

## **Chapter 734, Division 5 Oregon Coordinate Systems**

### **734-005-0005**

#### **Purpose**

The purpose of this administrative rule is to define the Oregon Coordinate System, consisting of three mapping projection coordinate systems that are authorized for use in the State of Oregon.

Stat. Auth.: ORS 184.616, 184.619, Chapter 179 OL 2011

Stats. Implemented: ORS 209.130, 209.155, 209.250, 390.770 and Chapter 179 OL 2011

### **734-005-0010**

#### **Oregon Coordinate Systems**

(1) The **Oregon State Plane Coordinate System of 1927** consists of two zones of mapping projections defined by the National Geodetic Survey of the National Ocean Service, one for the Oregon North Zone and one for the Oregon South Zone.

(2) The **Oregon State Plane Coordinate System of 1983** consists of two zones of mapping projections defined by the National Geodetic Survey of the National Ocean Service, one for the Oregon North Zone and one for the Oregon South Zone.

(3) The **Oregon Coordinate Reference System** consists of multiple zones developed by an Oregon Department of Transportation committee of private and public land surveying, geographic information system, and academic professionals to define a system of low distortion mapping projections wherein distances computed between points on the grid plane will represent the distances measured between the same points on the ground within published zone tolerances.

Stat. Auth.: ORS 184.616, 184.619, Chapter 179 OL 2011

Stats. Implemented: ORS 209.130, 209.155, 209.250, 390.770 and Chapter 179 OL 2011

### **734-005-0015**

#### **Coordinate System Parameters**

##### **(1) Oregon State Plane Coordinate System Of 1927**

###### **(a) North Zone**

North American Datum of 1927

Reference Ellipsoid: Clarke Spheroid of 1866

Projection: Lambert Conformal Conic (Two Standard Parallel - Secant)

Central Meridian: 120° 30' West

Latitude of Origin: 43° 40' North

Standard Parallel (South): 44° 20' North

Standard Parallel (North): 46° 00' North

False Northing: 0 US Survey Feet

False Easting: 2 000 000 US Survey Feet

One U.S. Survey foot = 1200/3937 meters exactly

#### **County Coverage of North Zone:**

The area included in the following counties on June 16, 1945, constitutes the north zone: Baker, Benton, Clackamas, Clatsop, Columbia, Gilliam, Grant, Hood River, Jefferson, Lincoln, Linn,

Marion, Morrow, Multnomah, Polk, Sherman, Tillamook, Umatilla, Union, Wallowa, Wasco, Washington, Wheeler and Yamhill.

**(b) South Zone**

North American Datum of 1927

Reference Ellipsoid: Clarke Spheroid of 1866

Projection: Lambert Conformal Conic (Two Standard Parallel - Secant)

Central Meridian: 120° 30' West

Latitude of Origin: 41° 40' North

Standard Parallel (South): 42° 20' North

Standard Parallel (North): 44° 00' North

False Northing: 0 US Survey Feet

False Easting: 2 000 000 US Survey Feet

One U.S. Survey foot = 1200/3937 meters exactly

**County Coverage of South Zone:**

The area included in the following counties on June 16, 1945, constitutes the south zone: Coos, Crook, Curry, Deschutes, Douglas, Harney, Jackson, Josephine, Klamath, Lake, Lane and Malheur.

**(2) Oregon State Plane Coordinate System Of 1983**

**(a) North Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Lambert Conformal Conic (Two Standard Parallel - Secant)

Central Meridian: 120° 30' West

Latitude of Origin: 43° 40' North

Standard Parallel (South): 44° 20' North

Standard Parallel (North): 46° 00' North

False Northing: 0.000 meters

False Easting: 2 500 000.000 meters

One International Foot = 0.3048 meters exactly

**County Coverage of North Zone:**

The area included in the following counties on June 16, 1945, constitutes the north zone: Baker, Benton, Clackamas, Clatsop, Columbia, Gilliam, Grant, Hood River, Jefferson, Lincoln, Linn, Marion, Morrow, Multnomah, Polk, Sherman, Tillamook, Umatilla, Union, Wallowa, Wasco, Washington, Wheeler and Yamhill.

**(b) South Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Lambert Conformal Conic (Two Standard Parallel - Secant)

Central Meridian: 120° 30' West

Latitude of Origin: 41° 40' North  
Standard Parallel (South): 42° 20' North  
Standard Parallel (North): 44° 00' North  
False Northing: 0.000 meters  
False Easting: 1 500 000.000 meters

One International Foot = 0.3048 meters exactly

**County Coverage of South Zone:**

The area included in the following counties on June 16, 1945, constitutes the south zone: Coos, Crook, Curry, Deschutes, Douglas, Harney, Jackson, Josephine, Klamath, Lake, Lane and Malheur.

**(3) Oregon Coordinate Reference System Zones**

**(a) Baker Zone**

North American Datum of 1983  
Reference Ellipsoid: Geodetic Reference System of 1980  
Projection: Transverse Mercator  
Latitude of Grid Origin: 44°30'00" North  
Central Meridian: 117°50'00" West  
False Northing: 0 meters  
False Easting: 40 000 meters  
Central Meridian Scale: 1.000 160 (exact)

One International Foot = 0.3048 meters exactly

**(b) Bend-Klamath Falls Zone**

North American Datum of 1983  
Reference Ellipsoid: Geodetic Reference System of 1980  
Projection: Transverse Mercator  
Latitude of Grid Origin: 41°45'00" North  
Central Meridian: 121°45'00" West  
False Northing: 0 meters  
False Easting: 80 000 meters  
Central Meridian Scale: 1.000 200 (exact)

One International Foot = 0.3048 meters

**(c) Bend-Redmond-Prineville Zone**

North American Datum of 1983  
Reference Ellipsoid: Geodetic Reference System of 1980  
Projection: Lambert Conformal Conic (Single Parallel - Tangent)  
Standard Parallel & Grid Origin: 44°40'00" North  
Central Meridian: 121°15'00" West  
False Northing: 130 000 meters  
False Easting: 80 000 meters

Standard Parallel Scale: 1.000 120 (exact)

One International Foot = 0.3048 meters

**(d) Bend-Vale Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Lambert Conformal Conic (Single Parallel - Tangent)

Standard Parallel and Grid Origin: 43°40'00" North

Central Meridian: 119°45'00" West

False Northing: 60 000 meters

False Easting: 120 000 meters

Standard Parallel Scale: 1.000 200 (exact)

One International Foot = 0.3048 meters

**(e) Canyonville-Grants Pass Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Transverse Mercator

Latitude of Grid Origin: 42°30'00" North

Central Meridian: 123°20'00" West

False Northing: 0 meters

False Easting: 40 000 meters

Central Meridian Scale: 1.000 070 (exact)

One International Foot = 0.3048 meters

**(f) Columbia River East Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Lambert Conformal Conic (Single Parallel- Tangent)

Standard Parallel & Grid Origin: 45°40'00" North

Central Meridian: 120°30'00" West

False Northing: 30 000 meters

False Easting: 150 000 meters

Standard Parallel Scale: 1.000 008 (exact)

One International Foot = 0.3048 meters

**(g) Columbia River West Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Oblique Mercator (Rectified Skewed Orthomorphic)

Latitude of Local Origin: 45°55'00" North

Longitude of Local Origin: 123°00'00" West

Skew Axis Azimuth at Origin: -65° 00' 00"  
False Northing: -3 000 000 meters  
False Easting: 7 000 000 meters  
Projection Skew Axis Scale: 1.000 000 (exact)

One International Foot = 0.3048 meters

**(h) Cottage Grove-Canyonville Zone**

North American Datum of 1983  
Reference Ellipsoid: Geodetic Reference System of 1980  
Projection: Transverse Mercator  
Latitude of Grid Origin: 42°50'00" North  
Central Meridian: 123°20'00" West  
False Northing: 0 meters  
False Easting: 50 000 meters  
Central Meridian Scale: 1.000 023 (exact)

One International Foot = 0.3048 meters

**(i) Dufur-Madras Zone**

North American Datum of 1983  
Reference Ellipsoid: Geodetic Reference System of 1980  
Projection: Transverse Mercator  
Latitude of Grid Origin: 44°30'00" North  
Central Meridian: 121°00'00" West  
False Northing: 0 meters  
False Easting: 80 000 meters  
Central Meridian Scale: 1.000 110 (exact)

One International Foot = 0.3048 meters

**(j) Eugene Zone**

North American Datum of 1983  
Reference Ellipsoid: Geodetic Reference System of 1980  
Projection: Transverse Mercator  
Latitude of Grid Origin: 43°45'00" North  
Central Meridian: 123°10'00" West  
False Northing: 0 meters  
False Easting: 50 000 meters  
Central Meridian Scale: 1.000 015 (exact)

One International Foot = 0.3048 meters

**(k) Grants Pass-Ashland Zone**

North American Datum of 1983  
Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Transverse Mercator  
Latitude of Grid Origin: 41°45'00" North  
Central Meridian: 123°20'00" West  
False Northing: 0 meters  
False Easting: 50 000 meters  
Central Meridian Scale: 1.000 043 (exact)

One International Foot = 0.3048 meters

**(L) Gresham-Warm Springs Zone**

North American Datum of 1983  
Reference Ellipsoid: Geodetic Reference System of 1980  
Projection: Transverse Mercator  
Latitude of Grid Origin: 45°00'00" North  
Central Meridian: 122°20'00" West  
False Northing: 0 meters  
False Easting: 10 000 meters  
Central Meridian Scale: 1.000 050 (exact)

One International Foot = 0.3048 meters

**(m) La Grande Zone**

North American Datum of 1983  
Reference Ellipsoid: Geodetic Reference System of 1980  
Projection: Transverse Mercator  
Latitude of Grid Origin: 45°00'00" North  
Central Meridian: 118°00'00" West  
False Northing: 0 meters  
False Easting: 40 000 meters  
Central Meridian Scale: 1.000 130 (exact)

One International Foot = 0.3048 meters

**(n) Ontario Zone**

North American Datum of 1983  
Reference Ellipsoid: Geodetic Reference System of 1980  
Projection: Transverse Mercator  
Latitude of Grid Origin: 43°15'00" North  
Central Meridian: 117°00'00" West  
False Northing: 0 meters  
False Easting: 80 000 meters  
Central Meridian Scale: 1.000 100 (exact)

One International Foot = 0.3048 meters

**(o) Oregon Coast Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Oblique Mercator (Rectified Skewed Orthomorphic)

Latitude of Local Origin: 44°45'00" North

Longitude of Local Origin: 124°03'00" West

Skew Axis Azimuth at Origin: +5° 00' 00"

False Northing: -4 600 000 meters

False Easting: -300 000 meters

Projection Skew Axis Scale: 1.000 000 (exact)

One International Foot = 0.3048 meters

**(p) Pendleton Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Transverse Mercator

Latitude of Grid Origin: 45°15'00" North

Central Meridian: 119°10'00" West

False Northing: 0 meters

False Easting: 60 000 meters

Central Meridian Scale: 1.000 045 (exact)

One International Foot = 0.3048 meters

**(q) Pendleton-La Grande Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Transverse Mercator

Latitude of Grid Origin: 45°05'00" North

Central Meridian: 118°20'00" West

False Northing: 0 meters

False Easting: 30 000 meters

Central Meridian Scale: 1.000 175 (exact)

One International Foot = 0.3048 meters

**(r) Portland Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Lambert Conformal Conic (Single Parallel - Tangent)

Standard Parallel & Grid Origin: 45°30'00" North

Central Meridian: 122°45'00" West

False Northing: 50 000 meters

False Easting: 100 000 meters

Standard Parallel Scale: 1.000 002 (exact)

One International Foot = 0.3048 meters

**(s) Salem Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Transverse Mercator

Latitude of Grid Origin: 44°20'00" North

Central Meridian: 123°05'00" West

False Northing: 0 meters

False Easting: 50 000 meters

Central Meridian Scale: 1.000 010 (exact)

One International Foot = 0.3048 meters

**(t) Sweet Home-Sisters Zone**

North American Datum of 1983

Reference Ellipsoid: Geodetic Reference System of 1980

Projection: Transverse Mercator

Latitude of Grid Origin: 44°05'00" North

Central Meridian: 122°30'00" West

False Northing: 0 meters

False Easting: 0 meters

Central Meridian Scale: 1.000 155 (exact)

One International Foot = 0.3048 meters

Stat. Auth.: ORS 184.616, 184.619, Chapter 179 OL 2011

Stats. Implemented: ORS 209.130, 209.155, 209.250, 390.770 and Chapter 179 OL 2011