Oregon State Historic Preservation Office
Oregon Parks and Recreation Department
725 Summer Street NE, Suite C
Salem, Oregon 97301

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GIS SUPPLEMENT

For

GUIDELINES FOR CONDUCTING HISTORIC RESOURCE SURVEYS IN OREGON (rev. February 2008)

Contact for more information:
Cara Kaser
Survey Coordinator
(503) 986-0784
cara.kaser@state.or.us

Background

Beginning in 2010, the Oregon State Historic Preservation Office (SHPO) will be adding a Geographic Information System (GIS) component to its historic sites information system in an effort to make historic sites information more accessible and useful. This data system is the master repository of information about Oregon's historic resources (buildings, structures, sites, etc.). Beginning in the 1970s, this information has been collected through historic resource surveys conducted for preservation planning purposes and in accordance with state and federal compliance activities. All information is available for use and duplication by anyone, including federal, state, and local governments, consultants, property owners, and the general public.

Purpose of the GIS Supplement

The GIS component will provide a new, map-based way to access and search Oregon's historic, above-ground sites. Specifically, this feature will link information already collected through survey and captured in Oregon's historic sites information system to a geographic location on a digital map. Users will have the ability to see locations of historic sites displayed graphically, select specific resources, and query data on those resources. Through graphic symbols, the map feature will also show selected attributes of resources, such as National Register eligibility and listed status. Examples of potential GIS capabilities include:

- Graphically show the location of National Register-listed (or eligible) properties in a city or county.
- Graphically show the locations of historic resources statewide based on original use, such as granges or schools.
- Select resources within a defined area and query information about those resources.
- Generate custom, user-created maps for survey and reporting purposes.

A key component to the successful deployment of a GIS for historic resources is to capture accurate location information during survey.

In addition to recording a physical street address for a property, the SHPO strongly encourages surveyors to begin collecting latitude and longitude coordinates for each resource surveyed and recording these coordinates in the Oregon Historic Sites Database. Recording latitude/longitude coordinates for resources will ensure that data collected will be imported into the historic sites information system more quickly and made accessible to online users sooner than survey data submitted to the SHPO without latitude/longitude coordinates. In addition, latitude/longitude information can be used by surveyors and local governments for historic preservation planning and other applications, such as mapping or data query.

Guidance for Collecting Latitude/Longitude Coordinates

Collecting latitude/longitude coordinates for resources using the North American Datum of 1983 (NAD83) is preferred by the SHPO over collecting coordinates using other geographic coordinate systems, such as the Universal Transverse Mercator (UTM) coordinate system. Latitude and longitude coordinates are unique to any given point on Earth and is a system used both nationally and worldwide. Unlike the UTM coordinate system, each latitude and longitudinal angle is unique and does not need to reference a larger zone to specify a point. Recording unique latitude/longitude coordinates can aid in the accuracy of data entered into the Oregon Historic Sites Database and streamline information sharing between public agencies and historic preservation professionals.

The North American Datum is the official datum used in North America. Although the North American Datum of 1927 (NAD27) is still extensively used by many federal agencies, including the National Park Service, the North American Datum of 1983 (NAD83) references a newer and more precise global ellipsoid used to calculate exact position. In addition, NAD83 is an Earth-centered datum, meaning that it has no initial point or direction. NAD83 is also very similar to the new World Geodetic System (WGS) called WGS84. WGS84 is often the default datum for many Global Positioning System (GPS) devices and mapping applications. Although coordinates displayed in NAD83 and WGS84 are slightly different, they can be considered nearly the same for historic resource survey purposes in Oregon. However, NAD83 should be used as the datum to collect resource location information whenever possible.

- **Latitude/Longitude Information:** Record latitude and longitude coordinates in the respected fields for each resource in the "Additional Location Info" tab. Both latitude and longitude should be expressed as Decimal Degrees (DD) to at least the fifth decimal place with a datum of NAD83. In Oregon, all latitude is measured in positive values; all longitude is measured in negative values. Example: 45.93009 (latitude); -118.38543 (longitude).

    - For a single property, record latitude/longitude coordinates for the center of the primary building or feature on the property (e.g. a property contains a house and associated garage; since the property will have only one resource record in the Oregon Historic Sites Database, record latitude/longitude for just the house).

    - For large properties with multiple resources that will have individual resource records in the Oregon Historic Sites Database, such as a farmstead or military complex, record latitude/longitude coordinates for the center of each resource.

    - For linear properties, such as a trail or railroad bed, record three or more latitude/longitude coordinates along the feature. To record latitude/longitude of

linear resources for compliance projects, one coordinate should be the center of where the resource is being crossed; the other two coordinates should be either end of the Area of Potential Effect (APE).

Tools for Collecting Latitude/Longitude Coordinates

Below is a list of devices and digital applications that can be used to determine latitude/longitude coordinates. Please note that this is not a complete list.

- Global Positioning System (GPS) Devices:
    - Any of a variety of electronic devices that receive GPS signals for determining a location on Earth can be used to collect latitude/longitude coordinates during historic resource survey. The degree of accuracy of data depends on device model and features.
- Online Mapping and Coordinate Conversion Tools:
    - Topoquest (free) -- http://www.topoquest.com/
    - NADCON, tool to convert between NAD27 and NAD83 (free) -- http://www.ngs.noaa.gov/cgi-bin/nadcon.prl
- Desktop Mapping Tools
    - GeoPDF USGS Maps and TerraGo GeoPDF Toolbar (free) – http://www.store.usgs.gov/ (click on “Map Locator”)
    - ArcGIS Explorer (free) -- http://www.esri.com/software/arcexplorer/index.html
    - Google Earth (free) -- http://earth.google.com/
    - ArcGIS (fee/subscription) -- http://www.esri.com/software/arcgis/index.html