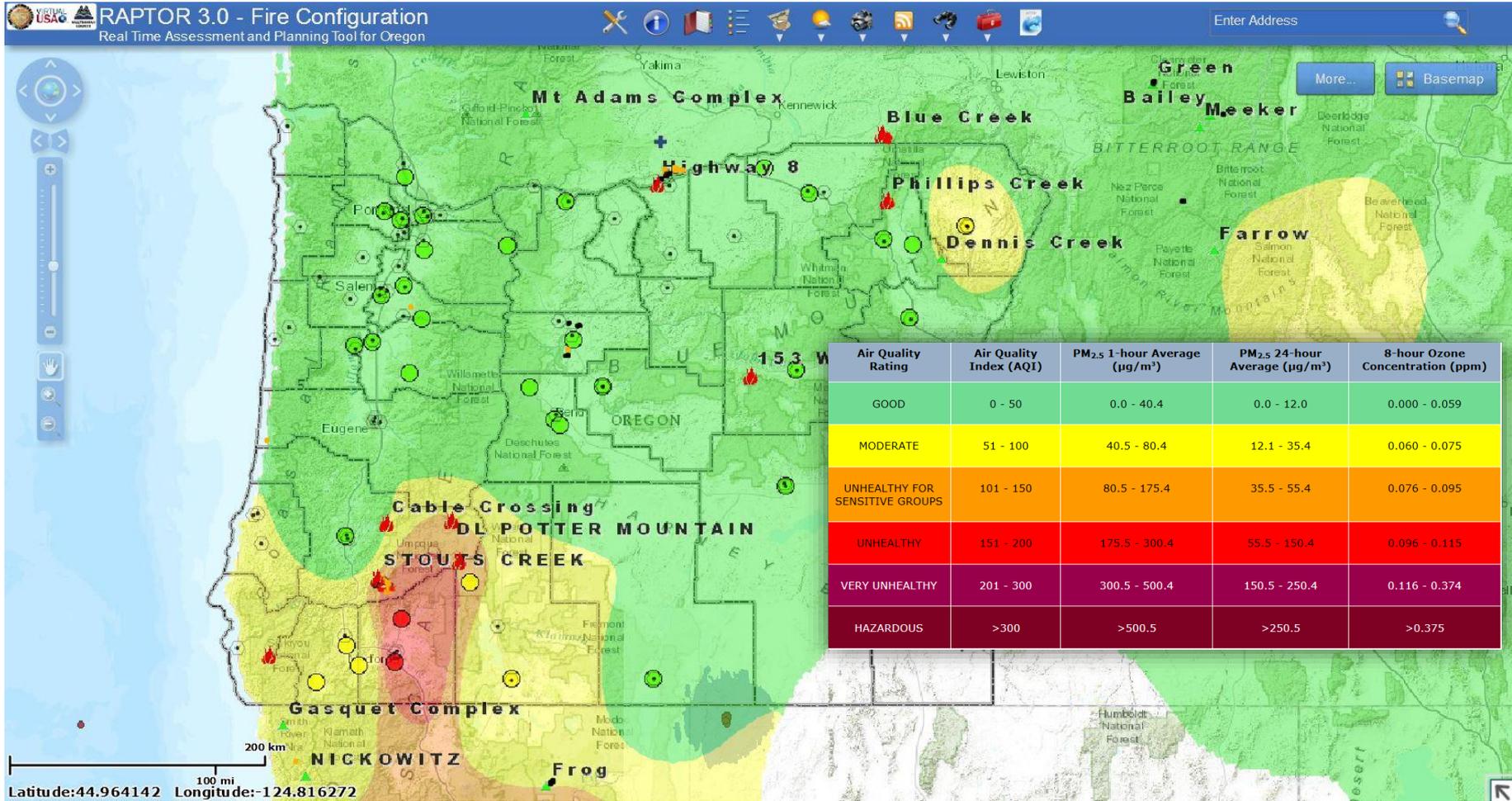
2015 Extreme Heat





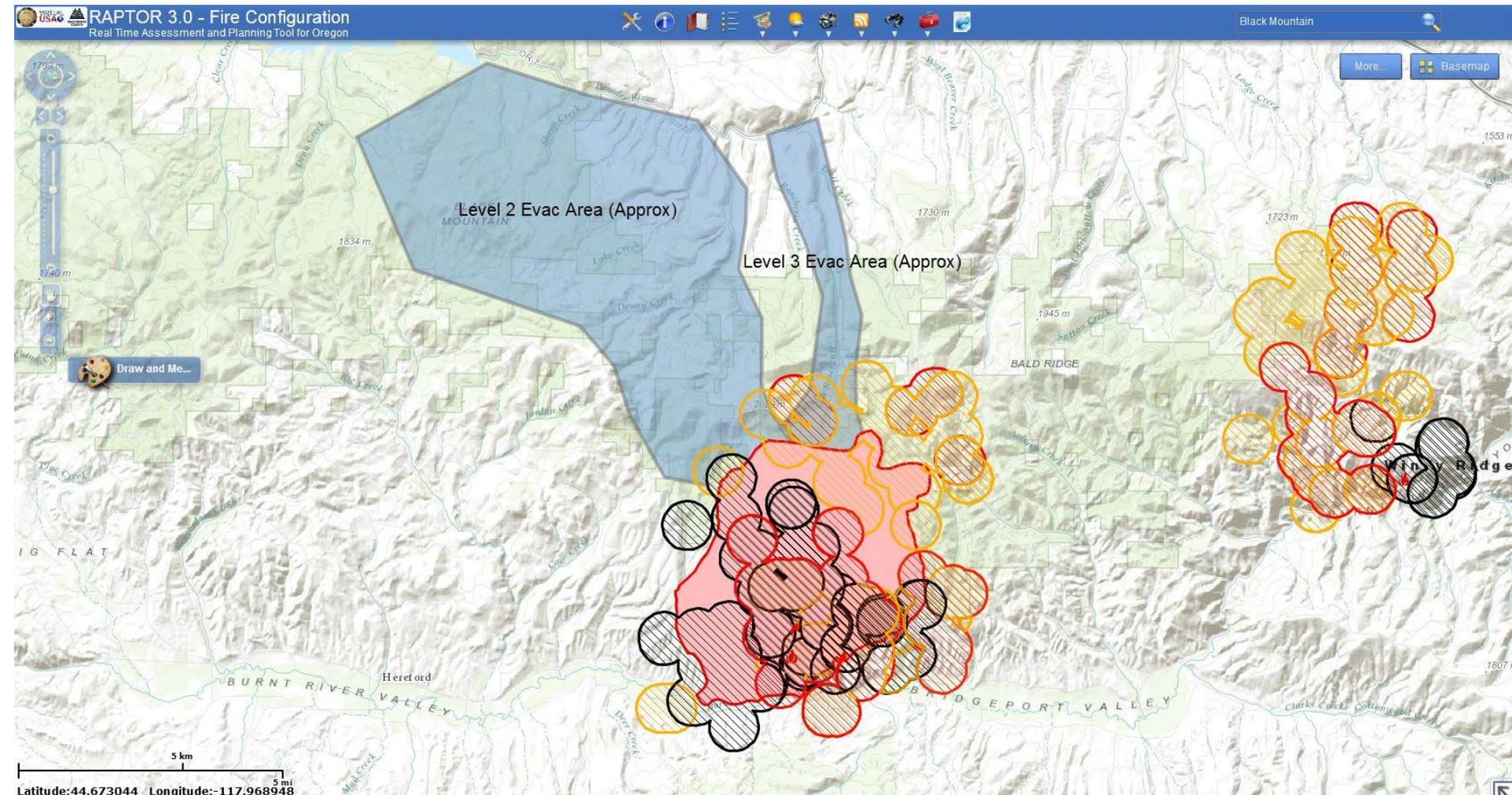
2015 Wildfires

Air Quality





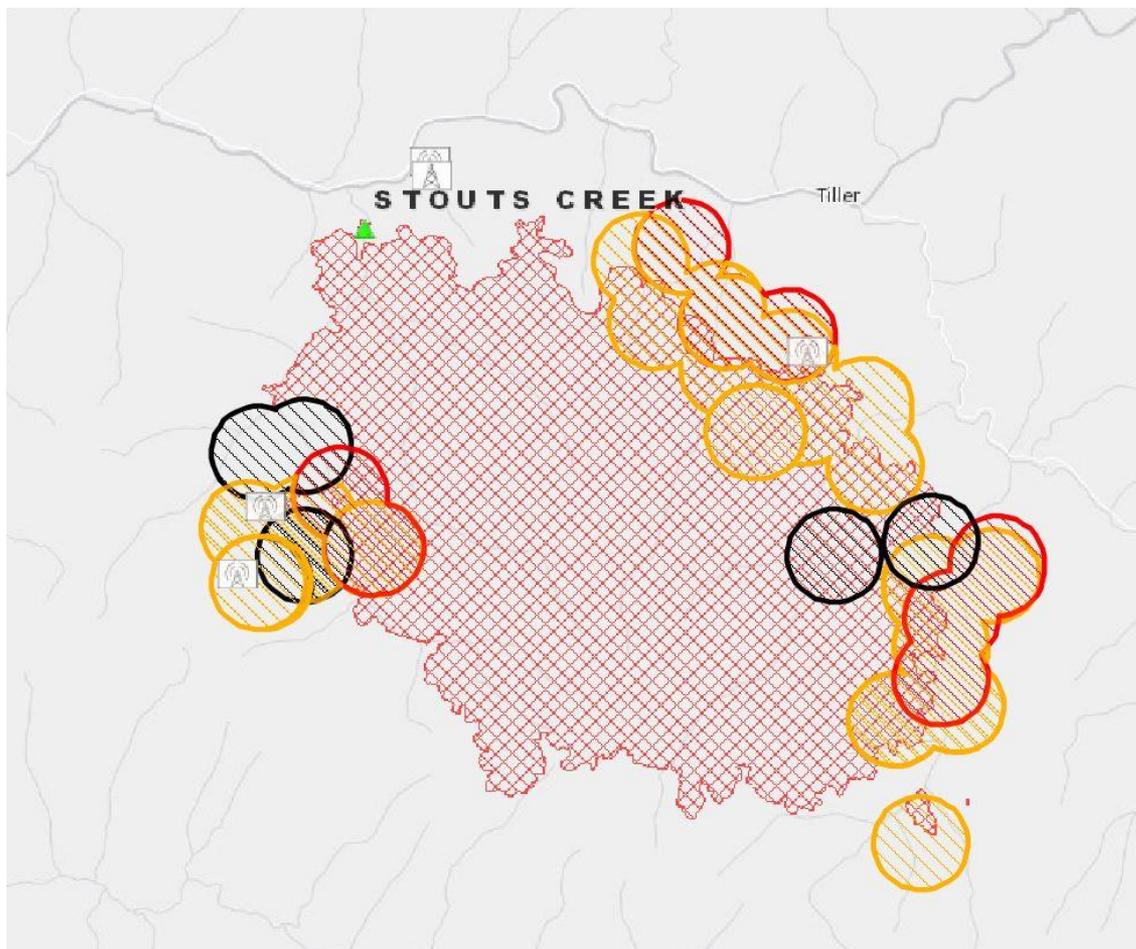
2015 Wildfires Evacuation Areas





2015 Wildfires

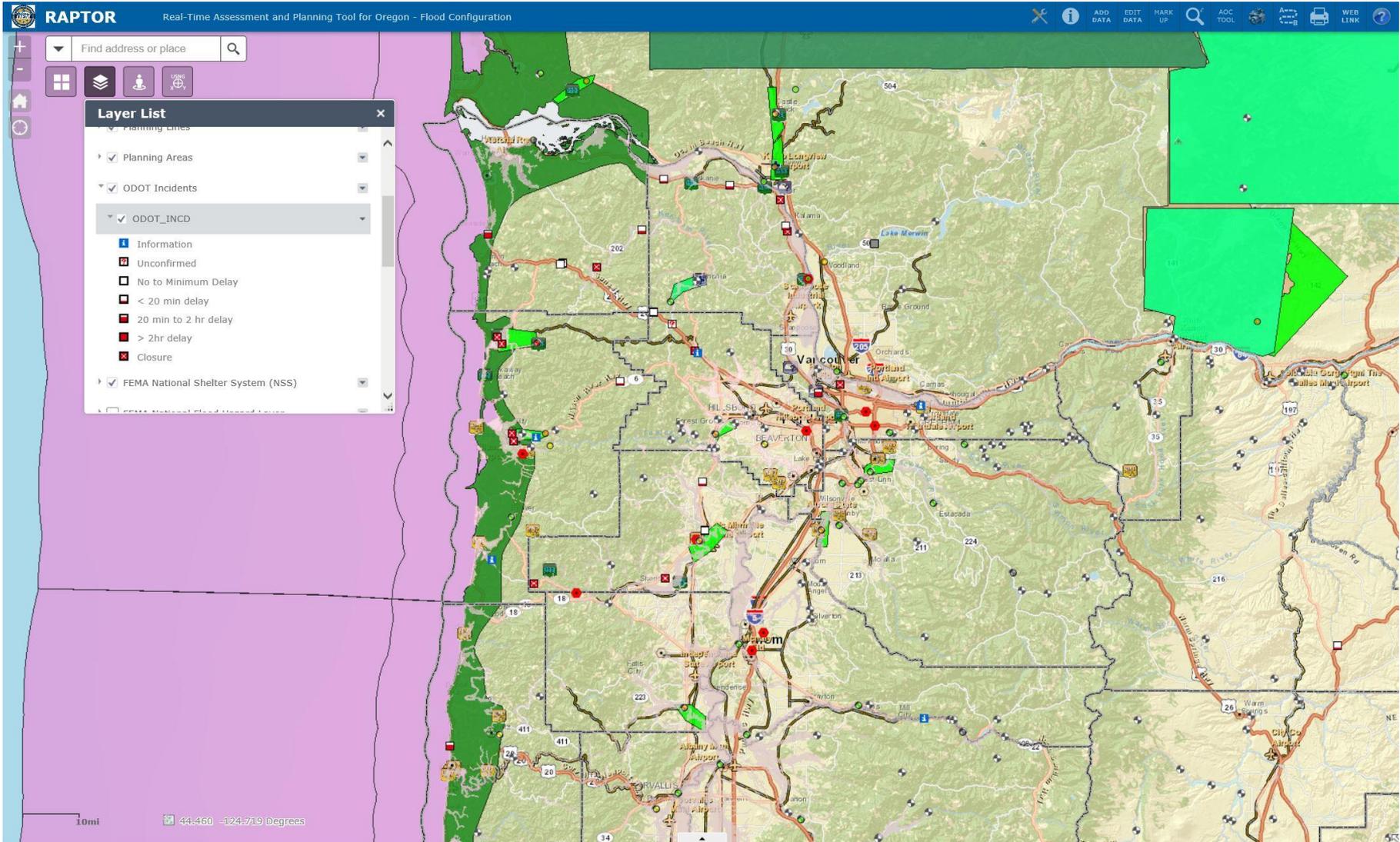
Critical Infrastructure/Key Resources





2015 Severe Winter Storms

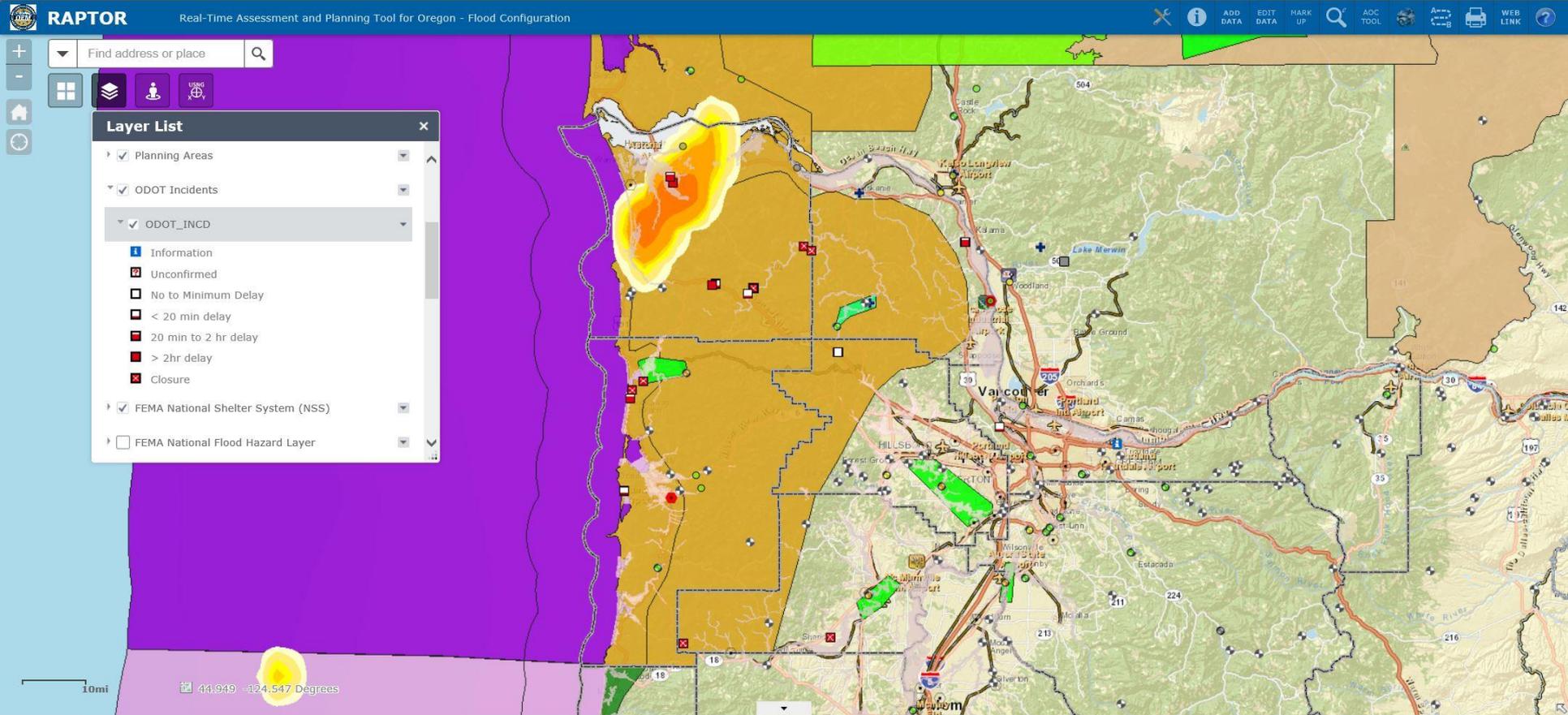
12/09/15





2015 Severe Winter Storms

12/10/15



Options Zoom to Clear Selection Refresh

EOC Locations Open Shelters ODOT_INCD Planning Points Planning Lines Planning Areas Local Storm Reports Floods Hurricanes CurrentWarnings WatchesWarnings

OBJECTID	SHELTER_ID	SHELTER_NAM	ADDRESS_1	CITY	COUNTY_PARI	FIPS_CODE	STATE	ZIP	MAIL_ADDR_1	MAILING_ADD	MAILING_ADD	MAILING_ADD	MAILING_CIT	MAILING_COU	MAILING_STA	MAILING_ZIP	FACILITY_USA	EVACUA
178356	356,659	Vernonia High School	1000 Missouri Ave	VERNONIA	COLUMBIA		OR	97064	YES								BOTH	1
49759	77,372	Clatskanie High School	471 SW BEL AIR DR	CLATSKANIE	COLUMBIA		OR	97016	NO								BOTH	200



2015 Severe Winter Storms

12/11/15

RAPTOR Real-Time Assessment and Planning Tool for Oregon - Flood Configuration

Find address or place

Layer List

Operational Layers

- kml_8377_2
- Forecast Stream Gages (NWS)
 - action
 - low_threshold
 - major
 - minor
 - moderate
 - no_flooding
 - not_defined
 - obs_not_current

60mi 44.028 -121.289 Degrees

Options Filter by Map Extent Zoom to Clear Selection Refresh

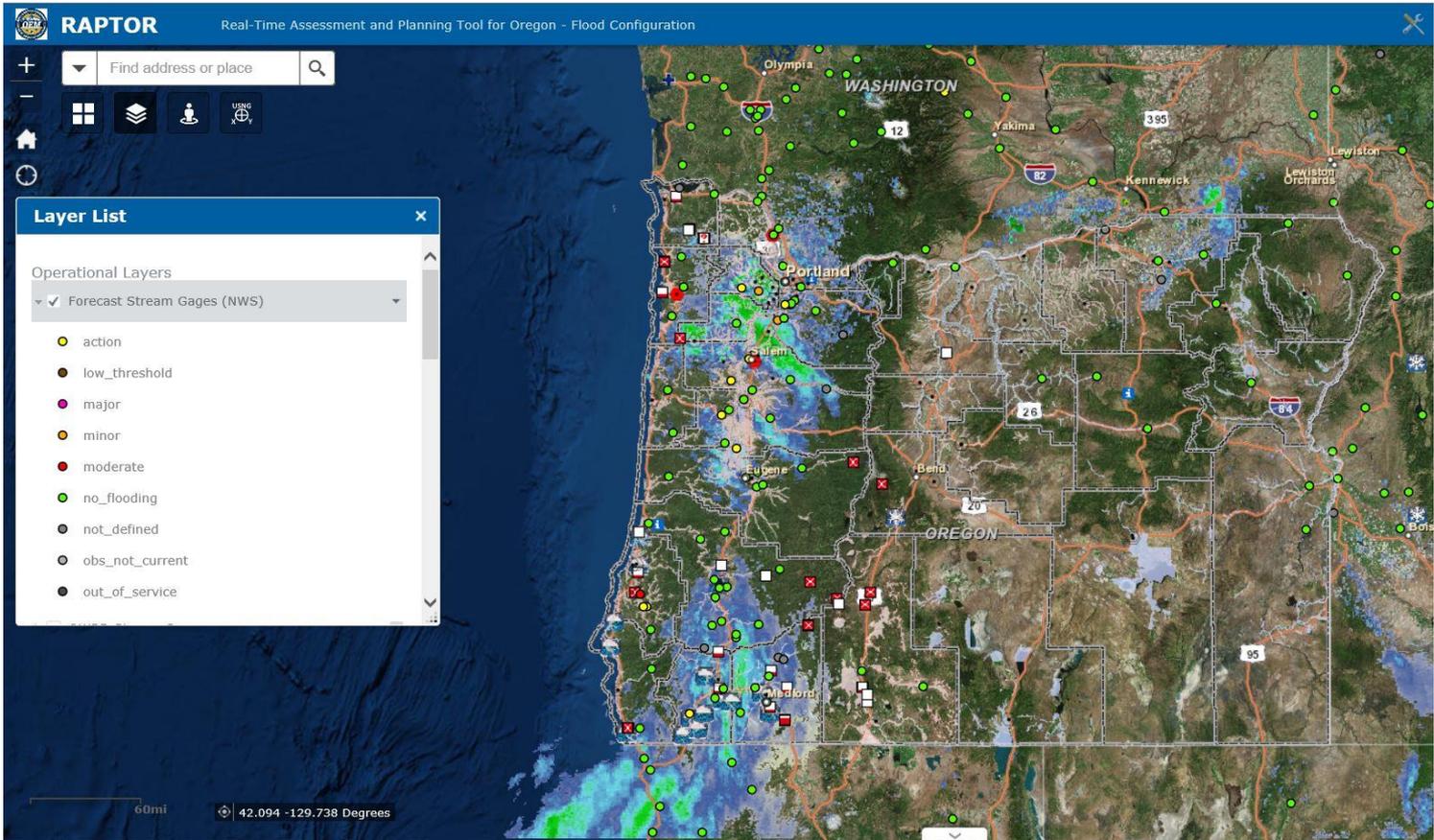
EOC Locations Open Shelters ODOT_INCD Planning Points Planning Lines Planning Areas Local Storm Reports Floods Hurricanes CurrentWarnings WatchesWarnings

OBJECTID	SHELTER_ID	SHELTER_NAME	ADDRESS_1	CITY	COUNTY_PAR	FIPS_CODE	STATE	ZIP	MAIL_ADDR_S	MAILING_ADD	MAILI
49759	77,372	Clatskanie High School	471 SW BEL AIR DR	CLATSKANIE	COLUMBIA		OR	97016	NO		



2015 Severe Winter Storms

12/14/15



Options Filter by Map Extent Zoom to Clear Selection Refresh

EOC Locations	Open Shelters	ODOT_INCD	Planning Points	Planning Lines	Planning Areas	Local Storm Reports	Floods	Hurricanes	CurrentWarnings	WatchesWarnings				
OBJECTID	SHELTER_ID	SHELTER_NAME	ADDRESS_1	CITY	COUNTY_PAR	FIPS_CODE	STATE	ZIP	MAIL_ADDR_5	MAILING_ADD	MAILING_ADD	MAILING_ADD	MAILING_CIT	MAIL
36820	76,311	Vine Street Baptist Church	2152 Vine Street	ROSEBURG	DOUGLAS		OR	97470	YES					
5794	76,989	Josephine County Fairgrounds	1451 Fairgrounds Rd.	GRANTS PASS	JOSEPHINE		OR	97527	NO					



Potential Partnerships

- **Public/Private inviting them to share data**
- **First Responders**
- **Federal & State Agencies**
- **Tribal Governments**
- **Other Associations Within Oregon**
 - **Private**
 - **Non Governmental**
 - **City**
 - **County**



Steps Forward

- **Cascadia Rising After Action**
 - **What data we want**
 - **Why we want it**
 - **How we use it**
- **Documentation**
 - **How to populate**
 - **Data Retention**
 - **Data Downloads**



Contact Information

GIS Program Coordinator

Daniel Stoelb

(503) 378-3234

Daniel.stoelb@state.or.us

RAPTOR Website

www.oregon.gov/omd/oem/pages/plans_train/RAPTOR.aspx