

Quad Cities/Bi-State Region Coordinated Aerial Photography Project

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Today I'd like to share information with you about our efforts to coordinate the purchase of updated aerial photography for our region. These photos and other aerial products will be used by local governments their Geographic Information Systems (GIS).

Background

- Exploratory group – Spring 2004
- Similar aerial photo needs
- Cost savings
- Shared administrative preparations
- Shared expertise

In the Spring of 2004, a number of GIS coordinators formed an exploratory group to consider the idea of turning their individual county/city aerial photo flights into a region-wide project.

We discovered that all of the participants have similar needs . . .

We all require high quality aerial products

We aspire to the same mapping accuracy standards
and we seek an affordable product.

We also discovered that aerial photo products between counties and cities are similar enough from a technical perspective that jointly acquiring such a product is possible.

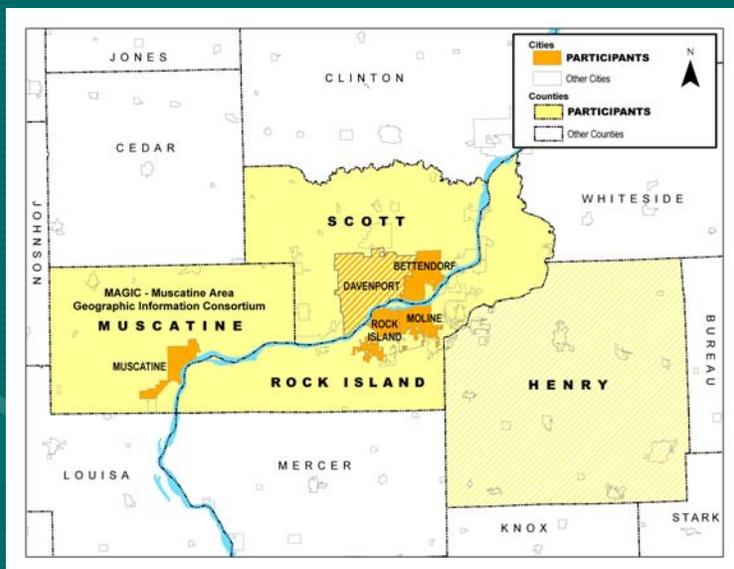
We also identified several benefits of working together:

We suspected that there would be a substantial cost savings over contracting separately for the desired work. As I'll share with you later in the presentation, this has proven to be true.

Administrative efforts to procure a vendor for the work are shared. It was beneficial to have a coordinating agency, like Bi-State to keep the project moving and provide administrative management.

We were able to capitalize on the shared expertise of the project participants. We have a core of 1- 12 GIS professionals working on the project. Those cities or counties that have done this work before help those that have less experience.

Aerial Photo Participants



Local governments participating in the project include:

Muscatine (MAGIC Consortium), Rock Island, and Scott Counties (Lost Henry County)

Mention Mercer County, flown Spring '04.

Cities of Bettendorf, Davenport*, LeClaire*, Moline and Rock Island

Project Timeline

- Planning: April – August '04
- Qualification-based selection process: Sept. '04 – Feb. '05
 - Statement of Qualifications – 12 Vendors
 - Request for Proposals – 10 Vendors
 - Technical Review of Proposals – 8 Vendors
 - Vendor Interviews – 2 Vendors
 - Vendor Selection – **Kucera International**
- Development of Contracts: Feb. '05
- Flight – Mar./April '05
- Pilot Project – Fall '05
- Final photos - December 2005

As I mentioned, planning began in April of 2004. Gathered specifications, products needed, etc.

To procure a vendor we used a qualification-based process.

An invitation to submit Statements of Qualifications was mailed directly to 28 vendors, in addition to the publication of a public notice. Twelve vendors responded and from those twelve the group determined that ten were qualified to do this type of multi-jurisdictional project.

The group then developed an RFP and used a consultant to assist with the technical specifications.

This firm's services were paid for out of the USGS GIS Coordination Grant that was awarded to Bi-State last August. (\$2,100.00)

Eight Vendors responded to the RFP. Proposals were ranked through a numeric scoring process based on a technical review of each proposal. The proposals were ranked by cost separately. The group invited two vendors to the Quad Cities to interview and Kucera International out of Ohio was the vendor selected.

Currently contracts between each jurisdiction and the vendor are being finalized.

The flight will occur when conditions are favorable, in late March or early April, with initial delivery of products by fall of 2005. We are scheduled for final delivery of all products by December 2005.

Aerial Photo Products

High altitude (12,000' flight)

Color Ortho-Photos



- MAGIC
- R. I. Co.
- Scott Co.

The MAGIC Consortium, Rock Island and Scott Counties are having high altitude photography flown at a flight altitude of 12,000 feet above the earth. These photos are used in outlying areas where there are larger open spaces and fewer features to be recognized.

Aerial Photo Products

Low altitude (4,200' flight)

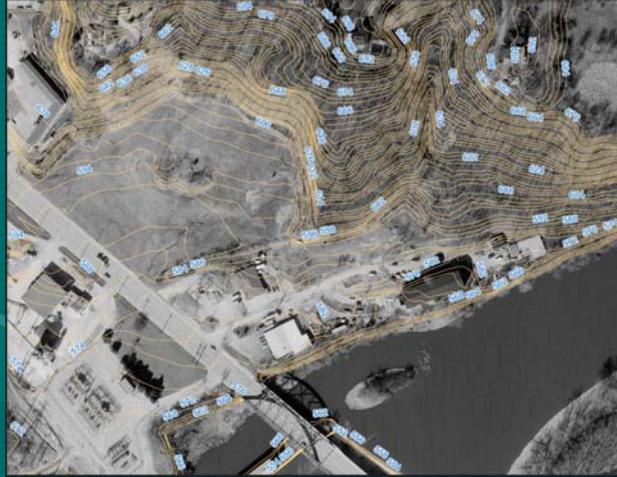
Color Ortho-Photos



- Bettendorf
- MAGIC
- Rock Island
- Rock Island Co.
- Scott Co.

The City of Bettendorf and Rock Island, MAGIC, Rock Island and Scott Counties are also getting lower altitude photography. These shots will be fired from a flight altitude of 4,200 feet above the terrain and are used where development is dense and more detail is needed.

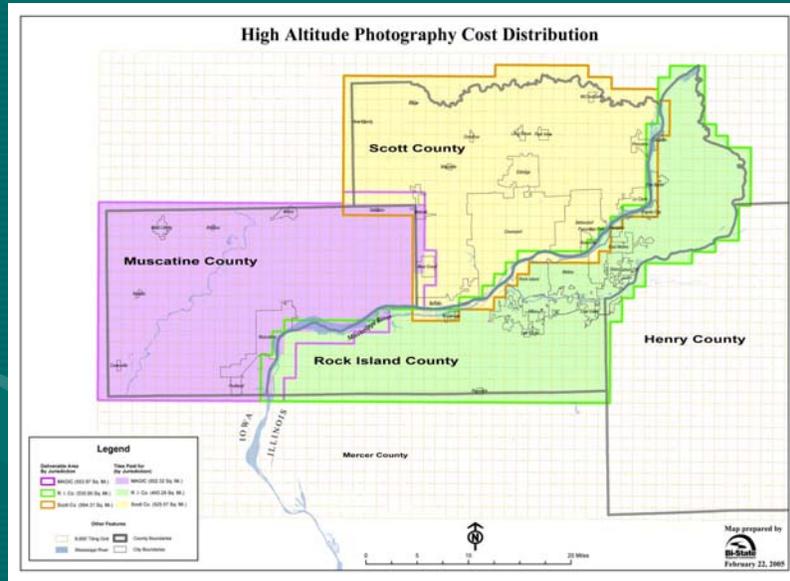
Aerial Photo Products Digital Terrain Model / Contours



- Bettendorf
- Moline
- Rock Island
- MAGIC (DTM)
- Has elevation info
- Used for slope

The Cities of Bettendorf, Moline and Rock Island are getting updated Digital Terrain Models (or DTM) and contour lines. The MAGIC consortium is getting an updated DTM. Both of these products introduce the vertical dimension – the distance from the Earth's surface, which is used to show slope and such tasks as determining flow for water and sewer system planning. Also used for detailed engineering work.

Cost Distribution



This map shows an example of how the costs for the project were distributed among consortium participants for the high altitude photography. The colored outlines show the areas that will be flown and delivered to the corresponding jurisdiction. You can see there is substantial overlap. The photos will be delivered by individual tiles. Using GIS we assigned each tile to a jurisdiction and where there was overlap we simply split the number of tiles. For example, through shared area with Rock Island and Scott Counties, the Muscatine Area Consortium MAGIC reduced the amount of area they were paying for by 28 tiles for a \$1,500 cost savings.

Project Cost

- Total Preliminary Cost - \$496,282
- Sample Costs

MAGIC – 25-30% savings over 2000 project

(Plus: Color, higher accuracy, more products)

City of Moline – 28% less than previous project

City of Rock Island – 40% less than previous project

The good news is that we were able to achieve substantial cost savings by bidding this project as a region. Since we are still negotiating final contracts, exact final costs are not yet available, but the estimated total cost for the project is just over a half million dollars. Our initial estimates were that it would be over one million dollars; however, the project area is smaller than originally planned.

For example, the MAGIC has reported seeing about a 25-30% reduction in cost over what they paid in 2000 and this is with a better product (color ortho, higher accuracy rectification, lower-altitude 100-scale flight and a 4' countywide DEM that we didn't have last time). If you compare black and white photos, the savings are more like 40%.

The City of Moline estimates that the color photos are 28% less on this project than the last time photos were flown.

And the City of Rock Island is estimating about a 40% cost savings over the last photos they had done.

Conclusion

- Received \$15,000 Fed. grant to assist in effort
- Cost Savings
- Photos w/ same vintage date for most of Region
- Shared administrative preparations
- Shared expertise
- TEAMWORK!

In conclusion I'd like to re-emphasize the benefits of this project:

Intergovernmental efforts are recognized: We received \$15,000 from the USGS National Spatial Data Infrastructure Cooperative Agreements Program to assist in the coordinative efforts of this project. We were 1 of 12 recipients in the Coordination category, nation-wide.

We realized a substantial cost savings

We shared the administrative efforts to plan and prepare for the project

We capitalized on the shared expertise of 10 or more GIS professionals in the group

We'll have photos that span our and region that have the same vintage date.

Finally, I chose the background image for this slide because it was called "Teamwork" and I want to emphasize the great amounts of teamwork and cooperation that went into this project. We really opened the doors to communication among the various GIS coordinators in the region.

On Feb. 2nd, the day we made our vendor selection, I heard many positive comments from the group. Many emphasized the cost savings. And a few were already talking about doing this again as a region in three or four years when updates are needed.