



*The Wisconsin Land Information Association presents....*

## **Fundamentals of Digital Orthophoto Quality Assurance**

A Wisconsin Land Information Association Workshop and Regional Seminar

Radisson Hotel, La Crosse, WI

October 20 & 21, 2005

### **Abstract**

Many Wisconsin counties and municipalities acquired new digital orthophotography in 2005 through one of several regional consortia. The purpose of this workshop is to help local governments understand the fundamentals of digital orthophoto quality assurance, and give them the knowledge to answer the basic question, “Did we get what we paid for?”

The morning session will consist of a quality assurance “crash-course” provided by the U.S. Geological Survey, along with an overview of the recommended orthophoto technical specifications developed by the Northeast WI Orthophoto Consortium. In the afternoon, the vendor selected through the Northeast Consortium’s competitive RFP process will provide an overview of how they met those specifications.

The workshop will wrap-up with some real-world perspectives from city, county, and regional representatives. Our speakers will discuss their own methods for assessing the quality of past and present digital orthophoto products.

### **Agenda: Thursday, October 20, 2005**

8:30 – 9:00

**Registration**

9:00 – 9:15

**Introduction**

*Dick Vraga, U.S. Geological Survey*

*Jim Lacy, Wisconsin State Cartographer’s Office*

### **Part I: The Fundamentals of Digital Orthophoto Quality Assurance**

9:15 – 10:30

**Digital orthophoto inspection procedures**

*Jim McNamara, U.S. Geological Survey*

Part one of the workshop will focus on the basics of digital orthophoto generation and quality assurance, including an overview of issues such as ground control, elevation models, tonal balancing, edge matching, feature displacement, absolute positional accuracy, and metadata review. The discussion will also include a description of relevant National Map Accuracy Standards.

10:30 – 11:00

BREAK

11:00— 11:30

**Digital orthophoto inspection procedures (continued)**

11:30 – 12:00

**Northeast WI Orthophoto Consortium contract specifications**

This session will include a short overview of the Bay-Lake/East Central/North Central RPC

Orthophotography Consortium, followed by a summary of consortium’s project specifications. Everything from sensor type to accuracy will be covered. Every county needs to know why it is important to know the specifications of their orthophotography.

*Andy Faust, North Central RPC*

*Andrew Jennings, East Central RPC*

*Josh Schedler, Bay-Lake RPC*

Thursday October 20th, continued...

12:00 – 1:00 LUNCH (on your own)

1:00— 1:45 **Vendor quality assurance and quality control procedures**

*Kirk Contrucci & Aaron Sale, Ayres Associates*

QA/QC procedures are an integral component of a successful digital imagery project. This presentation will look at the QA/QC of digital orthoimagery from the perspective of a consultant responsible for the production and delivery of high-resolution digital orthoimagery. We will review our orthoimage generation process and examine the role of formal QA/QC procedures in the production of high-resolution digital orthoimagery. The presentation will conclude with a demonstration of Ayres Associates QA/QC tool for the review of digital imagery.

**Part II: Local Perspectives on Digital Orthophoto Quality Assurance**

1:45 – 2:15 **Tom Faella, La Crosse-Area Metropolitan Planning Organization**

In 2000 the East Central Wisconsin Regional Planning Commission contracted for 10 counties of aerial photography, expecting that there would be 5 or 6 counties geo-referenced in house. This required some unique issues of quality control, both in working with the consultant and to ensure a quality product from the geo-referencing process. Some of the issues Tom will discuss include working with the consultant during the preparation, flight and scanning process, working with the camera calibration report and terrain models, setting procedures for consistency of workmanship, the importance of a pilot project.

2:15 – 2:45 BREAK

2:45 – 3:15 **Jeff DuMez, Brown County**

Brown County has well-established procedures to ensure that contracted orthophoto products meet their specifications. Jeff will describe items they require in contracts (sun angle, scale, etc.), and why, along with other technical details such as pre-flight control paneling. He will also cover the county's post-flight procedures for quality assurance, including: checking image extents, tonal balancing, edge matching, and the methods they use to report errors back to the vendor.

3:15 – 3:45 **Lee Halbrook, City of Wausau**

The City of Wausau is set to enter its third round of aerial photography and mapping updates. The focus of each project has been the creation of accurate mapping data for engineering and site design work. Lee will discuss the quality control and review procedures used during the 2000 project with respect to special considerations for municipal GIS operations. He will also discuss the preparation for the 2005 project and how cooperative agreements with a surrounding town have helped them secure some additional data.

3:45 – 4:00 **Conclusion and Quality Assurance Workshop Evaluation**

4:00 – 4:15 BREAK

4:15 – 5:00 **Overview of the 2005 USDA Farm Service Agency National Aerial Imagery Program**

*Larry Cutforth, USDA-FSA*

National Agriculture Imagery Program (NAIP) partners contributed funds to acquire 1 m. resolution, leaf-on, true color orthoimagery in 2005 with statewide coverage in Wisconsin. Thirteen Wisconsin counties, WDNR, and DATCP participated in the partnership with the USDA Farm Service Agency. 2005 NAIP is a publicly available product that will be posted on WisconsinView website for free download. Applications of NAIP for Wisconsin counties will be discussed along with options for reprojecting the imagery into Wisconsin county coordinate systems.

## Agenda – Friday October 21, 2005

- 7:00 – 8:00      **Committee Meetings**
- 8:00– 9:00      **LION Meeting**
- 9:00– 9:15      **Break**
- 9:15 – 9:45      **Update on the WLIA Emergency Management Task Force**  
*Chris Diller, Chair, WLIA Emergency Management Task Force*  
The Mission of the Emergency Management Task Force is to “identify the need and scope of a statewide homeland security geospatial strategy and make recommendations on the steps needed to implement such a strategy.” The task force has developed a set of goals and is working toward delivering a final report to the WLIA board in the March 2006. Hear what the Task Force has learned so far, and what steps we are taking to meet the mission and goals of EMTF.
- 9:45 – 10:00      **Break**
- 10:00 – 10:45      **How Wisconsin Emergency Management Responds to Emergencies**  
*Larry Reed, Response Section Supervisor, Wisconsin Emergency Management*  
The Department of Military Affairs and Wisconsin Emergency Management responds to emergencies by supporting local agencies when additional resources are needed. On August 18, 2005 Wisconsin experienced our largest outbreak of tornadoes in history. This situation demonstrated how Emergency Management works in Wisconsin, and how WEM supports local governments. Topics to be covered include: Land Use/Zoning issues, Plan Development, Emergency Operations Centers, Search and Rescue, Debris Removal, Federal assistance, Staffing, GIS and more.
- 10:45 – 11:30      **How Winnebago County GIS and Emergency Management Work as a Team**  
*Dave Levine, Winnebago County GIS Database Administrator*  
*Linda Kollmann, Deputy Director, Winnebago County Emergency Management*  
Dave and Linda will share real success stories of the two divisions working as a team in various emergency situations in Winnebago County. Some of the team efforts that will be discussed include: “Emergency Planning and Community Right-To-Know Act” Offsite Plans, All Hazards Mitigation Planning, 2004 Flooding Disaster in Omro, large scale event planning with EAA and Ducks Unlimited, Box Car Fire - Hydrite Chemical, and the 2001 wind storm.
- 11:45-12:15      **Lunch**
- 12:15-2:00      **Roll out of WLIA Strategic Initiative Plan**
- 2:00-3:00      **WLIA Board of Directors meeting**

## Agenda – Wednesday, October 19, 2005: WLIA 2005 Annual Golf Outing/Fundraiser!

- 2:00 pm – 5:00 pm      **WLIA Annual Golf Outing – Forest Hills Golf Course, La Crosse**  
Includes 9 holes with a cart (Tee times & scramble format)  
You can visit their web site for more information on the course at [www.foresthillslacrosse.com](http://www.foresthillslacrosse.com)  
\$5 of the golf fee will go to the WLIA scholarship fund.
- 5:00 pm – 7:00 pm      **Dinner/ Golf Awards Presentation**

*see separate page and registration form*

# Wisconsin Land Information Association

WLIA

## Workshop and Regional Seminar

October 20 – 21, 2005

Radisson Hotel, LaCrosse

WLIA

## Registration Form

**To Register:** Please email Ann Barrett at: [abarrett@uniontel.net](mailto:abarrett@uniontel.net) or fax: 715-366-4501 or call: 800/344-0421 to register for the October 19 - 21 meeting in La Crosse, WI. Please indicate what you plan to attend below\*.

**Directions to the Radisson La Crosse:** Can be found on their web site. Go to: <http://www.radisson.com> and go to the La Crosse hotel for directions and a map.

**Lodging Reservations:** WLIA has a block of rooms at the Radisson La Crosse, 200 Harborview Plaza, La Crosse, WI 54601 on Wednesday and Thursday, October 19 & 20 at the state rate of \$62.00 for single for those who qualify and \$92 for single and double. You can call the hotel directory at 608/784-6680. They will honor the WLIA group rate as long as rooms are available. Their web site is: <http://www.radisson.com>

**Cost:** Make check payable to WLIA and mail to: WLIA, P.O. Box 389, Wild Rose, WI 54984. Check must arrive prior to October 19th or you may pay by MasterCard or Visa below. See below for options and fees.

**Cancellations:** You may cancel by noon on Monday, October 17th, 2005 for a full refund. After October 17th, 2005 there are no refunds.

### **REGISTER BELOW:**

Name (s) \_\_\_\_\_  
Title(s) \_\_\_\_\_  
Organization \_\_\_\_\_  
Address \_\_\_\_\_  
City/State/Zip \_\_\_\_\_  
PHONE/FAX \_\_\_\_\_  
Email address \_\_\_\_\_

### **\*Check Attendance Below:**

1. **Thursday AM Workshop:** \$25.00 member/\$35.00 non-member: \_\_\_\_

2. **Thursday PM Workshop:** \$25.00 member/\$35.00 non-member: \_\_\_\_

3. **Friday Meeting:** \$30.00 member/\$40.00 non-member: \_\_\_\_

Pay by MasterCard or Visa or make check payable to WLIA:

Card Number (MasterCard or Visa only) \_\_\_\_\_

Exp. Date \_\_\_\_\_

Signature \_\_\_\_\_

Amount \$ \_\_\_\_\_

• Will you need a receipt faxed to you? \_\_\_\_yes \_\_\_\_no

# WLIA Annual Golf Outing & Fundraiser!

Come join business associates and friends for an afternoon of golf to benefit the WLIA Scholarship Fund!

**Wednesday, October 19, 2005:**

2:00 pm – 5:00 pm **WLIA Annual Golf Outing – Forest Hills Golf Course, La Crosse**  
Includes 9 holes with a cart (Tee times & scramble format)  
You can visit their web site for more information on the course at [www.foresthillslacrosse.com](http://www.foresthillslacrosse.com)  
\$5 of the golf fee will go to the WLIA scholarship fund.

5:00 pm – 7:00 pm **Dinner and Golf Awards - Forest Hills Golf Course**

### GOLF OUTING REGISTRATION FORM

Create your own foursome - ask your clients or colleagues to golf with you or fill in your name and we will place you on a team.

Player \_\_\_\_\_ Avg Score \_\_\_\_\_  
Organization \_\_\_\_\_  
PHONE/FAX \_\_\_\_\_  
Email address(es) \_\_\_\_\_

#### \*Check Attendance Below:

- 1. Wednesday Afternoon Golf:** 9 holes and a cart: \$25.00 \_\_\_\_\_ x \_\_\_\_\_ people = \_\_\_\_\_
- 2. Wednesday Evening Dinner:** \$20.00: \_\_\_\_\_ x \_\_\_\_\_ people = \_\_\_\_\_

Pay by MasterCard or Visa or make check payable to WLIA:

\_\_\_\_\_   
Card Number (MasterCard or Visa only) \_\_\_\_\_ Exp. Date \_\_\_\_\_ Signature \_\_\_\_\_

**Grand Total \$** \_\_\_\_\_

Please send to Ann Barrett, Executive Services Manager of  
the Wisconsin Land Information Association  
PO Box 389, Wild Rose, WI 54984  
[abarrett@uniontel.net](mailto:abarrett@uniontel.net) • 800/344-0421 phone • 715/366-4501 fax

# WLIA