APPENDIX A: COMPLETE TEXT OF INTEVIEWS

Counties

Barbara Berquam, Black Hawk County EMA Coordinator 5/6/08
bhcema@co.black-hawk.ia.us 319 291-4373

She uses county data plus dispatch data with block numbers. 130 layers categorized by agriculture, (hog confinement, cattle), commercial building, crowds and attended places, child care, schools, emergency chemicals, Tier 2 sites, sirens, utilities, fueling stations, government building Uses ArcMap. IT department does address matching for her.
Able to buffer around major roadways (re haz mat transport).
Use GIS for exercise planning or during exercises. Benefit is ability to print out updated maps and to include imagery. Time saving is minutes rather than hours going to other offices for data. She estimates she saves 3 days/exercise and counted five exercises for this year.

1) small training session for the media
2) full-scale airport crash and burn in August
3) June 12 exercise involving multiple counties, traveling disease
4) Strategic national stockpile
5) Functional exercise in June. Calls come in but don't move people or resources.

If no GIS would use Google but would have loss of local detail and couldn't buffer. Would have to create buffers manually. Thinks smaller counties in Iowa do this currently. Talk to Rick Wulfkule in Buchanan County.
They have the ability to link school points to floor plans and pictures of the building, enabling faster response. Measuring this would be a question for 911. Contact Judy Flores, GIS enabled dispatcher (319) 291-2680.
Works with Intercog (Iowa Northland Regional Council of Governments) to put numbering grid on bike trails. Dan Schlitchmann (IT and GIS) (319) 235-0311.
Recommends Lisa Swanson at Black Hawk Health 292-2202

Bill Greazel, Johnson County Assessor 4/17/08

They have a full GIS department (3 full-time in IT and 3 full-time in assessor's office) and a web presence for making data publicly available. Johnson County residents all know how to access the county's data. But public and private entities outside the county won't easily know how to find their data. One central storehouse for the state would be helpful. He notes that they do store their data in a central repository for a small fee (approximately $3000/yr), he can't remember the name but it is through a consortium. They maintain servers at the county as well, so the storehouse also serves as a backup for their data. He

further notes the state's efforts to centralize assessors' files, but as has been noted before, this is not geospatial data.

What would a seamless statewide database do for Bill? He would like to have easy access to parcel information from adjacent counties so he could check values of adjacent properties. He does not go to the trouble to do this with current capabilities. Many counties don't have a good web presence. A universal interface would be helpful. Real estate, insurance, bankers, appraisers experience the data in a chopped-up fashion currently. He sees the greatest benefit for statewide parcel data being to the private sector.

They get thousands of web hits daily to their parcel information. Schneider Corp. maintains their web site and provides stats on hits. Bill will email selected stats to me.

No need to also contact Gary Bilyeu in assessor's office.

Bill Buttrey Marion County GIS 5/13/08
(641) 828-2153 wbuttrey@co.marion.ia.us

His time with the county goes back to GIS for the assessor's office. Best use of GIS currently is directing citizens to the Schneider site. They have no formal GIS use for economic development, but he is hoping to work with Economic Development Director, Carla Ferguson, to develop capabilities.

GIS has been geared primarily toward assessment. Able to look at property sales in county. Working with zoning office to get going info on their web site. Just announced the new county web site last week.

Assessors and auditors benefits: went from paper to GIS. Large portion of their time went to serving data requests from the public. With web site traffic dropped to nothing. Public can get CSR reports, aerial photos, sales data.

Brad Kettles, Linn County Assistant Engineer 5/12/08
(319) 892-6404

Currently working on a sign management database, including GPS coordinates. Started Access database management in 2000. Also bridge database, with locations picked off aerial photos. Also culvert database. Having all this organized in the GIS provides a place to start in designing replacement projects. A map is visual and provides more information. The GIS is a good way to organize data.

If a sign goes down they can send out exact locations to dispatchers and crews. Snow routes and grading routes in GIS provides visualization for equipment operators. Routing optimization is their ultimate goal. Pavement management storing data for every segment.

Brad feels they are very early in their GIS implementation. Stage of improved record storage. They are saving time accessing records. Routes developed in the GIS are repeatable. ***Brad saves a couple of hours/week accessing data.***

They have agreements with cities at city/county boundaries regarding who is responsible for maintenance. This can be accessed by anyone at the county using the GIS and can be used for answering maintenance questions from citizens.

Brian Hanft, Environmental Health Manager, Cerro Gordo County 5/12/08
(641) 421-9340

Brian says it takes time to learn GIS technology. Field staff have difficulty with GPS signal. For them it's not so much saving time but accessing new data. For instance, soils maps are easier to access with GIS.

He knows there is long-term savings to be captured. For example, maintaining data on septic systems in GIS would be beneficial to everyone. But they don't have enough people in their department to do GIS work. Lisa Swanson in Black Hawk County is an example of good county use of GIS.

Their next step is to hire someone full time for GIS so they aren't technically handicapped. At this point don't have staff understanding the technology well enough for GIS to be useful for them.

Carl Wilburn, Carroll County 4/29/08

Planning & Zoning: Use photography a lot. When application for permit come in, can go to property and see what district it's in. Helps see if rezoning is needed. If so, helps with notification to adjacent property owners***. Time saved/permit with GIS = ¼ to ½ hour for simple permit. For rezoning save 1 – 1 ½ hour/permit.*** **We do between 150 to 200 permits, and 4 or 5 re zonings per year.**
In case of wind towers, application for 106 wind towers. Entered each into GIS. Did they meet set back requirements? Were they on parcel with lease agreements? ***Took 14 hours with GIS vs. 3 weeks by hand. This was the biggest single permitting incident to date. But it continues—100 permits for towers in 2008 already. Reasonable to count one of these special permitting projects/year.***

Another project is a sewage disposal system for an unincorporated area. Used GIS analysis to get drawings to be used for bids from contractors. This avoids paying engineer to prepare this material. To get cost avoidance, try asking DNR about USDA grant for this project, as DNR is forcing the area's hand regarding sewage. See Jim Carroll.
Get data requests from engineers for aerial photos and property boundaries. ***Take in about $8K/year from requests from outside companies buying parcel databases plus hourly billing for staff time.*** This income has been increasing.
The county is developing a comprehensive plan, with GIS used extensively. ***Saved $2K on comprehensive plan contract by county providing its own GIS analysis.*** Comprehensive plan should be done by each county on a 5 year cycle but sometimes it stretches out to 7-10 years.
Cost avoidance driving to ID bridge and culverts on Carroll County spreadsheets. Possibly won't collect this benefit as the county will drive to collect GPS.
County will track gravel applications using GIS. See Paul Heugon 712-792-3603.
See Washington County GIS application online for their Engineering Department.

Cherese Sexe, Humboldt County E911 Dispatch 5/8/08
cherese@e-911.org 515-332-5216.

They've only had GIS for 2 ½ or 3 years. Used in the following ways:

1) 911 map with basic layers
2) Disaster response map

Cell phone calls. Before GIS, couldn't track where a caller was. ***Now can track them on a map. Benefit is ability to respond to a location. Use this approximately 10 times/year.***
Road closures are kept updated on the dispatch maps. Closures are common due to flooding, snow, construction. ***Able to reroute ambulances. Did this a week ago with flood closures. Use this for approximately 10 responses/year.***
Having all information in one spot saves time. Otherwise, for example, would have to go to the assessor's office to get property information or building footprints (fire department wants this***). Use this capability approximately 20 times/year, saving 1 hour of staff time each time.***
Maintain layers for DNR access points, confined animal feed operations, hospital information (which is required for state public health program).
Cherese believes that public health would be interested in census data on age of homes for use in identifying lead poisoning potential. Met someone from Des Moines in State Public Health who is tracking this. Alan from Iowa State would know who this is.

Cliff True, Cerro Gordo County Health 5/12/08
(641) 421-9305

Have all county wells plotted in GIS. Look at contaminated areas. Look at areas of high lead housing. Would have never done these projects without GIS.

Use in environmental health regarding septic systems, wells. GIS products affect inspection activity. Flooding examples – wells affected by flooding. Generated list to property owners. Would have worked with paper maps otherwise but would have missed some wells. Were able to notify affected population same day vs. several days delay and thus able to prevent people from drinking contaminated water.

Able to do analysis based on plumes for planning evacuations. Able to be more precise with areas to be evacuated.

Permitting for septic systems. Radon test results—will be able to predict likelihood of finding radon. Use GIS regarding specifications for septic systems and wells. Don't have to go onsite for initial evaluations. To quantify this type of savings, talk to Environmental Health Manager. Brian Hanft (641) 421-9340.

Dan Schwartzendruber, Linn County Planning and Zoning 5/1/08
(319) 892-5139 dan.swartzendruber@linncounty.org

Use GIS for property queries. Answer development questions online or on the phone***. Requests that previously took 15-20 minutes now take 5 minutes. They get about 50 requests/week. This would translate conservatively to 8 hours/week of staff time saved.***
Use GIS for basic queries about real estate data. Able to answer questions without bouncing citizens around from department to department.
FEMA delineation. Will be able to use the new LIDAR to start LOMAs in house. There is a contract at the state FEMA level for Black & Veatch to provide map updates but this may not be totally up to date.
Sensitive areas planning. Slope data more accurate with 2 foot contours from LIDAR than with old 5 foot contours they were using. Benefits: more accurate information to the public is better. County ordinances say they can't build on greater than 14-15% slope. New LIDAR may save the public from having to go to an engineering firm seeking better data for their site***. They send citizens to get better data for critical natural resource delineations 12 to 20 times a year. Work on even a small parcel will cost $2000-3000. Conservative estimate of saving to the public from use of new LIDAR would be $40000.***
Water and sewer savings would be at the city level.
Dan thinks smaller counties would be stuck in AutoCAD thinking rather than using LIDAR in a GIS for preliminary surveys.
Their Planning and Zoning Department saves 20-30% of overall time by having GIS. ***They are 14 staff (4 clerks, 4 inspectors, 4 or 5 planners, an intern). For a mix of these job classifications would get 140 hours saved/week or***

7280 hours/year. This would obviously need to be scaled to the size of the planning and zoning department. All of them use GIS. Mostly use for routine queries but also for analytical. Making better decisions—not allowing sprawl, saving money on infrastructure (see engineering department to quantify this), forcing developers to pay for themselves.
Long-term planning initiatives and policies affected. These are difficult to quantify.

Dave Janda, Dane County, WI Emergency Management 5/8/08
(608) 266-5950 Janda@co.dane.wi.us

He's been using his county's GIS for years for disaster planning, special needs population mapping, flood plain inventory and structures within, land use and census data and transportation for evacuation planning. Working on registry for individuals. Primarily GIS used in EOC. Some munis have maps in vehicles.
Tornado incident in 2005. Collected addresses affected, color coded parcels for degree of damage. Hard to eliminate on-foot time but the GIS work could have made assessment go faster. Building inspectors spent long time at each address***. Quick and dirty estimate would have taken a couple of hours vs. couple of days. Really crude details for three days, essentially no information, and then finally full assessment. Until this complete, they had no way to answer questions to the public.***
Off-site plans for hazard materials with Federal requirements. Deals with how to protect community. ***One element is vulnerability zone to include map and listing of special needs facilities. 200-400 facilities in some vulnerability zones. To generate took one person 1-2 days, with GIS takes 20 minutes. Have 140 sites in county. Maybe 1/3 of these are big sites where it makes this much difference. So time saved would be 1/3 * 140 * 12 hours = 564 hours saved.***
Incident response. Either look at lots of paper maps or have GIS. More a matter of not being able to do the analysis at all (in a timely fashion) without GIS.

Dave Wilson, Johnson County Emergency Management 5/2/08

FEMA has created a GIS product called HAZUS which works with ArcView. Helps predict damage by dollar value. Helps with buyouts as well as application of preventive measures. Damage assessment.
They've only had the product for two months. Moving toward analysis with it. Dave has heard from other parts of the county that HAZUS cuts disaster response in half. The product is not heavily used in Iowa.
Prior Johnson County director did not use GIS at all, was computer phobic. Dave has been at this job for a year.
Suggests I call FL and TX State Emergency Managers to hear about savings from HAZUS use. Or locate contact at FEMA Region VII.

In Dave's year have used GIS for modeling and prediction. ¼ of his time for modeling reduced to 1/8 of this time by using GIS. (annual values)
They work with a University of Iowa student, Gene Hubbard, who may also have ideas.

Diana DeSotel Jones County E911/Landuse 5/12/08

Originally worked with aerial photos from early 90s, which were blurry at best. With new aerials she can see if a building is there. New capabilities are far more accurate. ***Diana estimates that GIS saves her 2-3 hours effort every day. Response time is also saved.***

She says it is not the case that in rural and small town areas everyone responding knows where everything is. Volunteer services are losing volunteers all the time. Paramedics are hired from outside the area and will have no clue where things are. Having GIS available for dispatch matters every day. However, she does not know how much time the responders save daily as she serves 5 or 6 ambulance services and 7 or 8 fire departments.

They don't have building footprints in GIS now but she's sure she could find a use for them. Currently drawing emergency response districts in detail in the GIS to determine service areas. She will push aerials for each district out to its responders. They can look at the aerials and see buildings and other features. Aerials are new for everyone, within the past year. She is also creating an overlay map of the county with just addresses which will be helpful. Ryan recently did a zip code map to show which post offices are in each area.

Email comment from Ryan Lafrenz: GIS was used to clear up fire and ambulance districts that were previously determined by marker lines on non-contiguous township maps. On the old maps the districts would cease to follow roads, rivers and section lines (the only features shown on the map) and where the district boundary was located was a complete guess!

Belinda Ogle, Assistant Director of Emergency Management, Taylor County
712-523-2167 5/15/08

The grant for aerial photography described by Bonny Baker is in the very early stages of being researched. The 18 county southern Iowa Emergency Management Region is looking into whether they would be eligible for such a grant. Pete Buckingham had called Belinda earlier today so she was somewhat confused to receive a second call.

Benefits of GIS to emergency management: able to find addresses better through the 911 system. Since the county doesn't have GIS now she can't imagine what other benefits might be.

Harry Graves Johnson County Conservation 5/13/08
(319) 645-2315

GIS has opened a whole new world of property information. Previously used NRCS grainy black and white photos with colored pencils. GLO surveys have been digitized for past several years. Use to see changes in land use over time.

Kent Park is their flagship operation, 1032 acres. Have photos back to 1930s. Had proliferation of invasive species. Data back to 1841; thus know what Johnson County looked like to the settlers. Can see what was in cultivation.

GIS is a powerful tool regarding change in land use. Talking about a ballot measure in the county for land preservation. GIS makes the public aware graphically of changes. Species richness map are barometer of quality of the land.

Grant writing. A picture is worth a thousand words.

Uses for statewide seamless database. Iowa River is second or third most impaired waterway in the country. Need to view statewide data on it.

Use GIS for improved information in controlled burning and land managing. Include rate of slope, fuel load.

Larry Latensky, Superintendent of Operations, Johnson County Conservation

Currently hampered by a GPS unit with accuracy problems. Use ArcMap.

Measure acreages. Plan burns, sequences. ***Previous method for burn maps took much longer. One week's time is reduced to several hours for maps created annually.***

Use GIS in construction projects and wetland projects. Saves field time. Cuts time 80-90%. Some years would have a wetlands project. Other years a building project. ***Average one of these projects/year with same savings as controlled burn. One week's time reduced to several hours.***

Jason Siebrecht, Linn County GIS 4/30/08
Jason.siebrecht@linncounty.org 319-892-5300

They have a web application, resulting in no foot traffic or phone calls for data, unless the server is down. ***Went from someone at the counter 8 hours/day to 1 hour/day. Jason to verify this with clerk staff.***
Auditor's office supplies parcel mapping to other departments.
Helping election staff. Reducing improperly placed voters in districts and redistricting for county supervisors and council. Doing this manually would take a lot of time given the different scenarios. Before GIS process with Census Bureau maps took weeks. Jason will ask the staff person that did this in 1992 with colored pencils how long it took. Beauty of doing redistricting in GIS is ability to create alternate scenarios. Change to precincts happens every 10 years, following each census. Cedar Rapids had change in governance and added supervisors. This is an unusual event that might happen only every 50 years.
Parcel maintenance. Went from CAD-based to GIS. ***Went from two full-time staff to one for parcel maintenance.*** Went from 40000 parcels (all of the county minus Cedar Rapids) to 100,000 parcels (now including Cedar Rapids).
Planning and Development and Zoning use GIS daily. Making more informed decisions. See Lee Beck, Department Head 892-5151 or Dan Schwendrube, more nuts and bolts, 892-5139.
Brad Kettle, Assistant Engineer 892-6404
Health Department, Larry Hlavacek 892-6003
Emergency Management, Rich Mahaney 363-2671
For Em Mgment, GIS department creates buffer maps for chemical reporting. Now a one-day support process vs. longer for Em Mgment to do this.
Sheriffs' office uses GIS but not so transparent to them.
GIS helps sex offenders find where they are permitted to live.
Jason to verify time of clerk

Jasper County, Newton, IA Lawrence Hartpence 8/30/07
Brad Cutler attended interview

They've had GIS for 7 years, Internet enabled GIS for 3 years.
Annual budget of approximately $100,000
This county is a good example of use of limited funds.
They do no ongoing outsourcing except aerial photography.
Started with CAD maps of properties and outsourced conversion and cleanup as a startup cost.
ArcIMS site has 125 hits/day. Mostly realtors and appraisers looking at property. Copy into their ads are jpg images. Remote realtors (Des Moines) use the site. Assessors and auditors office say traffic to them is reduced significantly due to the site.
Maintenance in GIS takes longer than CAD because they are maintaining more data.
CAD staffing to GIS – Lawrence replace a planning/zoning position. Work load on planning/zoning was reduced. CAD technician became a GIS technician.

Lawrence's position was upgraded $15/hour for CAD incremented up to current $25/hour because the county sees the value of GIS. However, he knows that Appanoose County only pays their coordinator $16/hour.

Technology Users:
Assessor/Auditor/Conservation/Emergency Management
Sanitarians use internal IMS. Aps have been developed for offices.
10 ArcView licenses could be reduced to 5 ArcView through use of ArcIMS.
Engineering and Conservation plus 3 in GIS office (zoning admin, secretary, technician) plus one ArcInfo license for coordinator.
Don't have ArcSDE and thus no ArcEditor.
Get ArcInfo functions from developer samples.
Many counties have to do upgrade to ArcEditor when they use Sidwell or similar software.

Training:
At time of first ArcInfo license, training at $1600 for one week was required. But county only provides $300/year for training. Therefore, Lawrence does a lot of web-based training.

Issues with third party aps. Sees developer samples able to do this for free.
Counties without coordinators (Marion and Madison) outsource to third party aps and do their own maintenance.
How long did Lawrence spend on developing aps? Still save money, especially regarding maintenance. Parcel maintenance tools took 80 hours to develop.
Customizing web aps takes a lot of time, 2 months total, vs. Schneider services for web.

Jasper currently charges for parcel info. Varies by customer. Navtec charge would be $1/parcel resulting in $30K total charge. Free for student projects.
High cost to cities. Charged Newton $80K for parcels and aerial photos on a cost recovery basis. One or two engineering companies might pay $100-200/year for aerial photos. $1/Meg usually turns people away.

DOT partnership to get centerlines. Counties don't trust the state. Fear state agencies will take data and ruin it or control it. What aps received back would more than justify contributing to statewide database?
Lawrence to look at cost recovery vs. time spent setting up contracts for cost recovery. They have many distribution agreements.
Big value of having lines for parcels is associated ownership info, which could still be sold.

Benefits to county of having GIS:
Reduction of calls to GIS department (due to IMS) yields 5 hours/year savings.
Able to get surrounding county info saves 5 hours/year searching for data.

Strategic benefits: updated address ranges to centerline files would be helpful for dispatch.
A new county would not have to develop its own IMS site.
Realtors and assessors would love to have a common site.
County engineers would love LIDAR. Must purchase DEMs for new road construction.
We will ask Jim to talk to Rog Patocka (Emmet County)
May need better than 2 foot contours for actual construction of complex projects.
May be able to avoid aerial surveys by use of LIDAR.
Statewise photography could be helpful. County flew in 2005 and plans next flight for 2008. Supplementing cycle via 4-5/year statewide?
Looking for $1M from legislature for 2 foot flight.
Would be worth it for county to chip in $10K for statewide flights.
For each flight, 40-80 hours administering contract. Depends on how sticky county attorney is. Time spent nagging contractor.
What about Economic Development aps? Homeland Security? Find a good contact at the state level.
Mary Ann to ask Talbot Brooks about measuring HS benefits.
Someone in Iowa to ask Jon Paoli in state HS regarding snowstorm benefits.
Idea to have IMS site for recreation and one for surveyors.
Office staff says value of GIS with IMS site is 5 less walk-in people/day at 15-20 minutes each plus 5 less phone calls (realtors mostly) a day at 15-20/minutes each. Conservative estimate is 12-15 hours/week of clerks time saved.

Jon Lubke, Winneshiek County 3/18/08

Jon worked for Promap in Ames and has worked for several counties. Will provide list of benefits compiled by Promap.

Aerial photography crucial for assessors/engineers to reduce field visits. Every year they are supposed to assess everything in the county. Can only afford new photography every 6-10 years. Used USDA NAPE photos. Get their own orthorectified photos at a cost greater than $100K each flight, plus an additional 1-2 weeks contracts work. Really need to hire consultant for help with imagery, to manage quality of product they receive.

LIDAR – Have not yet used it. We discussed reduction in survey costs. The county may spend $10K to $20K per survey for elevation data.

CSRs used for ag land. Have to calculate new values when tracts are split. Used to do this a planimeter and soil survey. Very labor intensive. Johnson and Lynn County consider CSRs in zoning. Near Decorah have limestone bluffs with development on them. Considering setbacks for aesthetic reasons.

Having GIS available has resulted in reduction of one map technician job at the county. Staff reduced from 5 to 4 in assessors' office. Half of the savings come from web access to data.

Benefits of seamless data layers to Winneshiek County:

1) aerial surveys
2) LIDAR

Plus reduction of one map technician for use in analysis of counties without GIS.

Benefits of photography. Traditionally use field surveys to map Karst topography. Would use with sanitarians for hog confinement. Determining forested/nonforested land. Row cropped vs. pasture. Better photos would help. They use color IR a lot. This county has lots of hills which results in lots of shadow on the photography. Would benefit from common software used for statewide layers.

They have gone from paper maps to electronic on-demand service.

Benefits:
Inventories: centerlines, etc.
Buying ROW
Zoning – would like to use more
Dispatch – police, sheriff. Assessors' office would like to maintain some police data as this office is the primary date provider for plat maps.
Goal to develop enterprise system and provide out to cities and utilities. Data would flow in two directions. At lot of this goal has to do with easements and where one can build.
Linking documents – deeds, plats, mortgages. All linked back to GIS. Easier to find than looking up by legal description. Can click on lot and pull up original survey. Click on parcel and see all the deeds. Ten minutes to look up and chance of damaging document plus time traveling to document. Save one hour/day/person for mix of six people for this benefit. This data now pushed out to the public via website.
Half a dozen real estate companies in the county send 2-3 realtors to view records. They visit 4 times/week down to every other week. With online viewing this no longer necessary.

Larry Gullett, Jones County Conservation Director 5/7/08
conservation@co.jones.ia.us 563-487-3541

GIS used in project planning. NRCS comes in and does detailed topo survey. Use to develop plans for infrastructure improvement (roads, ponds and wetlands). Ryan has data for adjacent landowners so it is possible to see who

will be affected. ***This saves time – what took 10 hours before takes 2 hours now. 70% of time using GIS for special projects and 30% on standard operations.***

I would estimate at least 14 to 16 hours per month is saved from standard operations, although this is difficult to estimate. We do some things with GIS that allow us to perform our job better. Without GIS, we wouldn't consider doing these things as they are too time consuming. For example, we manage plant communities through burning every few years. GIS allows us to map burned areas, store the records for future reference and assessment of plant communities and calculate accurate acreages, which allows us to determine staff needs and allocation of time.

Mapped trail system last fall taking 2-3 hours vs. 2-3 days. They save 18 hours/month using GIS on special projects.

They are in charge of over 90 miles of river system used for recreation. Project planning. Special and natural resources. Maps of river corridors used in meetings. Show unique features (geology, plant communities, native American sites) on maps. Ryan will overlay these features. Optimize opportunities to preserve resources and acquire areas. Use in management plan regarding decision to develop or preserve an area.

Mapping helps determine future direction of their program. Taxpayers can only be expected to fund a certain level of services. Helps identify priority areas. ***If budget is $400K/year and taxpayers will support $600K/yr, use GIS to get more bang for the buck in offering services***

The mapping and analysis of special natural and cultural resource sites allows the Board to identify areas where public tax money is best expended. By mapping these sites and reviewing the data we can make better decisions about the future of our program, i.e., focus on areas that provide the most return in terms of recreational benefits, educational opportunities and preserving high quality resources, that benefit the majority of people over the long term. In summary, it allows decision makers more detailed and better information for use in the decision making process.

Benefits to the public are in millions of dollars over 10 years.

Consider grant funding and corporate and private support enhanced because they see the use of professional planning tools.

Mapping endangered and threatened species. Old way of keeping it in someone's head means that knowledge is lost over time as people go away.

Use GIS for project planning to avoid interference.

The Matokata River Water Train Project started in 2006, will be complete in 2009***. Raised $650K in past year based on thorough planning.*** GIS is a major part of this. Started project with 1) GIS maps and aerial photography and 2) getting people together to talk about the project. Project would not be as successful as it is without GIS. GIS is what got the project started. ***Outside firm to do GIS for this project would cost $5-7K.*** Able to leverage in-house skills instead.

Another project involved GPS surveys with NRCS for 200 acre wildlife area. ***$170K to implement.*** Able to raise all funds through government grants and private donations. Ongoing project taking 3-4 years.

I have written many grant applications and proposals from the federal, state, local and private level. The competition is fierce for these grants and it is very important that proposals are professionally done. GIS gives us an edge over other applicants as it

illustrates the information in a way the grant reviewers can understand it, is very accurate, and it is visually appealing to the grant reviewer. It is difficult to estimate the value of GIS in these grants, I compare it to graphics included in the application. In some cases it may make the difference between getting the grant and not getting it. This could range from 0% impact to 100% impact. If you want to estimate it, I would say it gives us a 50% edge in grant writing.

MAS concludes this benefit to be 50% of $650K + $170K distributed over 3 years = $136K/year.

First responders know how to access river via maps. Ask some of them about time savings and other benefits.

Another project is to provide information kiosks at parts, web sites and brochures. Very high quality map development provided by Ryan, professional and accurate. ***One brochure to an outside designer would cost $2K. They created three brochures this year. Ryan has just done two info kiosks plus web sites. Ryan started with the county two years ago. At first providing the equivalent of $2-4K/year vs. outside graphics but now more like $6-8K/year.***

LeAnn Harter Story County Planning and Zoning 6/5/08
515-382-7245

Uses for statewide data: When development right at county boundaries, Matt has to jump through hoops to get data for them. With statewide data their department could give an analysis back to property owners sooner. They deal with this kind of situation 1-2 times/year. They have a case of a wind farm coming in where they need to notify property owners ¼ mile radius around property. As it is multicounty area, this may take a lot of time. Previously they have not notified beyond county boundary but she feels this is bad practice.

They would appreciate shared services/service agency as budgets are in decline or stagnant.

Uses for Lidar: They require all applicants to provide an existing resources inventory. Currently this is not well researched due to lack of data.

Benefits of GIS: More professional reports. For example, damage assessment from recent flood. This took 1 week's work for 1993 flood and now can be done instantly.

Responding to public queries. They get 20 calls/day. Average time before GIS was ½ hour. Now answers are instantaneous, or at least under a minutes. This saves 10 staff hours/day plus equal or greater time for the public.

Les Beck, Linn County Planning and Zoning 5/1/08

Greatest GIS benefits come from the analytics aspect. Having data at a common scale for site review, environmental review, land use.
He's been using GIS for 20 years now. Previously did manual overlay projects on Mylar for soil types. Drew cells on Mylar. ***Took three interns an entire summer to complete vs. 1 hour now. That translates to a savings of 1559 intern hours.***
Some projects are done now that previously would not have been done.
Flood plain review. Sent out letters this spring. Queried all properties in flood area to remind them of availability of flood insurance. Took 1 day. Don't know how long otherwise to search records manually for property values greater than $5K. Bottom line is this search would not happen.
Use Land Evaluation and Site System to evaluate parcels for development suitability. Soil quality/surrounding land use/surrounding zoning. ***20 years ago did this type of analysis in 3-4 days vs. minutes now. Some front end work needed to develop the models, contracted out to ProMap in 2001. Developed models based on ELISA and ran over the entire county at cost of $14400. Les notes that modeling may be easier today. Do 2 analyses/week year round. Staff time saved would be of a planner. Result savings would be savings of 2800 planner hours/year.***
Catch to the above savings is that only a handful of Iowa counties use this evaluation model. 78 zoned counties. Something like 8 have professional planning & zoning staff: Scott, Linn, Johnson, Story, Polk, Pottawattomie, Dallas, Woodbury.
LIDAR benefits- slope analysis. What about aboveground information? Viewshed analysis would be possible. They would use this for cell towers and wind farms. Have done previously with USGS topo maps and arbitrarily assigned types.

Lisa Swanson, Environmental Health Officer/GIS 10/18/07
Enforcement, Surveillance & Preparedness
Black Hawk County Public Health Department

Looking at benefits for nutrition program coalition.

Benefits of address points: Many of their projects are multi-county but they don't have data for adjacent counties. Lisa does inspections of 1800 restaurants in 9 counties but maps only for Black Hawk. Possibly could relate savings to hours for interns to work with adjacent county data.

Maps as a tool for securing funding = value of finished product.

Staff efficiency regarding routing using address points. Look at 200-2007 routing metrics. Nutrition program through Iowa State Extension. Find out how many similar programs there are.

If we are currently mapping matching to parcels, we are therefore limited to the areas that we have parcel data.

Using parcels, there is a process…. To match up the address with the corresponding parcel of that address and to geocode. Having a statewide framework of address points will reduce time spent on parcel matches and increase the value of geocoding because it possible to map datasets that cross into counties with no parcel framework.

Looking at benefits for nutrition program coalition.

Food bank Meeting:
I talked with the food bank (one component of the coalition) →
Black Hawk County (only) 20 hrs for client/demographic/service area data, but they have 16 county area (Northeast Iowa Food Bank). There are 6 regions in Iowa, each having multiple counties. If we had statewide framework for mapping their client data, the Black Hawk Co. project could be duplicated across the 99 counties. There are 6 food banks serving the counties of Iowa.

Iowa State Extension Nutrition Program Meeting:
Find out how many similar programs there are. Staff efficiency regarding routing using address points. Look at 2005-2007 routing metrics.

FY2006 – 2167 miles driven, clients seen???....incomplete, couldn't get a ratio
FY2007 – 30.3 miles per client seen
FY2008 – 19.75 miles per client seen…so far
That's for Black Hawk Co…..they have a 10 County area. Unfortunately that data I received wasn't apples-to-apples so the "measurable" comparison was not as clear cut as we hoped. You can see a rough improvement once their data was mapped. Mapping their data equates to these estimated hour values:

Black Hawk County maps of this data -
Zone creation (one time) 4 hrs. (Framework data wouldn't change this allotment)
Client location (geocoding) framework would replace or enhance existing geocoding (in Black Hawk only we have parcels but currently that's all we can map) 10 hours of matching and then manually fixing the mismatches for the county clients (based on number of clients and quality of this type of data).

It's true that we could do what we did with or without the framework data for Black hawk County because we have parcel data. However, we could open up this process in the other counties (and statewide) with framework data, mapping to address points rather than relying on the presence of a parcel layer. This was

never possible before so the mapping was limited to the counties with parcel layers available.

For all programs in the coalition:
If framework address points were available statewide, the project could be expanded to study poverty in more detail across the state; instead of census averages, you could pinpoint using department of revenue data (household) and look for growth and disparities. This would be good for the low population counties (which most of the outlying counties are with the exception of a few urban counties, which probably already have the framework data).

Another benefit would be that the data would be more timely than waiting for census data, which is aggregated and less useful anyway. The real-time data by household could be mapped and updated more frequently with less hassle

School data (how many school districts in IA?): they all collect data, right now we only map data based on school (ie – stats of school mapped to the location of the school)….if we had address points, the distribution of students, poverty levels, school assignment…all of the data that is student based could be mapped by address rather than to a central location (school address). The value of this would also be statewide and for districts that are both.

Benefits of address points: Many of their projects are multi-county but they don't have data for adjacent counties. Lisa does inspections of ~1800 restaurants in 9 counties but maps only for Black Hawk. Possibly could relate savings to hours for interns to work with adjacent county data.

Mapping in Black Hawk – estimated time based on number of data points
Without framework, the process for mapping outside of black hawk county would be to either research/secure some parcel data from that county (not likely) or to use an outside reference layer. How can we say how much time that would take? I basically can estimate that, assuming that the data layers do not exist in other counties, you might have to do some manipulation of the data to make it geocode ready to some other layer, which would probably take twice these values, which are estimates of the time it takes to map the data we have:

	Food Licenses	Estimated Mapping Hrs Food with framework
Black Hawk	864	10
Buchanan	170	2.5
Butler	85	1
Benton	145	2.5
Bremer	164	2.5
Fayette	200	2.5
Tama	129	2
Grundy	82	1

Delaware	141	2.5
Poweshiek	n/a	n/a

Other inspection services that could be mapped in the 9 county region, value to our program specifically but the statewide

- Transient Non-Community Wells
- Septic systems
- Private water wells (see below)
- Illegal dumping, other complaint events
- Environmental Risk factors and indicators (http://www.idph.state.ia.us/do/common/pdf/talking_points/CARHI.pdf)
- Nuisance activity (complaints, locations of reported incidents)

Also, statewide private water well/water quality data would be mappable. This was not possible before. Each water test represents a well with address. Example sets below indicate wells that, if mapped could help us study the results of our water testing (nitrate levels, bacteria problem areas) beyond just our county. The times are similar to the previous estimates for food (see above)

	Number Tested	Passed Coliform Test	Passed Fecal Coliform Test	Passed Nitrate Test	Failed Coliform Test	Failed Fecal Coliform Test	Failed Nitrate Test
Iowa, 2005	7000	4765	3637	6079	2185	178	683
Iowa, 2006	7665	4899	5835	6558	2726	306	768
Iowa, 2007 so far	6074	3841	4610	5138	2182	342	690

Statewide disease incidence and surveillance data is not available from counties, the Department of Public Health would have to answer for this (John Warming, GIS Coordinator for Dept. Of Public Health jwarming@idph.state.ia.us). Other datasets from reportable data could be aggregated and provided by the IDPH team.

Maps as a tool for securing funding = value of finished product.
The environmental health has used maps for field work in Black Hawk County to help health officers with inspections. This reference would be even more valuable if it could be expanded to the other counties in the region.

Map products have been used for justifying program need (Iowa State Extension used their client/staff zone maps to defend their request for additional staffing, which resulted in a successful plea to not have an empty position canceled but rather to hire a staff person for a specific geographic region of need based on the client distributions they were able to show on the map). This justification would have been very difficult without the visual demonstration. Jill Weber from the Iowa State Extension told me that she was not sure that they could have successfully secured the new staff person without being able to show this need so clearly.

Cathy Simmons and Barb Prather of the Northeast Iowa Food Bank have both expounded on the value of their maps for showing the current food safety net (the distribution of agency services, grocery stores, food assistance outlets, school programs). The value has not only been in being able to look at target populations in relation to efforts of various agencies but also in helping to negate incorrect assumptions about where the need actually is. The "real" picture has been a driving force behind the outreach and presentations made to community leaders, policy decision makers, funding sources and in public service announcements.

The Food Security Alliance of Black Hawk County has found value in the finished map products because by showing their target populations in relation to their allocation of resources, they have been able to make sure that they are getting the maximum impact for their efforts. When one of the summer feeding sites was discontinued, GIS was used to determine the most appropriate new site that was accessible to children (along bus route and in a public building like a church or school) and in the right service zone. The agencies have valued being able to look at all of their service areas overlaid so that community wide, they can analyze for duplication and gaps in services in the needy populations they serve collectively but with separate missions and separate funding.

Mahala Cox Emergency Management, E911 Administration, Homeland Security
Warren County 5/19/08
515/961-1105 Mahalac@co.warren.ia.us

Majority of her work is planning for response. GIS has data for chemical facilities and evacuation zones, critical infrastructure. They model problems from chemicals mixing. ID fire hydrants, debris management sites approved by DNR. Bridges with weights for evacuation routes. Railroads and pipelines regarding evacuation zones. Emergency response districts. Flood plains.
Before GIS: did everything manually. Drew circles on paper. Couldn't ID people in an area without going to assessor's office. Now they have automatic updates and track people as they move about.
Iowa Code requires plan updates in a five year rotation. Her plan book is 6 to 7 inches thick.
She recommends the GIS handbook, "Confronting Catastrophe."
Planning is a daily thing. Staffing level has increased since 9/11 but new staff always had GIS available.
Benefits to citizens? Better plans. Assess vulnerability.
She will think about how they may have quantified benefits to citizens and get back to us.

I am not certain I can quantify and "hours save" as we are still building our GIS databases. There are many to find the appropriate "data" to add to the system. I apologize for not being about to assist you in this portion of your project.

However,

I spoke on the phone this AM briefly about a new book I have received. Although, I have not had the time to completely digest it .. I have given you some points (or lessons learned) from this book:

Confronting Catastrophe - A GIS handbook
by: R.W. Greene (ESRI Press - Redlands, California)

ISBN 1-58948-040-6

Mark Castenson Warren County, Indianola, IA 8/30/07

ProMap project begun December 1999 with contract. RFP in 1997.
$600K paper to GIS, everything except zoning. Flew county spring 2000 at 2 foot county 6 inch urban. January 2002 data was delivered. Mark started there July 2001.
County is on UMWare – unique use. UM boxes with multiple servers. $14K on server including ESX (VM component).
$9K on ArcGIS.
Server upgrade Enterprise level – split costs with city.
Making web aps specific to each department and hyperlinks to documents.
In 2004, city hall went to ArcSDE ($33K upgrade) with SqlServer data. $12K server.
View here is GIS is critical to doing job. County Assessor is good cheerleader for GIS. Fly every other year. One of top 5 growth counties in Iowa. Assessor web site since April 2002. Dropped phone calls to office by 70-80%.
Schneider hosts the site. Hits likely over 1000/day.
Get more done as a result. Appraisers out looking at new construction in June vs. Sept.
Would like to develop permit database and put on web. May get a programmer next year. Fund ½ and county IT would fund ½. Would like to do more with SQL Server, more web-based. More with sheriff's office, emergency management, traffic data, fire chief service calls.
Good experience with city of Indianola. GIS bridging gap and causing better relations.

28E with city provides for charging city for Steve's consulting. Started November 2006. Collected $2500 to date, will go up with ArcGIS Server implementation.
Police cars have laptops and City Hall has wireless. View in cars as well as fire department command vehicle. Sheriff's office looking at getting laptops.
2007 GIS budget (total) = $133K. Assessor's office doesn't pay all of this.
Maintenance $25K
Aerial survey component $25K
Schneider $9K
Web site $8400
ArcGIS Server configured right could get rid of ArcViews and maintenance. Got rid of ArcPublisher.
Data repository – ICIT. Like ftp site.
Hope to have payment engine for counties with pricing policy. They are mostly a give it away county. Do have under $3K/year coming in from data sales.
Engineering firms working with school district, etc. so don't charge.
County vs. state politics serious especially emergency management.
Will it be downloadable? Would not want to release data related to HS. Would not want to release attributes of parcel data. Issue of legality – whose data is it to provide? Almost need an attorney to say.
Currently for county can view but not download.
With LIDAR will generate two foot contours to be used for economic development. Generate new floodplains. Currently have 10 foot contours from 2006 aerial photos. Two foot contours get developers through planning stage (cut and fill) will save money.
Chad from Engineering Dept and use of LIDAR: Do surveying internally at cost of $10-20K on a major road. Still shoot culverts for exact elevation. But for grading LIDAR will work.
Small project 2-3 guys $100-150/hour crew
1 grading project a year plus a couple of bridges
LIDAR would save 20 crew days/yr at $150/hour = $24K savings.
Currently use USGS quads for drainage currents.
Fire dispatch in Marion, Madison, Lucas, Dallas
Hydrography – what if a dam breaks and another holds? Big impact to county.
Rivers that feed into Des Moines River.
County would like to see utility data – emergency management and public safety. Dispatch.
30,700 parcels. Add 400-500/year

Matt Boeck, Story County 3/20/08

Three topics for further quantification for use in ROI for counties without GIS. Matt to get with his boss and others at the county and try to come up with estimates. Matt to email results.

1) CSRs with and without GIS. How much time saved per parcel with this analysis available? Corn Suitability Rating/Crop Suitability Rating methodology was developed at Penn State in the 1970s/1980s as part of LESA, Land Evaluation Site Assessment. High CSR would factor into total scoring for zoning decisions in Story County. This methodology begun in Storey County by Les Beck, who is now with Planning and Zoning in Lynn County.
2) GIS used for analysis of sales information in determining assessed values. Potential for increased revenue as well as time savings.
3) Use of GIS with topo features such as flood plain in assigning property values. More accurate values and time savings.

Matt: I was talking with Wayne (my boss and county assessor) about the savings from using GIS to calculate CSR points. We estimated that it may take one full time person 2 years to make these calculations for all of their ag land for an 'average size' county. This person would possibly be making $15 per hour with benefits added in (of course you might have better numbers). The software would do the same amount of work in just a few days. However, just to be safe we can say that it would take a month with quality control and any other time required to complete the process (setup time, training, etc.). Even then, it's still a great return on investment. It is more 'fair' as well, but that doesn't seem to be included in ROI ☺. One question I have yet that I haven't been able to answer is whether or not the required soils data is available for all counties. I think that it is, but I will do some double checking with the Soil Tilth lab at ISU or maybe the DNR or NRCS. Actually, maybe Jim G. would know…

As far as the other two items we talked about (GIS for sales mapping and utilizing flood data) – Wayne didn't think that these would really have any cost savings for counties or it would be difficult to calculate savings. The problem is that the smaller counties most likely don't have enough sales to perform any GIS analysis with. Sales mapping would mostly be just an added 'wow' benefit. Also, utilizing flood data to assign values can differ between counties quite a bit. My opinion would be to just factor in the ROI for CSR calculations.

Jim: That's an easy one. Yes there are soils for all the counties, some worse than others, but otherwise pretty well universally available.

So property assessments are usually made on a two year cycle, yes? Is this a benefit we can count every two years?

Matt: That's a good question Jim. Actually, the initial calculations would be the biggest cost savings. Once all of the ag parcels have had their CSR points calculated, they just need to be updated. And this would only occur when there are parcel splits or combines. I would say that a person would save 1 hour per split/combine. These new CSR calculations would just be made as needed and at the time of the split (no need to wait two years). Basically what I'm saying is that if Parcel A is 40 acres and isn't modified for many years, the same CSR point calculation can be used.

One thing that I forgot to mention (and I'm not sure how it plays into all of this) is the creation of a 'non-tillable' GIS layer. Forest Reserves, slough land, etc. can be used to reduce the CSR point total because that area cannot be farmed. Some counties have taken the time (or paid a consultant) to digitize this data and create a layer. This is just another layer in the cookie cutter process. However, this is not a necessity for CSR calculation - Story County doesn't have this layer yet but would like to create one.

Peggy Smith, Assessor, Page County 4/10/08
712-542-2516

She has budget capability to raise funds for conversion over the next 2-3 years. She is fairly comfortable with the process, having gone through this previously as assessor in Montgomery County. She would be interested in knowing more about statewide services. Regarding web service, she believes a statewide portal is being provided through the legislature and called something like CREW or CRIGAC. This service designed for real estate information include assessor, auditor and recorder.

Her needs for GIS: 1) plat maps. Their base maps haven't been updated since 1996. New additions won't fit in.
2) Sharing data among departments/offices. Analysis on sales, soil types, redistricting, engineering needs, emergency management. Improve the decision making process and provide information to the public.

Benefits: Their three person assessor's office will remain a three person office. There will be less walking around to find data. Current hard copy maps won't hold new data very well due to scale issues.

Enable catching errors in assessments. Sales analysis—GIS is a more visual way of tracking changes in the real estate market. Soil survey – ag assessments will be updated eventually. This is quite controversial work she notes.

Page County is not seeing lots of growth from industry or new subdivision. They are a rural ag community.

Emergency management coordinator is Rod Riley. He is really new to this position and may not have ideas about GIS.

Judy Clark (712-542-3219) is County Auditor. Her interests include voting precincts, redistricting, census. She is also very interested in GIS.

Pat Powell, Jones County Surveyor 5/8/08
(319) 462-3785

They haven't used the new statewide LIDAR yet but they have used this type of data previously and find it saves a lot of field time. ***Save 25% of total time on any one field work project. They will be out every day working on a five year project with a three man crew. There would be approximately 250 crew days/year so would save approximately 62 crew days/year. Warren County estimate for cost of a field crew is $150/hour. Using this value would make for saving of approximately $75K/year reduced field work from new LIDAR.***

They are relatively new to GIS. Had the county flown a few years back. Tie all projects to State Plane coordinate system and wish everybody would go to that. Having standards to use for the statewide project would be helpful.
Having aerials to look at results in better decision making in setting up surveys. Pat says it is reassuring to have the imagery confirm his ideas for setup and to be able to zoom in and out in the GIS and to see miles outside a project.
He doesn't believe they are up to full use of the GIS yet. They will get better at using it. Likes the Beacon product provided on the Schneider website. ***Using it saves trips to the courthouse. Savings average 5 hours/week but for some projects research would take days.***
Needs to have section-quarter section data in the statewide data layers. Easy access to this information would make everyone's life easier, would reduce time looking for monuments. ***Having the statewide seamless data layers include section-quarter section data would save time making trips to engineers' offices or the courthouse, on the average of 8 hours/week.*** He does use the Iowa Land Record system but it is cumbersome.

David Bayer Pottawattomie County GIS 5/19/08
712-328-4882 david.bayer@pottcounty.com

They're a stand-alone department, providing support to the public and other departments. This is a huge organizational benefit. Support to Planning and Zoning, Engineering, Emergency Management, Audit, Assessors, Conservation, Animal Control, Human Services, Water Works, City of Council Bluffs, Sheriffs, 911.

Irony is they don't do much with assessor's office. See GIS as a window into the database. People are visual vs. lists of reports. Statewide GIS would help large companies see opportunities in Iowa for economic development. Seeing the state as a whole would draw them in. Might help give a kick in the pants to counties without GIS. Foster communication. Pottawattomie is in far SW corner of the state. There is not a lot else around this county. They would like to have a bigger GIS neighborhood. Their population is 90000. Adjacent counties with GIS have more like 15000 population. Scale and approach of GIS in larger vs. smaller counties is very different.

Small groupings of counties for GIS services seems good to him. Pottowattomie would keep its own web site vs. using a state site. The little counties use Schneider. Could be a huge bonus to smaller counties to have a state web site. However, David notes that state-run technical services don't seem to be run well. He cites the Lidar project where data is coming out very slowly. Promises from the state are not coming though. They wanted to use Lidar for DEMs. In hindsight, he sees they should not have relied on the state for a local project. He sees problems with the project having no real schedule at the front compounded by weather problems. He would like to have county-wide contours, hillshades,

3D buildings. Has heard nothing about receiving this data for quite some time. He says that DNR uses Pott Co. Lidar for 2004 to take to legislature to show its use to get funding for the current Lidar project.

At the county level, the biggest benefit from GIS is public safety – 911, sheriff, police, fire. Also, benefits to citizens from not having to drive to their courthouse, which is not centrally located. Could have as much as a 30 mile drive to the courthouse.

Paula Glade – auditor's (has traffic decreased since GIS?) 712-328-3019

Andrea Schaffer – somewhat paranoid and very busy 911 director
Andrea.schaffer@pottcounty.com 712-328-5739
Getting ready to install AVL for county, which should decease response time.

Animal Control will have TomToms/Garmins in vehicle but not quite there yet.

Rose Brown in Council Bluffs Planning 712-328-4629

Sheryl Garst in Council Bluffs Eco Dev 712-325-1000 x 120
Notes Google is coming to Council Bluffs.

Conservation Chad Greve at Hitchcock Nature Center 712-545-3283

Ray Willis, Polk County Assessor 5/1/08

His commercial assessing staff will call all over the state to get assessed values. Would benefit from a seamless statewide parcel map. Contact Rod Hervey, head of commercial group 515-286-3088.
Assessors tend to compare notes with each other more than auditors or other county offices, view beyond their county borders.
GIS is core requirement to getting their business done.
Web site is biggest impact of their office. Very good public response. Has cut significantly on phone traffic. ***Gone from 800 calls/day to 100 calls/day at 5 minutes/call. Ray will provide metrics on average length of calls measured today as they collect this. So far, appears they are saving 58 staff hours/day.***
Get feedback regarding inaccuracies in property description from owners, real estate, bank, appraisers. Most cases will increase tax revenue. Neighborhood is the best watchdog. Many little bits and pieces.
Address info is hardest to get right. Platting will assign two addresses to a corner lot and only 50/50 change assessor will guess it right. Hard to count benefits here because so many points of contact. Ray will check and let us know.
GIS started at Polk County in 1991-92. Prior plat maps were done manually and poorly. Paper maps were not tied to records.

GIS works around previous paper map workflow. Auditor gets deed describing a split. Updates in GIS. Sends forms to assessor's office. Sends someone out to look for improvements on the property. Time consuming to follow this process through. Do versioning on SDE database. May be weeks/months for final version to be posted.
Consulting firm in mid1980s tried to estimate benefits of GIS but overestimated it. Use GIS to review bad data. Provides tools for resolving problems. Projects that couldn't be done before. Use spatial analysis to develop surface model for sales. Derive land rate model to make adjustments. Used through two reassessment cycles with success. Stated goal of their department is equity. Better able to defend values with procedures/processes. Fewer protests or cases where office doesn't look good***. Ray will try to get reduction in protests and reduction in workload.***
LIDAR benefits: use as surface to rectify aerials. Polk County acquires aerials on annual cycle since spring 2000. Have edge to edge for county with zero voids. This results in improved quality. They would probably not buy some other product for rectification but Ray will use new LIDAR to tweak existing maps for improved quality. Paid $285K first year for aerials, which included rectification. Now pay $75K. Ray takes it that rectification thus cost them $190K, which would be a one-time cost avoidance for a county to start GIS.
Madison County aerials are rectified but data is section by section rather than seamless.
Cindy Diminico Birger, head assessor in Boulder County, CO made nice presentation on use of 3D models for viewshed analysis. Handful of properties in DesMoines affected by viewshed issues.
Ray would strongly advocate to other counties in Iowa to make their database seamless. Chopping up by the square mile or township hides lots of errors.
Cedar Rapids went from chopped up to seamless and from city engineer maintenance to county-wide. Talk to Jason Siebrecht.
Iowa City also went from home grown to seamless. Talk to Ray Havel, although this may have happened before his time.

Here are the residential protest numbers for our last three "reassessment" years:
Year # protests # res parcels % of res parcels protested
2007 5,886 147,111 4.00%
2005 7,044 139,046 5.07%
2003 8,014 130,988 6.12%
I visited with one of residential supervisors. The variation in time spent on each protest is too wide to even give you a ball park average.
It can be as little as a minute or as long as several hours depending on the nature of the protest.

Rich Mahaney, Linn County Emergency Management 5/2/08

They use GIS for analysis regarding special needs population. This is the only application Rich uses directly. There are lots of GIS applications Rich would like to use but they don't have their own GIS software so they rely on the GIS department and don't do as much as they might.

Rick Havel, Johnson County 2/29/08

Regarding LIDAR use, roads department would use it as a planning tool. Our estimates of $24K cost avoidance seem reasonable.
Address points/structures: working on this data layer. University data affects this layer. Use for 911 addressing and other addressing. Have four distinct dispatchers in Johnson County. Use for more precision. Small counties currently use centerline files that are pretty rough. Dispatchers becoming map enabled helps with response time. This project driven by county assessors dealing with commercial condos wanting more precision.
Laurie Phillips from Sheriff's Office for E911. Works closely with Rick cleaning up addresses. Refining database on both sides. Merging standards (319) 356-6020 lphillips@cojohnson.ia.us
Fire departments. Use map books for vehicles. North Liberty experimented with electronic maps
Ambulance vehicles all have pc tables. See Steve Spenler 356-6013 or sspenler@co.johnson.ia.us
Iowa City Fire Department – analysis project regarding time saved. Having data in graphic format helped them fund new fire station. Johnson County compiles data and ships it to them weekly.
Emergency Management – creating joint communication system. GIS analysis of buffers for this. Sirens database. Dave Wilson dwilson@co.johnson.ia.us
Ortho cycle every two years. IFTN would be of interest. Pay $115K/flight, including contracting services from Dan Corbin. This year bypassed rfp process and piggybacked on Linn County contract. Did this last two flights.
Arc IMS web site. Pay $3K in software maintenance plus $2K in staff time. Would probably keep their own site even if a state site was available.

Emergency Management

1. We are putting together a Special Needs Registry. This would contain persons that would require assistance in case of an evacuation or after a disaster situation. We will geocode the addresses to produce a map of where the people are so EM can plan accordingly.
2. Johnson County recently created a "Warning Sirens" layer to display siren locations throughout the county. Each siren has a specified coverage area. We buffered each siren based on its coverage area distance which shows areas where sirens may need to be added.

E911

1. Johnson County currently has 4 different Public Saftey Answering Points (PSAPS). Iowa City, Coralville, Sheriff, and University of Iowa each operate their own PSAP. 2 years ago each of the PSAPs agreed to switch to use Geocomm software to display map information for their jurisdictions. Each of the PSAPs use the same dataset that is updated weekly by Johnson County GIS. Having mapping capabilities is currently required in order to effectively locate 911 calls that come from cell phones. With the rise in cell phone use, accurate maps are needed more than ever.
2. Johnson County produces customized maps for fire departments throughout Johnson County.
3. Johnson County assisted the Iowa City Fire Department in analyzing 2006 incident information. Each time ICFD answers a call, the address, type of call, and response time is recorded in a database. We took that information and plotted each call for 2006. We then used Spatial Analyst to produce a grid of response times with varying degrees of shades. This information was used in an application for accreditation.
4. Using ArcReader and Visual Basic, we created a customized map viewer to be used in each of the ambulances. (5 total). The map viewer operates on a PC tablet. Data for the map is updated regularly using county data.

Zoning

1. Zoning used to store all of their zoning information on hardcopy map sheets. When a person would want to know their zoning, the would have to locate the proper map sheet from a hanging map sheet folder and pull the sheet. Since we have put the zoning information on the web, phone calls have dropped significantly.
2. Maps are used extensively in the subidivision review process. Digital versions of plats are received from the developers and drawn on on top of existing orthos to show the Board how the developments will look after it is built. Discussion and debates of proposed subdivisions have been reduced due to the ability to have current/accurate maps.

Social Services

1. We recently produced a map of all the schools and churches in Johnson County. This was used to help develop a partnership between churches and schools in regards to administering aid to lower income families. Such as school supplies and promotion of available medical services. A one mile buffer was created around each school and used it identify that churches in that proximity. With that, we were able to make a simple list of schools with churches within one mile.

Census

1. GIS played a huge role in providing the 2010 Census address list update. Using GIS we verified all of the addresses supplied to us from

Census and were able to identify new addresses that were added to the existing list. Johnson County started maintaining an Historical Annexation layer 2 years ago. This layer provides an accurate account of annexations over time. This will be used each year to update the Census information through their Boundary Adjustment Survey.

Conservation

1. GIS was used to map out each of the conservation areas throughout Johnson County. We have also produced maps to be used in grant applications.
2. We used GPS to create a database of memorial trees. The layer was added to GIS Online so people can see where the trees are located.

Rod Hervey, Polk County Commercial Assessors 5/12/08
(515) 286-3088

Respond to many tax reps, for instance from HiVee and other chains, and need to compare values statewide. With GIS statewide data, able to develop more uniformity throughout the state. Or can compare values with a property unique to their county by pulling up one elsewhere in the state. Do they address these issues manually now? Only on a case by case basis by phone or viewing other assessors' website. Result would be more equitable assessments which is a benefit to the public, by keeping assessors' offices more in line with each other. Potential time saving in justification of values when contested but not able to estimate extent of this. Good cross check of decisions.

Rod Sullivan, Johnson County Board of Supervisors 5/6/08
319-356-6002

He is more an observer than a user of GIS. Regarding seamless statewide database, he sees many more commercial than government agency uses for this.
Just flew the biggest cooperative aerial survey project yet in Iowa, finished this spring.
Johnson is one or 3 or 4 growth counties. The rest of the state is drying up. This seems to be self-perpetuating—when counties don't invest in technology and move in a growth direction, others don't come there to do so either. Whole industries – real estate, engineering, appraisals, public health, conservation, human services, public safety – would go crazy without GIS.
Originally GIS was viewed as a money maker for counties, via selling the data. Johnson County just made the change from selling data to making it freely available. Rod was an advocate for this change. Rick Havel helped with the decision by explaining that it takes a lot of work to try to sell the data while the return is not that great. Charges were generally low. They made something on

the order of $10K in 10 years—check with Rick before using this number. Now Johnson County considers everything a matter of county record, whether it is paper or digital.

Roger Patocka, Emmet County Engineer 5/2/08
712-362-4846

He is aware of the new LIDAR data sets. Has called up the data sets and looked at them.
They use GIS every day. Unified framework for data, based on location. High accuracy requirements for property lines down to less accuracy like sign locations.
Use Iowa DOT layers, centerlines. Try to set up linear referencing for county. But DOT uses GeoMedia vs. ESRI which makes for quite a leap. Rolling sign layer over from CAD to linear referencing. Preventive maintenance system also to be based on linear referencing.
PLSS corners in Access. Want to get them tied into system. Survey grade.
DOT has developed statewide virtual GPS layer. Won't need to have GPS reference station to have survey-grade GPS available.
Biggest challenge for more rural counties is having good signal for GPS.
Bridge locations. Tie in to linear referencing. Recently identified width of bridges on maps.
Over the counter traffic for rural counties mostly agricultural drainage tiles in ROW. Get a couple of queries/week. Able to provide a better product with aerials behind tiles. Show color IR. More things you can do. Connects more with the public.
Aerial surveys done infrequently. 2 foot and 6". 2001 last flight. Would have an interest in IFTN.
LIDAR – would use for drainage and agriculture and tiling. Better planning.
Situations where work has been done over and costs absorbed by the county.
Hog confirnements. Manure management plans filed with auditors. Last year there was significant damage to roads due to misapplication of manure. $6K for one incident. $2-3K for another. Taxpayers had to pay to fix these roads ultimately. Could use GIS and LIDAR to plan better manure movement.
Figuring crop yields***. $20K damage to roads due to heavy equipment moving grain to ethanol plant.*** Better planning could prevent.
If hog operators would use planning info, with LIDAR and other data, at least $9K/year in road repair would be saved.
Feed from animal confinements hauled on roads. ¼ to ½ of maintenance budget ($371K last year) goes to repairs. Every count required to file County Engineers report to DOT annually.
Avoidable repairs 10-20% of all repairs. Roger estimates 40% of budget to repairs and 20% avoidable.
Grader cost is $260K for a new one every two years. $652K/year on fuel.

So ($371K + $651K + $130K) * 40% * 20% = $92.2K avoidable maintenance costs/year

See Iowa County Engineers Association Service Bureau site (Steve DeVries) at cfappl,iceasb.org/iceasb/index.cfm to try to get at maintenance budgets for all counties

Sheriff's office – Roger's group updated the #911 addresses recently. But rural sheriff GIS not as active as urban.

Ryan Lafrenz, GIS Coordinator, Jones County 4/29/08

Sidwell formerly maintained cadastral and aerials. Original flights in 1988, updated urban areas in 1998. New orthos in 2005 to build GIS.

Regarding new LIDAR, Ryan is interested but hasn't messed with it yet.

Ryan to check on previous costs for outsourcing.

2005 imagery already getting outdated, missing many major new buildings. They are near Cedar Rapids and Marion and relatively high growth area.

Ryan to collect data from assessor's office regarding:

1) Ability to spot cabins seen on imagery that are not on property records and thus able to pick up these property values
2) Time savings to staff from public web site released last month. Surveyors and realtors being directed to the site.

Jones County does not charge for data

Engineers use web site to find owners along a road. Participate in a section corner database. The website has direct link to Iowa land records. Talking to Cartograph about signage and bridges.

Would Jones County participate in a web site centrally managed by the state? They would be interested. Currently pay Schneider $600/month.

Pat Powell is surveying contact in the Engineer's Office, does ROW acquisition 462-3785.

Conservation Department – have a huge water trail project with them and NRCS and National Park Service. Will use LIDAR for this project (vs. 30 meter DEMS with field checking). At least one week's time saved each for two staff. These would be Conservation Officers (rangers). Also one day of Ryan's time saved. This is a pilot project in Iowa. Conservation Director is Larry Gullet 563-487-3541

Also wood duck migration and water quality sample. Hope to get better understanding of water quality issues by using GIS.

Zoning – small areas show up by zooming in on GIS. Info is lost for small areas on paper maps.

GIS available for dispatch in the past year. Cell phone calls plot on a map now. Diane DeSotel will know about this.

Need for a software program for Environmental Health to use, something generic and statewide. Currently ask field staff to collect GPS points, write down lat-long, eventually data makes its way into the GIS. Not very streamlined.

Hazmat locations. Use GIS to create plumes for distances from hazards. Reference Black Hawk County plume model for underground storage tanks. Emergency Management. April 2006 tornado. GIS used to limit search times. Currently there is flooding. Plotting locations of sandbags. Brenda Leonard is Director 319-462-4386. Don't call this week due to flooding!!

Email response from Ryan:

In the past year we GIS and aerial photography have helped us identify 8 buildings that were previously unaccounted two years ago adding a total of $163,940 value to our tax role.

On the website we average 91 visitors a day so far without advertising that it is out, just word of mouth. 91 x 5 mins (average time of helping someone – total guess) = 7.58 hours a day of help. Granted some of the visitors are employees or they are people who may not come in to ask the question. But if you even divide this by half and say 4 hours of work a day times minimum wage = $580/mo we would at least be close to breaking even and that is if we are assuming the worst and we are able to still be able to provide better access to information and an additional tool for us to use. Best case scenario is that we would be saving about that much if it was all counter/phone traffic plus the amount of additional work that we are able to accomplish.

Steve Spenler, Johnson County Ambulance 4/30/08
sspenler@co.johnson.ia.us 319-356-6013

For the past 4-5 years they've had GPS in all vehicles. Track vehicles from the office and send closest vehicle. Calls come in through sheriff's dispatch.
Track time in trucks from a module of the GPS, which is effective from an operations standpoint.
Can replay tracking records. Helpful if litigation were to result. Five years ago an incident with ambulance running with lights and sirens. Car with a green light hit the ambulance and alleged no lights or sirens. At the time they were able to play back the recording of the hospital call, which included sound of sirens, but now the GPS system records when lights and sirens are on. It records speed also.
Recently put county mapping system on tablets. Drivers can enter destination address and use for routing. Don't have to look something up manually.
Johnson is a growing county so it is helpful to get regular downloads to include new subdivisions. More accuracy saves time in discussion with dispatch. ***Could save 1-2 minutes/call in cases where there was difficulty with location.***
Operations benefit. ***When they incorporate route finding expect to see at least 1-2% savings in fuel out of a $15k annual fuel budget.***
Peace of mind is the greatest benefit. They bill by the mile and submit claims to Medicare. Mileage tracking could be huge with respect to potential audits. They can now be accurate to the 1/10 mile. Previously drivers recorded mileage from

the speedometer, would have to round up or down and remember to record mileage. ***They respond to 7000 calls/year. Bill Medicare for 4000 calls. Figure the drivers were estimating mileage conservatively. Recover 1 mile/call at $8.45/mile for 4000 calls = $33,800/year***.
The GPS system was approximately $12000 for the software and hardware/radios in the ambulances. The tablets for mapping were $20000 for hardware and software
Originally were looking for a way to track their vehicles for regulatory purposes. Able to measure service quality via response time. Previously time recorded by dispatch was never accurate.
Suggest speaking with Medic Ambulance in Davenport, which has its own dispatch and makes 20,000 responses/year. Linda Fredrickson is its Executive Director 563-323-6806

Tamara Ewoldt Johnson County Public Health 5/14/08
319-356-6040 x113 tewoldt@co.johnson.ia.us

Currently working with their IT department to bring GIS data they use more under their control. Don't control their own septic or well location data at this time. Developing a layer with IDs tied to parcels.
Review building permits relative to septic system/wells. With GIS can make determinations by map rather than going to site. Saves 8 or 9 visits/10 applications and get about 250 applications/year. Yield is saving of 213 visits/year. Each visit 1-2 hours counting driving time. Yield is saving of 320 hours/year staff time plus mileage.

They look at aerials in evaluating new septic and well applications. Do background research before going to field. Previously would not have done this research. This reduces time in the field by 10 minutes/visit. There are 160 wastewater applications/year. Yield is reduction of staff visit time by approximately 26 hours/year. There are also 80 well applications/year. For ¼ to 1/3 of these, staff can see from aerials that there are no complex setbacks and that the permitting process will not require a field trip. Yield is 24 visits avoided at 1.5 hours/visit = 36 hours staff time/year saved by avoiding well application visits plus mileage. For the remaining 56 well applications save 10 minutes/visit. Yield is 9 hours staff time saved/year.

They have acreage requirements, such as one septic system/three acres. Can pull up maps and see what requirement applies to an area. Saves 5 minutes each for 160 septic system applications, yielding 13 hours staff time saved/year.

Contact Karen Bowdin at extension 127 regarding mileage rate and miles traveled by the department.

2005 25,540
2006 19,173
2007 16,338

So, we have decreased our annual mileage by quite a bit over the last few years. These numbers are from the three watershed staff members who regulate wells and septic systems.

Sees that GIS will be good for planning and for catching illegal discharges.

In the case of driving to a new parcel for a new permit, it will not yet have an address. It may be vacant farm ground at the time of the visit. Staff pull up aerials and print the off to provide landmarks. This saves 10 minutes/trip for 1/3 of all trips. Yield is 10 minutes * 1/3 (37 building permit trips + 56 well trips + 160 septic trips) = 14 hours saved/year.

Might use LIDAR for slope calculations.

Total savings calculated above = 418 hours/year. Annual salary of about $39,000.
Mileage saved/year is 9202 @ $0.50/mile = $4601/year in car expenses.

Rosalyn Cummings, Assessor, Taylor County 4/10/08
712-523-2444 assessors@frontiernet.net

Her conference board just voted to have bids for converting their data from the three big players—Sidwell, Schneider, Midland. Have increased the tax levy to fund this project but will take three or four years to raise enough money for the project. Use of the state revolving loan fund would thus be of interest to them. They would be VERY interested in assistance at the state level regarding contracting, QA, project oversight. They would have an interest in the project being combined with neighboring counties in the same situation. Rosalyn does not feel she understands the technical issues of data conversation well enough to manage this project.

Adjacent counties: Page County just had three bids for data conversion submitted. Fremont and Union County desire GIS but are uncertain regarding funding.

Uses for GIS: Getting current soil survey in digital format (1947 soil survey on paper currently being used). Plat maps. Web site for public and staff use. Sheriff's office. Emergency management. 911.

Their business model for operation would be to have no GIS Coordinator and to have each office able to work with the system for their own purposes. Thus, the model of having state support with data on the common server would be very

attractive. Uncertain whether they would desire to maintain their own plat maps or would outsource.

Get back to Rosalyn after April 21st.

Sheriff is Lonnie Weed 712-523-2153
911 officer is named Joanie.
Rosalyn calls engineer's office for new 911 addresses.

Bonny Baker, Auditor, Taylor County 4/11/08
712-523-2280

As she has already discussed the project with Pete Buckingham, she doesn't feel she has anything more to say about benefits. The only benefit documented at that time was GIS would have been helpful in decision making around dissolving of a school district. Bonny doesn't believe that having electronic data access would save time in her office as she believes that people want to see paper maps in books as they always have. Similarly, she believes that the public in Taylor County will not use the Internet to view county maps.

She did have news of a recent grant to pay for aerial surveys for 18 southern Iowa counties for emergency management. This information came from Belinda Ogle, emergency management assistant director (712-523-2167). Belinda is in the engineering office and comes in early, by 7:30 am. Emergency management director is Mick Ware, but he did not attend the meeting where this grant was discussed.

Tiffany Coleman, Warren County Economic Development 5/14/08
wcedcdirector@mchsi.com 515.961.1067

She uses GIS to find information on a particular piece of property. Assessor information, for instance. Building footprints. Use aerial photos.
Photos taken from the side of the road of an empty field don't tell a prospective client much. Aerials help paint pictures. They often work with general land owners who are not involved in development. These people don't know their facilities information. Realtors often don't collect full information either. Need water, sewer, electric. Mark works with P&Z and utility information. Will get utilities and show them on aerials for Tiffany. This is not quite like having it all at her fingertips. Use floodway information, railroads.
Before GIS, paid for individual aerial surveys for an individual site. Did this as recently as 1999. Took at least a day and a half to arrange for and do the flight, in addition to paying for the flight. This would happen once every two years.

Benefit of statewide GIS – show state transportation infrastructure.
Having public GIS is important for a nonprofit. Otherwise, must invest in another tool Sometimes must get information out in 24-48 hours. Having everything online electronically really helps. Visitors came from Sweden because a drawing of the site was pretty and also identified infrastructure in details.
With no GIS: others can be more impressive. Flexibility is important. Every project is unique. Must be able to show what the client wants to see.
Warren County is land poor. Not a lot of shovel ready sites. ***Use GIS to help identify developable sites. Without GIS: run between assessor and recorder's office. 2 or 3 days work can be done in one afternoon with GIS. 2 or 3 of these type efforts in a year. This yields 2 days saved * 2.5 efforts/year = 5 days saved/year.***
Location 1 information system developed by Aquila. Put economic development standards into a software system. Online database of regional information, buildings and sites. Can do site search/building search. Can access census population data. Can imagine other applications – commuting pattern studies.
Online GIS is easy to manipulate. Aerials in electronic format now. ***Before you have to fly a site and then develop hard copy brochures. Now copy and paste into electronic templates. What took 2-3 days for a proposal is now 2-3 hours. They get 40-50 leads/year and would make 40 responses/year if they had sites for everything. As it is, more like 20 responses/year. This yields 20 responses * 18 hours/response = 360 hours saved.***
If property changes owners, can cross reference with assessor's site. Update information easily vs. having an outdated flyer.
Iowa Department of Economic Development – Business Development unit needs statewide data Beth Balder (515) 242-4863
Regional GIS needs. Tiffany has to switch systems to go from Polk to Warren. Standards are disparate. Landuse planning and development. Coordinate between multiple jurisdictions. Being able to consolidate info all into one map instead of taping them together.
Professional Developers of Iowa. Tiffany will contact some members to see if they want to talk.
Retaining business is also highly competitive. Need to develop trust.

Wayne Chizek Economic Development, Marshall County 5/16/08
641-844-2811 wchizek@co.marshall.ia.us

He provides services to Joel Akason, their Director of Economic Development. Put parcels on top of aerials. Or soils, contours, flood zones, land use, utilities (pressure, size of lines), railroads, highways.

Can get data out to remote sites in half an hour if necessary. Don't have contours in many parts of the county, so they use soils data in place of contours. Will use the new two foot LIDAR including point clouds data when it is available for their area.

Can do four sites with 6-8 maps each without much trouble. This puts their county at an extreme advantage compared to counties without GIS. He can turn out a complete packet for 1-4 sites overnight. Generate 2-3 maps in an hour (site, zoning and soils, aerials).

Statewide data? They already have this through the Iowa Counties data repository. They are the lead for this effort. Need to go across county lines. Uses DNR data to enhance county data.

Joel Akason akason@marshalltown.org 641-753-6645

Other uses: school districts (boundaries, road centerlines, routing), emergency response, sign inventory for engineering, assessors, conservation, zoning, sanitarians (septic tanks), elections in auditor's office.
School District routing vendor is Educational Logistics Kris Nord 406-478-0893 x2123
Planning and Zoning (incl. sanitarians & weed commissioner) John Kunc (pronounce koontz) 641-844-2707

Cities

Andy Rocca Iowa City Fire Department Chief 5/21/08
(319) 356-5256 andy-rocca@iowa-city.org

Statewide system benefits: to have more data available would be very helpful. Currently they give their data to Rick Havel to plot incidents for analysis. Look at problem response areas. Response time modeling. Analysis also useful in pursuing accreditation.

He would like to have access to preplanned info on structures. They currently do not have online GIS information available. Andy and his Deputy Chief are the staff members who look for data. It takes time to get hooked up with the county GIS people to make data requests. A conservative estimate of time spent looking for data would be an hour a month.

For counties without GIS: Knowing appropriate jurisdiction for response would be a big benefit. This could prevent redundant response efforts. ***Andy's cost for fire truck with crew is $280/hour.***

Having facility maps would be a benefit. Also storm sewers, bodies of water to be protected, special hazard info.

Response time affected by GIS more out in the county. More important benefit is the ability to analyze fire statistics for comprehensive response planning. There are 300 fires a year in Iowa City, of which 10% are actual structure fires.

What are the impediments to GIS implementation for him? Staffing is the biggest deal, much greater problem than funding for hardware and software. If the central state services could provide something for use by all fire departments to reduce the individual staffing overhead, that would be a great benefit.

Joel Akason Marshalltown Chamber of Commerce 5/22/08
641-753-6645 akason@marshalltown.org

Tiffany Coleman in Indianola mentioned speaking with me so he already understands some about the project.
Benefits of GIS to a county: without GIS they would not be getting shots at projects. Without this capability, don't even know what they are missing out on. GIS is turning into a must have rather than a nice to have. He is fortunate in having Wayne and Melanie at the County and Phil Grammet at the City of Marshalltown to support him.
Uses: bird's eye view, show utilities, show potential roads, slope, curb cuts. Takes days and weeks out of the decision timeframe.
He knows that GIS capabilities brought in two (soon to be three) large deals for them in the past year. These would be on the scale of $5M projects and larger. Maps got the clients to come to town and then Joel must make the sale.
Google Earth provides imagery access to everyone—raising the bar.
Statewide GIS: this would be more gravy to him because his projects are limited on one county. However there are organizations dealing in multi-county projects. See Priority One out of Cedar Rapids, the Greater Des Moines Partnership (Stacey LaVon), or the Iowa Department of Economic Development.
Wells Fargo campus in West Des Moines could be as much as $100s of millions in capital investment. Other extreme is $3.5M in Franklin County for a five acre project.
Joel uses the City GIS to look at empty spots by existing buildings and other already developed areas. He needs the ability to look from the top down. If he is able to close a project in under 30 days vs. someone else taking 6 months, the company will build at his sites even if it doesn't like the sites as much. Time is money. ***These little projects would be in the range of $1-5M and he closes approximately five a year.*** They would be something like retail or hotel businesses.
GIS provides at least 50% of the resources for bringing in projects. He always starts with a picture. If you can get them to visit your town and the property, you are already on the short list.

Adding the large and small projects gives 50% (3 x $5M + 5 x $2.5M) = $13.6M benefits in economic development projects/year.

Kevin Posekany Marshalltown Schools for bus routing 6/2/08
641-754-1000

Their routing vendor (EduLog) typically uses Mapquest for basemap data, but this is not adequately up to date for rural Iowa. For example, Kevin's house is in a five year old subdivision. In that area there are three bus stops. None of the streets appear in Mapquest. There are pockets like this all over Marshalltown. Therefore, they use county data instead. They are also able to get school district boundaries from the county. Data is free and county provides GIS expertise as well.

In their case, adjacent county data from the IGIC project would not be needed, but many Iowa counties do have school districts that cross county lines. He recommends contacting Iowa Association of School Boards, I Programs, to see about this and about other counties using GIS for routing.

Routing benefits. They have 40% annual student turnover which is difficult to manage. Route optimization to include load balancing routes. Analysis of which kids are entitled to ride the bus for free. Improve communication to families. Also important is that the student management system can export data to EduLog.

They had EduLog in the past. Changed transportation directors and everyone now is new so no records of benefits from the past. Routing software service costs on the order of $700-900/month.

Kris Nord Education Logistics (provides school bus routing software to Marshall County) 406-728-0893 x 2123

His company provides software targeted to school districts. He implements bus routing data, student data, centerlines. Used for boundary planning, enrollment projection, tracking buses.
They have several Iowa clients.
Effectiveness of software is dependant on quality of addressing data. Most difficult task is to develop and maintain this data. It is more difficult in rural areas.
He recommends going directly to school districts for metrics regarding benefits.
Client generally responsible for use of the results. For example, Marshalltown does their own implementation of routing.
For Example, State of Michigan has a statewide data framework but results are variable. NY GIS framework works well—can tell where all the data comes from.

Data acquisition from assessors, planning, sheriffs. If only paper data is available, this process takes 1-2 hours for a county. If some digital data is available, takes 4 – 6 hours to acquire, analyze, import data, fill out paperwork with its owners.
Seamless statewide benefits: often transport students in multiple counties. They have had to do data merges for Polk and adjacent counties. Takes 2-3 days labor to merge 1-2 counties.
There are states that use their software statewide. See North Carolina, ITTRI system.
Marshalltown Business Manager is Kevin Posekany 641-754-1000

LaVon Schiltz Nevada Economic Development (Story County) 6/4/08

Benefits from a statewide GIS: useful when negotiating to buy land. Often there are absentee owners who don't want to sell outright because that would create a tax occurrence, so they are looking for an exchange. Often there is nothing available in the county that meets their specifications. LaVon needs to search the state for properties, equate by CRS, etc. to make comparisons. Currently she could bring in a $130M project where only one property will suit the project. Property owner has specified certain locations where they would accept a trade.

She gets help from Matt for professional proposals. GIS helps show the community has its act together. Typically she uses GIS for projects requiring at least 40 acres. Lots of energy projects – wind and ethanol.

Saving time: saves a day of time for each proposal. Timeliness of response is of utmost importance in her field. Last month she did four proposals. Result would be a saving of 48 days a year by using GIS. LaVon does not have an assistant. She's a one person office.

GIS contributed to bringing in a project this year assessed value $10M which translates to $400K in real estate taxes. Mill rate might be lower in Ames but this is probably representative of these type of projects. She notes that location is so important in economic development so scaling benefits according to population of counties may not capture everything in economic development.

LeVon will look at numbers for projects she's brought in past 3 or 4 years and email me something next week.

Linda Fredrickson, Executive Director, Medic Ambulance Davenport 5/12/08
Kevin Lang, Parametic Division manager
(563) 323-6806

Linda would refer questions to IS Manager Paul Andorf, but he is on vacation all week. Will set up a call with the two of them for the following week.

Kevin Lang: Have AVL on all trucks. Dispatcher can send closest truck to a call. This has improved their processes greatly over the years. Any way to measure prior response times vs. now?
More accurate data results in better planning. Better ideas of where to station trucks, whether to add a truck. 759 or 859 benchmarks (fractile response time). Able to time stamp from phone call coming in to truck arriving at scene.
Kevin will look for old metrics to compare to current and will get back to me. Will participate in call with Linda and Paul.

Sheryl Garst Council Bluffs Economic Development 5/22/08
712-325-1000 x120

See their site at www.councilbluffsiowa.com Functionality is for blind searches to be done on their Site Selector. Listings are placed on LoopNet. She says all economic development organizations are required to use Loop Net. Realtors enter data directly to LoopNet. They use the county server to map features, thus using GIS.

She doesn't have server capabilities, hardware, or technical knowledge. Working with the county therefore is a good public/private partnership. They would have no interest in a statewide data effort. Perceive this would take time and money away from the county. She believes private effort is always better than public.

However, she would like to have more local assistance regarding staff and resources. For example, she did a downtown survey of businesses. Would like to plug data from the survey into tables to map thematically, but she doesn't have the necessary resources to do this and David doesn't have the time. They need a GIS technical person rather than someone with planning skills.

Council Bluffs would like to map zoning but doesn't have the resources. The city has GIS software but no staff. Chamber has neither software nor staff. David Bayer at the county did a good job of adding a FEMA layer. But not able to maintain zoning out of David's office as zoning changes every day.

She believes GIS does not save her time. It is just another communication tool.

State Agencies

DOT Tour led by Michelle Fields July 19. 2007

Adam Shell – Office Systems

Referenced Stu Anderson, planning director in his office
They work with MPOs throughout the state.
Trails is their biggest data set and most frequently downloaded. They are difficult to separate from big sidewalks. Stored in Oracle. But the grant database is in Access and they are not tied together, which is a problem.
Collect this data from counties and regions. Can't currently show places where funds have been spent.
Urban Area Boundaries are intermediaries with MPOs, determine where funds goe.
HERS – Economic Analysis/Forecasting Asset Management Tool
DOT is a heavy data user.
Michelle points out issue of data layer ownership.
TransData used by Planning. Is missing address ranges.
Research is in Highway Division. Have LIDAR project and linear reference system.
Active partnerships with counties for data. One unified presence of DOT to counties. They try to get counties with GIS to maintain centerlines. DOT to maintain others.
Emmet County – Roger Petroka would be a good contract.
114,000 miles of road. Iowa has always maintained this data, unlike many other states. Update cycles for bridges and railroad crossings are annual now but moving toward more dynamic updates.
LRS carries shape of roads and routes. GEMS adds data to this.
Have yearly aerial photography from agriculture and use to maintain new roads at a high level.
IGIC would receive transportation layer from DOT.
Census gets 31 counties' data (those with no GIS) from DOT.
DOT gets hydrology from DNR. There is synergy here.

Office of Traffic and Safety -- Keith Wieland

1) Signing – working on tools to maintain data
2) Pavement markings – mobile update capability via GPS in trucks. Video logs also. Good aerial photos, 50 m from profile view.
3) Support Structures
4) Lighting
5) Signals
6) Speed Studies – should have high public demand once geographic reference complete.

Jim comments that access to photos and LIDAR should be a benefit. Need at least 2 foot resolution and 1 foot would be outstanding.
Crash Records – UTM, xy coordinates in DOT GEMS. Maps updated annually +/- 15 m accuracy.

What data do they supply back to counties? Crash data distributed via CD. Issues with Internet distribution as media and lawyers are looking for this data. Have a web site with county profiles. Fifteen topics for each county. Also do city profiles.
They are a consumer of data, a data scrounger. School/hospital locations, school zones.

Right of Way – Marty Sankey

Receive plans from design, then determine property ownership. Electronic county websites are used, so one site for all would be a great benefit. Abstractors hired for permanent acquisition of property and go to courthouses in person if necessary. Each county provides it services differently. Have set of plat books but these are not great on ownership. Have agents that travel the state.
Any idea how much time saved by electronic access? Some rare counties are not receptive to doing anything over the phone. Worst case is driving to remote courthouse. But often agents are nearby, so might only take an hour. But takes ½ to 1 hour on each county website because must get familiar with each site. Would take 5-10 minutes with a common good system. Examples of good county sites are Polk, Lynn, Johnston (these are some of the bigger counties). Know how many parcels purchased in a year to calculate savings.

DOT Interviews with Jim Giglierano, Kevin Kane, Michelle Fields 8/29/07

Adam Schell Trails
See as an economic development tool for recreation. Information from locals not always best, but lots of money is being invested.
No link between spatial data and grant management. Creating this would be a great improvement.
Export to CAD for bike maps.
Funding for construction and maintenance of trails comes from grants. Tracking projects spatially is not happening. Digitize paper from counties or MPOs currently. Some provide this digitally. Current maintenance is on 2 year update cycle, resulting in a lag. ***Maintenance is 10hrs/week for 6 months = 260 hours every 2 or 3 years. This would be for an intern job for GIS tech. This includes looking for data. Must use Intergraph GeoMedia which results in an additional training cost.***
Statewide Bike Plan also uses data.
Benefits: more timely updates. Latest update right now is 2004. Would be good communication for public to be aware of plans. Legislators want to know.
Economic development would like access to current data and current plans.
IDOT now has trails available online. Inquiries come from neighboring states.
Bike Plan is supposed to edgematch with adjacent state.

18 council of government should be included.

Tom Gettings – Right of Way

Problems currently with disparate data. Auditors vary in how helpful they are.
Send someone to courthouse every 6 months.
Agents throughout the state available to do this.
For Tom's section use survey technicians.
Time associated with adapting to each county's website. 20-30 minutes/query 5-10 queries/week, yielding range of 2-5 hours/week.
Who owns property? Where? Property lines? Any contractor purchases?
Obtain plat and copy of deed. ***Say 4 hours/wk for phone/internet queries resulting in 200 hours/year. Design Technicians do this work.***
Right of Way agents spend more time in courthouse. Probably great benefits from statewide system. Don Musickman, supervisor acquisition.
Appraisal researches land sales, ask them.
Property management?
Use abstractors for records of lien.

Alice Welch – Office of Design
Photogrammetrist. She produces for Planning and Design
2 foot, 1 foot, six inch orthos/LIDAR/hydrography/parcels/geodetric control would all be layers of interest.
1) Capture aerial photo and lay out flight lines. Higher quality would help regarding accuracy and currency, and placing targets.
2) Geodetic layer is critical. Lots of quality from counties. No one source.
Have Jim call Gary Brown, who produces and provides them.
DOT surveyors spend lots of time collecting info.
Benefits of having all data layers available together = 40 hours/year
Norm Chard and Scott Miller are surveyors who look for this data.
3) Capture terrain and planimetric and utility information (1:100 scale). Culvert and bridge. Easy access to LIDAR would help by improving ortho quality and get orthos earlier, because TIN would already be there. Don't have to create terrain model. Slight time decrease.
Have to remove trees and buildings for planning. Benefits of having data sooner? Talk to Planning about dollar benefits. Would get data to their projects 6 months earlier with LIDAR available.
Issues: time of year, getting consultant on board, negotiating project.
$150K for data for one project, including digital orthos (count each as $50-75K)
$260K for photogrammetric work on another project
Very occasionally have big corridor projects.
Labor associated with getting contracts in place = 100 hours of misc. wage bands. Count two engineers, committee members such as Michelle and 5 ITS
Parcel data would save lots of time regarding contacting property owners, consider right of way and surveyors

Alice could ask surveyors. Save 1-3 hours on bridge project, 40 hours on long project

50 – 75 projects/year Michelle to check on this.

15 long projects 40 X 15 = 600
25 medium proj 5 X 25 = 125
20 short proj. 2 X 20 = 40
Grand total 765 hours/year for surveyors
Prelim/ Land survey / Soils / Wetlands

Steve Kadolph – Chair of Remote Sensing Coordinating Committee
DOT, also LRS

Orthoimagery at high resolution of interest.
Corridor analysis – fly at very high resolution, more so than most counties would do. In other cases finer than 2 foot for digitizing centerlines wouldn't help much.
Have 28E agreements with counties to get imagery, but can't share this data with anyone else. Steph Wonders would know about overhead regarding this data sharing. But there are cases (Woodbury and Muscatine) where counties don't want to share or want to charge. There are a significant number of counties with aerial images but may not be on a cycle. Philosophy is to not pay counties for data but to share data back with them. Data loaded on portable hard drives.
Need data for every county on a time cycle.
960 cities. Rely on counties and cities for data. Use 1 meter NAP photography from 2006. Care about LIDAR and hyperspectral data (but would not gather this). 3D on roads. Lets you do better classification for entire state.
What about remaining 71 counties? ¾ of state is not up to that level.
We are talking about 3 foot imagery on three year +/- cycle. DOT using less accurate FSA stuff. Look at AVL applications.
114,000 miles of roads
Less accurate data: Issues with snapping to correct road or what lane something is in.
Primary digitizing done of 2002 data. Consider 28 + 17 = 45 counties currently provide data. For remainders of state, what uses for better data.
Have already made major adjustments to road centerline. So benefits would come from more current data.
How old would data have to be to chip in more money? 2002 and LIDAR is total history.
Looking at partnership with UNI working with LIDAR data.
Infrastructure cost regarding hosting LIDAR data.
Creating contours via pooling resources with UNI. But issues with their money running out. Would not DOT provide more stable environment?
DOT bought 8 terrabytes of servers, in their plan and approved. Ask Eric about 8 of 10 $54K??? other costs, Mr. Sid
Other piece would be software and effort to create contours and clip
GeoQ or somesuch. But not served up on web.
But DOT would not have put $1.5M into LIDAR if no benefits.

Brad Hofter location

Parcels – currently many counties don't provide them info. Time sensitivity regarding ownership because of notifications.
Office is Location – routes planning.
Current business process assumes time lag from Alice. But six months sooner in life of a 10 year project is not much. Rarely are there huge time constraints.
Work with consultants: they do charge for data but not pulled out as a certain task. Probably would reduce cost of contracts but by how much? Get this from consultants.
Six months earlier in planning may or may not result in roads built sooner.
Usually bottleneck is elsewhere. Currently working on 4 or 5 projects.
Paying for data sets Sioux City $1300-1600.
District must still go to courthouse to certify data before proceeding with hearings.
Michelle to find out who is buying address range info (from TeleAtlas, etc.)
Benefits to wetlands – hydrography, elevations.

Berry Bennett State Historic Preservation Office 5/21/08
515-281-8742

Traffic asking for their data is mostly email, some phone, a few walk-ins. ***Would save him 2-3 hours/week to have data on a web server.*** He could have info ready to go on the web within a year.
Another benefit is people would have a better idea of what data is available. Those coming into the office would be better prepared. These people might be Federal reviewers for Section 106. Consultants and agencies could do a better job with this information access.

Bill Kroes Iowa Department of Public Safety 5/28/08

He is interested in crime mapping data and would love to be able to go to a web application. Does GIS queries by crimes using ArcView. Plots incidences to the city level. Struggling with street level data is a problem and has so far not been manageable statewide.

Example: plotting meth labs, where address might be three miles north of a city.

Ten years ago recreated a new intelligence database.

Would be nice to have 100,000 addresses geocoded. This would get them set up for ad hoc queries using interactive GIS capabilities. Interest in having a state GIS service agency but there would be privacy legal issues. Other parts of Public Safety would have geocoding needs as well.

Sex Offender Registry uses GIS currently. Capabilities set up by a vendor. But they are managing 600-700 records which is more manageable.

Idea of having Department of Public Safety providing GIS services for county and city public safety organizations. This could include services to fire departments, as requested by Iowa City. State Fire Marshall Division, Fire Service Training Bureau. Contact is Jeff Quigle, Asst. Director (515) 725-6144.

Utilities layer of interest. This concern overlaps with Homeland Security needs.

Would use building footprints for SWAT calls, about 200 a year.

John C. Warming, ITS4
Web Team Lead / GIS Coordinator
Bureau of Information Management
Iowa Department of Public Health
(515) 281-7993
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Phone interview October 11, 2007

Improved accuracy and timeliness would be key to data improvements for public health. They would very much like to have building footprints as an aid to determining critical infrastructure locations. They are concerned with planning for pandemic influenza and with bioterrorism and need reliable data to help in assessing risk.

Currently, John does crude geocoding. It is unclear to me whether we could expect counties to maintain building footprints or if this would be derived from Lidar data sets or some other means. Availability of buildings from this project needs to be clarified for John's data needs.

Currently they buy data from TeleAtlas for $6000/year. There are problems with missing data and with lags. In areas of rapid development there may be as much as a five year lag. John estimates saving one week/year of his time not having to deal with these inaccuracies.

John estimates he spends two months/year geocoding, collecting and maintaining data. Of this, one week is spent on address scrubbing and the remainder on determining locations for risk, dealing with unmatched addresses, etc.

John says that even to have current and accurate street data from counties would be a huge improvement.

He estimates annual salary of $50K as GIS Coordinator with standard state fringe rates.

They are an unlikely data provider and we anticipate no costs for them to participate in the project.

Don Hirt State Historic Preservation Office 5/20/08
don.hirt@iowa.gov 515-281-7803

Areas of relevance: geocoding historical buildings; archaeological survey (Isites, they maintain this layer); cemetery layer; use of imagery

Issue with ESRI datasets using address ranges. Geocoding is clumped to one end of each block. Hand plotting addresses that don't match, especially rural addresses. Having 1000 records unmatched takes him a month off and on to fix. He has only completed 21 counties out of 99. Main cause of his problem is that records were recorded poorly many years ago. He gets 50 to 60 to 70% matches. It would be very exciting to have addresses drop on top of buildings. That would be the really big win of this project for him.

Don would like to have historic building layer online.

Inventory person, Berry Bennett at 281-8742, spends a great deal of time answering phone and walkin questions. He also runs reports on property locations for citizens. He would stand to gain the most from having historic property data online.

Accurate data is important. Can't tell which property is the one you are looking for in a clump.

Use Iowa State WMS server for imagery and likes it. Not sure of uses for Lidar for them.

Building footprints from counties might help clarify if they had located the correct building in a search. Over 100,000 buildings in their records, although some are not significant.

They have long-term financial issues regarding having their own web server. Having this be part of a centralized service for them would be huge.

There would also be benefit of avoiding development and maintenance overhead and avoiding having their own development group.

Don will send me contact info for contractors who do historical and archaeological survey work. Tallgrass Historians in Iowa City.

I am in the process of mapping our Standing Structure / Inventory locations (point locations). These are the historical buildings and sites that have been recorded with our office (State Historic Preservation Office). I did use geocoding of addresses in this process for those structures that had known addresses. Better or more accurate address locations would be wonderful. Geocoded addresses matched with the ESRI distributed address data tend to plot bunched up at the end of the block in urban areas.
Unfortunately many of the records do not have complete addresses and many rural locations have only township, range, section, etc. (recorded before 911 addresses were assigned). This is a long term ongoing project. Note: This is public data and we are willing to share it across the state agencies and out to the general public. At some point our office will need to make this location data available to everyone along with the associated support records (PDF files and image files).

I am also mapping Intensive Archaeological Survey areas (polygons) for all of Iowa. This layer is confidential and shared with the Office of the State Archaeologist (OSA) in Iowa City. This data is accessed via a Web page designed by the OSA and is stored on an ISU server.

I also reworked the DNR Iowa Cemetery Layer mapping actual cemetery boundaries (polygons) rather than point locations. I add new cemetery locations as found or when brought to my attention. I will also be adding pioneer / family plot cemeteries as this information becomes available.

I use the ISU WMS server (Iowa Geographic Image Map Server) for my base maps. The 1930's aerial layer is extremely useful for mapping historic structures. I also regularly use the Infrared aerial layer, the 1990's B&W aerial layer, and the 7.5 min. USGS layer.

Any and all UTM NAD83 Zone 15N base maps and or geographic data sources would be appreciated!

Karen Rawson, Iowa State FSA Office 2/20/08

They use a common land unit layer, boundary around each tract in a county. There are about 3000 tracts per county, based on ownership. Issues: a farmer may sell a portion of land not for agriculture. It is time-consuming to obtain parcel listings from each courthouse. Time saved if up-to-date county landbase data was in a statewide data layer would be 2 hours per contact * 30 contacts per year per county * 100 county offices = 6000 hours/year. Staff person would be a Program Technician in charge of farm resources at $32000 times state fringe.

Overall benefit would be accuracy of records and providing better customer service. They would not need constant updates. A minimum of once a year from the courthouses would be adequate. Would envision transitioning in to this methodology as county data became available. Six Sigma training helped Karen understand ROI approach.

Janell Brandhorst Iowa Department of Education 5/27/08
515-281-5288 Janell.Brandhorst@iowa.gov

She is a sporadic GIS user, generally for reports such as Condition of Education. They got a contract in place this January for a longitudinal data warehouse and hope to use GIS more in the future. The data warehouse with merge data sets on students. They will do geostatistical analyses on this data.

They do not have student home addresses but track location of building where they attend school. They receive information on school district changes from the districts. They might want building footprints from out project for use in emergency response. Would like more accurate centerline files for geocoding school buildings.

District consolidation projects could require use of plat maps. Generally simple consolidations will merge existing district shape files. Last time they had a complex consolidation was in 2004.

Janell sees her agency as most a provider of data to the project than as a consumer. They would provide: 1) Area Education Agency shapefiles; 2) school building locations; 3) school district shapefiles.

Distributing the school district shapefiles through the IGIC server could save time through elimination of redundant data efforts. Janell coordinates school district shapefile comparison with Census boundaries. This takes her about 20 hours a year. Could be helpful to find out what time others are spending on a redundant effort.

Janell is also a member of Iowa Collaboration for Youth Development. There she does thematic mapping of social data. They publish these maps to their website.

Jared Shoultz, Director Division of Public Health Informatics 6/16/08
PHSIS, SC DHEC Office: 803-898-3668 Cell: 803-465-6059
shoultjj@dhec.sc.gov

Jared did work for Iowa DNR in the past. He was recently featured in Government Health IT magazine. He provides services to the Data Fusion Center for Homeland Security. He is featured in the ESRI business case book.

He has developed applications for many clients within his state but has never captured metrics regarding benefits as he has no difficulty funding his programs. He says that this is the thing that people have always wanted but he hasn't done it.

October 25, 2007

Jonathan Paoli, GIS Coordinator/Specialist, Iowa Homeland Security & Emergency Management

They work with MOUs to get county cadastral and ortho data. Working with DNR is easy resulting in no net effort.

Two planners spend 10% of their time obtaining data plus 5% of Jon's time obtaining data plus some travel time.

Benefits: Faster response time. There were 4 Federal declarations this year alone. Losing 4 hours of response time in an emergency ice storm due to data problems is typical and is a real problem. Flooding incident with old imagery and new subdivisions. They did not buy satellite imagery for that project due to cost. ***Jon will look up what the cost would have been to purchase this imagery.***

- $1650 for 192 sq km
- $216 for 30 sq km (standard imagery)
- $630 for 90 sq km (standard imagery)

Total = $2496

Assist in damage assessment. They send people to the field for assessments. The project's data would help save time in the field and in looking for information. There are 6 field workers and there would be a saving of 1/3 of their field time at 2 days/year times 6 people.

In the 99 counties there are 80-85 coordinators trying to map all the emergency response information. The project could provide a service for them to use, providing a benefits to the county coordinators and the state emergency management agency. The support efforts could be automated. This would result in 40 days/year saved for planners plus another 40 days/year for each county staff person.

DNR works on getting Tier 2 data into the system.

Costs: 15-20 hours of Jon's time at startup.

Use standard state pay bands for this agency.

Mark McMahon Iowa Department of Human Services, Data Warehouse Analyst 5/23/08
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They need accurate geocoding for 100,000-150,000 providers. It would be desirable to also have geocoding for several hundred thousand recipients. Providers are physicians, dentists, audiologists, social workers.

They have done very little production of maps to date. They do have an ArcGIS server and some licenses in the agency.

Centralized geocoding would be the biggest benefit of a centralized agency. Followup capability would be making a web application available. They have in-house skills for web applications but there is a time and priority issue. No one is devoted full time to GIS. Two or three people in Matt's shop mess with GIS.

Their biggest gap is the time and expertise to do GIS. They need property training and resources. It would make a world of difference to have a technical resource to go to. The first hurdle is reliable address information. Second hurdle is translating data into active GIS layers.

Currently a recipient might contact their case worker for location information about providers. Mark will look for a case worker to ask them how much time is spent on location information.
I have had a chance to speak with a few people who used to work with recipients directly for a number of years. They told me having access to a GIS application would save them some time but not as much as I had thought. They said it would save them just a few hours a month at the most.

Regarding benefit to recipients, ask Matt if he has a statistic on how many have access to the Internet.

Would also do analysis of proximity of recipients and providers. Make information available to DHS employees and the public. Analyze utilization and claims information.

Matt Haubrich Iowa Department of Human Services, Bureau Chief 5/27/08
Bureau of Research and Statistics, Division of Results Based Accountability
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Mark McMahon is building an application for recipients to locate providers. Matt is concerned about liability regarding any errors in the data (leaving out providers and having them be upset). Currently using TIGER provided with Arc 9.2.

Question: How good would county data be regarding alternate street names or changes in names? Some commercial packages are try to track changes. Matt knows of a project with Polk County address information using odd reference system not registered to locations in Iowa.

Geocoding level of effort. They do this for research projects on an as needed basis. Example would be a project on foster care locations where they did spatial statistical analysis. Tracked 8000 kids at 16000 addresses (original location to placement location***). They have approximately 6 projects like this a year, geocoding 2000 to 20000 addresses. They get 60% hit rates, half of the problems have to do with landbase, allow 5 minutes per manual geocode. Result is 6 * 11000 * 0.4 * ½ * 5 minutes = 1100 hours manual geocoding. Allow $25-30/hour for analysts.***

Having actual address points would be good but not critical to their efforts, as compared to emergency response needs.

If they built GIS into Human Services processes, in their databases, would have much larger geocoding needs, more like a million addresses/year based on 500,000 to 600,000 direct services to households plus 150,000 additional households support services plus providers. They would not spend 5 minutes/address on manual geocoding for this scale.

They tend to serve transient populations. Operate emergency assist program in locations where there is a disaster but not presidential declaration. 5000 benefited from this in a tornado last year.

Use of GIS would permit better understanding of their service delivery system. People spend energy troubleshooting problems that a map could explain. Emergency response coordinator does a lot of this type of work. He will ask Marvin about this and get back.

Analysis: looking at movement of population over time. An example of a county that did focused study of children. Outsourced address plotting. Used the map to determine location of a new office. Better location provided better services. Saw reduction in overall demand due to less continuing problems as help was more readily available. Matt will ask about this example and get more info.

Most services are state administered but individual difference matter. Map situations and see patterns. Detecting inequalities in system protects against legal action.

They don't have GIS built into their processes now. Might want geocoding outsourced to a state central agency but they have privacy issues with their data. Lots of Federal requirements. Outsourcing could be messy.

Operate 24 hour care facilities throughout the state. Might need aerial photos in the case of disaster. Otherwise can't think of much need for other data layers.

It would be enormously helpful to have a source for address points. Of course we'll still have a problem in that many of our addresses are not well validated, but it

would be a huge boost if we just knew that we had a reasonably good source of address points to geocode our cruddy addresses against.

Back of the envelope, between clients and providers, we probably have at least a million address records across our agency. Far too many to manually resolve. As we attempt to expand the use of GIS in the agency, I expect address quality and geocoding to be our #1 barrier.

Melanie Riley Office of the State Archeologist July 20, 2007

GIS Specialist/Archeologist/Geoarcheologist
Spend lots of time looking for land ownership records. Involved in LIDAR project.
Able to use to identify/locate mounds.
Funds needed in grant writing and grants to duplicate work.
Very progressive agency, all sites digitized.
Decision support tool for DOT to determine if survey needed.
Issues with I80 projects requiring $1M for geodatabase creation. Ultimately more gap analysis.
Long-term idea of financial analysis regarding real time data vs. static (old) data captured on project by project basis. See MODOT experience with HNTB project.
Issues with who owns the data.
Economic Development – IDID has grants for development projects. Siting for wind and ethanol.
Redundancy of data collection in time, project by project vs. continuous maintenance.

Michael Lipsman Iowa Department of Revenue, Tax Research and Program Analysis Section 5/23/08
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1. Currently, we have five ArcView 9.2 desktop licenses. So far we are only doing some thematic mapping for presentation purposes.
2. One project we would like to complete this summer is the geocoding of all sales tax permit holders. We have a small contract with Monica Haddad, Community and Regional Planning, Iowa State University, to help us in this effort. She has geocoded all of the locations in Polk County and has developed a tutorial for us on the geocoding process so that we can do the remainder of the State. Tomorrow morning several staff members are going up to Iowa State for a training session that Dr. Haddad will instruct. Also, we will be assisting Dr. Haddad with a study of the Des Moines Neighborhood Development Corporation that will make use of the geocoded Polk County sales tax data.
3. Property Tax Division would like to geocode and use GIS to analyze property sales information in order to provide better information to city and county assessors as a means of improving the accuracy of property tax assessments

and as a consequence reduce the number and magnitude of property value equalization orders and the number of property assessment protests. A geography graduate student from the University of Northern Iowa with extensive GIS experience has been hired for the summer to help with this work. Also, since this graduate student has been teaching GIS classes at UNI we hold to make use of her to teach GIS to other staff during the summer.

4. Nationally, there is a program to standardize sales and use tax laws across the states as a prerequisite for getting Congress to enact legislation requiring remote sellers (i.e., catalogue companies, telemarketers, and Internet retailers) to begin collecting and remitting state use taxes. One requirement of this program is for each state to maintain a database of state and local option tax rates by jurisdiction and a system that allows remote sellers to determine the appropriate tax rate to apply to sales by customer address. Currently, the Department acquires this serve from an outside vendor. The Department wants to determine if this service could be provided in-house.

5. The Department has received pooled technology funding for FY 2009 to establish a Property Tax and Local Government Finance Information and Analysis System. This project will involve upgrading the Department's SAS BI Server to a SAS BI Enterprise Server. SAS and ESRI have a strategic partnership. One aspect of this partnership allows an ESRI ArcGIS Server to be installed on the same hardware and integrated with the SAS BI Enterprise Server software. We hope to implement this improvement by this fall.

The property tax division administration is working on a common assessor's site. Using Pooled Technology at the governor's level (property tax and local information). They have $323K appropriated for 2009 for hardware and software. Will do a SAS upgrade to include ESRI server. They are concerned with security issues due to the nature of their data. Plan to get plat level database from every county.

Geocoding: Polk County project got 80% match. Took an additional 80 hours to manually adjust 1500-2000 matches.

Will need to ramp up very quickly for some aspects of their work. Local Option Taxes – cities with urban renewal areas can set up TIFs. Department of Revenue would have to determine base year for any TIF district established. There are over 400 urban renewal districts in the state. They would need to geocode every sales tax record. Boundaries of TIF districts are not static. Due to legislative demand, they need to move into this area really quickly.

Lots of types of exempt property. Need GIS to identify these classes of property. Would be nice to have something in place as legislature attempts tax reform.

99 county assessors and 8 city assessors in Iowa. 7 classes of property. They are all supposed to be consistent in assessing.

If a centralized group at Association of Counties did geocoding, that would be helpful.

Maintaining economic boundaries would be of interest to many agencies.

Currently they pay $20K for annual tax rate shape files for Iowa (with quarterly updates). Bringing this service within government could be cost effective.

Indiana has centralized property tax info system maintained by Department of Revenue or state legislature. He cites State of Washington's extensive use of GIS.

Tasks for IGIC centralized office: Geocoding and sales tax records work effort. Revenue needs to outsource GIS architecture design to consulting services, but central agency could do this. Maintaining standard boundary files.

Real estate transfer tax is tied to geography. 50% of money collected goes into the General Fund. This could be a continuing source of funds.

Michael wonders if $250-325K from pooled technology could be used to serve multiple purposes? He suggested that Jim Giglierano come to Revenue to discuss options with Michael and Del Hyman. They have a geography intern available this summer to get them started.

Two main areas are: 1) sales tax and 2) property tax.

Bruce VanLaere, District Conservationist - Clinton Field Office NRCS 2/20/08

They use FSA's data so can't really double count the benefit of having county land use changes in a statewide data layer.

What would they like to have? Utilities would be great. Use One Call for this now. Cultural resources would be helpful. He knows well info is maintained by the state somewhere but not sure how to get it. Appreciates assorted DNR layers, such as bald eagle nest sites. They sometimes use older aerial photography. DOT has historical imagery, for instance 1937 layer. Wetland inventory process requires 1980s data. Still using old slides which would be expensive to rectify. Hydrology? They have rivers and streams and watersheds. He needs 11 or 14 digit unit code layer.

Shawn Richmond, Iowa CREP Coordinator, Water Resources Bureau 6/13/08
Iowa Department of Agriculture PH: 515-281-7032 FAX: 515-281-6170

Lidar would be the largest benefit of IGI to CREP (Conservation Reserve Enhancement Program). They have a contract out for engineering services for surveys for wetland structures. Must determine if site meets their criteria. Lidar will take out the guesswork.

Average engineering contract for site is $25K. Preliminary survey is $5K. Typical year have 12-15 sites. Would save $5K minus 2 hours staff time at $30/hour for these sites. ***Result would be 13.5 sites * $5K = $67,500 saved/year with expense of 2 hours staff time * 13.5 sites = 27 hours staff time.***

Other programs in Division of Soil Conservation would use Lidar: Ag Drainage, Abandoned Mines, Water Quality, Watershed Protection Program.
See Iowa Department of Agriculture site iowaagriculture.gov
Jim Gillespie in Field Services
Todd Coffelt in Mines & Minerals
Vince Sitzmann in Water Resources

Vladimir Bassis Iowa Department of Education Community College Division
Vladimir.Bassis@iowa.gov 515-281-3671 5/20/08

He has problems obtaining modern data sets, such as shape files or other spatially located data files. His department can't do their own GIS data creation.

Their operations are based on school district borders. The latest available borders are from 1998. Boundaries change a lot in 10 years. For some types of research, this outdated data is unacceptable, as the result will be incorrect analysis without the researcher even being aware of the error. 364 district boundaries are difficult to check manually. Results affect fund distribution and errors mean inequitable fund distribution. School districts are often located in two counties, up to four counties. Trying to interrelate with DHS data which uses county boundaries, brings up these issues.

Other data needs: specific structures related to urban development, industrial construction. They would use this to help determine what programs community colleges should support due to industry growth in the area. An example would be trades supporting ethanol plants. Research regarding technology development. Claims of 10,000 unfilled jobs for technology-related fields. How can DofE find those jobs? 22% of Iowa's adult population is currently enrolled in some type of community college class.

Discussion that the IGIC site could be a foundation for data sharing between Economic Development, educators, workforce development. Time for agencies to understand that everything is interrelated. Geographic location is the unifying theme. Workforce development is critical. DofE is interested in where alumni go

and their economic wellbeing. Note there could be opportunities to develop GITA's giwis though DoL grant activity to support this idea.

Geocoding activities find that available databases are outdated for addresses. Common result is to get 70% correct. If one is geocoding 10000 names, dealing with 3000 manually is a lot. When Vladimir geocoded childcare facilities for DHS, he only got 60% automatic matches and spent weeks doing manual correction.

How many GIS users at DofE? At least 5.

Currently facing a project to locate GED users. Can't use some commercial address matching services due to privacy issues with the addresses. ***Would probably have well over 3000 addresses to correct manually. One address matched manually is 5 minutes. This would take 250 hours, which is over 6 weeks***. Very frustrating.

He is not aware of massive geocoding needs at DofE. At Department of Human Services (DHS) they need millions of addresses matched. Recommends talking to Matt Hubrick at DHS. Also someone from Medical Enterprises at DHS, where there is strong need.

Some tasks just don't get done due to lack of data. Would be good to have data sets for routing for staff trips. Being able to plug in to DOT data for updates on road construction would be helpful.

ESRI offered to sell them the business geographics package for $18K. This was to provide an updated address range database to improve hit rate to 95%. DofE would not spend this much but in a sense, this price (per agency) may set the value of current correct address ranges.

The IGIC site could provide a repository for statistical analysis tools. This would decrease cost and increase information sharing regarding what is available. He uses geoda package for spatial autocorrelation. This is free research software but he had to spend time to find it. Getting similar capabilities by activating a component of ArcInfo would be very expensive and probably provide way more capability than actually needed.

Additional Emergency Management

Brian Quinn, City of Berkeley Emergency Management 5/5/08
voice: +1.510.981.6520 e-mail: bbq@ci.berkeley.ca.us

Flooding would be the primary module for Iowa. Brian's main experience is with the HAZUS earthquake model. The software is helpful in preparing credible scenarios for emergency response exercises. Adds an element of credibility.

Other tools provided by DOE. National Atmospheric Release Advisory, NARAC. Developed following Three Mile Island. Worldwide wind circulation model. Industrial or radioactive releases. Berkeley collaborates with DOE. Univeral hazard model. Web interface to Lawrence Livermore. Info comes back in shape files of lethality contours. An EOC needs GIS onsite for this to do much good. Benefits: could not do earthquake modeling at all without GIS. Overlay loss on parcel layers and make automated phone calls to affected populace.
Changes in staffing: from 3 hours to minutes for nonconforming property zoning. This application runs 3000 times/year yielding 1 FTE saved.
Public safety benefits – nature of response is ad hoc. Not defined as a business process. Berkeley has a 911 call center for dispatch ambulance, fire, police. Culture of ad hoc response in emergency response.

Eric Berman, FEMA HAZUS Contact in Washington 5/2/08
202-646-3427

In California, OES has HAZUS installed. Contact was Rich Eisner, but he has retired.
Indiana working on a HAZUS project with USGS on stream gauging. Kevin Mickey at Pollis Center 317-278-2582
Csec – central states earthquake consortium
Multi-hazard Mitigation Council has an ROI project related to HAZUS
Iowa – some sort of university grant to look at GIS, emergency management, risk assessments. Result will be an analysis for HAZUS. Presented recently at American Planning Association Conference in Nevada.
He notes the HAZUS online library has 1600 documents which could be reviewed.

Kevin Mickey, Director Professional Education and Outreach, The Polis Center, Indiana University Purdue University Indianapolis, Indiana 46202 5/6/08
317.278.2582 kmickey@iupui.edu

Kevin is also on the Board of Directors for Indiana GIS Council (IGIC)
He has been involved with HAZUS since 2000-01 and has worked with the emergency management community for 20 years.
Early on GIS just allowed emergency managers to see buildings and people, and in a community this was already known so not very impressive.
Indiana HAZUS use began after flooding. It generated amazing amount of interest. Kevin has trained hundreds of people around the country in HAZUS. It provides the ability to ask questions and get a meaningful response.
Why resistance in Emergency Management to using GIS? Lack of base map data, resistance to analytical procedures.

HAZUS designed for mitigation (dominant intent) but also used successfully for response and recovery.
Kevin strongly recommends talking to Shane Hubbard in Iowa, Sue Evans FEMA Region VII HAZUS Point of Contact. Jan Kreider, State Hazard Mitigation Officer for Indiana.
They did a statewide flood study Levels of Use: Level I provides out of box analysis capabilities but limited use for response. Level II provides improvements to the model, better data regarding hazards and the environment, better analysis parameters.
FEMA Risk Map will bring various programs together.
South Carolina web portal will allow communities to contribute data for emergency response.
HAZUS created in response to Disaster Response Act of 2000. Community must have plans in place to get Federal funding. FEMA 433 document describes how HAZUS can be used for risk assessment and required 3 to 5 year plan updates. Jan Kreider advocates this use of HAZUS. Also Roxanne Anderson, Wisconsin Hazard Mitigation Director.
Response: Doug Holse in CA State Office of Emergency Services. HAZUS 99 for earthquake modeling using automated HAZUS response from sensor reads.
State of Florida uses HAZUS for hurricane response. Inventories related to hospitals, fire stations, schools. Use HAZUS in response environment.
Mitigation improves data for better plans but response environment more urgent.
Emergency response all about accurate information, thus metrics. Use as a catalyst to bring disparate interests together. Encourage data collaboration efforts. By improving data that HAZUS requires, you are meeting needs of many communities, meeting multiple goals. South Carolina provides great examples.
Good input from Iowa to HAZUS will result in good output.
FEMA continues to develop tools – Comprehensive Data Management System.
Communities collected data in isolated fashion in the past but emergencies don't work like that.
Address weaknesses to pursue benefits.
Emergency Management is all about property data which may come from county assessors and other traditional sources.

Roxanne Gray, State Hazard Mitigation Officer, Wisconsin Division of Emergency Management 5/8/08
608-242-3211 roxanne.gray@wisconsin.gov

Roxanne believes HAZUS is too difficult to use even at the State level.
Her involvement is with planning, preparedness, response.
Example in Dana County with 2005 tornado, event which Shane Hubbard modeled. Collaborative effort with county. University of Wisconsin remote sensing center had image showing debris. Overlaid parcel data, resulting in rapid damage assessment. This could have saved effort vs. assessment on foot, which was what was done. On foot spent several days, at least 6-8 people, plus

support staff at EOC. One average, they get one presidential declaration of a disaster every year, but this one didn't make the cut.
Comprehensive planning data useful in emergency management planning. Ask counties about this application.
Trying to get data sharing within a state is a big deal.
GIS person in her office, Chris Diller, was on Emergency Management Task Force working with GIO on data sharing. (608) 242-3626
Dave Janda also good.

From Roxanne's email: I'm not aware of anyone at the local level in Wisconsin utilizing HAZUS. This is for several reasons. Most County Emergency Management Offices consist of 1 individual and maybe only half-time at that. They do not have the staff and time to devote to HAZUS. Another reason is that not only do you have to have Arc GIS, but you also have to have Spatial Analyst in order to run HAZUS. Most, if not all, of our county Land Information Offices do not have spatial analyst. In fact, the Regional Planning Commissions don't even have it yet. At the State level, we have contracted with the UW-Land Information and Computer Graphics Facility who is working with the POLIS Center, to complete a statewide flood (riverine and coastal) HAZUS risk assessment. The County reports will be shared with the County Emergency Management Directors for their use in mitigation or other planning. The statewide assessment will be incorporated into the State of Wisconsin Hazard Mitigation Plan. This is a huge endeavor that our existing staff could not have accomplished on its own. The assessment is to be completed by September. To be real honest with you, I don't see HAZUS being used that much at the local level due to the above reasons unless it is a larger community with GIS staff and the time to devote to HAZUS. I see more of a potential for the Regional Planning Commissions to utilize HAZUS in working with county government in the development and update of the local hazard mitigation plans.

Data sharing is a huge issue. The State, through the State GIO Officer, has been working on the whole issue of data sharing and trying to develop agreements with the local governments. There is a long way to go.

Shane Hubbard, University of Iowa Geography Department and Johnson County Emergency Management 5/7/08
Tel: (319) 335-0165 e-mail: shane-hubbard@uiowa.edu

Original intent of HAZUS was for mitigation rather than response. Example: current flooding in Iowa which could continue throughout the summer. Can take current and forecasted stream information, plug in to HAZUS and receive prediction of flooding. Can predict depth of water, knows if buildings have basements (if county/city has built an inventory via assessment information). Can identify key areas likely to be flooded. Working in Wisconsin, they had to

use historic knowledge or anecdotes. HAZUS capabilities suit cost/benefit analysis of mitigation.
Working for Wisconsin Emergency Management there was a large tornado event. Shane modeled tornado path using real time weather data to predict damage as tornado hit. Severe weather produces greater fear factor in Iowa than flooding. Tornado occurring at night more difficult to respond to, reports come in regarding damage. How to understand its path and tell first responders where to go? Tornado in Indianapolis in 2002 late in the day. Many resources sent to south part of the city, then reports 45 minutes later regarding damage in east part of city. How best to redeploy?
Local emergency manager after disaster. UDSR is a disaster report that must be filed. Dave Janda from Dane County, WI, filled out UDSR using GIS to populate the report. Saved time. Contact info to follow.
Shane Booker, Marion County, IN Emergency Management, will also have quantification ideas.
Roadblocks to small counties implementing GIS: 1) limited resources (can't afford $1200 ArcView license, can't devote our time to learning; 2) lack of understanding and wanting to learn GIS.
Regional planning groups built out of transportation funding some years back. Our effort would provide data to regional planning group and give them renewed reason for existence. They could write grants for local communities.
Roxanne Carey extremely knowledgeable. Call her!!
Programs for EOCs at State level. In WI could lay out polygon of potential damages, look at resources and see how to allocate. Tied in to state repository. Communities ask State or Feds to come in to work a disaster because they have used up their local resources. Use GIS from a planning standpoint also.

Sue Evers, FEMA Region VII HAZUS Point of Contact 5/6/08
816-283-7005 Sue.evers@dhs.gov

Sue is very interested in our work because her constituents frequently have difficulty getting resources allocated for use of HAZUS. Having a business case for HAZUS would be of great value to her.
In Washington State, the previous HAZUS guru provided training and refined the data flow so counties upload data to the state repository. See George Crawford from the state earthquake program: g.crawford@emd.wa.gov (253) 512-7061
FEMA GIS person, branch manager working field operations, Region I, Jo Jordan (212) 680-8544
Database collected at national level within HAZUS CDs. May be better than some locally available data.
Loss estimation component is significantly different from other software.
Health and human services at county level. GIS plotting and tracking case loads between and within counties.

Missouri, Tony Spicci and data warehousing. Jason Ebersole at MDOT (573) 526-5860 jason.ebersole@modot.mo.gov

Additional Government

Alan Peters Urban Planning/Economic Development University of Iowa, Iowa City July 20, 2007

Without a seamless database, can't do joint planning between counties. Johnson/Lynn a good example.
Users for the data: Finance Authority regarding housing in the state. Title Guarantee Association for land ownership records. Nonprofits such as local housing authority and school districts.
** Iowa Assn. of School Districts – Larry Siegelman
** Iowa Assn. of Counties – research people
** City Managers of Iowa – very professional and organized, contact info available.
United Way – think of homeless services, track where they whould be providing services. State mandated to do counts of homeless which could feed into the system.
Chambers of Commerce – try Des Moines first as a lead – better than Economic Development.
Assn. of Bankers as boosters.
There is a political move toward consolidation. Proponents may support joint county development.
Census.gov – economic census, census of government, local government financing. Use for defining line between haves and have nots.
In areas of no growth the county should not have its own GIS.
Universities: epidemiology, public health, social services. All could be funding sources.

Dan Schlitchman, Data Services Coordinator, Iowa Northland Regional Council of Governments 5/12/08
(319) 235-0311 dschlichtmann@inrcog.org

Dan did work for Barb Berquam of Black Hawk County making a zoning layer for their parcels and a 911 system for bike trails in remote locations. For the 911 system they broke the trail into 1/10 mile grids so bikers in trouble could identify their location to speed up the ability to respond to calls. He suggests I talk to Barb again about an article she wrote for a national GIS publication on this project. Dan's boss also wrote an article and he will attempt to locate and send this.

Dan made the comment that his management is reluctant to give out county information and that they generally would not participate in data sharing projects.

Utilities

Andy Eastman Paetec 5/20/08
319-790-6195 andrew.eastman@mcleodusa.com

He would use a county-based statewide system immediately. Right now uses outdated street data to draw utilities against. Currently adjusting facilities for changes in landbase. Hoping that street data is finally getting to be positionally accurate. Use GDT, with problem that they prioritize updates for metro areas. Iowa is too rural. Even Cedar Rapids is years out of date.

Have services in 96 counties in Iowa. No longer purchase updates to street data.

He believes having county-based plat maps would be labor saving for their design work with underground facilities. Easier to identify exact location with plat map, especially in rural areas. Building footprints with addresses would be ideal.

They don't do lots of excavation currently as they are mostly built out.

Would save a few hours a week on underground protection.

Design tickets as part of requirements with Iowa One Call. ***If a map with all utilities was available, they wouldn't have to create maps for One Call. This would save 2-4 hours/week.***

Bill Teager MidAmerican Energy 5/16/08
309-793-3625 WFTeager@midamerican.com

They maintain their own completely separate landbase. Get plat information for new customers. Timelines of new development is their driving issue as they design new services in the mapping system. Turn around new developments in a day or two. Often plats may change after preliminaries have been submitted requiring rework. Can't be reliant on a county getting data into their maps. Bill wouldn't want to be the middleman for such an effort.

They serve 67 counties in Iowa. Also IL, SD, MO, NE. Aerial surveys are not timely enough for their needs. They map to +/- 5 foot accuracy. However, they do acquire aerials from counties or Google Earth for special needs. For example, with new road project may use aerial to clean up their work.

They use Intergraph GTech. Adjusting afterwards does not bother them. Addresses and building footprints? Obtaining the last 10% of this data takes as

much time and effort as the first 90%. Always looking for address information. Smaller communities in the west part of the state didn't have much available. Would use this county data. Today have 98% of customer addresses matched.

They have 1.3 million customers in Iowa. Current project to obtain the missing 2% of data. Two employees working on this full time for a year. One quarter of this effort is addresses. Bill estimates maybe 1000 hours of work on Iowa addresses.

In rural subdivisions with a community well, it won't be addressed properly. Outage at a rural well would be critical. Billboards have meters but their addresses may not be accurate. However, impact to billboards will be minimal.

GIS drives outage system so addressing is important.

Statewide addresses with parcels would be very useful data to them. Questions regarding addressing should diminish every year.

They don't have a lot of use for LIDAR.

Chris Dewey Aquila GIS Support in Omaha 5/16/08
402-221-2103

Some of their maps come from mylar scanned in. Maintain centerlines, ROWs, easements, parcel data. Buy data from some counties and get some free. Would be interested in source for statewide data. Bought Pottawattomie data several years back for something like $1200. Respond to problems identified in the field and fix minor to major problems all over their service territory. Would be great to get new updates directly from the counties. Spend only a couple of days/year on fixing Iowa problems.

Dan Klopfer Des Moines Water Works and Iowa One Call Board 6/8/08
(515) 283-8754 klopfer@dmww.com

His utility is in four counties. They work primarily with Polk County GIS, which is easy. Dallas and Warren also, plus a bit from Madison. Multiple county service territory presents challenges. Drafters spend two weeks/year approximately dealing with these issues.

Dan is very interested in the IGIC project, primarily as board member for Iowa One Call. He sees huge opportunity for benefits of IGI to One Call. This would help every excavator and utility and help reduce damages.

Dan believes that One Call spends hundreds of thousands of dollars every year to obtain and maintain its landbase data. Steve Halstead's half time position is wholly dedicated to solving landbase problems. Estimate Steve's job at $25/hour and also count the additional 8-10 hours/week put in by other One Call employees as cited by Steve.

Regarding saving damages, the number of hits every year are tracked by One Call. Would be fair to say the improved data from IGI would cause 1% avoidance of hits, as One Call's goal is to get 10% avoidance from all improvement measures. Avoidance of hits caused by improved data as bad data leads to incorrect tickets. Average damage for utility minor repairs could conservatively be estimated at $2K. Using data below, savings from reduced damage would be $2000 * 1% * 4500 = $90,000/year.

Response from Halstead by email:

Please note that not all dig ins are reported to Iowa One Call.

YEAR	NUMBER OF DIG INS REPORTED	PERCENTAGE OF TICKETS
2005	4,381	1.11
2006	4,398	1.12
2007	4,544	1.09

We do not collect data as to type of facility hit, situation in which the facility was hit, blame, excavator type, etc.

Dan has a State of the Art Committee meeting June 13th. Would very much like to have spreadsheet results available to show at the meeting. I promised to get him something by Monday morning.

Utility benefits: Considerable effort is devoted to bringing in new development base maps. IGI would save 1-2 months of a drafter's time if current county info could be provided. But we cannot claim this benefit without finding a way to improve on county timeliness regarding availability of data. Currently, data from even Polk County is not early enough for their purposes. General discussion that this is the case for all utilities.

Dan mentions the Des Moines Focus Group on GIS issues is a joint city group attempting to take over city tasks. Cities involved are Urbandale, Johnson, Clyde, Des Moines. Contact is Michael Mathes, asst. city manager of Des Moines. mematthes@dmgov.org 515-283-4049.

Dave Ren One Call Systems (vendor to Iowa One Call) 5/14/08
412-415-5050

Originally they purchased data such as TeleAtlas. They update these maps with local data, additions and changes. Dave provides data for updates from the counties. When operators are unable to find addresses on maps, they generate map notes which are sent to Dave and Steve. May be a new development or an error reported. Steve has to deal with these errors at the county level. Dave no longer acquires data.

Terry Burke and Charles Bruggeman Iowa Telecom 5/19/08
641-990-1605 (c) 641-787-2259
Charles.Bruggemann@iowaTelecom.com

Use a cable locate database. In dealing with new developments, engineers turn new plats over to drafting group for addition to GIS. Plats are sent in by developers or engineers may find them. It is a manual process. It would be great to have a current downloadable database from counties statewide. For one call, they know about problems with new addresses and manual updates.

They have paid engineering companies to update their records, at significant annual cost.

Iowa Telecom spent the following annual dollar amounts for CAD drafting labor to update mapping:

2006 $4845
2007 $6999
2008 $8791 (first four months)

Total $20635

Annual average over last 28 months is: $8844.

The labor identified above was for adding new sub-divisions and correcting existing plat or right-of-way info.

Leon Hofter Iowa Network Services 6/2/08
Also participating Jeff Clocko, fiber engineer and Craig Roffler, fiber ops mgr
(515) 830-0441

They are starting up GIS capabilities by purchase of base maps from Schneider. They are selective on where data is purchased as they provide services in 52 counties and to cover this entire area would be costly and take a lot of digital storage space. Solution is to use a one mile window along the corridor of their

lines. They are interested in right of way, centerline and some parcel information. Would also be interested in imagery.

Have just completed their first six counties with six more to be delivered next week. Costs range from 5 cents to 25 cents/parcel depending on charges from counties, density, condition of data. Working out maintenance agreement currently. Could not get digital data for 5 or 6 of their counties.

They are new to the IGIC project and to GIS. Somewhat amazed that it might be possible in the future to get all county-level data free of charge on publicly available website. Would consider providing utility data under appropriate circumstances. Sound like they might participate in IGIC if invited and educated.

They are to get back with cost estimates from Schneider for base map development and maintenance.

Nate Pollock, Alliant Energy October 26, 2007

Use ESRI with Miner & Miner software. Their service territory includes most of the Iowa counties, 70 or 80.

Alliant maintains their own landbase. They get preliminary engineering plats and digitize them into the system. Two techs maintain this. There are time constraints relative to this process. For community boundaries, they rely on ESRI data which will be several years out of date. Currently do not have tax districts and utility service boundaries, which the keep as a mess of paper records. ***To-do #1: Nate to discuss issues with Alliant tax staff.***

Vision of the project: They would bring in county updates every four months or so. Using county landbase will yield a level of agreed upon accuracy via standards set by the project. Alliant needs the layers to line up throughout the state.

It will be lots of work to line up utility facilities data with county data, in essence a county by county data conversion project. Nate's guess is that this project would cost approximately $1M by the time it's done.

Benefits: Getting forecasting info from planning for new plats, yielding better data analysis and earlier information. ***To-do #2: Nate to discuss issues with Alliant forecasting staff.***

Labor savings from data maintenance of land base equal to one full-time tech.

Help for design staff – contours and currents orthos. Designers work with final plats. This project could remove an update step from the current process. Will

this save time for design staff? If so, how much? ***To-do #3: Nate to discuss issues with Alliant design staff.***

Address points would be a resource for marketing staff. ***To-do #4: Nate to discuss issues with Alliant marketing staff.***

Tools developed for the project could be helpful. General navigation help, a tool to light up chosen lots by number. Routing data currently is sufficient. Project would help QA data.

Nate creates standard data layers for use by others. This project could do some of that work. Consider one month a year of time saved (2 weeks of Nate and 2 weeks of techs). Consider Nate would put in one week in startup year setting up standards with participating agencies.

Ability to do more analysis than currently done. Synergy with others. Collaboration.
For emergency management, data sharing would result in better analysis. Currently Alliant doesn't share its data for emergency management but this project could be used to build toward a common ground for sharing.

Uses for LIDAR and orthos. Would replace 2002 imagery, acquired through partnership with DNR, resulting in improved quality and timeliness. However, this benefit may be a wash given that Alliant has participated in funding for imagery. Followup to determine what is appropriate in the case of current LIDAR data.

Nate to obtain salary and fringe figures for himself and techs, as well as salary increase projections if possible.

Steve Halstead Iowa One Call 5/14/08
515/278-8700 stevehalstead@mchsi.com

They primarily used street centerline files with named address ranges. As more counties go to GIS, it is proving to be a godsend for their business needs. More accurate data. They budget $20K/year for translation from paper maps. More and more counties in Iowa going to GIS—Worth County recently.

Primary value of LIDAR will be to utilities and engineering firms for topo mapping.

Des Moines Waterworks, Dan Klopfer
515-283-8754 cell: 515-208-2019 klopfer@dmww.com

Paul Wiggin at Iowa State Center for Transportation Research
515-294-7082

Time saved messing with bad county addresses = 8-10 hours/week. Currently Steve travels to the field with a handheld to verify addresses. 2-3 days/month effort

Scott and Lee County have large population and growth but do not have county-wide GIS. Davenport does have GIS but not outside the city boundaries.

Check Marshall County for economic development.
Berquam good for emergency management.

Business of one-call is to alert utilities they must do locates. Data sharing would benefit those doing the locates.

Houston Gas is providing orthos with lines overlaid by wireless handhelds to their locators. Only utility Steve is aware of doing this.

Potential for use of IFTN data: Call center is run by a vendor that purchases orthos for Iowa (and presumably bills Iowa One Call for this purchase) Dave Ren (412) 415-5050. Ask Dave how valuable data consortium maps may be to him. Gets data for Marshall and Carroll County.

Steve buys digital maps from GeoCom at $200/county for a few selected counties. He also pays annual fees around $5K/year to selected counties for data.

Marshall County may be maintaining ROW info.

MidAmerica Energy has GIS people, but not sure who they are.

Tyler J. Jacobsen
GIS Specialist/Cartographer
Rathbun Regional Water Association
16166 Hwy J29
Centerville, IA 52544
641-647-2416
tjacobsen@rrwa.net

Everything is great here Jim, thanks for asking. This sounds like a fantastic project Jim and would certainly allow a better pathway to data that is available at a number of sites. Address matching that is accurate and yields results would be very beneficial to our organization, especially to be able to type in an address on an interface and get a point to pop up in the correct location. I know this is available at the moment, but the layers used to match against aren't the greatest (at least what I can find). There are a lot of address ranges missing in most of the data, especially in Southern Iowa. "No Location Found" or something along those lines is a frequent

problem. If you know of a better source of address data, please fill me in. Also, folks using just ArcGIS Explorer as a client would benefit greatly from this type of infrastructure and could add their own data to supplement what would be available in one package.

I am not up to speed at the moment on the various organizations within the water utility sector that are using GIS in a support role or at a greater capacity. I'm the only guy here at Rathbun dealing with managing/creating data, so if I can be of any further assistance to you, please let me know. Keep me posted. Thanks.

Consulting

Derek Lee Bear Creek Archeology 5/21/08
(563) 547-4545 Derek@BearCreekArcheology.com

They use the Beacon site for assessor's data and it works well for them.

Opportunity for big process improvement using central data service for Structure Inventory Forms which contractors must fill out for each property. There are many attribute fields to be populated. Currently most of this information is available from the Beacon Site. However, contractors are still filling out paper forms which seems at least a decade out of step. Having assessor info in one location would facilitate a process improvement. Archeologist would just add comments regarding their recommendations to a self-populating form.

Currently a contractor can't tell if anyone has even looked at a property without going to Berry Bennett. An overhaul of this system could eliminate redundancy and time costs. Structures have unique ID numbers and all information could be tied to that. Another advantage is this would give Berry Bennett a complete data set. ***Derek estimates that streamlining the process and using a statewide assessor's data set would save 20 minutes to 1 hour/structure. Berry Bennett provided metric of 1600 to 2000 Structure Forms filled out in a year. Conservative estimate would be saving of 1200 hours by streamlining the process on the statewide web server.***

There are paper copies for 100,000 structures in Iowa.

Derek uses the DNR site for a great deal of GIS data: 2006 aerial imagery, soil surveys, 1930 aerials, GLO just arriving online, historic plat maps of Iowa.

Addition by email: Another suggestion…that would save time/money…electronic submission of contractor reports.
Currently: We make a pdf of our reports…then print out several copies for various groups (Clients, SHPO, Permitting Agency, etc). These get shipped out to the client, client turns and ships them to SHPO, etc. etc. You get the picture. How about we put together the pdf, upload it to a central location (obviously secure) where SHPO, client, and agencies can retrieve/view, etc. No paper copy…no shipping costs/delays…electronically archived.

Greg Brennan, Professional Geologist, Certified Professional Hydrogeologist, HR Green

I think this sort of database would be of tremendous use and save us quite a bit of time in terms of data acquisition. A statewide parcel database in particular would be very useful in many of our projects. The 3 – 6" resolution on urban aerial imagery would also be a significant improvement from what is currently available on NRGIS and save us time in acquisition. Having access to LIDAR data will also prove very handy in the future. This looks like an exciting development to me.
Pete Lovell, Staff Scientist

HRG is currently using many of these data layers in our project work. I would like to see these layers published in a state-wide context for many reasons, but the most important being for GIS analysis. We setup many of our projects to include these basic layers and if these layers used a common schema, consistent GIS analysis would much easier.
Scott Mattes, GIS Coordinator

As a regional consulting company that offers architectural, engineering, planning, surveying and environmental services our clients are in diverse market sectors, including municipal, transportation, state and federal government, commercial, institutional, industrial, education and aviation. The diverse nature of the consulting business makes the seamless database of common, high-accuracy GIS coverage described for IGI a highly anticipated technical and planning resource. Such a framework would be of great benefit, especially aiding efficiency and reliability during the preliminary phases of our projects, as all of the data layers mentioned are typically brought into projects at their beginning and then used throughout the course of project completion. The framework described is desirable because it will facilitate preliminary assessment, planning, budgeting, and conceptual design of infrastructure. Nothing can replace the site-specific requirements of project engineering but IGI would be a tremendous framework from which to begin. Clients and consultants, including scientists, engineers, planners, surveyors, GIS and CAD users, will all benefit from this resource.

An example is the coordination required for recent projects for the City of Sioux City and the Iowa Department of Transportation. The city water department contracted HRG to study, site and design a high-capacity collector well along the Missouri / Big Sioux Rivers. The project was handled by the HRG Water Group and resulted in a 10 million gallon per day water well and 3.2 miles of 30" raw water piping back to the water plant. The well siting considered geology, hydrogeology and geomorphology (river setting, floodway, flood plain and wetlands) – all GIS intensive applications. The piping had to cross Interstate-29, a major interchange of I-29, a wetland area, a municipal park, a railroad, a nature trail, several municipal streets and many existing utilities, and was constrained within a very narrow corridor area by natural topographic and hydrographic features (loess hill bluffs, a very narrow flood plain, and steep riverbank). The well and piping project totaled $5.9 million.

Concurrently (and still in process), HRG was contracted by DOT to provide widening and intersection improvements to Interstate-29, including the stretch of highway passing the well and the nearby Riverside Blvd. and Hamilton Blvd. interchanges which had to be crossed by the water well piping.

Both projects relied heavily on GIS data. Coordination between the HRG Water and Transportation Groups was required due to the complex nature and large scope of these inter-related projects – each project had to take into account the planning objectives of the other. GIS coverage was collected from a variety of sources by staff working on both projects but integration was hampered by the absence of a seamless, common database. Had a GIS framework such as IGI been available the coordination, integration and overall efficiency of these projects would have been facilitated; thus providing benefits to the DOT, city and consultant.

Nick J. Roethler, E.I. & L.S.I. **6/12/08**
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At Kuehl and Payer we use GIS quite regularly for a varying number of projects. Many times GIS data is used for the preliminary stages of the project. A few ideas that come to mind are The Iowa CREP program, any City which would benefit for prelim planning and assessments. Also Drainage Districts would benefit for assessments and annexation, and even possibly research done for Land Surveying operations. The biggest benefit here would be the ability to access this data remotely (view or download from the internet) which would be very convenient for our business. Kuehl and Payer currently uses the IDMR NRGIS page regularly along with the ISU GIS Server to access most of their data, however at times we do hire companies to collect data for use such as LiDAR data for drainage district work. I think the concepts you've discussed below are very important and benefits will be gained by everyone in the "Engineering World" and many other professions.

The biggest part of their projects may be data acquisition. Nick could come up with percent savings and hopefully contract dollars. He comments that Lidar and aerial photos contribute to the public sector as well, especially in providing graphic communication needed to get projects to be approved.

We decided that general benefits categories for him to consider would be: consulting firm benefits, government client benefits, private client benefits.

Drainage districts in the state have been established since the 1900s, originally using manual surveys. Iowa Department of Agricultural Land Stewardship (IDALS) contact would be good to make. See his comments above on the CREP program and LIDAR use. Shawn Richmond would be a good contact.

Nick to attempt to come up with percentages and contract amounts and get back to me.

Patrick Poepping Poepping, Stone, Bach & Associates, Inc. 6/13/08
Quincy, IL : Keokuk, IA : Hannibal, MO
Phone: (877) 423-4605 Website: www.psba.com Email: patrickp@psba.com

Rather than purchasing data for Iowa clients, they typically remap it. They have issues with leaf off plus data available for purchase may be expensive, difficult to negotiate, of poor quality. They will rarely go through the time and trouble of going through hoops to buy data.

To remap an area, they will fly it. Typical expense would be $180K for 120 square miles. They do about three of these data collection events a year for Iowa clients. Result would be savings of $180K * 3 flights/year = $540K saved/year.

Patrick would be a strong support of the IGI and data sharing efforts. He states that the highest and best use of data is to freely use it and is concerned with the waste from duplicate data collection efforts.

Other

Tim Shuck, formerly ProMap 5/1/08

They never did a lot with quantifying benefits at ProMap. Talking in terms of upgrading office procedures. Don't want to get in the middle of cutting staff. Small counties have very inefficient methods for finding records. Benefits are in responding to constituents better, meeting their expectations. Experience with two hours to find adjacent property owners manually vs. minutes with GIS. Staff most expensive part of county budgets in many cases.
Skeptical of cost/benefit analysis he has seen. Not detailed enough.
Gary Bilyeu in Story County states that counter traffic dropped by 50% with web deployment of records.

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He does not use individual county sites other than Polk County, as that is the only county he does analysis upon. He uses the Iowa State ftp site, including DNR data he finds there. Most commonly he works with Census data.

Geocoding is customized for each data request he receives. He uses street files from ESRI, which seem expensive to him, as he pays the normal market rate. Purchases these files every 2-3 years. They are not updated frequently enough for his needs so he must often search for better address data.

He estimates that he spends half an hour per project dealing with bad address info in the streets file and that he has 24 projects a year. Eliminating the searches would provide a productivity benefit of 12 hours a year.