Preliminary Findings & Observations
From Topeka & Salina GIS Stakeholder Information Gathering Sessions

November 2007

This document aims to catalog the "high points" and "take home messages" that Michael Terner heard during the four "information gathering sessions" conducted in, and around Topeka in July, 2007. Subsequently, additional notes and observations were added by Rich Grady and Sara Kustron, after they traveled to Salina, Topeka, and Lawrence in September, 2007, to gather additional input. These notes should not be considered comprehensive minutes nor chronological. Rather, they're aimed at pulling out and organizing "priority content" that may be elaborated upon and documented in the strengths, weaknesses, opportunities and threats (SWOT) section of the final report.

1 "Large Group Information Gathering Sessions"

1.1 On Requirements for Data Sharing:

- SE Kansas floods of June-July 2007, including the Coffeyville flood and subsequent oil spill, provide important, **statewide use cases on why data sharing is important**. 20 counties were impacted. Declaration of disaster dictates when emergency funding becomes available. Declaration is dependent on identifying impacted property and assessed value (i.e. local, county parcel data). Emergency Management estimated that declaration could have been made up to 2 weeks earlier if they had all county parcel data on-hand prior to the event. 67% of impacted counties had electronic parcel records. As of July 11, Emergency Management only had still obtained 3 counties worth of data. The After Action Review (post-incident procedural document) has not been completed for these flooding incidents, however, these documents provide an opportunity to raise the awareness and identify lesson's learned on how GIS could have been leveraged further in the response lesson's learned. Jessica Frye from Emergency Management is a contact for the after action exercise.
- In Salina, there was a lot of discussion about "who owns the data", in the context of data sharing. There seems to be a strong perception at the local level that **"it's my data,"** meaning that the local data does not belong to the state or any other entities. One attendee asked, "Why give the state anything if we get nothing in return?" However, this was not the only perspective that was represented and there were certainly some local government representatives who were very willing to share data (and to take advantage of DASC's offer to provide back-up services). One implication of these divergent perspectives is that there seem to be misperceptions at the local level about the meaning of the **Kansas Open Records Act**, in terms of both intergovernmental sharing and charging for data. Some attention to this issue at a policy level might be appropriate and worthwhile, such as an **overview document of Open Records as it pertains to GIS data in Kansas.** Another factor that can lead to

a reluctance to provide/share data may be an organization's concerns about the quality of its data and a concern about "embarrassment" if others have an opportunity to scrutinize their data.

Plan Implication: Would it be desirable/beneficial to have the plan identify the inconsistency with which the Open Records Act seems to be applied for GIS data sets?

1.2 On Requirements for Better Data:

- The late June, 2007 SE Kansas floods also came up during in the context of the inadequacy of existing statewide elevation data sets. The usefulness of higher quality LiDAR elevation data was discussed in the context of flooding, and the **Kansas River Corridor Project** was mentioned as an example of producing higher quality elevation data. This project was put together collaboratively, with USGS coordinating the various participants. There were 5 counties in Kansas, and 2 in Missouri who participated. From an accounting standpoint there were 16 different local, state, and federal partners. LiDAR has been captured for the project area, comprising approximately 4000 square miles. Economies of scale were identified as being important for getting the best price per square mile. **Statewide LiDAR capture has potential as a programmatic goal that may merit a Business Plan.** In subsequent meetings with GIS Council reps it was identified that LiDAR (and ortho-imagery) is being captured for the urban areas in Kansas that are part of the **133 Cities Program**, including Kansas City, Topeka, and Wichita. This program is sponsored jointly by USGS and the National Geospatial-Intelligence Agency (NGA), as part of Homeland Security and Homeland Defense missions. If the data captured as part of the Kansas River Corridor Project and as part of the 133 Cities Program are combined, a significant portion of the State is covered. Other use cases for LiDAR besides draught and floodplains and dam breach inundation studies includes:
    - Better drainage models to support precision agriculture
    - Development of derived products such as 2ft contours
    - Better tornado prediction path models?
    - Archaeologic discovery (old race track example)
    - Support of high-resolution imagery, and enhancements to geodetic control

Plan Implication: There is great interest in elevation data and this data set is the leading candidate to be prioritized for business plan development.

- There is **redundant crop land data collection** taking place between the Federal Farm Service Agency (FSA) and the State (as mandated by DOR for agricultural land inventory). Due to relatively minor differences between the categorization of crop lands (i.e. the state is looking for 6 categories and the Federal government is looking for 3 categories) these data sets are collected independently and redundantly. There would appear to be a **huge opportunity** to align these programs to collect agricultural data in a manner that meets both sets of user's needs. Could FSA potentially fund the state/counties to deliver what it needs (rather than doing it themselves)? Such

funding could have ancillary benefits to local GIS efforts by tying it into a repetitive, core business question.

Plan Implication: Plan should identify this overlap of effort and recommend further alignment between state and federal crop land mapping efforts.

- At the Salina Session, there was widespread interest in and utilization of **aerial photography** from the National Agriculture Image Program (NAIP). Even though the imagery is relatively low resolution, at 1-meter Ground Sample Distance (GSD), it is widely utilized for its consistency and widespread availability. Unfortunately, new imagery for Kansas may not be flown for another 3-5 years unless partnerships are found to cover 25% of the necessary funding, approximately $300K. For there to be a new flyover in the spring of 2008, FSA would need to have contractors line-up with orders by the end of calendar year, 2007. Time is short to make this happen, and it depends on partnerships being formed with state, local, and federal participation. If each of the 105 counties in Kansas pledged $2,000, that would cover the majority of the 25% contribution needed from inside the state.
- While currently there are no formal GIS standards for parcels, due to the reach of a limited number of vendors that specialize on Kansas data (e.g. R&S Digital and Kimmel), many parcel data sets are found in a "uniform format" (i.e. these vendors do their work in a consistent format). The state should also consider developing a common sense **digital parcel standard** that lays out minimum quality and content guidelines. In Salina, there was considerable discussion about data quality, and this has implications on data standardization. Some counties expressed concern that their data would not hold-up to scrutiny at higher levels of government, where the reality of scarce resources and tiny budgets might not be understood. There was also discussion about cross county edge-matching issues, which could be an issue when **statewide data layers** are compiled from local data sources. There is a clear implication that without uniform standards for minimum parcel data quality the task of assembling a statewide parcel resource becomes much more challenging.

Plan Implication: Kansas should consider developing parcel mapping standards that cover both minimum content and accuracy specifications. As appropriate, an existing standard from another state could serve as a model for Kansas.

- Many counties are highly interested in obtaining access to **survey quality section corner data**. KDOT has collected an enormous amount of these data as part of its ongoing operations and projects. However, the KDOT data are not readily available and are largely found on hard copy plans in KDOT facilities. Given the large general interest in this survey data, it would be highly desirable if KDOT could find a way to share these data with county governments. Going forward, KDOT might mandate that their surveyors provide electronic renditions of the section corner data and these data could be made available on a KDOT web-site. New York's DOT maintains this type of web-site and all DOT survey data are readily available to the public. If feasible, KDOT could also pull out additional section corner information from older surveys and convert those corners to electronic formats for dissemination via the web.

In Salina, **tying section corners to parcel data** was identified as a highly desirable means of improving parcel data quality.

- In Salina, **critical infrastructure data** was discussed from several perspectives:
  - Emergency management (vulnerability to hazards, both manmade and natural)
  - Aging infrastructure (pavement condition, pipe condition)
  - Service to citizens (such as water distribution, special population assistance);
  - Economic development (bio-fuel development, wind farms).

  There appears to be **considerable overlap in various efforts to collect the same data multiple times for different purposes.** More awareness is needed, and more communication, both horizontally and vertically, between levels of government. For example, local Emergency Management Plans are being developed at the county level, including GIS data layers and attribute information. At the same time, the Department of Homeland Security (DHS) is sponsoring data collection through law enforcement officials as part of the Automated Critical Asset Management System (ACAMS). Salina participants report that there was no shared, common list of data elements being collected in these different efforts. In lieu of a standard, the counties have come up with their own lists – and, unsurprisingly, each county's list tends to be somewhat different. A recommendation was made to **"get agreement on the list of what is critical – both geometry and attributes – and on who is the authoritative source."**
- **Addressing** was identified as a key issue in Salina. In general, each county and city has the authority to assign addresses, and some are working on Master Street Address Guides (MSAG). However, in some areas, developers are naming streets, which seems contrary to best practices. Potentially, there is a need for greater **awareness of state standards and best practices** for address assignment.

1.3 On Supporting Local Government GIS Efforts:

- There is some concern that some smaller counties are not in a good position to be discriminating consumers of geospatial technology. It is a technical field, and there are many vendors pushing their wares and some examples of counties spending money and being disappointed by the results (e.g. software that didn't meet their needs; imagery at inappropriate resolution; etc.) **Providing "procurement guidance" to counties** could be a useful role for the state GIS program and DASC. Procurement guidance might include the dissemination of technical information, use cases, best practices and specifications. Going further, the state could potentially provide "blanket" purchasing vehicles (such as is found in many other states) that include a list of **pre-qualified vendors.**

Plan Implication: Kansas should consider developing a statewide blanket contract for GIS services that state and local government can buy off of. Such a contract would serve as both a streamlined procurement vehicle and a formally vetted, pre-qualified GIS vendor list.

- In Salina, the relatively new **back-up services offered by DASC** to provide redundant storage for GIS data that currently might only reside in counties was well received in concept. This service would ensure that if a catastrophe hit a local community, such as the F5 tornado that hit Greensburg on May 4, 2007, DASC would have a copy of their data to help with continuity of government and the restoration of services, as well as damage assessment and mitigation. Among others, Junction City expressed a specific interest in this service.
- In addition to procurement assistance and backup services, many counties (and private sector companies that cater to counties) identified a need for "GIS program support" to counties. Especially counties that are just starting out with GIS. The suggestion was made that a state sponsored **"GIS starter kit"** that would include a "cookbook" and best practices on how to develop a local GIS might be valuable to further catalyzing local GIS efforts. In Salina, the point was made that many counties have fledgling and struggling GIS programs, and they need to be informed about and to have access to educational resources on GIS applications and lessons-learned by others. Interest was also expressed in access to reliable and current demographic data to help with economic development and public health studies at the local level.

Plan Implication: The State GIS program – via the GIS Coordinator and/or DASC – should consider developing a formal "local government technical assistance program". This program could begin with indirect support in the form of educational materials but it could potentially evolve to provide further, direct support services.

- In Salina, several observations were made about the importance of **inceasing general awareness of GIS**. Decision makers, such as County Commissioners, are generally not aware of the versatility of GIS technology and typically only know of it in a tax assessment or property mapping context. Examples of other important local uses of GIS (e.g. in Ford County) include economic development and siting analysis for industrial projects as well as support of alternative energy projects such as wind farms and bio-fuels. The comment was made that **"GIS is under the radar"** of what politicians know about and pay attention to. To elevate its visibility, a recommendation was made to improve how GIS **"is tied to key issues,"** such as disaster declaration, economic development, revenue-generating business activities (such as permits, licenses, and taxation), and asset management.
- Incentives were mentioned as something attractive to counties to promote the sharing of data with the State. The potential for **Regional GIS Centers** and cost-sharing was also mentioned as a means to help GIS "have-not counties" to initiate GIS programs.

2 Environmental Oriented Session

- Better elevation data is a major priority. 32 counties involved in map modernization with FEMA. Dam breach and inundation studies also require good elevation data. 2 foot contours is the ideal.
- Several agencies are involved in "regulatory siting" that could benefit from GIS. Wind energy fields, and their attendant "viewsheds" are of particular interest.

- There's a large amounts of GPS within KDPHE "environmental side" aimed at locating facilities. 14 units in 12 district offices. Some requirements for GPS would be reduced/eliminated if accurate and comprehensive situs addressing was available.
- There are opportunities to engage private utility companies in certain areas, particularly situs addressing. Prairie Land and Wheatland Electric were sited as examples for this potential, and some preliminary communications have transpired.
- HIPPA requirements in general have made it difficult for any type of data sharing to take place on "health side". It is difficult to decouple what is "confidential" from what is not. Large interest in identifying health facility locations (e.g. hospitals, pharmacies, physician locations, etc.). Currently, no comprehensive nor reliable sources. Could tie into related critical infrastructure data gathering (e.g. NGA structures and a 7 county pilot project).

3 KDOT/DOR Oriented Session

- KDOT is very interested in getting local parcel data and road attributes from counties. Counties are interested in KDOT section corner information, corridor imagery and local DTMs. Is this type of exchange the basis for a state-county *quid pro quo*?
- There may be opportunities to leverage the existing "precinct geography" project with DASC into broader efforts. Since precinct boundaries need to be coincident with other administrative boundaries this could push some data quality decision-making. Right now, County Clerks are responsible and the state compiles 105 separate documents without ever creating the "statewide picture".
- State currently engages a private, third-party vendor to do "streamlined sales tax" lookups on a contract basis. Is there an opportunity for DASC to be able to do the same kinds of lookups? If so, could the dollars currently used for contracting could be directed to DASC to support the activity, and potentially improvements in address and administrative boundary data.
- The State DOR is intimately involved with supporting local county assessment activities. The new statewide CAMA (Orion System) is a key example. Another example is the state providing email services to 95 counties. Large expenditures on these types of "county support" projects are the norm. Could this outlook be extended to **state support of county tax mapping through the DOR (and in association with DASC)?** It would be a logical extension, and good maps are part of the "fair and equal" assessment mandate. Such an effort would be hugely important to helping GIS "have not" counties. This is the model that worked in TN. Like TN, KS has an active DOR that actively supports local county-based assessment process.

Plan Implication: Would it be appropriate to have the plan make a recommendation that DOR get more involved with supporting electronic tax mapping across the state? This is potentially the only feasible way to ensure that there could be a statewide parcel layer as some of the smallest counties will most likely be unable to initiate their own GIS programs.

- State GIS strategic plan should be aligned with State Information Management Plan which is being prepared by Beta Group (local IT consultant).
- KDOT has a major internet and intranet web GIS portal with Integraph GeoMedia WebMap technology: the KGate Project.
- KDOT would like to have counties help with local street name identification. Statewide roads have been compiled off of the DOQQs, however, they are not all attributed with names, yet. Are there opportunities for providing incentives to counties to report this information? Most small county GIS are focused on parcels, how to help build an interest in roads data? Could KDOT make final county road maps, with the street names, available on the web as PDF files?

Plan Implication: Two-way data exchanges of road information between counties and the state could be a strong model for other statewide data layers.

4 GIS Executive Committee Session

- Additional regional GIS education sessions were mentioned as something to consider, as part of the 'going forward' strategy, perhaps aligned with the state's Homeland Security Districts, or some other regional delineation.
- The HS Districts may be particularly relevant if **flooding** (and Drought Emergencies) and statewide LiDAR gain traction as issues to focus on in the Business Plan. A **Hazard Mitigation Task Force** was mentioned in this context, and outreach to this group would be appropriate. The State Climatologist was also mentioned as a potential stakeholder in this context. In general, **water related issues** are of great interest in Kansas, and have ramifications well beyond GIS.
- A brochure was discussed, to **document the recent flooding disasters**, with pictures and other information. It would be an opportunity to promote the value of GIS data in recovery efforts. Along this line, the Committee believes that the the public records laws must be promoted so to raise awareness that GIS data is in the public domain.

Plan Implication: This type of "brochure" could be a model for educational materials that could be disseminated by the state GIS program as per the suggestions found above (under Section 1.3, third-bullet).

- A strong desire was expressed amongst Council members for **statewide LiDAR to improve elevation and surface data** needed for agricultural, engineering, environmental, and hazard mitigation applications. This is a **candidate for a Business Plan**. Ivan would like to have the GIS Business Plan to provide as input to ongoing IT planning efforts -- synergy with the emerging Strategic Information Management (SIM) Plan will be important.
- **Dam breach and associated inundation** issues were discussed. Dam safety inspections are done by the Dept. of Agriculture, Div. of Water Resources. They may have interest in statewide LiDAR to help with their analyses.

5 Funding Discussion

- The **Kansas Water Plan** was referenced as the current key funding source for GIS. At present, it is the only reliable, annual funding source. The Water Office has been a strong supporter of statewide GIS efforts. It provides approximately $250K of funding every year for GIS initiatives, including funds for data collection and staff support at DASC, and the Kansas Geologic Survey has provided the facility. So far, this funding has been presented without strings or Water Office interests attached. Other funding has been found in creative ways that are ***not*** sustainable. Overall, statewide GIS funding is minimal for a state of this size (i.e. data acquisition and maintenance costs are relatively high) and there is a **need to find a broader base of reliable funding** to support statewide GIS initiatives.
- Historically, the GIS Director position was in the Water office. Four years ago, the position was migrated to the Dept. of Administration, **Div. of Information Systems and Communications (DISC)**, which is part of the IT infrastructure of the state. The position is grouped with overhead operating expenses.
- DISC has an overall budget of $50-60Million per year, but it is a **"fee for service" operation**. The goal is for it to operate on a "cost neutral" basis, using charge-backs and assessments to recover costs, and to offer services at market rates. State agencies may have their own IT shops, but they are assessed on an annual basis to support the DISC operation, whether they have their own IT shops or not. Agencies pay the assessment, but the willingness to pay is not voluntary, and there are some feelings of **"taxation without representation."** Nonetheless, leadership on the GIS Council (and within DISC) favors making GIS funding integral to IT, given the existing infrastructure and management practices.

Plan Implication: GIS/geospatial technology would be highlighted within the plan as a core component of the state's overall IT infrastructure. However, unlike other types of IT infrastructure GIS has very large and ongoing costs associated with data acquisition and maintenance.

- The Water Office is assessed by DISC for general IT support, but also is a willing provider on a voluntary basis of the approximately $250K that is provided to support statewide GIS initiatives. This money is part of their departmental budget. **The Water Office is comfortable having the state's GIS Policy Board set priorities** for how this money is spent, and feels that their interests are represented. They are less comfortable with how the general IT assessment works, and how it gets spent.
- The DASC strives to take on data projects for which there is no obvious logistical home (e.g. LiDAR) and thus funding is that much harder (i.e. there is not a clear "corporate sponsor" responsible for the funding).
- During the meeting it was suggested to **"go for GIS as a budget item"** in more of the state agencies that would benefit from statewide coordination and data sharing initiatives, similar to what the Water Office is already doing. **Departments prefer to see defined programs to support**, such as statewide LiDAR capture and processing,

rather than general-purpose IT assessments. To do this, long-term coordination with the departmental budget process and schedule is necessary. For GIS to be added as a budget item, **work needs to begin now on requests for FY 2010**, which will be submitted in September 2008. The KS Legislature sometimes appropriates funds for one-time "enhancement" projects, however, this is not a sustainable or reliable base of GIS funds.

- Annually, Departments submit their requests to the Div. of Budget in September, and these requests get rolled-up into the Governor's Budget by January, which then gets reviewed by House and Senate Committees, before approval in April or May. The Fiscal Year (FY) runs from July 1 – June 30. **The FY 2009 (July 2008-June 2009) budget was submitted in September of 2007**, and the FY 2010 (July 2009-June 2010) budget will be submitted in September of 2008.
- In the short-term, approximately **$300K is needed to enable new NAIP imagery to be flown in the spring.** Many departments use it, and benefit from it. Perhaps an appeal could be made to the key agencies who use it, such as the Dept. of Agriculture, to find money on-hand to spend on the update program. For the longer-term, budget support for GIS programs would need to be in-synch with the state's overall budget process and recurring expenses (even when they are not annual) such as flyover updates need to be planned for. As described above (in Section 1.2, second bullet) the idea of employing a bottom-up strategy to seek financial contributions for the NAIP matching funds from local governments has been discussed. However, there is no Kansas precedent for a project with 105 county partners engaged in cost-sharing.

Plan Implication: The current challenge of "passing the hat" to find the $300K for the state match of the NAIP program might be held up as an example of the shortcomings in the current funding model. There should be adequate examples of the value of NAIP (including use in the Summer 2007 flooding events) that help explain the benefit of taking advantage of the 3-to-1 federal match.

- For long-term support, a champion is needed **to promote GIS at the Cabinet level**. An action item was taken to identify the Sub-Cabinets, such as Health & Human Services, Public Safety, and Agriculture, for which there are Chairpersons. There is also a Homeland Security Council with which the GIS Council should be in regular communication.
- By way of comparison, the new Kansas Biosciences Initiative is a 10-year $650 Million dollar effort to distribute funds and support to areas within the bioscience realm, and this has the support of the legislature.

6 "DASC/Academic Oriented Session"

See Powerpoint slides that Ken Nelson from DASC presented titled: "Strategic Planning 2007 – DASC Initiatives"

- DASC casts itself not so much a data "originator' as a data "integrator." Four priority data development projects include

  - Roads
  - Tax units
  - Precinct boundaries
  - Situs addressing

- The DASC should capitalize on new notions of what a Clearinghouse function should be. For example, novel strategies for point data collection where location information is solicited from locals via an email link may be easily implemented and could help the non GIS-powerhouse agencies (Heath, Asset Management) achieve their missions more efficiently.
- DASC is committed to a "RAMONA-style" GIS survey of all 105 counties for information-gathering and relationship building.
- Ken described the DASC offer to locals for a free backup service for GIS data.
- DASC back-end technology is undergoing an upgrade and DASC is implementing some Google Interfaces. Both changes will help fulfill user-expectations with respect to performance and application "look and feel."
- The audience pointed out that there has been some informal (neighbors helping neighbors) with large counties assisting smaller counties with GIS projects. It would be helpful if the DASC could capitalize on this spirit of regional effort and coordinate/facilitate these efforts.

Plan Implication: This could be another model for identifying best practices and preparing educational material that could be disseminated by the state GIS program as per the suggestions found above (under Section 1.3, third-bullet).

- Until funding is augmented, the DASC is re-examining its activities and being more selective with respect to the applications and services it provides.
- The session participants from the academic community cited examples of successful GIS data projects conducted by motivated GIS students (e.g. in Arkansas, college students are collecting structures data). Adequate training and supervision was stressed as a key factor in the success of these projects. Students are typically early adopters and willing testers of new technologies.