West Virginia Statewide Imagery Contract

Prepared by Kurt Donaldson 4/23/2024

INFORMATION SHEET

West Virginia Statewide Imagery Program

A statewide contract through the WV GIS Technical Center at West Virginia University is available for the acquisition of digital orthoimagery in West Virginia. As part of the Statewide Imagery Program (WVSIP), the imagery is unit priced so that participants can budget for imagery years in advance as well as pay over multiple budget cycles. To meet the needs of the largest number of potential participants, a variety of product options are available through the WVSIP program to include countywide unit pricing for 12-inch, 6-inch, 4-inch, and 3-inch spatial resolutions. This contract allows for municipalities, counties, state agencies, and the federal government to tap into an existing contract to acquire imagery at a known unit price that is usable until June 30, 2025.

Pixel Resolution (Detail Level)	3-inch	4-inch	6-inch	12-inch
Cost per square mile	**$106**	**$77**	**$62**	**$42**
Map Scale	1" = 50'	1" = 67'	1" = 100'	1" = 200'
Horizontal Accuracy (ASPRS 1)	0.5 feet	0.66 feet	1.0 feet	2.0 feet

Note: 4-band stacked imagery that includes color infrared can be added at 25% of the acquisition cost

A target spatial resolution of 6 inches is recommended for counties that can afford this level of detail. The horizontal accuracy standard is ASPRS Class 1. The original state contract was awarded to Blue Mountain Inc. which is now part of The Thrasher Group, Inc. The state contact and county unit prices can be viewed at the following links: Amendment #2 (7/1/2024-6/30/2025) | Amendment #1 (current price list) | 2019 Contract

Performance Period

The total contracting period of this contract has been extended from 1 January 2024 through 30 June 2025 to include the spring 2025 leaf-off season.

How can you participate?

Any organization can participate in the Statewide Imagery Program. A signed MOU that states the specifications and costs is all that is needed to participate in the program. The MOU must be signed by **March 15** of the flight season. For more information, contact one of the following program representatives:

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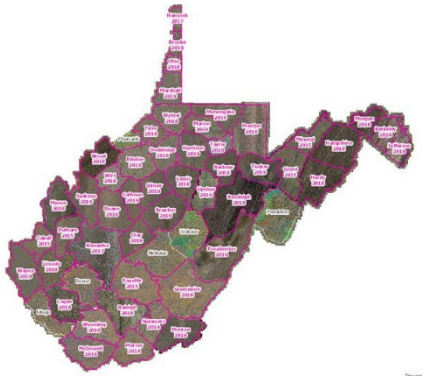
View Aerial Imagery Examples

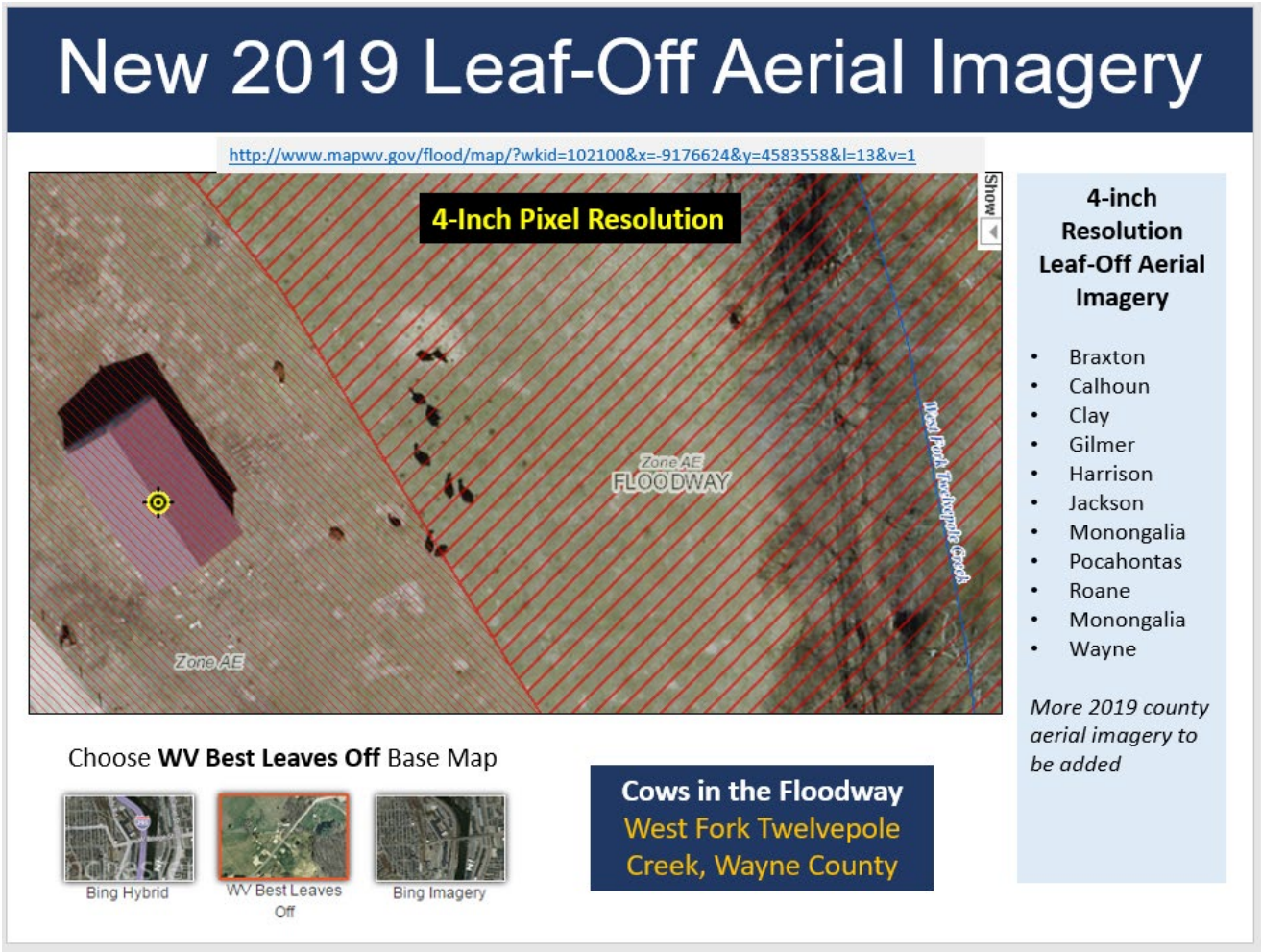
You can review the aerial imagery acquired via the State Contract by linking to the statewide aerial imagery web service below. Refer to counties of the vendor acquisition map by The Thrasher Group, Inc.

- County Aerial Imagery Year Acquired
- County Aerial Imagery Resolution
- County Aerial Imagery Vendor
- Resolution Comparison – Baseball Fence
- Resolution Comparison – WVU Coliseum
- Statewide Leaf-Off imagery web map service
- Download County Aerial Imagery



Detailed Imagery Resolution

The four-inch resolution imagery is high enough resolution to count cows on the imagery.



State Contract Aerial Imagery Pricing

AERIAL IMAGERY PRICING

Pixel Resolution (Detail Level)	3-inch	4-inch	6-inch	12-inch
Cost per square mile	**$106**	**$77**	**$62**	**$42**
Map Scale	1" = 50'	1" = 67'	1" = 100'	1" = 200'
Horizontal Accuracy (ASPRS 1)	0.5 feet	0.66 feet	1.0 feet	2.0 feet

Notes:
4-band stacked imagery that includes color infrared can be added at 25% of the acquisition cost.
The county border buffer is 1000 feet unless otherwise noted.

County	Square Miles	12" @ $42 per square mile	6" @ $62 per square mile	4" @ $77 per square mile	3" @ $106 per square mile
BARBOUR COUNTY	343	$14,406	$21,266	$26,411	$36,358
BERKELEY COUNTY	322	$13,524	$19,964	$24,794	$34,132
BOONE COUNTY	503	$21,126	$31,186	$38,731	$53,318
BRAXTON COUNTY	516	$21,672	$31,992	$39,732	$54,696
BROOKE COUNTY	93	$3,906	$5,766	$7,161	$9,858
CABELL COUNTY	288	$12,096	$17,856	$22,176	$30,528
CALHOUN COUNTY	280	$11,760	$17,360	$21,560	$29,680
CLAY COUNTY	344	$14,448	$21,328	$26,488	$36,464
DODDRIDGE COUNTY	320	$13,440	$19,840	$24,640	$33,920
FAYETTE COUNTY	668	$28,056	$41,416	$51,436	$70,808
GILMER COUNTY	339	$14,238	$21,018	$26,103	$35,934
GRANT COUNTY	480	$20,160	$29,760	$36,960	$50,880
GREENBRIER COUNTY	1024	$43,008	$63,488	$78,848	$108,544
HAMPSHIRE COUNTY	645	$27,090	$39,990	$49,665	$68,370
HANCOCK COUNTY	88	$3,696	$5,456	$6,776	$9,328
HARDY COUNTY	584	$24,528	$36,208	$44,968	$61,904
HARRISON COUNTY	416	$17,472	$25,792	$32,032	$44,096
JACKSON COUNTY	471	$19,782	$29,202	$36,267	$49,926
JEFFERSON COUNTY	212	$8,904	$13,144	$16,324	$22,472
KANAWHA COUNTY	910	$38,220	$56,420	$70,070	$96,460
LEWIS COUNTY	389	$16,338	$24,118	$29,953	$41,234
LINCOLN COUNTY	439	$18,438	$27,218	$33,803	$46,534
LOGAN COUNTY	455	$19,110	$28,210	$35,035	$48,230
MARION COUNTY	311	$13,062	$19,282	$23,947	$32,966

County	Square Miles	12" @ $42 per square mile	6" @ $62 per square mile	4" @ $77 per square mile	3" @ $106 per square mile
MARSHALL COUNTY	312	$13,104	$19,344	$24,024	$33,072
MASON COUNTY	445	$18,690	$27,590	$34,265	$47,170
MCDOWELL COUNTY	535	$22,470	$33,170	$41,195	$56,710
MERCER COUNTY	420	$17,640	$26,040	$32,340	$44,520
MINERAL COUNTY	329	$13,818	$20,398	$25,333	$34,874
MINGO COUNTY	424	$17,808	$26,288	$32,648	$44,944
MONONGALIA COUNTY	366	$15,372	$22,692	$28,182	$38,796
MONROE COUNTY	473	$19,866	$29,326	$36,421	$50,138
MORGAN COUNTY	230	$9,660	$14,260	$17,710	$24,380
NICHOLAS COUNTY	654	$27,468	$40,548	$50,358	$69,324
OHIO COUNTY	109	$4,578	$6,758	$8,393	$11,554
PENDLETON COUNTY	698	$29,316	$43,276	$53,746	$73,988
PLEASANTS COUNTY	134	$5,628	$8,308	$10,318	$14,204
POCAHONTAS COUNTY	941	$39,522	$58,342	$72,457	$99,746
PRESTON COUNTY	651	$27,342	$40,362	$50,127	$69,006
PUTNAM COUNTY	350	$14,700	$21,700	$26,950	$37,100
RALEIGH COUNTY	609	$25,578	$37,758	$46,893	$64,554
RANDOLPH COUNTY	1039	$43,638	$64,418	$80,003	$110,134
RITCHIE COUNTY	454	$19,068	$28,148	$34,958	$48,124
ROANE COUNTY	483	$20,286	$29,946	$37,191	$51,198
SUMMERS COUNTY	367	$15,414	$22,754	$28,259	$38,902
TAYLOR COUNTY	176	$7,392	$10,912	$13,552	$18,656
TUCKER COUNTY	421	$17,682	$26,102	$32,417	$44,626
TYLER COUNTY	261	$10,962	$16,182	$20,097	$27,666
UPSHUR COUNTY	355	$14,910	$22,010	$27,335	$37,630
WAYNE COUNTY	512	$21,504	$31,744	$39,424	$54,272
WEBSTER COUNTY	556	$23,352	$34,472	$42,812	$58,936
WETZEL COUNTY	361	$15,162	$22,382	$27,797	$38,266
WIRT COUNTY	235	$9,870	$14,570	$18,095	$24,910
WOOD COUNTY	377	$15,834	$23,374	$29,029	$39,962
WYOMING COUNTY	502	$21,084	$31,124	$38,654	$53,212

Note: A countywide buffer of 1000 feet is flown beyond the county border.

Vendor agrees to not exceed the countywide unit rates or price schedule listed for the services rendered:

FAQs

FREQUENTLY ASKED QUESTIONS

What is Aerial Imagery?

Aerial imagery refers to digital pictures taken from the air. These pictures are normally taken from a vertical perspective looking straight down from the airplane onto the rooftops. Digital aerial imagery requires bright sunlight and cloud free conditions for good results. Digital orthoimagery is the foundation for GIS, forming the base layer from which many additional data layers are created. It combines the characteristics of an aerial image with the geometric qualities of a map. This allows GIS and CAD software to accurately measure all visible ground features in their true geographic position and lets users:

- Make accurate distance and area calculations across the entire image mosaic
- Measure the true position of any feature observed in the orthoimagery

What is the best resolution for your needs?

Your organization should capture aerial imagery at the smallest feature and highest positional accuracy that you require, while not to paying for more than you need if there is no benefit. Refer to the table below to choose the best resolution. Digital aerial imagery can vary greatly in accuracy and pixel resolution. Pixel resolution (a single point in a graphic image) refers to the actual distance on the ground each pixel represents in the orthoimagery. For example, one-foot pixel resolution means each pixel in the image covers one foot on the ground.

Table 1. Comparison of Aerial Imagery Resolution

Resolution	3-inch	4-inch	6-inch	12-inch
Cost per square mile	$106	$77	$62	$42
Mapping of:	Utilities and public works	Utilities and public works	Urban and more developed areas	Rural and less developed areas
Mapping Scale	1:600 Map Scale 1” = 50’	1:800 Map Scale 1” = 67’	1:1200 Map Scale 1” = 100’	1:2400 Map Scale 1” = 200’ or 1” = 400’
Positional Accuracy	Very High	Higher than 6” Lower than 3”	Higher than 12” Lower than 4”	Lowest
Key Features Visible	*Very Small Infrastructure* ▪ Fire Hydrants ▪ Manhole Covers ▪ Individual people and animals ▪ Finer details on roads including markings and skid marks	*Smaller Infrastructure* ▪ Clearer Road Markings ▪ Power Lines	*Infrastructure* ▪ Property line fences ▪ Utility Poles ▪ Individual Trees ▪ Vehicle Types ▪ Road markings	*Large Infrastructure* ▪ Buildings ▪ Paved Roads ▪ Railroads ▪ Vehicles ▪ Tree/shrub line
Tax Parcel Conversion Projects or Re-mapping	Identifiability of small features somewhat improved over 4”. Lower cost-to-benefit ratio	Ideal for mapping fences and other survey features at a higher positional accuracy than 6”	Ideal for mapping fences, survey features, and land divisions (e.g., fences, walls, tree lines, roads)	Satisfactory for conversion projects
Other Notes	More building lean may be noticeable at 3” resolution for taller structures	2-foot contours for engineering grade maps generated at this resolution		

What is Uncorrected versus Corrected (Ortho) Aerial Imagery?
If you are planning to measure ground features or to create maps from your aerial images, then orthorectified imagery is necessary. Orthorectification corrects for tip or tilt of the aircraft and displacement in the photograph caused by changes in the ground elevation.

How often should aerial imagery be purchased by your organization?
We would like to see all counties flown once every five years at a minimum resolution of 12 inches. Rapidly growing counties or developing areas may choose to fly every year.

How is a client billed for the imagery?
Clients are billed upon the complete delivery of the imagery products. Organizations may be able to pay the aerial imagery company over more than one budget cycle.

When is leaf-off aerial imagery flown in West Virginia?
Leaf-off aerial imagery is flown during late February to early April when there is neither no snow on the ground nor flooding. Leaf-on conditions occur about April 10 of every year, depending on the location in the state.

When will the aerial imagery be delivered?
For spring flights, all ensuing deliverables must be completed before the end of the calendar year, and preferably before October 1.

What is color-infrared imagery?
Color-infrared imagery is a false-color image that includes the near-infrared spectral band. Color infrared imagery is good at penetrating atmospheric haze and for determining the health of vegetation.

What is oblique imagery?
Oblique imagery is aerial photography that is captured at approximately a 45-degree angle with the ground and thus allows viewers to see and measure not only the top of objects but the sides as well. Typically, oblique imagery requires proprietary software to view.

What are Benefits of a Statewide Imagery Program?
A coordinated statewide imagery program employs a collective approach where partners share imagery acquisition costs in an equitable manner and based on the available funding of organizations.

- Excellent value through:
  - economy of scale
  - partner funding
  - efficiency in implementation
- Data-sharing among members
- Specifications and QA/QC support
- RFP and contract administrative support

Business Case for Aerial Imagery. What is it used for?

- Aerial imagery is used throughout West Virginia to meet daily business needs. Imagery has many uses, including providing a common operating picture and accurately mapping the locations of natural and man-made features.
- Access to current imagery improves business efficiency and informs decision making.

What is the MrSID compression ratio?

MrSID (Multi-resolution Seamless Image Database) is a highly compressed format used to store images of photographs. The MrSIDs by default are compressed to a 20 to 1 ratio generation 4.

What is the defaults county border buffer?

The county border buffer is 1000 feet unless otherwise noted. The county can expand the buffer by adding the additional specifications in the Memorandum of Understanding.

What does The Thrasher Group offer a 4-inch resolution product?

The 4-inch resolution allows for two-foot contour accuracy, provides a spatial resolution that is slightly better than Google Earth, and captures slightly more detail than the 6-inch resolution product.