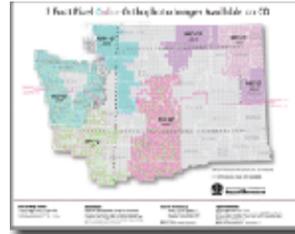


Transportation Framework

The Transportation Framework is called WA-Trans. It is a statewide transportation database of location-based transportation data to use in GIS across the state.

WA-Trans is a collaborative project and will contain the best data available from all levels of government including tribal nations. Data includes information about roads, rails, ferries, ports, aviation and non-motorized transportation infrastructure. The data will be seamless, connected, consistent and continuous between jurisdictions and boundaries and other framework layers and will be continuously improved. WA-Trans will be useful for a large set of business needs. For details please visit our web site:

[www.wsdot.wa.gov/mapsdata/TransFramework/default.htm](http://www.wsdot.wa.gov/mapsdata/TransFramework/default.htm)



Statewide Orthophoto Program

The WSDOT Geographic Services Office partners with a number of different Washington State and local governments in a joint effort to produce and share orthophoto data.

This cooperative approach for the production of orthophotos substantially benefits the citizens of Washington, government partners, and other organizations that decide to cooperate in the project or purchase products.

Statewide imagery is typically 18" GSD and is available in the GIS Workbench. The actual imagery resides on the Corporate W drive. Please visit the Statewide Orthophoto Program web site for more information

[wwwi.wsdot.wa.gov/ppsc/geoSrvcs/StatewideOrthos.htm](http://wwwi.wsdot.wa.gov/ppsc/geoSrvcs/StatewideOrthos.htm)

Geographic Services Contacts

George Spencer - Office Manager  
360-709-5515

Ron Cihon - Cartography & GIS Manager  
360-709-5510

John Tull - Photogrammetry Manager  
360-709-5540

Scott Campbell - Photogrammetry Supervisor  
360-709-5545

Kurt Iverson - Survey Manager  
360-709-5532

Kurt Williamson - Survey Supervisor  
360-709-5533

Jim Walker - Aerial Photo Manager  
360-709-5555

Vern Potts - Aerial Photographer  
360-709-5551

Help Desks

Imagery Help Desk -Jacque Whaley  
360-709-5541

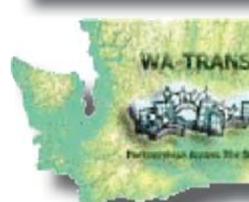
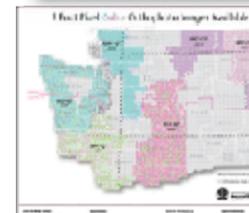
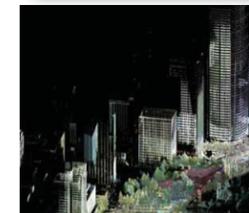
GIS Help Desk - Julie Fogde  
360-709-5509

Geographic Services Office Product Contacts

Aerial Photography	Aerial Imagery / Service / Research	Danielle Huston-Brown	360-596-8950
Cartography/GIS	WSDOT GIS Training Coordinator Cartography / Special Maps / Research	<b>Julie Fogde</b>	<b>360-596-8919</b>
		<b>Mark Bozanich</b>	<b>360-596-8921</b>
Geodetic Survey	Monument Database / Research	Heidi Miller	360-596-8930
Photogrammetry & Remote Sensing	3-D Terrestrial LiDAR Orthophotos & Archive Data 3-D Base Mapping	Jackie Ouellette	360-596-8942
		Jacque Whaley	360-596-8941
		Scott Campbell	360-596-8945
GIS Applications	<b>Application Development Team</b>	Alan Smith	360-596-8925
		Tami Griffin	360-596-8926
Statewide Projects	<b>WA-Trans</b> Framework Statewide Ortho Imagery	Jacque Whaley	360-596-8941

# Geographic Services Office

Facilitating Project Delivery With Cutting Edge Technology



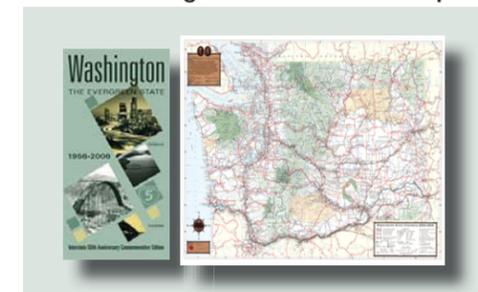
The Washington State Department of Transportation (WSDOT) Geographic Services Office provides products vital to WSDOT project delivery.

Geographic Services provides geodetic survey control, aerial photography, 3D Terrestrial Laser Scanning, base maps, orthophotos, and GIS data services. Our mission is to provide project engineers, planners, environmental specialists and operations staff accurate data for planning and pre construction analysis, project development design, maintenance, operations, and communications.

Geographic Services is home to a number of statewide programs that serve WSDOT, other state agencies, Tribal Governments, county & city governments, and Washington State Citizens.

Our cost recovery units partner with consultants to get your project done in the best possible time. This not only helps deliver projects on time but also keeps costly project data in a central location for use by all WSDOT staff.

The Washington State Tourist Map





## Geodetic Survey

The Geodetic Survey Branch maintains a geodetic reference network of very accurately located survey points that form the foundation for mapping, design, and construction of WSDOT projects. The utilization of the reference network yields a stream of benefits to WSDOT and other entities that typically require accurate and compatible spatial information. Universal compatibility, of such a reference system, allows users of various information products



to combine and integrate other information products regardless of the original purpose for which the information was produced.

### Monument Database

The WSDOT Monument Database is a survey control archival and retrieval system. The database offers the advantages of more timely access to data, elimination of duplicate efforts, more efficient utilization of technical staff, and increased accountability. The database also allows for better decisions based on more available data and provides a fire-safe, high security, offsite mechanism for geodetic information. Currently, more than 1,000 customer/users, internal and external to WSDOT, access the database per month. Please visit the Survey Monument Database web site to access the monument engine.

<http://www.wsdot.wa.gov/monument/>



## Aerial Photography

Aerial photography is a key component of base mapping and existing record photography. Photography is flown on good weather days including weekends and holidays. The best photography for mapping is acquired between March and September to maximize our photographic quality.

The Aerial Image Archives now hold over 500,000 film and 30,000 digital



images of the Pacific Northwest dating from 1933 to the present in B/W, true color and color Infrared films.

### Products & Services

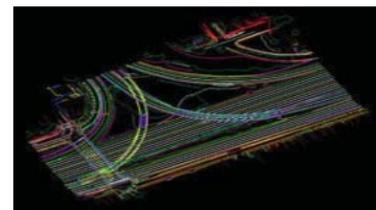
- Large Format Aerial Photography
- Medium & Small Format Aerial Photography
- Digital High Resolution Scanning
- Digital Contact Printing
- Digital Mosaic Printing
- Digital Enlargement Printing
- Digital Image Publication
- Darkroom Contact Printing
- Darkroom Enlargement Printing
- Print Mounting
- Print Laminating
- Print Framing
- Historic Image Research Services
- Image Certification Services
- Packaging & Shipping Services

<http://www.wsdot.wa.gov/MapsData/Aerial/default.htm>



## 3-D Base Mapping

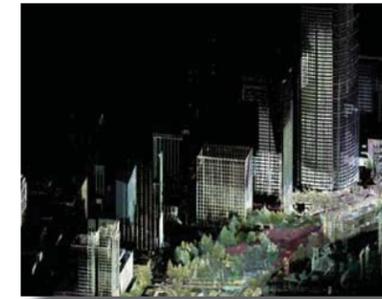
A 3-D Base Map is similar to a traditional map, consisting of linear and point features which have been precisely measured from aerial photos, ground surveys, or remote sensing tools. The features are represented by stylized lines and symbols in a CAD file, or plotted on hardcopy media. Base Map products can be made according to a wide range of specifications for accuracy and precision, depending on the requirements of the data users.



3-D Base Map data can be used in CAD, GIS and a variety of other applications. This data is used for accurate measurement of location, distances, and areas. The base map file can also be used to measure elevations. There are common approaches to making these products, although many variations are possible.

InRoads Surface is the existing ground surface created from the 3D surface and 2D feature base map data collected with Photogrammetric or 3D Terrestrial LiDAR methods (a new source of data for making 3-D base maps), and conventional survey methods. It usually covers the entire project extent but for large projects may be broken down into several pieces. This product is delivered in state plane coordinates ready for the design staff to move to project datum so no further importing of 3-D Base Map data to InRoads surfaces is needed.

<http://www.wsdot.wa.gov/PPSC/Photogrammetry/Default.htm>



## 3-D Terrestrial Laser Scanning

The Terrestrial Laser scanner captures a very dense 3-dimensional data set, often referred to as a "point cloud". This point cloud is used by a Photogrammetrist to create very accurate 3D Base Maps.

This relatively new survey technology has proven to be a fast, safe and efficient way to gather large amounts of data that can be modeled and measured almost immediately after scanning.



The scanned data set creates a record of "what was there" and can easily be accessed at a later date for additional data extraction if needed.

This "3D Record" is a great way to capture, view and measure changes that occur over time, such as land slides, earthquakes, and floods, and is also an excellent tool in gauging project progression, assisting with as-built plans and construction repairs.

Terrestrial Laser Scanned data collection can be used by itself or in conjunction with Photogrammetry and conventional survey methods as projects require. Terrestrial Laser Scanning is one of many tools WSDOT Geographic Services uses to provide highly accurate, 3D data sets to its customers.

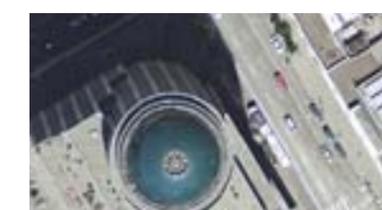
There are many benefits to using this technology including crew and driver safety, avoiding or reducing lane closures, and emergency mapping of slides, earthquake damage, and flooding.

[www.wsdot.wa.gov/mapsdata/Photogrammetry/HDS.htm](http://www.wsdot.wa.gov/mapsdata/Photogrammetry/HDS.htm)



## Orthophotos

Orthophotos are created by combining the 3-D digital terrain model (DTM) data with very precise digital aerial photographic images. Powerful software applications are used to take apart the image, pixel by pixel, and reassemble it so that each pixel and feature is in its correct geographic location. Orthophotos can be made according to a wide range of specifications for accuracy, precision, and resolution.

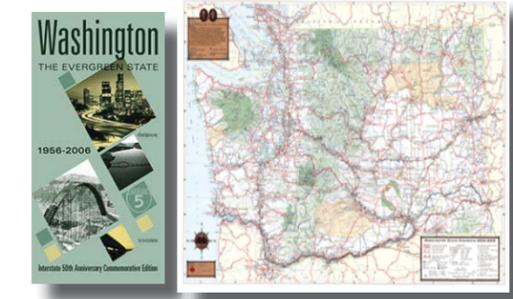


Orthophotos can also be created as stand-alone products without the need to create a 3D base map. This requires less labor than is needed to collect the very detailed data for design use, so the cost is less than the cost of 3D base mapping. The photos and survey to make this special product usually cannot be used to go back and make precise CAD files for design work.

WSDOT Photogrammetry orthophotos are available for use with GIS, MicroStation, and InRoads. Our orthos are of the pre-construction State Routes & Highways according to project planning needs. They can be used for measurement of location, distances, and areas. Digital orthophotos at 6" resolution and higher are available for areas mapped by Geographic Services Photogrammetry since 1998.

Please visit the Image Portal for available areas and viewing.

<http://www.wsdot.wa.gov/PPSC/Photogrammetry/ImagePortal.htm>



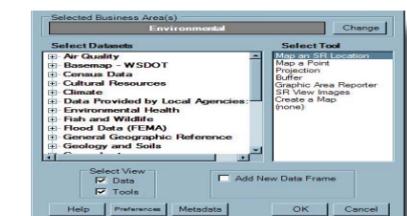
## Cartography & GIS

Prepares custom and special purpose maps including:

- The Official State Highway Map
- Freight and Goods Maps
- Annexations from quarterly OFM reports
- Functional Class Maps
- 2-D Base Maps & GIS Layers depicting jurisdictional boundaries.
- Custom and Specialty Maps

### GIS

The GIS Linear Referencing System (LRS) Layer scales of 1:24,000 and 1:500,000, including



mainlines and ramps; adding correct ARM values that are in sync with the most current published Road Log.

- Tele/Atlas data set for address matching
- Provide GIS training and Help-Desk Support
- Leadership in the development of the Washington Transportation Framework

Application Development Team builds GIS software tailored for WSDOT planning, programming, and other uses. The Application Team takes a lead role in the development of standards for GIS architecture, and applications that have a location component. The GIS Applications Development Team has supported the development of:

- The GIS Workbench
- Several Web-based mapping applications
- Roadside Feature Inventory Project
- Impact Risk Screening tool
- Real Estate ArcIMS site
- Enterprise Location Class
- Traffic/Weather/Camera Web prototype
- Maintenance & Equipment Tracking Pilot

<http://www.wsdot.wa.gov/GIS/supportteam/default.asp>