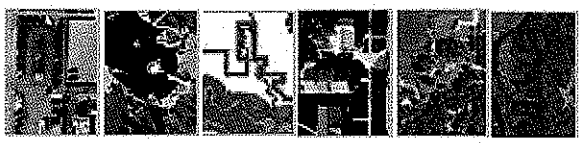
Aerial Photography
In Franklin and Hardin Counties



Aerial photography provides the basis for GIS (Geographic Information Systems) in Hardin and Franklin Counties.

- Provides added information for decisions
- Makes us more efficient
- When provided with online mapping, it helps citizens know what they are looking at (more than any other layer!)
- Used for a wide variety of purposes from real estate transactions to tourism

Planning for the Future

Hardin County is in the position where they need new aerial photography. The 1998 imagery is no longer adequate to show areas of new development or change. ***It will have taken us 9 years to budget the money for a new flight.***

Tremendous changes have taken place in Hardin County in the last 9 years. The largest has been the rerouting and expansion of Highway 20 through the county, which was completed in 2004.

Franklin County will be facing the issues of a new flight in the next 3 years. We continue to see huge expansion of animal confinement facilities and wind farms in the county, which will not be visible on county imagery for several years.

The Boards of Supervisors in both Franklin and Hardin Counties support a statewide acquisition of aerial photography. They want to work within a regional group to bring the cost of acquiring adequate and timely aerial imagery down.

Franklin and Hardin Co. Contact Information
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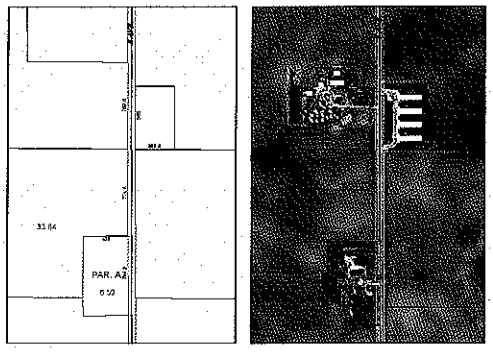
COUNTY GOVERNMENTS NEED AERIAL PHOTOGRAPHY

- Visual base to all layers
- To measure distances
- To calculate areas
- To determine shapes of features, such as ponds, structures, or wooded areas
- To determine accurate locations (using coordinates)

BUILDING ON AERIAL PHOTOGRAPHY

Aerial photography serves as the base layer for all other layers. The photograph under the "lines" make it clear to the user what he or she is looking at.



Other layers added on can include:

- School districts
- Drainage districts and drainage tiles
- Fire and other emergency districts
- TIFF districts
- Enterprise zones
- Road signs
- Facility locations
- Recreational areas and trails
- Zoning and land use boundaries

COST OF AERIAL PHOTOGRAPHY

Current imagery in Hardin County is from 1998. At that time, Hardin County paid approximately ***$98,000, or $172 per sq. mi.,*** *for it.* Estimates for a new flight would be $50,000.

Franklin County purchased aerial photography in 2004 at the cost of ***$50,000, or $86 per sq. mi.***

Although aerial imagery is currently available for free from a variety of sources, this imagery is not of sufficient resolution to be used for most county purposes. When working with land ownership issues, the ground looks "blurry" and features, such as fence lines and outbuildings are difficult to distinguish on the freely available imagery. When examining an area the size of a subdivision or city block, it is completely unusable.

COST TO PURCHASE

Aerials for Franklin and Hardin County are for sale and cost about ***$15 per 4 sq. miles.***

Total cost for entire county (with discount) **$1,200**

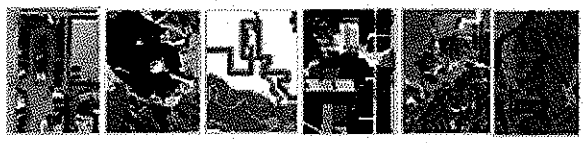
Taxpayers in essence pay twice because their tax dollars go to pay the original amount, then cities or other government agencies have to pay to purchase it.

EACH COUNTY IS SEPARATE

Information here is only for Franklin and Hardin Counties. Each and every county is working independently and some have been successful at collaboration in the past. Different counties offer different aerial photography products taken in different years with different levels of accuracy. This makes it very challenging for regional planning or to attract businesses that cross county boundaries.

Imagery for Iowa

Iowa Geographic Information Council



Project Information

The vision of the Iowa Geographic Information Council is that Iowa will have a sustainable and flexible digital aerial imagery program that meets the needs of local, state, regional, tribal, federal and private partners. State funding should support statewide production of standardized multi-resolution products on a consistent cycle. Local, regional, private, and federal partners could pay to enhance those products in specific areas based on their needs. The imagery should remain in the public domain and be archived to secure its availability for future scientific, legal, and historical purposes.

About the Iowa Geographic Information Council:

Formally established in 1998 by Executive Order, the Iowa Geographic Information Council (IGIC) was established to coordinate spatial technologies and information within the State of Iowa.

The mission of the IGIC is to foster an efficient Geographic Information Systems (GIS) environment through cooperation and coordination with public and private entities that access, collect, provide, and share data, metadata, applications and educational opportunities.

Successful past projects by IGIC and its partners have brought to Iowa a number of different endeavors that have made imagery available to Iowans

IGIC Contact Information:

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IGIC's Remote Sensing Committee Mission:

Work to promote the timely and effective collection and dissemination of information of importance to the IGIC membership, Board, and partners, support of the IGIC organizational goals via the conduction of advocacy, outreach and liaison activities, and coordinating with partners and other stakeholder organizations to promote and achieve greater utilization of remote sensing technologies across the state.

Imagery for Iowa Questions:

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Partners:

State government
Local units of government
Federal government
Regional organizations
Academic institutions
Private business and industry

The Value of Imagery

Aerial imagery provides the visual content of a photograph while being as accurate as a map for measurements. These qualities allow users to easily:

- Measure distance
- Calculate areas
- Determine shapes of features
- Calculate direction
- Determine accurate coordinates (locations)

Digital images are used to collect a wide variety of information, including transportation routes, streams, building outlines, timber stands, land use patterns, and farm fields.

Local governments rely upon digital aerial imagery to map property boundaries and manage their infrastructure assets.

Digital imagery serves as a seamless base map layer to which many other layers are registered. It also provides visual information that is useful for the following partial list of activities.

- Homeland Security and Emergency Management
- Public Safety Planning, Response, & Mitigation
- Tax Parcel Mapping
- Transportation Management
- Economic Development
- Utilities Management, Operations & Planning
- Land Planning and Zoning
- Code & Permit Enforcement
- Agriculture Animal Feeding Operations & Manure Management Plans
- Insurance
- Surveying & Mapping
- Environmental Management, Planning & Regulation
- Public Health Services
- Education

Proposal Details

- Each partner will specify its imagery requirements in its business plan (resolution, frequency, and image type)
- Base resolution for statewide imagery will be 2-foot.
- Participants can "buy-up" to acquire imagery at higher resolutions or faster intervals. Buy-up resolutions will include 1-foot, 6-inch, and 3-inch.
- Image acquisition will be accomplished during "leaf-off" conditions unless otherwise agreed to.
- All imagery will remain freely available on the Internet for access and usage.

Cost of the Proposal

IGIC estimates that a statewide program will cost approximately $1.5 million dollars per cycle based on industry pricing. It is anticipated that the cycle will be setup on either a 3 or 4 year rotation.

Economies of Scale & Coordination

A single statewide program can be managed and implemented for far less money than state and local governments spend when they issue independent contracts. This program will offer outstanding value to local governments due to price breaks achieved by contracting for increasingly large areas.

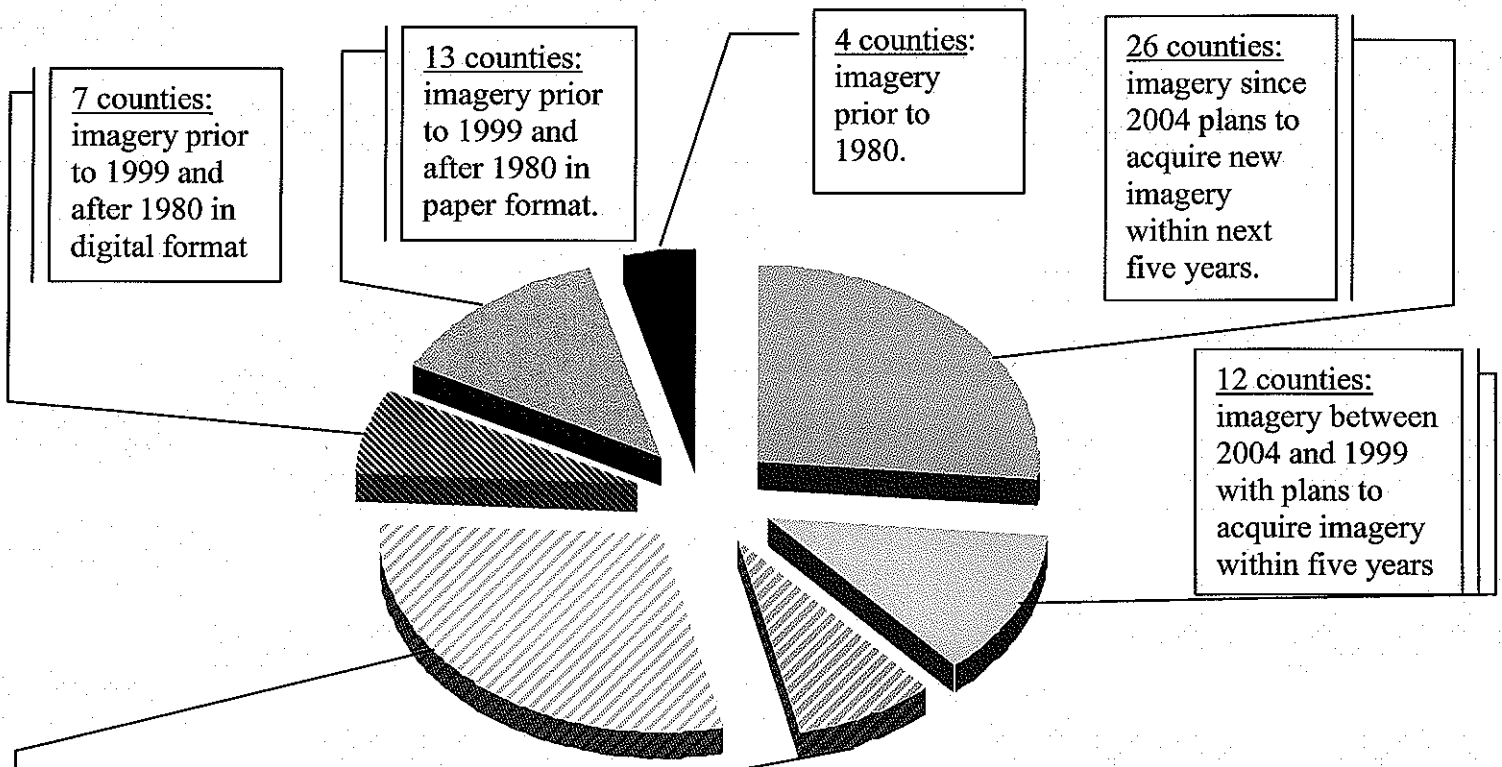
This program will also work towards the creation and establishment of a consistent, accurate, foundational base map upon which local government and many regional, state and federal geospatial data applications could be built, working towards producing an efficient statewide spatial data infrastructure.

Aerial imagery is the foundation for most public and private GIS (Geographic Information Systems) operations, yet it is being developed by many different entities across Iowa in an uncoordinated fashion. Some areas are essentially "left behind" due to lack of coordination or funding. There are holes in the coverage, varying qualities of product and the duplication of effort leads to higher costs; varying quality, accuracy and currency; and restrictions on its access and use.

IOWA
geographic information council

MISSION:
To foster an efficient GIS environment through cooperation and coordination with public and private entities that access, collect, provide, and share data, metadata, applications, and educational opportunities.

Information Regarding Recommendation to Complete Funding of State-wide Aerial Photography Project

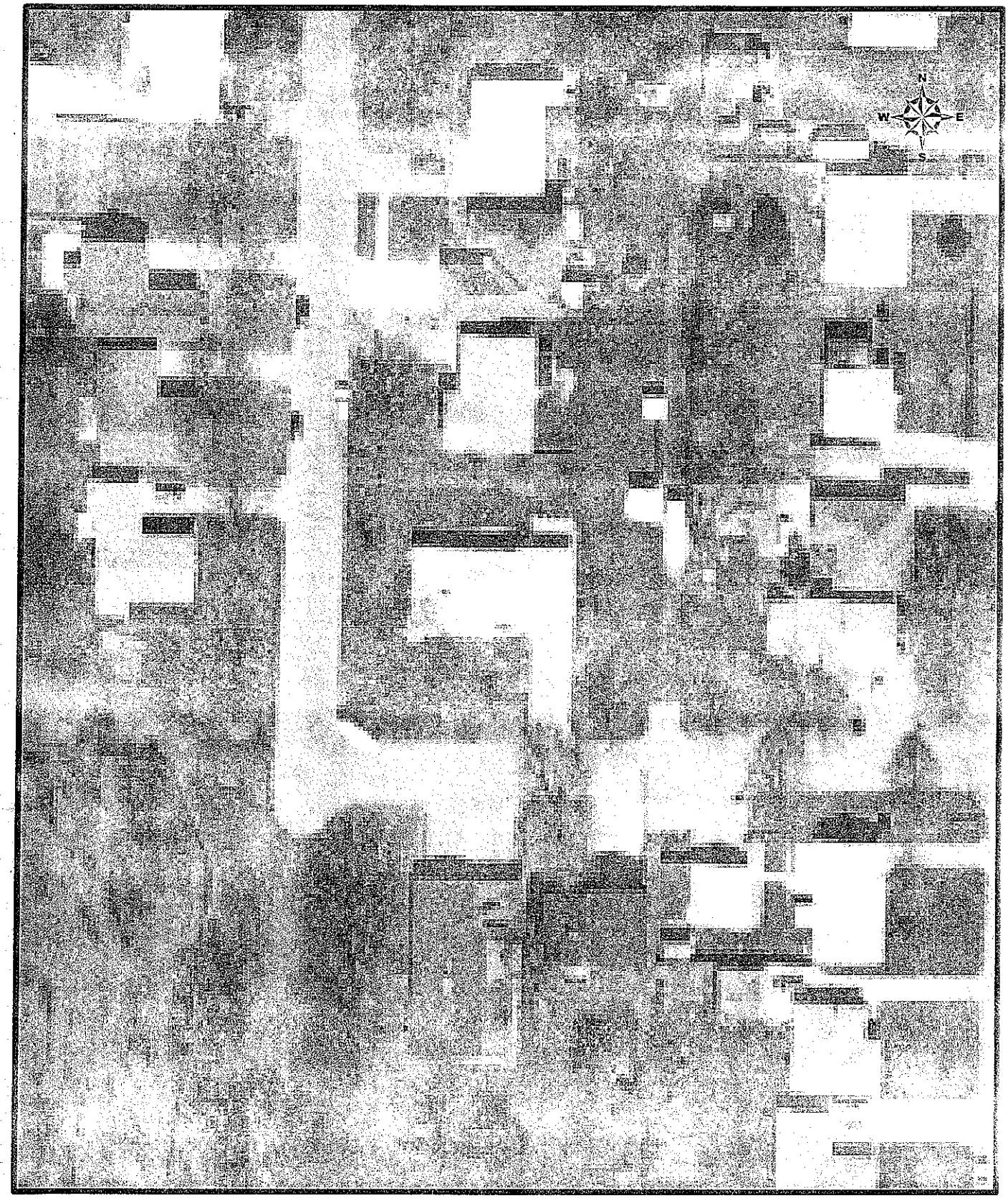


- Since 2004, 34 counties have acquired digital aerial imagery. Twenty-four paid an average cost of **$72,500**.
- If all 99 counties were to acquire at this rate, Iowa taxpayers would spend **$7,179,000** in the next three years on imagery.

The requested $1.5 million will acquire statewide imagery at a 2-foot resolution. Imagery at this resolution meets many of the current business requirements for local governments in Iowa.

Partners who choose to cooperate would have the opportunity to "buy-up" to higher resolution imagery. Current estimates for a "buy-up" option for local governments are in the area of $80 - $100 per square mile to acquire 6-inch imagery. There are various factors that affect the potential cost of "buy-up" options but a recent image acquisition project for Sioux City cost the city $517 per square mile to acquire 6-inch imagery over an area of 87 square miles. Using these figures, potential cost savings for Sioux City could have been in the area of $43,000 if a program like Imagery for Iowa were implemented.

Neighborhood of planned raid at 2' resolution



0 20 40 80 120 160
Feet

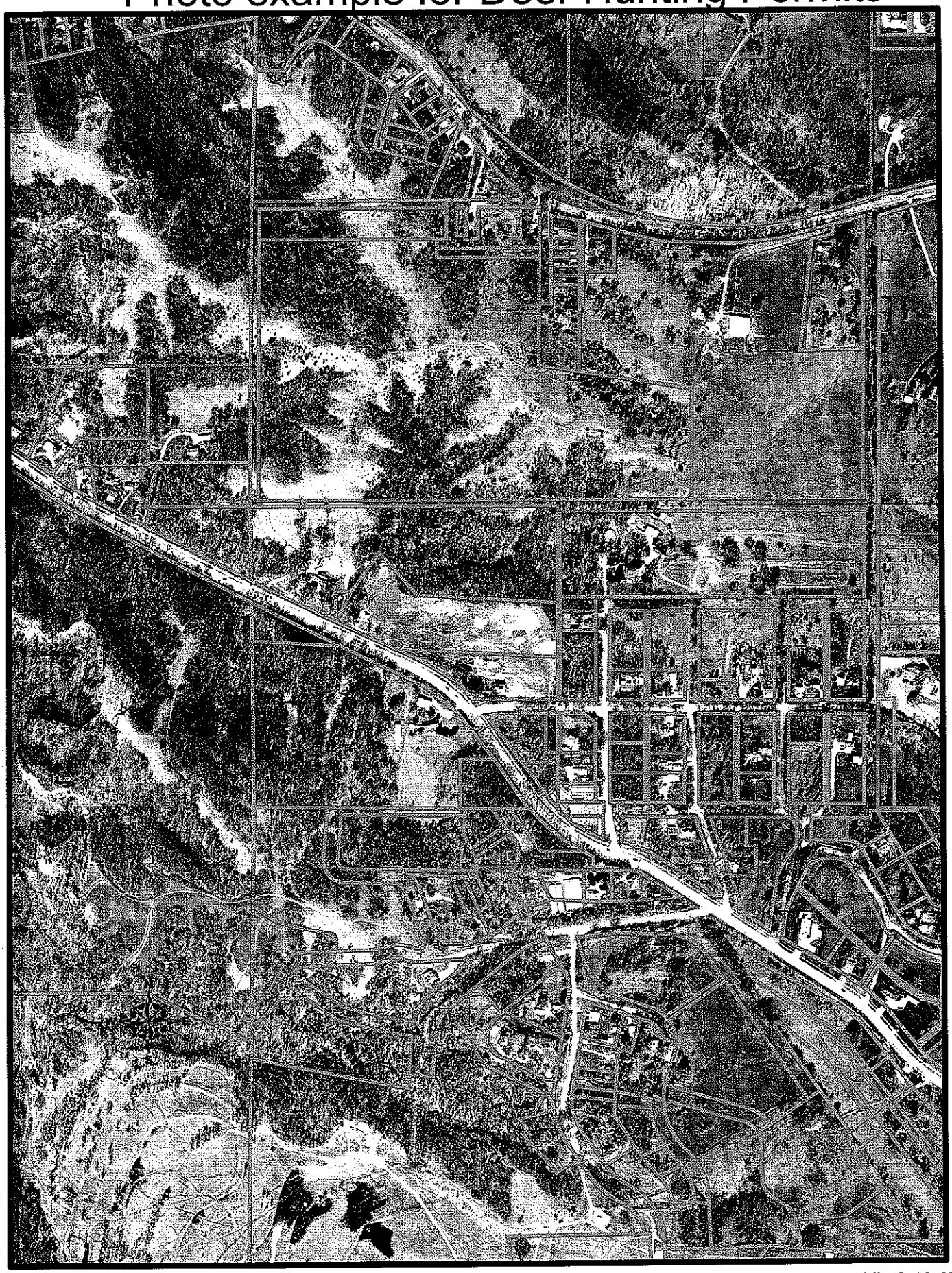
crime analysis: hjk 2-19-07

Neighborhood of planned raid at 6" resolution

0 20 40 80 120 160
Feet

crime analysis: hjk 2-19-07

Photo example for Deer Hunting Permits



0 170 340 680 1,020 1,360
Feet

crime analysis: hjk 2-19-07

Telephone Survey Conducted by Iowa Geographic Information Council Fall 2006

County	sq mi	05 Pop	GIS?	Aerials?	Media	Urb Rez	Rurl Rez	Form	YR	Cost	Plan?
Adair	570	7,859	N	Y	PAPER	UNK	UNK	BW	1980		N
Adams	425	4,264	N	Y	PAPER	UNK	UNK	BW	1991		Y
Allamakee	659	14,709	Y	Y	DIGITAL	1 : 100	1 : 400	BW	2003		Y
Appanoose	516	13,666	Y	Y	DIGITAL	6 IN	24 IN	BW	1999	66000	N
Audubon	443	6,457	Y	Y	DIGITAL	UNK	UNK	BW	2005		UNK
Benton	718	27,000	Y	Y	DIGITAL	1 : 100	1 : 400	CLR	2005	76000	Y
Black Hawk	572	125,891	Y	Y	DIGITAL	1 : 100	1 : 400	BW	2003		Y
Boone	573	26,602	Y	Y	DIGITAL	6 IN	6 IN	BW	2005	50000	Y
Bremer	439	23,677	Y	Y	DIGITAL	1 : 100	1 : 400	BW	2004	39000	Y
Buchanan	573	21,019	Y	Y	DIGITAL	6 IN	24 IN	BW	2002		N
Buena Vista	580	20,151	Y	Y	DIGITAL	UNK	UNK	BW	2001		UNK
Butler	582	15,072	Y	Y	DIGITAL	1 : 100	1 : 400	BW	1999	121170	Y
Calhoun	572	10,443	Y	Y	DIGITAL			BW	2003	70125	N
Carroll	570	21,034	Y	Y	DIGITAL	1 : 100	1 : 400	BW	2006	75000	Y
Cass	565	14,219	N	Y	PAPER	UNK	UNK	BW	1980		N
Cedar	582	18,254	N	Y	PAPER	UNK	UNK	BW	1990		UNK
Cerro Gordo	574	44,645	Y	Y	DIGITAL	6 IN	24 IN	CLR	2002	230000	Y
Cherokee	577	12,237	Y	Y	DIGITAL	UNK	UNK	BW	2000	290000	Y
Chickasaw	506	12,563	Y	Y	DIGITAL	UNK	UNK	BW	2001		Y
Clarke	431	9,161	Y	Y	DIGITAL	UNK	UNK	BW	2004	13000	N
Clay	573	16,897	Y	Y	DIGITAL	UNK	UNK	BW	2004		Y
Clayton	795	18,337	Y	Y	DIGITAL	1 : 100	1 : 400	BW	2003	60000	Y
Clinton	710	49,717	N	Y	DIGITAL	6 IN	6 IN	BW	2006	45000	Y
Crawford	715	16,889	N	Y	DIGITAL	6 IN	6 IN	BW	2006	50000	N
Dallas	591	51,762	Y	Y	DIGITAL	6 IN	6 IN	CLR	2006	50000	Y
Davis	504	8,659	Y	Y	DIGITAL	UNK	UNK	BW	1999		N
Decatur	533	8,605	N	Y	PAPER	1 : 100	1 : 400	BW	1986	40000	N
Delaware	579	18,025	Y	Y	DIGITAL	UNK	UNK	BW	2003		Y
Des Moines	430	40,810	Y	Y	DIGITAL	3 IN	24 IN	BW	2006	121000	Y
Dickinson	404	16,687	Y	Y	DIGITAL	1 : 50	1 : 400	BW	2002		Y
Dubuque	617	91,631	Y	Y	DIGITAL	2 M	2 M	CLR	2005		Y
Emmet	402	10,534	Y	Y	DIGITAL	1 : 100	1 : 400	BW	2001		N
Fayette	731	21,298	Y	Y	DIGITAL	6 IN	24 IN	BW	2004	80000	Y
Floyd	501	16,443	Y	Y	DIGITAL	1 : 100	1 : 400	BW	2001	60000	N
Franklin	582	10,732	Y	Y	DIGITAL	6 IN	24 IN	BW	2004	135400	Y
Fremont	517	7,759	N	Y	PAPER	1 : 100	1 : 400	BW	1996		UNK
Greene	571	9,963	Y	Y	DIGITAL	UNK	UNK	BW	2000		UNK
Grundy	501	12,329	Y	Y	DIGITAL	6 IN	24 IN	BW	2004	45000	N
Guthrie	593	11,547	N	Y	DIGITAL	1 : 100	1 : 400	CIR	2006	78000	Y
Hamilton	577	16,209	N	Y	UNK	UNK	UNK	BW	2002	0	N
Hancock	573	11,786	Y	Y	DIGITAL	1 : 100	1 : 400	CLR	2006	75000	Y
Hardin	570	18,003	Y	Y	DIGITAL	6 IN	24 IN	BW	1998	175000	Y
Harrison	700	15,884	Y	Y	DIGITAL	6 IN	24 IN	BW	2001		Y
Henry	436	20,246	Y	Y	DIGITAL	6 IN	24 IN	BW	2004	66000	Y
Howard	473	9,700	N	Y	DIGITAL	1 : 100	1 : 400	BW	2006	45000	UNK
Humboldt	435	9,973	Y	Y	DIGITAL	1 : 100	1 : 400	BW	2001	391000	Y
Ida	432	7,379	N	Y	PAPER	UNK	UNK	BW	1980		UNK
Iowa	587	16,055	N	Y	PAPER	UNK	UNK	BW	1979		Y
Jackson	650	20,335	Y	Y	DIGITAL	UNK	UNK	BW	2002		N
Jasper	732	37,674	Y	Y	DIGITAL	6 IN	6 IN	BW	2005	65000	Y
Jefferson	437	15,972	N	Y	PAPER	UNK	UNK	BW	1986		Y
Johnson	623	117,067	Y	Y	DIGITAL	6 IN	6 IN	BW	2003	350000	Y
Jones	577	20,509	Y	Y	DIGITAL	6 IN	24 IN	BW	2005	112000	UNK