



# Geometronic On-Line Toolkit

15 March 2017

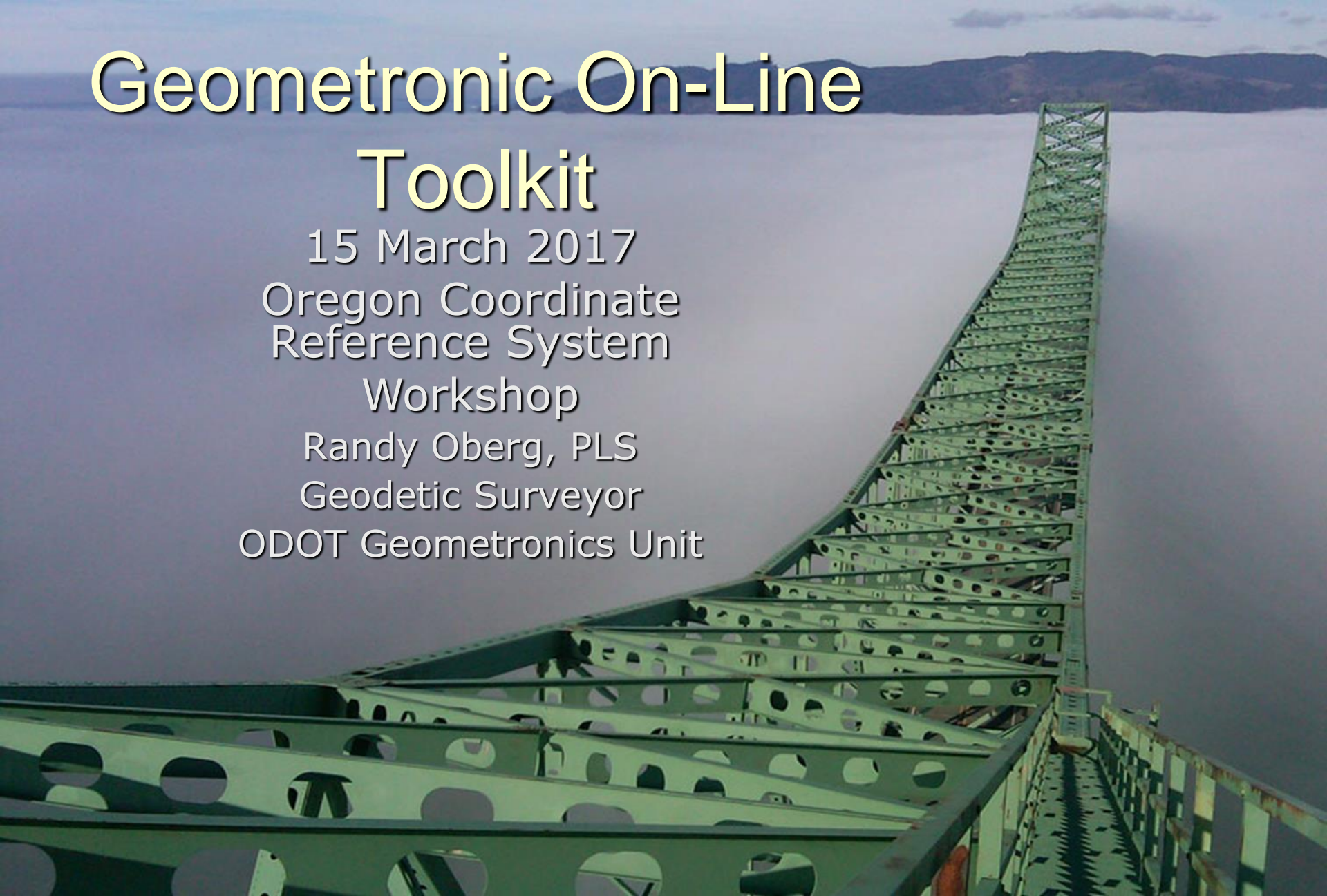
Oregon Coordinate  
Reference System

Workshop

Randy Oberg, PLS

Geodetic Surveyor

ODOT Geometronics Unit





# Geometronics Online Toolkit

- ◆ Current Products Available
  - OCRS
  - ORGN
- ◆ Future Products
  - Lidar
  - Benchmarks
  - ????
- ◆ ODOT TransGIS Platform
- ◆ Administrator Ken Bays and Randy Oberg



## Oregon Real-Time GNSS Network



Department

- Home
- Alerts
- ORGN Status Map
- ORGN Coordinates
- Products & Services
- Station List
- GLONASS
- About RINEX Data
- RINEX Data
- Rover Account Request
- ORGN Partners
- Contacts
- Support Documents
- Site Reconnaissance
- Links

The ORGN is fully Functional



### DATUM REALIZATION FOR THE OREGON REAL-TIME GNSS NETWORK

On Friday, 8 March 2013, the Oregon Real-time GNSS Network (ORGN) was transitioned to a new datum realization: NAD 83(2011) epoch 2010.00. Please visit our [ORGN Coordinates](#) page for more in depth information on this transition.

### GLONASS and the Oregon GNSS Network

Please see our [GLONASS](#) web page for information about GLONASS and the Oregon Real-time GNSS Network.

### OVERVIEW

The Oregon DOT Geometrics Unit is operating and expanding the Oregon Real-time GNSS Network, a network of permanently installed, continuously operating GNSS reference stations.

The ODOT Geometrics Unit is responsible for enhancing and maintaining the vertical and horizontal geodetic control infrastructure across the state of Oregon. The establishment and operation of the ORGN in Oregon helps us accomplish this mission.



## Oregon Real-Time GNSS Network



Department ▾

- Home
- Alerts
- ORGN Status Map
- ORGN Coordinates
- Products & Services
- Station List
- GLONASS
- About RINEX Data
- RINEX Data
- Rover Account Request
- ORGN Partners
- Contacts
- Support Documents
- Site Reconnaissance
- Links

### Links

#### Resources

The following links are provided as a reference for related information:

- [Geometronics Online Toolkit](#)
- [Interactive GNSS Calendar](#)
- [National Geodetic Survey](#)
- [NGS Oregon State Geodetic Advisor](#)
- [Oregon Coordinate Reference System](#)
- [ODOT Geometronics](#) (Internet)
- [Oregon Association of County Engineers and Surveyors](#)
- [Oregon GPS Users Group](#)
- [Professional Land Surveyors of Oregon](#)
- [UNAVCO Plate Boundary Observatory](#)
- [US Coast Guard Navigation Center](#)
- [Washington State Reference Network](#)

Help us improve! Was this page helpful?

Yes

No



Browser navigation bar showing address: <http://www.oregon.gov/ODOT/HWY/GEOMETRONICS/Pages/ocrs.aspx>

Navigation menu: File, Edit, View, Favorites, Tools, Help. Search bar: Google, iLinc, ODOT Intranet, ODOT, OPUS HomePage, ORGN, TripCheck, Verify URL.

OREGON.GOV logo and banner image of yellow tulips.

Geometronics header with Oregon Department of Transportation logo.

- Department
- About Us
- Contact Us
- Benchmark Retrieval
- Forms & Requests
- Geodetic Control
- Links
- Manuals & Documents
- Maps & Plans Center
- OCRS: OR Coord Ref Sys
- ORGN (GPS Network)
- Remote Sensing
- Right of Way Engineering
- Search Geometronics
- Survey Conference
- Survey Operations

## Oregon Coordinate Reference System

- [About the 'OCRS'](#)
- [History](#)
- [Legal Status](#)
- [OCRS Zone Maps](#)
- [OCRS Zone Export \(Parameters\)](#)
- [GIS Projection \(.prj\) Files](#)
- [OCRS Handbook & User Guide](#)
- [Geometronics Online Toolkit](#)

### About the 'OCRS'

The Oregon Coordinate Reference System is based on a group of low distortion map projection coordinate systems. Low distortion projections are based on true conformal map projections designed to cover significant portions of urban and rural areas of the state. The term 'low distortion' refers to both the horizontal distortion from presenting a curved surface on a plane and the vertical distortion because these projections are also scaled to a regional height representative of the area to be covered. The advantages of a low distortion projection are;



- Grid coordinate zone distances closely match the same distance measured on the ground.
- Limited distortion and reduced convergence angle.
- Easy to transform between other coordinate zone systems.
- Maintains a relationship to the National Spatial Reference System (NSRS). Can cover entire cities and counties making them GIS friendly.

[▲ Back to the top](#)

### History

The utilization of electronic survey data by surveyors and GIS professionals is bringing awareness of



## Oregon Real-Time GNSS Network



Department

### ORGN Status Map

Home

Alerts

ORGN Status Map

ORGN Coordinates

Products & Services

Station List

GLONASS

About RINEX Data

RINEX Data

Rover Account Request

ORGN Partners

Contacts

Support Documents

Site Reconnaissance

Links

The [ODOT Geometronics Online Toolkit](#) is a tool that works within the ODOT TransGIS website and provides maps and status of both the Oregon Real-time GNSS Network and the Oregon Coordinate Reference System.

#### ODOT Geometronics Online Toolkit



There are two components of the [Geometronics Online Toolkit](#)

1. Oregon Coordinate Reference System
2. Oregon Real-time GNSS Network

The Oregon Coordinate Reference System (OCRS) component of the Online Toolkit allows users to determine the best Oregon Coordinate Reference System low-distortion projection zone for their project. Users can display all of the OCRS zones on a map. They can also view the actual distortion of a particular OCRS zone in the vicinity of their project by placing a point, line or polygon on the map.

The Oregon Real-time GNSS Network (ORGN) component of the Online Toolkit allows users to view the status of ORGN sites, view a map of coverage areas in Oregon where real-time GNSS correctors from the ORGN are available, and display/download a list of ORGN stations with the current coordinates for each station and a link to the particular website for each station. For more information about the Oregon Real-time GNSS Network, please see the ODOT ORGN website at [www.TheORGN.net](http://www.TheORGN.net)





# Questions?





# Oregon Department of Transportation





http://wddotapp122/geometricsonlinetoolkit/ Geometrics Online Toolkit

File Edit View Favorites Tools Help

Convert Select

Home - ODOT NGS DATASHEET Bing Computer Support Desk OPUS HomePage ORGN Geometrics Online Too... TripCheck Web Slice Gallery

ODOT TransGIS print | about | contact | help | geometrics toolkit help

Display Navigation Analysis OCRS Tools Point Probe Line Profile Polygon Show OCRS Projection Zones Show Di

About TransGIS Legend

Overlay Legend

### ORGN Stations Legend

#### Ground Station Status

- Station Active
- Station Alert
- Station inactive
- Station Planned

#### Coverage Area

- Coverage
- No Coverage

#### Distortion Raster Legend

- < -50 ppm (< -0.25 ft/mile)
- ±(40 - 50) ppm = ±(0.2 - 0.25) ft/mile
- ±(30 - 40) ppm = ±(0.15 - 0.2) ft/mile
- ±(20 - 30) ppm = ±(0.1 - 0.15) ft/mile
- ±(10 - 20) ppm = ±(0.05 - 0.1) ft/mile
- ±10 ppm = ±0.05 ft/mile
- ±(10 - 20) ppm = ±(0.05 - 0.1) ft/mile
- ±(20 - 30) ppm = ±(0.1 - 0.15) ft/mile
- ±(30 - 40) ppm = ±(0.15 - 0.2) ft/mile
- ±(40 - 50) ppm = ±(0.2 - 0.25) ft/mile
- > +50 ppm (> +0.25 ft/mile)

Basemap Legend

0 117,407 feet

Oregon Department of Transportation © 2009-2014 -120.3797° E, 46.8999° N



## OCRS Tools

The screenshot displays the ODOT TransGIS web application interface. The browser address bar shows the URL <http://wddotapp122/geometronicsonlinetoolkit/>. The application header includes the ODOT logo and the text "ODOT TransGIS". A navigation menu is located below the header, with the "OCRS Tools" menu item highlighted. The OCRS Tools menu is expanded, showing the following options: "Point Probe", "Line Profile", "Polygon", "Show OCRS Projection Zones", "Show Distortion Raster", "PLSS...", and "Clear Graphics". Each of these menu items is circled in red. The main map area shows a map of Oregon with major cities and highways labeled. A scale bar at the bottom left indicates 0 to 117,407 feet. The bottom right corner shows the coordinates -116.0731° E, 44.5261° N. The footer text reads "Oregon Department of Transportation © 2009-2014".



## Point Probe – Click to add point

The screenshot displays the ODOT TransGIS web application. The browser address bar shows the URL <http://wddotappl22/geometricsonlinetoolkit/>. The application header includes the ODOT logo and navigation links: [print](#), [about](#), [contact](#), [help](#), and [geometricsonlinetoolkit help](#). The main toolbar contains several dropdown menus: **Display**, **Navigation**, **Analysis**, **OCRS Tools** (with **Point Probe** selected), **Line Profile**, **Polygon**, **Show OCRS Projection Zones**, **Show Distortion Raster**, **PLSS...**, and **Clear Graphics**. A search box labeled **PLACE NAME SEARCH** is also present.

The map area shows a yellow road network, a green shaded region for **Holman State Park**, and a blue area for the **WILLAMETTE** river. A tooltip with the text **Click to add a point** is positioned over the road network. Other map features include **Maple Hill Drive NW**, **RTGG S ST NW**, **2ND ST**, **SHAW ST**, **Creek**, **COLEBY DRIVE S**, and **AVENUE 88**. A **Switch Basemap** button is located in the top right corner of the map area.

At the bottom of the interface, there is a scale bar showing **0** to **229 feet**, the text **Oregon Department of Transportation © 2009-2014**, and the coordinates **-123.1139° E, 44.9337° N**.



http://wddotapp122/geometricsonlinetoolkit/ Geometrics Online Toolkit

File Edit View Favorites Tools Help

Convert Select

Home - ODOT NGS DATASHEET Bing Computer Support Desk OPUS HomePage ORGN Geometrics Online Too... TripCheck Web Slice Gallery

Oregon Department of Transportation ODOT TransGIS print | about | contact | help | geometrics toolkit help

Display Navigation Analysis OCRS Tools Point Probe Line Profile Polygon Show OCRS Projection Zones Show Distortion Raster PLSS... Clear Graphics PLACE NAME SEARCH

Switch Basemap

Probe #1

Eola

Maple Hill Drive NW

Riggs Street NW

2nd Street

Shaw Street

Creek

Colby River

1 Mile

0 229 feet

Oregon Department of Transportation © 2009-2014

-123.1103° E, 44.9305° N

**OCRS Zones at Probed Points**

Probe	Zone Name	Latitude	Longitude	PPM (+/-) ^	Ratio (1:x)	Ft./Mile (+/-)
Probe #1	Eugene	44 56 0.88756	-123 06 47.69298	1.609	621504	0.01
Probe #1	Oregon Coast	44 56 0.88756	-123 06 47.69298	49.498	20203	0.26
Probe #1	Portland	44 56 0.88756	-123 06 47.69298	36.903	27098	0.19
Probe #1	Salem	44 56 0.88756	-123 06 47.69298	-3.542	-282326	-0.02

Download Results



Browser window showing the Geometronics Online Toolkit interface. The address bar displays <http://wddotapp122/geometronicsonlinetoolkit/>. The page title is "Geometronics Online Toolkit". The browser's address bar shows several tabs: "Home - ODOT", "NGS DATASHEET", "Bing", "Computer Support Desk", "OPUS HomePage", "ORGN", "Geometronics Online Too...", "TripCheck", and "Web Slice Gallery". The page content includes the ODOT logo and the text "ODOT TransGIS". A navigation menu at the bottom of the browser window includes: "Display", "Navigation", "Analysis", "OCRS Tools", "Point Probe", "Line Profile", "Polygon", "Show OCRS Projection Zones", "Show Distortion Raster", "PLSS...", "Clear Graphics", and "PLACE NAME SEARCH".

## OCRS Zones at Probed Points

Probe	Zone Name	Latitude	Longitude	PPM (+/-) ▲	Ratio (1:x)	Ft./Mile (+/-)
Probe #1	Eugene	44 56 0.88756	-123 06 47.69298	1.609	621504	0.01
Probe #1	Oregon Coast	44 56 0.88756	-123 06 47.69298	49.498	20203	0.26
Probe #1	Portland	44 56 0.88756	-123 06 47.69298	36.903	27098	0.19
Probe #1	Salem	44 56 0.88756	-123 06 47.69298	-3.542	-282326	-0.02
Probe #2	Eugene	44 55 57.98920	-123 05 49.21653	10.728	93214	0.06
Probe #2	Oregon Coast	44 55 57.98920	-123 05 49.21653	61.147	16354	0.32
Probe #2	Portland	44 55 57.98920	-123 05 49.21653	46.016	21732	0.24
Probe #2	Salem	44 55 57.98920	-123 05 49.21653	5.376	186012	0.03

Download Results



## Download Results

probe	layerName	Latitude	Longitude	value	ratio	ftPerMile
Probe #1	Eugene	44.93357988	-123.113248	1.609	621504	0.01
Probe #1	Oregon Coast	44.93357988	-123.113248	49.498	20203	0.26
Probe #1	Portland	44.93357988	-123.113248	36.903	27098	0.19
Probe #1	Salem	44.93357988	-123.113248	-3.542	-282326	-0.02
Probe #2	Eugene	44.93277478	-123.0970046	10.728	93214	0.06
Probe #2	Oregon Coast	44.93277478	-123.0970046	61.147	16354	0.32
Probe #2	Portland	44.93277478	-123.0970046	46.016	21732	0.24
Probe #2	Salem	44.93277478	-123.0970046	5.376	186012	0.03

### Excel Spreadsheets

- Arrange Columns
- Sort Ascending or Descending
- Easy for Preparing Reports



# Oregon Department of Transportation



http://wddotappl22/geometronicsonlinetoolkit/ Geometronics Online Toolkit

File Edit View Favorites Tools Help

Convert Select

Home - ODOT NGS DATASHEET Bing Computer Support Desk OPUS HomePage ORGN Geometronics Online Too... TripCheck Web Slice Gallery

Oregon Department of Transportation ODOT TransGIS print | about | contact | help | geometronics toolkit help

Display Navigation Analysis OCRS Tools Point Probe Line Profile Polygon Show OCRS Projection Zones Show Distortion Raster PLSS... **Clear Graphics** PLACE NAME SEARCH

Switch Basemap

Eola

Willamette

Creek

MLE 88

COLBY DRIVE S

0 229 feet

Oregon Department of Transportation © 2009-2014

-123.0972° E, 44.9380° N





# Oregon Department of Transportation



http://glistestl.intranet.odot.state.or.us/geometronicsonlinetoolkit/ Geometronics Online Toolkit

File Edit View Favorites Tools Help

Computer Support Desk Google iLinc ODOT Intranet ODOT OPUS HomePage ORGN TripCheck Verify URL

Oregon Department of Transportation

ODOT TransGIS print | about | contact | help | geometronics toolkit help

Display Navigation Analysis OCRS Tools Point Probe Line Profile Polygon Show OCRS Projection Zones Show Distortion Raster PLSS... Clear Graphics PLACE NAME SEARCH: <enter s

Free hand  
Choose Number of Intervals

Switch Basemap

Chemeketa Community College

DOAKS FERRY RD. NW

Holman State Park

22

22

0 115 feet

Oregon Department of Transportation © 2009-2017

-123.1152° E, 44.9334° N



The screenshot shows a web browser window displaying the Geometronics Online Toolkit. The browser's address bar shows the URL <http://wddotappl22/geometronicsonlinetoolkit/>. The page header includes the ODOT logo and navigation links: [print](#) | [about](#) | [contact](#) | [help](#) | [geometronics toolkit help](#). The main interface features a toolbar with options like Display, Navigation, Analysis, OCRS Tools, Point Probe, Line Profile, Polygon, Show OCRS Projection Zones, Show Distortion Raster, PLSS..., Clear Graphics, and a search box labeled PLACE NAME SEARCH. A 'Switch Basemap' button is also present. The map displays a yellow line profile over a geographic area including the Willamette River, Holman State Park, and the town of Eola. A dropdown menu for the 'Line Profile' tool is open, showing options for 'Free hand', 'By Mile Post', and 'Choose Number of Intervals'. The 'Choose Number of Intervals' dropdown is currently set to 2. The map also shows various roads such as Maple Hill Drive NW, Riggs St NW, 2nd St, Shaw West, Colby Drive S, and Creek. The bottom of the page contains the URL <http://wddotappl22/geometronicsonlinetoolkit/#>, the copyright notice 'Oregon Department of Transportation © 2009-2014', and the coordinates '-123.1051° E, 44.9374° N'.



http://wddotapp122/geometronicsonlinetoolkit/ Geometronics Online Toolkit

File Edit View Favorites Tools Help

Convert Select

Home - ODOT NGS DATASHEET Bing Computer Support Desk OPUS HomePage ORGN Geometronics Online Too... TripCheck Web Slice Gallery

Oregon Department of Transportation ODOT TransGIS print | about | contact | help | geometronics toolkit help

Display Navigation Analysis OCRS Tools Point Probe Profile (freehand) Polygon Show OCRS Projection Zones Show Distortion Raster PLSS... Clear Graphics PLACE NAME

Switch Basemap

### Elevation & Distortion Along Route

Zone: Salem

Distance (mi)	Elevation (ft)	Distortion (PPM)
0.0	170	4.0
0.05	185	6.5
0.1	180	4.0
0.15	175	4.5
0.2	170	4.0
0.25	165	4.0
0.3	165	4.0
0.35	165	4.0
0.4	165	4.0
0.45	165	4.0
0.5	165	4.0
0.55	165	4.0
0.6	165	4.0
0.65	165	4.0
0.7	165	4.0
0.75	165	4.0
0.8	165	4.0

PDF Cancel

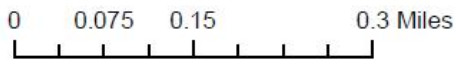
0 229 feet

Oregon Department of Transportation © 2009-2014

-123.1021° E, 44.9361° N



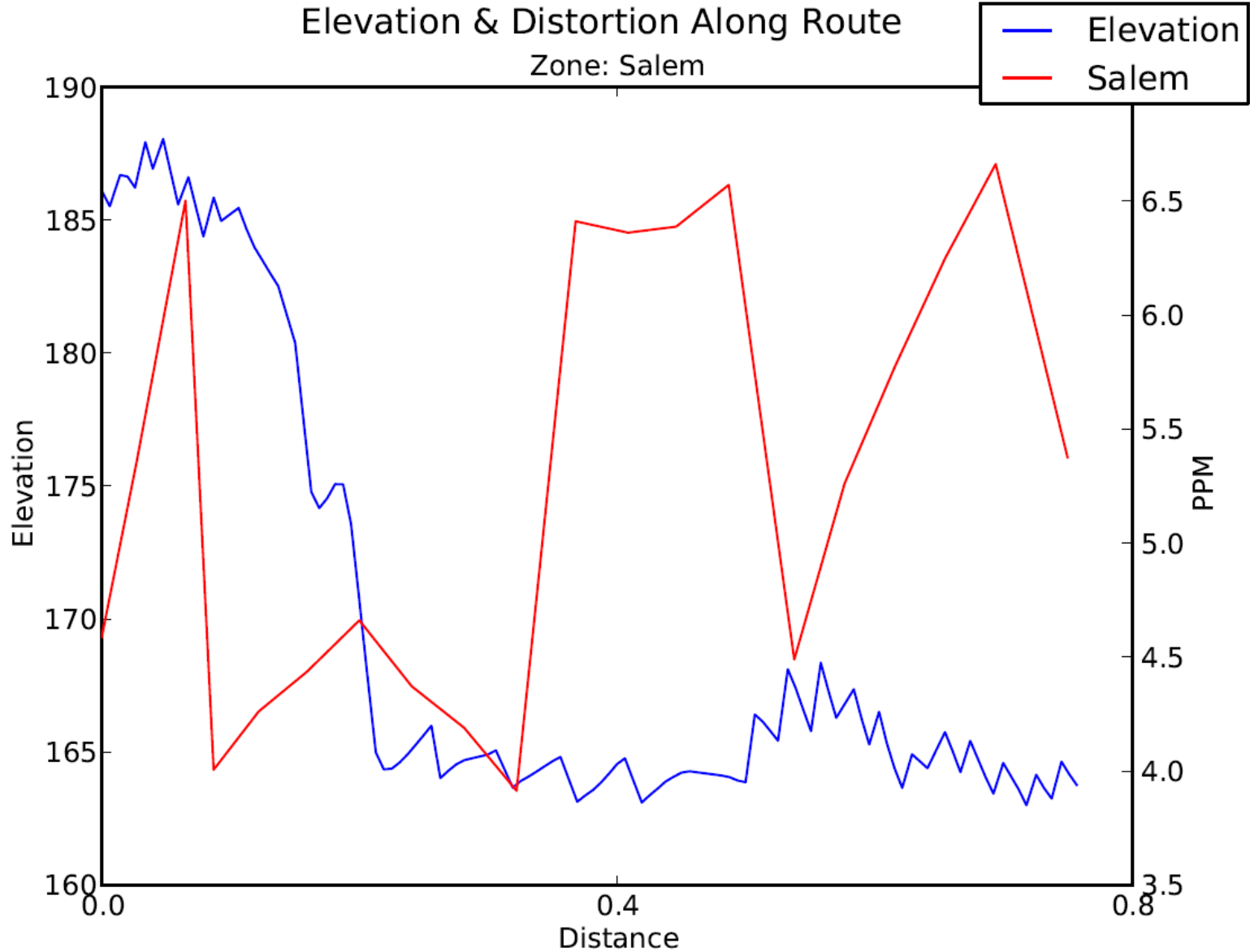
## Eola Hwy 22





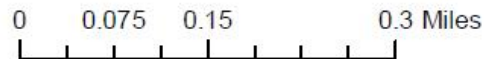
## Elevation & Distortion Along Route

Zone: Salem





## Eola Hwy22





## Polygon

http://wddotapp122/geometricsonlinetoolkit/ Geometrics Online Toolkit

File Edit View Favorites Tools Help

Convert Select

Home - ODOT NGS DATASHEET Bing Computer Support Desk OPUS HomePage ORGN Geometrics Online Too... TripCheck Web Slice Gallery

Oregon Department of Transportation ODOT TransGIS print | about | contact | help | geometrics toolkit help

Display Navigation Analysis OCRS Tools Point Probe Line Profile Polygon Show OCRS Projection Zones Show Distortion Raster PLSS... Clear Graphics PLACE NAME SEARCH

Switch Basemap

**OCRS Polygon Search Results**

Polygon	Zone Name	Area Sq. Ft.	Latitude	Longitude	Average PPM (+/-)	Max PPM	Min PPM
Polygon #1	Eugene	188187.68637057	44 55 54.65323	-123 06 18.59107	9.888	11.582	9.029
Polygon #1	Oregon Coast	188187.68637057	44 55 54.65323	-123 06 18.59107	59.162	61.322	57.98
Polygon #1	Portland	188187.68637057	44 55 54.65323	-123 06 18.59107	45.408	47.030	44.53
Polygon #1	Salem	188187.68637057	44 55 54.65323	-123 06 18.59107	4.641	6.251	3.772

Download Results

0 229 feet

Oregon Department of Transportation © 2009-2014

-123.1128° E, 44.9315° N



http://wddotapp122/geometricsonlinetoolkit/ Geometrics Online Toolkit

File Edit View Favorites Tools Help

Convert Select

Home - ODOT NGS DATASHEET Bing Computer Support Desk OPUS HomePage ORGN Geometrics Online Too... TripCheck Web Slice Gallery

Oregon Department of Transportation ODOT TransGIS print | about | contact | help | geometrics toolkit help

Display Navigation Analysis OCRS Tools Point Probe Line Profile Polygon Show OCRS Projection Zones Show Distortion Raster PLSS... Clear Graphics PLACE NAME SEARCH

Switch Basemap

**OCRS Polygon Search Results**

Polygon	Zone Name	Area Sq. Ft.	Latitude	Longitude	Average PPM (+/-)	Max PPM	Min PPM	Average Ratio (1...	Average Ft./Mile ...	Pct Above	Pct Below
Polygon #1	Eugene	188187.68637057	44 55 54.65323	-123 06 18.59107	9.888	11.582	9.029	101129	0.05	31	69
Polygon #1	Oregon Coast	188187.68637057	44 55 54.65323	-123 06 18.59107	59.162	61.322	57.983	16903	0.31	40	60
Polygon #1	Portland	188187.68637057	44 55 54.65323	-123 06 18.59107	45.408	47.030	44.534	22022	0.24	44	56
Polygon #1	Salem	188187.68637057	44 55 54.65323	-123 06 18.59107	4.641	6.251	3.772	215488	0.02	38	63

Download Results

0 229 feet Oregon Department of Transportation © 2009-2014 -123.1117° E, 44.9304° N





## OCRS Polygon Search Results

Polygon	Zone Name	Area Sq. Ft.	Latitude	Longitude	Average PPM (+/-)	Max PPM	Min PPM	Average Ratio (1...	Average Ft./Mile ...	Pct Above	Pct Below
Polygon #1	Eugene	188187.68637057	44 55 54.65323	-123 06 18.59107	9.888	11.582	9.029	101129	0.05	31	69
Polygon #1	Oregon Coast	188187.68637057	44 55 54.65323	-123 06 18.59107	59.162	61.322	57.983	16903	0.31	40	60
Polygon #1	Portland	188187.68637057	44 55 54.65323	-123 06 18.59107	45.408	47.030	44.534	22022	0.24	44	56
Polygon #1	Salem	188187.68637057	44 55 54.65323	-123 06 18.59107	4.641	6.251	3.772	215488	0.02	38	63

Download Results

## Downloaded Results

PolygonNum	layerName	Area	Latitude	Longitude	Average	Max	Min	ratio	ftPerMile	PctAbove	PctBelow	NumPoints
Polygon #1	Eugene	188187.6864	44.93184812	-123.1051642	9.888	11.582	9.029	101129	0.05	31	69	15173700
Polygon #1	Oregon Coast	188187.6864	44.93184812	-123.1051642	59.162	61.322	57.983	16903	0.31	40	60	17100000
Polygon #1	Portland	188187.6864	44.93184812	-123.1051642	45.408	47.03	44.534	22022	0.24	44	56	15173700
Polygon #1	Salem	188187.6864	44.93184812	-123.1051642	4.641	6.251	3.772	215488	0.02	38	63	15173700



## Show OCRS Projection Zones

The screenshot displays the ODOT TransGIS web application interface. The browser address bar shows the URL <http://wddotapp122/geomtronicsonlinetoolkit/>. The application header includes the ODOT logo and the text "ODOT TransGIS". The main menu contains options: Display, Navigation, Analysis, OCRS Tools, Point Probe, Line Profile, Polygon, Show OCRS Projection Zones (selected), Show Distortion Raster, PLSS..., Clear Graphics, and PLACE NAME SEARCH. The map shows the state of Oregon with major cities and highways labeled. The OCRS projection zones are highlighted in orange. A scale bar at the bottom left indicates 0 to 117,407 feet. The bottom right corner shows the coordinates -118.9570° E, 46.7420° N. The footer text reads "Oregon Department of Transportation © 2009-2014".



## Show Distortion Raster

The screenshot displays the ODOT TransGIS web application interface. At the top, a browser window shows the URL <http://wddotapp122/geometricsonlinetoolkit/>. Below the browser, the application header includes the ODOT logo, the text "Oregon Department of Transportation" and "ODOT TransGIS", and navigation links: "print | about | contact | help | geometrics toolkit help".

The main interface features a menu bar with options: "Display", "Navigation", "Analysis", "OCRS Tools", "Point Probe", "Line Profile", "Polygon", "Show OCRS Projection Zones", "Show Distortion Raster", "PLSS...", "Clear Graphics", and "PLACE NAME SEARCH:". The "Show Distortion Raster" option is currently selected.

The map shows the state of Oregon with a yellow distortion raster overlay. Major cities and towns are labeled, including Astoria, Longview, Vancouver, Portland, Salem, Newport, Eugene, Florence, Coos Bay, Roseburg, Medford, Brookings, Klamath Falls, Lakeview, Bend, The Dalles, Pendleton, Richland, Pasco, Yakima, Lewiston, John Day, Baker City, Ontario, Nampa, Burns, and Twin Falls. Interstate highways 5, 64, and 84 are also shown. The map includes a scale bar on the left and a "Switch Basemap" button on the right.

At the bottom of the application, there is a scale bar showing 0 to 117,407 feet, the copyright notice "Oregon Department of Transportation © 2009-2014", and the coordinates "-119.6272° E, 46.7495° N".



## PLSS

http://wddotapp122/geometricsonlinetoolkit/ Geometrics Online Toolkit

File Edit View Favorites Tools Help

Convert Select

Home - ODOT NGS DATASHEET Bing Computer Support Desk OPUS HomePage ORGN Geometrics Online Too... TripCheck Web Slice Gallery

Oregon Department of Transportation ODOT TransGIS print | about | contact | help | geometrics toolkit help

Display Navigation Analysis OCRS Tools Point Probe Line Profile Polygon Show OCRS Projection Zones Show Distortion Raster PLSS... Clear Graphics PLACE NAME SEARCH:

Switch Basemap

0 459 feet

Oregon Department of Transportation © 2009-2014 -123.0816° E, 44.9451° N



## ORGN Tools


Browser address bar: <http://www.theorgn.net/stations/grassvalley.html>

Navigation: File Edit View Favorites Tools Help

Home - ODOT NGS DATASHEET Bing Computer Support Desk OPUS HomePage ORGN Geometronics Online Too... TripCheck Web Slice Gallery

Text-Only Site State Directory Agencies A-Z Accessibility  SEARCH [Advanced Help](#)

### OREGON

Oregon Department Of Transportation - GPS Network 


**menu**

- Home
- Alerts & Advisories
- ORGN Map
- ORGN Coordinates
- Products & Services
- About RINEX Data
- RINEX Data Download
- Rover Account Request
- Meetings & Training
- ORGN Partners
- Contacts
- Support Documents
- Site Reconnaissance
- Links
- FAQ's


### Station - Grass Valley

Go to [Print Friendly Page](#)


**BLM Fire Guard Station Building**




Looking North



Looking South



Looking West



Looking East

**Station Information**

Site Name:	Grass Valley
Site ID:	GRAS
PID:	
Position at Antenna Reference Point: NAD83 (2011) epoch 2010.00	
Latitude:	45° 21' 51.87542"N
Longitude:	120° 47' 14.62113"W
Ellip. Hgt.:	677.871m
Location:	408 NW 3rd, Grass Valley , OR 97029
Organization:	Oregon Department of Transportation

**Equipment Specifications**

Manufacturer:	Leica Geosystems	Receiver Model:	GRX1200GG Pro
Antenna:	Leica AT504GG (LEIAT504GG LEIS)		
Elevation Mask:	0 Degrees		

**File Logging**

Operation Time:	24x7 log files	Logging Interval:	5 Seconds
-----------------	----------------	-------------------	-----------

**Important Links**

[Site Log](#)  
[RINEX DATA](#)  
[Alerts & Advisories](#)  
[Superseded coordinates NAD83](#)



http://wddotapp122/geometronicsonlinetoolkit/ Geometronics Online Toolkit Alerts & Advisories

File Edit View Favorites Tools Help

Convert Select

Home - ODOT NGS DATASHEET Bing Computer Support Desk OPUS HomePage ORGN Geometronics Online Too... TripCheck Web Slice Gallery

Oregon Department of Transportation ODOT TransGIS print | about | contact | help | geometronics toolkit help

Display Navigation Analysis ORGN Tools Hide Stations Show Coverages Station Id Tool Show Stations List Admin PLACE NAME SEARCH: <enter search text here>

Switch Basemap

NAD 83(2011) epoch 2010.00					
Export To Excel					
Station ID	Ref ID	Status	Latitude	Longitude	Ellipsoid Height (m)
ANAT	201	Active	46 07 58.29503	117 08 07.48104	1087.765
ARLN	202	Active	45 42 29.52532	120 10 59.71154	120.812
ASHL	203	Active	42 10 50.47299	122 40 12.55241	609.147
BEND	205	Active	44 03 25.75727	121 18 54.61222	1096.257
BLY1	204	Active	42 24 24.62755	121 02 56.57650	1313.889
CABL	206	Active	42 50 09.94322	124 33 47.98644	38.291
CHEM	208	Active	43 13 27.68494	121 47 08.94043	1440.413
COBO	209	Active	45 29 08.88914	122 47 50.56291	47.25

0 459 feet

Oregon Department of Transportation © 2009-2014

-122.7605° E, 44.4010° N



http://wddotapp122/geometronicsonlinetoolkit/

Geometronics Online T... Alerts & Advisories

File Edit View Favorites Tools Help

Convert Select

Home - ODOT NGS DATASHEET Bing Computer Support Desk OPUS HomePage ORGN Geometronics Online Too... TripCheck Web Slice Gallery

Oregon Department of Transportation  
ODOT TransGIS

print | about | contact | help | geometronics toolkit help

Display Navigation Analysis ORGN Tools Hide Sites Show Coverages Station Id Tool Show Stations List

About TransGIS Legend

Overlay Legend

**ORGN Stations Legend**

**Ground Station Status**

- Station Active
- Station Alert
- Station inactive
- Station Planned

**Coverage Area**

- Coverage
- No Coverage

**Distortion Raster Legend**

- < -50 ppm (< -0.25 ft/mile)
- ±(40 - 50) ppm = ±(0.2 - 0.25) ft/mile
- ±(30 - 40) ppm = ±(0.15 - 0.2) ft/mile
- ±(20 - 30) ppm = ±(0.1 - 0.15) ft/mile
- ±(10 - 20) ppm = ±(0.05 - 0.1) ft/mile
- ±10 ppm = ±0.05 ft/mile
- ±(10 - 20) ppm = ±(0.05 - 0.1) ft/mile
- ±(20 - 30) ppm = ±(0.1 - 0.15) ft/mile
- ±(30 - 40) ppm = ±(0.15 - 0.2) ft/mile
- ±(40 - 50) ppm = ±(0.2 - 0.25) ft/mile
- > +50 ppm (> +0.25 ft/mile)

Basemap Legend

0 459 feet

Oregon Department of Transportation © 2009-2014

-122.7340° E, 44.3961° N

Switch Basemap

**Groundstation Details**

Ground Stations NAD 83(2011) epoch 2010.00

Station ID: [STHM](#)

Latitude: 44 23 46.23855

Longitude: 122 44 03.16211

Ellipsoid Height (m): 145.043

Ref ID: 291

Location: Sweet Home

[ORGN Alerts](#)