



# sanborn

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## Ortho Products and Services

### Digital Orthophotography

Sanborn Orthos are a suite of orthoimagery products that provide geospatially accurate visual representations of the earth's surface. Rapidly changing surroundings have stimulated an awareness of the importance of an accurate, up-to-date understanding of the environment, and the resources that occupy it. Sanborn creates valuable digital orthoimagery products for the geospatial industry through innovative software techniques, rigorous production processes, and comprehensive quality control measures.

Sanborn owns and operates multiple digital acquisition assets customized for the unique collection requirements of cameras and sensors. Offering a variety of systems to collect aerial imagery, Sanborn has the capability to capture and process data to serve almost any mapping need.

Sanborn Orthos can be used for a vast array of GIS applications. They are produced by collecting aerial imagery and applying a rectification process using the associated area's digital elevation data. The orthorectification process is a software operation that makes allowances and corrections to the imagery data related to local elevation differences and the curvature of the earth's surface. Sanborn offers two types of orthophotography product---**Quick Ortho** and **Standard Ortho** ---each available for delivery at various pixel resolutions.

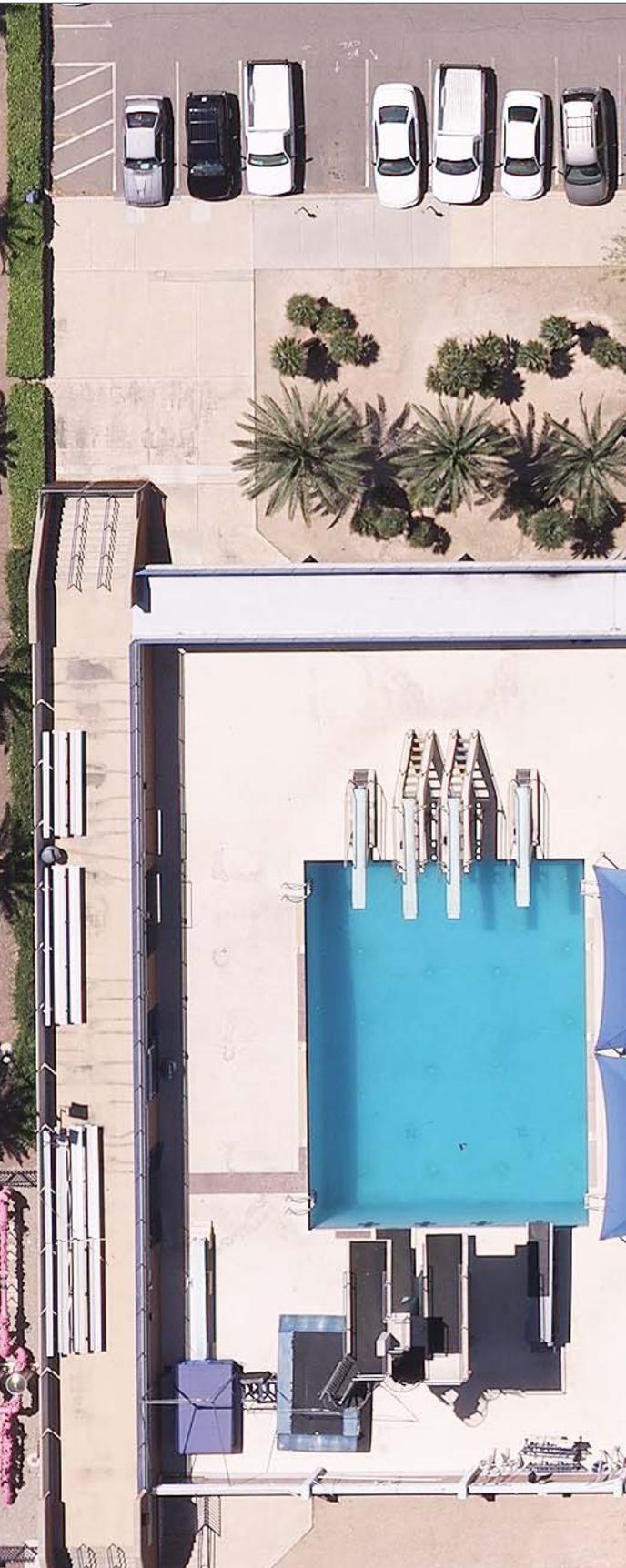
#### Orthoimagery applications:

- GIS land base / Annual base map update
- Engineering design
- Asset management
- Municipal and government maps
- Right-of-way mapping
- Alignment mapping
- Public and private land development
- Urban planning
- Soils science
- Watershed management
- Geography
- Landscape architecture
- Pollution prevention
- Agriculture
- Crop science
- Environmental assessment
- Planimetric feature extraction
- Image analysis
- Post-incident management

Ortho Products and Services, continued



3" pixel resolution Vexcel true color orthoimagery (resampled to 6" for printing)



### Quick Ortho

Quick Orthos are a cost effective way to collect imagery for projects in time constrained environments. Sanborn's Quick Orthos support various geographic information analysis and mapping applications. The result combines the image characteristics of a photograph with the geometric qualities of a map that facilitates the integration and sharing of data, promotes cooperative processes, and reduces high-cost duplication of database development. Sanborn's Quick Ortho products are quicker to obtain and have a reduced processing time, allowing for faster delivery.

- Quick turnaround, 2-4 weeks from acquisition
- Automated mosaic seam lines
- Suitable for general mapping purposes

### Quick Ortho Accuracies

Available Pixel Resolution	3"	4"	6"	12"
Map Scale	1"= 50'	1"= 50'	1"= 100'	1"= 200'
Accuracy	+/- 10'	+/- 10'	+/- 15'	+/- 20'

- Optional deliverables include:
  - Full mosaic file

### Standard Ortho

Sanborn's Standard Orthos are an increasingly conventional option. Standard Orthos provide a great framework layer for any GIS. This product can be used as a base layer for updating or deriving additional geographic information, such as transportation networks, hydrographic features, elevation, and land cover. This product yields greater accuracy and greater detail, as well as better inherent positional accuracy. Although processing time also increases, greater accuracy allows for a wider variety of different uses.

- Major bridge corrections performed (interstates and state highways)
- Intelligent seams with minimal editing
- Sanborn uses automated and manual processing for Standard Ortho products
- Automated color balancing
- Horizontal accuracy meets a minimum of NMAS

### Standard Ortho Accuracies

Available Pixel Resolution	3"	4"	6"	12"
Map Scale	1"=50'	1"=50'	1"=100'	1"=200'
Accuracy	+/- 1.6'	+/- 1.6'	+/- 3.33'	+/- 6.6'

- Optional deliverables include:
  - Full mosaic file
  - Contouring
  - DTM/DEM delivery
  - True Ortho upgrade

### True Ortho Option

While standard orthophoto rectification corrects relief displacement in ground level features, aboveground features, such as the tops of buildings and bridges, aren't normally corrected because they are not modeled in the digital terrain model (DTM). In the final orthophoto, these features appear distorted in the form of building lean and warped bridges. In severe cases, the distortion can impact the usefulness of the imagery. With True Orthophotography surrounding streets and other cultural features, ordinarily not visible in standard orthophotos, are clearly shown. This innovative process is possible by using Sanborn proprietary software and procedures. With this method, more cadastral information can be captured from digital orthophoto imagery.

- Increases visibility of streets, manholes, and utilities poles
- Removes building lean
- Corrects distortion of obscured features

### Choosing the right resolution

Orthophotography can vary greatly in accuracy and pixel resolution. Pixel (a single point in a graphic image) resolution refers to the actual distance on the ground each pixel represents in the orthophotography. For example, a one-foot pixel resolution means each pixel in the image covers one foot on the ground. Some common resolutions include three-inch, six-inch, and one-foot. The higher the resolution, the greater the visible detail.



#### 12" resolution orthophotography

Generally captured at higher altitudes, 12-inch resolution orthophotography provides a greater scale at a lower resolution. It is a cost effective way to collect large-area projects in time constrained environments.

##### Key identifiable features:

- ❑ Paved Roads
- ❑ Airfields
- ❑ Railroads
- ❑ Buildings
- ❑ Hydrology
- ❑ Forested Areas
- ❑ Quarries

##### Typical uses:

- ❑ Regional/rural planning
- ❑ Tax assessment
- ❑ Building counts
- ❑ Change detection
- ❑ Land cover trends
- ❑ Watershed management
- ❑ Forestry management
- ❑ Highway mapping



#### 6" orthophotography

Six-inch resolution orthophotography is a standard resolution option. The 6" resolution ortho product yields greater accuracy and greater detail, as well as better inherent positional accuracy.

##### Key identifiable features:

- ❑ Roads - Paved and unpaved
- ❑ Parking Lots and Driveways
- ❑ Lakes, ponds, rivers and streams
- ❑ Culverts and headwalls
- ❑ Property line fences
- ❑ Utility Poles

##### Typical uses:

- ❑ State planning
- ❑ Land boundaries
- ❑ Planimetric
- ❑ Pervious/impervious surface modeling
- ❑ Feature identification
- ❑ Stormwater management
- ❑ Natural resource management
- ❑ Irrigated/non-irrigated land management



#### 3"-4" orthophotography

Captured at lower altitudes, high resolution orthophotography has the greatest resolution and provides a product that is extremely rich in detail and has the best innate positional accuracy available.

##### Key identifiable features:

- ❑ Utilities - fire hydrants, manholes, catch basins
- ❑ Power and light poles
- ❑ Billboards and traffic signs
- ❑ Curbs and gutter
- ❑ Transportation paint lines
- ❑ Single trees and shrubs
- ❑ Golf course - tees, greens, fairways, sandtraps

##### Typical uses:

- ❑ Urban planning and zoning
- ❑ Contour development
- ❑ Asset management
- ❑ 3D Modeling
- ❑ Utility and pipeline mapping projects
- ❑ Land development, transportation, corridor projects
- ❑ Volumetric analysis
- ❑ Civil engineering

### Deliverables

- ❑ Orthoimagery data will be delivered in raster format
- ❑ Metadata
- ❑ Deliverable on DVD-ROM or external hard drive

### Minimum Order

- ❑ \$30,000
- ❑ Multiple products must be in same geographic area to meet minimum order requirement

### Conditions

- ❑ Order acceptance subject to Sanborn approval
- ❑ Price catalog is subject to change
- ❑ Accuracy is subject to inherent accuracy of customer supplied DEM
- ❑ High relief and dense terrain areas subject to Sanborn approval
- ❑ Product is warranted for 90 days as defined in the End User License agreement
- ❑ Shipping & handling/delivery media constitute additional charges

### How To Order

To order Sanborn Ortho products, contact Sanborn customer service at 1.866.SANBORN or e-mail [information@sanborn.com](mailto:information@sanborn.com). Shipping and handling fees may apply.

### About Sanborn

Sanborn is a 21st century industry leader in geospatial solutions and technology, offering superior services, program management, and customer support. For our clients we provide a national presence, extensive resources, quick responses, and exceptional value. For over a century, we have been a leader in the rapidly growing geospatial industry, with successful projects delivered worldwide. For more information, visit us online at [www.sanborn.com](http://www.sanborn.com), or call 1.866.726.2676 to speak with a representative.