

VBMP Ortho Products

VIRGINIA BASE MAPPING PROGRAM

Sanborn Orthos are a suite of spatially accurate orthoimagery products that provide geographically accurate visual representations of the earth. 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.

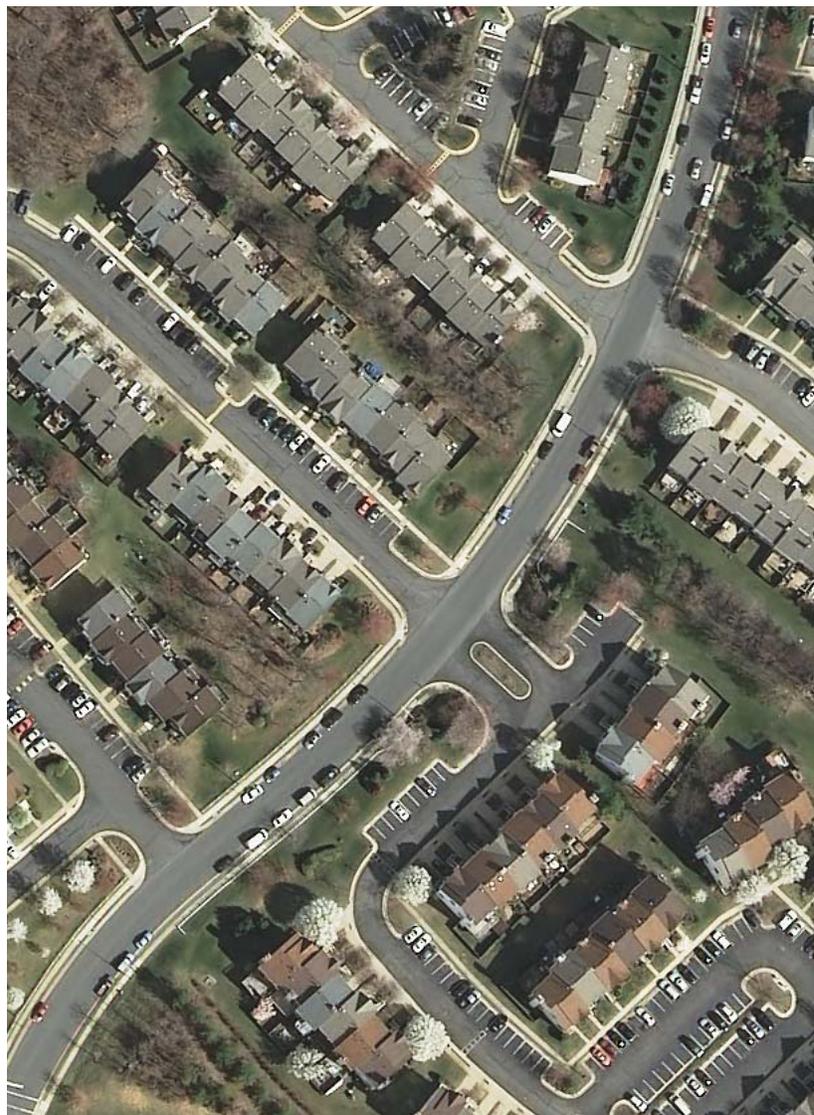
Sanborn Orthos are produced by collecting aerial imagery and associated digital elevation data. Sanborn offers orthophotography which is available at various pixel resolutions, which can apply to various applications.

Typical uses of a Sanborn Ortho:

- Annual base map update
- Planimetric feature extraction
- Image analysis
- GIS base layer
- Post-incident management

Orthoimagery applications:

- GIS land base
- 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



Sample: Derived from 12" Sanborn Ortho, Prince William County, VA

VBMP Ortho Products, continued

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 NNAS

Standard Ortho Accuracies

Avail. Pixel Resolution	3"	6"	12"
Map Scale	1"=100'	1"=100'	1"=200'
Accuracy	+/- 3.33'	+/- 3.33'	+/- 6.6'

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

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 (see Standard Ortho sample above) 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.

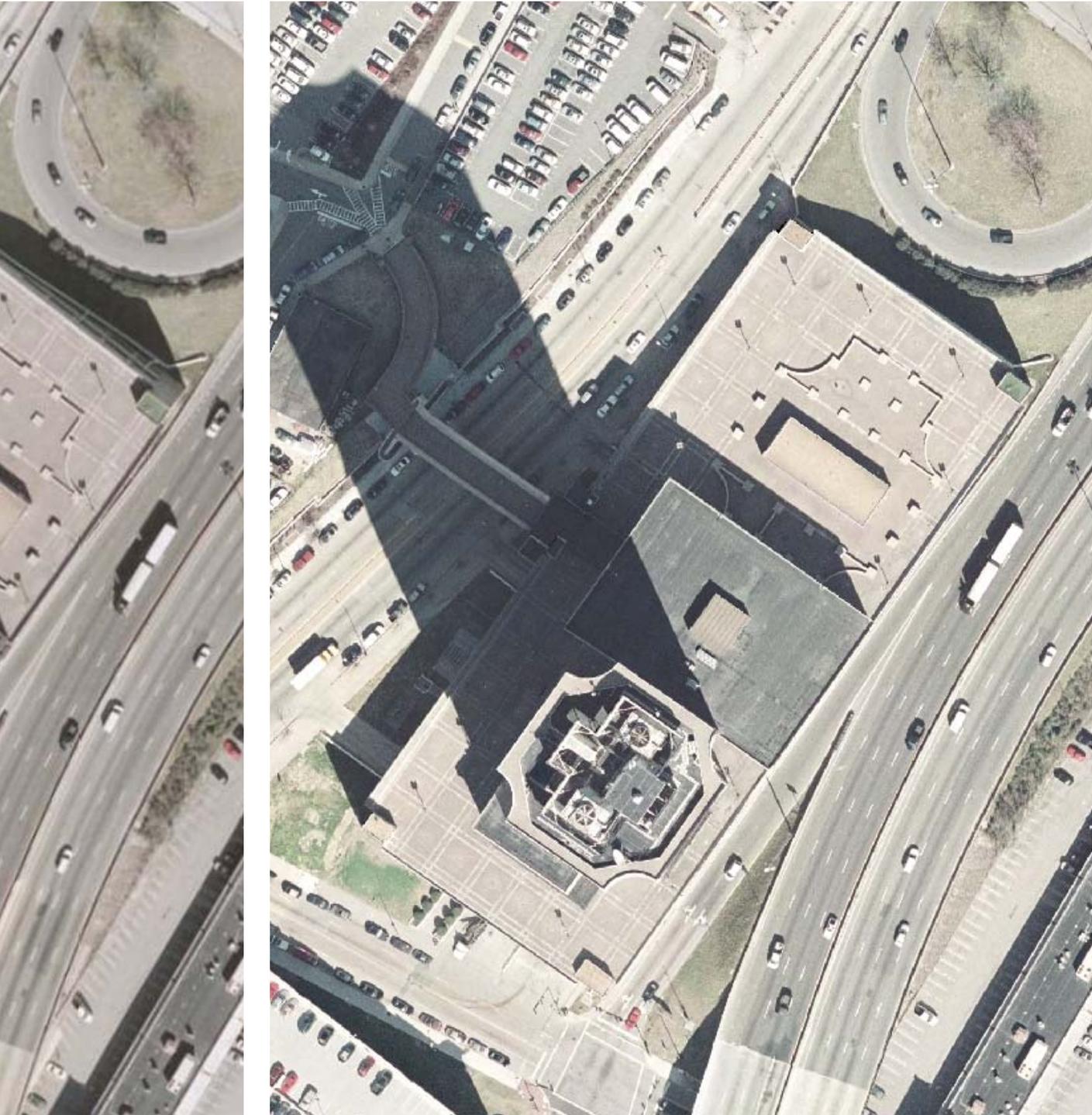
- ▣ Increases visibility of streets, manholes, and utilities poles
- ▣ Removes building lean
- ▣ Corrects distortion of obscured features

Standard Ortho



Sample Above Derived from 6" Standard Ortho, Richmond, VA.

True Ortho



Sample Above Derived from 6" True Ortho, Richmond, VA—note corrected building lean.

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 square 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

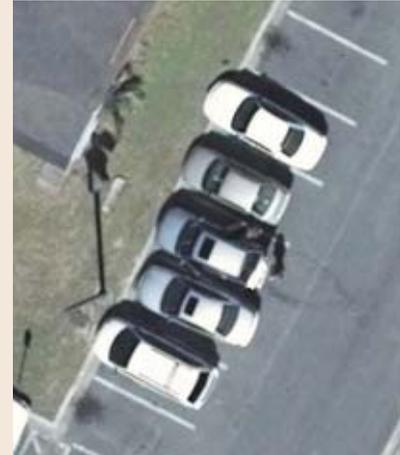
Six-inch resolution orthophotography is an increasingly standard resolution option. The 6" resolution ortho product yields greater accuracy and greater detail, as well as better inherent positional accuracy.

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
- Planimetrics
- Pervious/impervious surface modeling
- Feature identification
- Stormwater management
- Natural resource management
- Irrigated/non-irrigated land management



3" orthophotography

High resolution orthophotography has the greatest resolution, providing a product that is 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 and other corridor projects
- Volumetric analysis
- Civil engineering

Deliverables

- Orthoimagery data will be delivered in GeoTiff and JPEG2000 formats
- Metadata
- Deliverable on DVD-ROM or external hard drive

About Sanborn

With a rich tradition of mapping dating back to 1866, Sanborn provides comprehensive end- to-end geospatial solutions. Sanborn offers products and services that satisfy diverse and evolving customer needs for GIS software systems, application development, systems integration, and spatial analysis and modeling. Leveraging precision remote sensing techniques, Sanborn also supports a wide range of applications and users. Sanborn's solutions are founded on a strong legacy of innovative geospatial data collection and processing capabilities. An internationally recognized company, Sanborn has multiple U.S. offices with customers worldwide. For more information, visit www.sanborn.com.