Dewberry

8401 Arlington Boulevard
Fairfax, Virginia 22031-4666

703 849 0396
703 849 0182 fax
www.dewberry.com

Report of Horizontal Accuracy Testing
2005 Digital Orthophotos for
Miami County, Indiana

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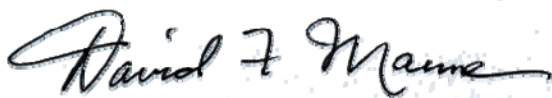
Reference: FGDC Geospatial Positioning Accuracy Standards
                  Part 3: National Standard for Spatial Data Accuracy (NSSDA)

Published in 1998, the NSSDA implements a statistical and testing methodology for estimating the positional accuracy of points on maps and in digital geospatial data, with respect to georeferenced ground positions of higher accuracy, reported at the 95% confidence level. The NSSDA replaces the 1947 National Map Accuracy Standard (NMAS) for digital geospatial data. The NMAS is applicable to graphic maps, as accuracy is defined by map scale. The NSSDA was developed to report accuracy of digital geospatial data that is not constrained by scale, to include digital orthophotos.

The "georeferenced ground positions of higher accuracy," referred to generically as "QA/QC checkpoints," were surveyed partly by Woolpert LLP, headquartered in Dayton, Ohio, and partly by Major Engineering and Land Surveying, Inc., headquartered in Indianapolis, Indiana. Each QA/QC checkpoint is a ground point feature that is well-defined and photo-identifiable on the digital orthophotos from which Indiana State Plane coordinates were measured by Dewberry & Davis. Dewberry then determined the Δx and Δy differences in Eastings (x-coordinates) and Northings (y-coordinates) between the ground-surveyed QA/QC checkpoints and their coordinates extracted from the digital orthophotos. Dewberry then computed the root-mean-square-error (RMSE) statistics, including $RMSE_x$, $RMSE_y$, and $RMSE_r$. $RMSE_r$ is the radial statistic which equals the square root of $[RMSE_x^2 + RMSE_y^2]$. Finally, The NSSDA absolute accuracy statistic ($Accuracy_r$) is computed as $RMSE_r$ x 1.7308 in order to report the tested horizontal accuracy at the 95% confidence level. Summary statistics are as follows for this county.

Criteria for 1-foot GSD Imagery	Acceptance Criteria	Tested
$RMSE_x$ (acceptance criteria 30)	2.04 ft	2.071 ft
$RMSE_y$ (acceptance criteria 30)	2.04 ft	1.361 ft
$RMSE_r$ (acceptance criteria 30)	2.89 ft	2.478 ft
$Accuracy_r$ (acceptance criteria 31)	5.00 ft	4.289 ft
Aerial Triangulation Block(s) used	N/A	B and E
Number of QA/QC checkpoints used	N/A	32

Miami County: Tested 4.289 feet horizontal accuracy at 95% confidence level.

David F. Maune, Ph.D., PS, GS, CP
Project Manager