Commonwealth of Kentucky Transportation Cabinet

# GIAC Standards Committee

## Kickoff Meeting - notes

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## Introduction

Jon Clark serves on the GIAC on behalf of Secretary Mike Hancock. He is the Executive Director of KYTC's Office for Information Technology and serves the Cabinet as its CIO.

Marvin Terry works for the Labor Cabinet/Public Protection, but also supports Energy & Environmental; he has done so since 1998 in a support/infrastructure role. Currently, Marvin serves as the Branch Manager for the GIS section.

Ann Miller is an elected official from Versailles. The Kentucky League of Cities has nominated her for the committee to both contribute and to learn and her non-technical background is expected to be an asset for an otherwise technically-focused committee. She represents Pilkington North America.

Brad Bates serves as a Lt. Col. For the State Police. He oversees much of KSP's IT resources, including the GIS arena.

Jerry Weisenfluh (Associate State Geologist)works for the Kentucky Geological Survey. He has served on the GIAC formally in prior rounds. His organization generates and hosts a lot of Kentucky's GIS data.

Brian Kiser is the Executive Director of OET for COT; he is here to help move things forward

Glen Thomas represents the Enterprise Architecture and Standards Committee for the Commonwealth. He will filter GIAC standards as they are ratified for distribution statewide.

Kent Anness is with the Division of Geographic Information (DGI)

Kim Anness is also with the Division of Geographic Information (DGI)

Will Holmes is the GIS Branch Manager in KYTC's Office of Information Technology.

## Overview

Will presents an overview of where we are:

Past standards were defined by GIAC and were driven by specific problems that needed to be solved. For example, a project addressing water & sewer would then have a committee formed to set standards and provide recommendations. These committees would be subcommittees to GIAC and would disband when complete, reforming only if needed.

No formal mine mapping data standard was ever formally defined or published.

Federal Standards were used to derive some GIAC standards (see links). Only the following standards created by GIAC subcommittees were adopted and published:

- Kentucky Water & Sewer Attribute Standard
- Transportation Road Centerline Standard
- Address-enabled Road Centerline Standard

City & County Boundaries were established, but difficult to apply due to a lack of participation. There were many Boundaries identified that were previously unknown, but the problem was that members were unable to obtain management buy-in on adopting them for the simple reason that it was considered a low priority.

Federal Standards can often be useful, but sometimes they are not the best solution; in these cases it would be the GIAC's goal to find a better standard and adhere to that.

In the past, tools for collection were difficult and limited. The information itself was replicated and hard to keep in sync. Kent and Kim have a system that now flows transparently, information is regularly updated, and we have more powerful software tools and more useful repositories (such as Google Maps). With the way this technology is moving globally, "if it's not on the map, in three years it won't matter."

## KYGeoNet

http://kygeonet.ky.gov

This system transformed data exchange for the Commonwealth. While Geospatial data existed in many locations, this system collected that information into one source. There were rules: if your dataset was not documented in even a minimal way, and did not contain metadata, it would not be included in the KYGeonet system. Information is collected throughout the week and updated every Sunday night.

From a standards perspective, this not only brought about the use of metadata, but of the level of detail that needed to be applied to assets. For example, a water tank would be viewed in a way that shows, record by record, how the information was collected. This helped those consuming the data have a feel for the degree of accuracy to the information. It helped them make better decisions about whether to include the information and to what extent it might be considered reliable.

The "1-Minute Carter Coordinate Grid" serves as an example of the useful data that can be added to a record. This information can be easily shared with the community (Counties, Cities, etc.) because the structure is standardized and the standards are documented. Anyone interested in working with the information has easy access to the standards documentation, and anyone wishing to add information can do so, so long as they provide the standard information this is required.

http://kygisserver.ky.gov/geoportal/

## Metadata Standards

Metadata Details shows the basic information for a record at a click. From a standards perspective, the metadata standards was Geonet's greatest contribution. The largest challenge was getting people to publish: there are tens of thousands of records, and many layers that, if each party spent a few hours cleaning up the layers, would be extremely useful for all. For example, the "Ferry Godmother" could provide information on Ferries that would be useful for tourism. This layer would be useful in a disaster.

Tunnels could be possible choke points. They exist in the database, but are not documented—and they also could be critical in a disaster. The DGI is willing to provide training to agencies interested.

There are individuals who spend time cleaning up their data.

If every County was encouraged to have this program, and a County-to-State relationship could be established, the flow of information could be very easily established and kept up to date. Data rarely flows from the County up; it typically goes from State and Federal downwards. The State obtains (and purchases) a lot of data locally and then shares it globally; local partners, however, often have no time, money, or interest.

NSDI maps roads and collects information, and while some efforts have been made to reduce duplicated effort between NSDI and the state, there has been little success.

## Data Needs and Data Sharing Buy-In

Data integration and flow needs to be usable and predictable, and standards are what can drive that. The trouble is that many agencies cannot easily collaborate and/or share data. KYTC has tackled this issue by establishing an Enterprise Data Branch: this organization pulls outlying data sources, organizes them into a standard repository, and then works on how to solve problems. Many agencies at other levels lack the ability to do this.

Counties are on an uneven playing field: some are at a much higher technical level than others in terms of GIS. As a result, writing a good paper (i.e., a standard) isn't necessarily the only need to build the solution: balancing skills to bring others up and simplify down is part of the process too.

Economic Development is one of the hidden gems in spatial systems. However, City and County entities see the risk of paying for data that gets passed along for free, eventually given away to private companies who will turn around and sell it. There are rules regarding sharing of imagery but not really much regarding the rest. Some entities will share everything, but this is rare. People who see the bigger picture realize that if a disaster strikes their area and they didn't share the data, getting help, relief, and restitution will be much harder, not to mention the negative publicity that could be generated. Many organizations were told that they could make a lot of money by investing into these systems, only to find that this is not the case. Even worse, the lack of consistent structure and/or a model of standards would mean that sharing would require many of these entities to completely redo their data.

As people are willing to volunteer, the GIAC needs to figure out how best to wrestle the information into a usable form and make the standards apply to the provider of the information in future.

COT sees collaboration as the best way to both reduce redundancy and hold consistent standards—the only problem is that it takes time.

## Cities and Counties

Cities and Counties have the same constraints that State Government does: they start the fiscal year with an empty budget and build from there. They have little to gain in putting extra cost and effort into data sharing. While they benefit greatly from the data we share with them, the data is free; there is little to no incentive to reciprocate despite the fact that without our information they would be severely hampered and far less effective.

Perhaps this can also be evangelized through the organizations that normally approach cities and counties: the independent initiatives & etc. These entities may be able to obtain the data we need and share it back to us simply by the fact that they have a business relationship (and/or some leverage) to get the information back. Some of this might be down to education and awareness: knowing what the state needs may make them more likely to provide it, given that it is simple & structured.

Data itself is also inconsistent: information from decades ago, dependencies on information that's kept in the back of someone's pickup truck, etc.

How receptive would cities and counties be to a pitch? When given the benefits of sharing this information in the event of a disaster, or the minimal and clearly-defined amount of work, how likely will they be to cooperate?

In some cases, the argument will be easy to make, but in many, the simple lack of resources or inability to properly see the incentives in sharing this data will be the primary barrier.

However: some places might like to know that they don't have to have an ESRI infrastructure: that they can use a browser to access our system and use it both for pulling down information and keying updates in and pushing them up. In other words, offer them an easy way to get into state systems and use them without having to invest in infrastructure. Further, they might consider teaming up with other cities/counties to share the burden. This probably wouldn't mean replacing the existing ESRI staff, but it would be low-hanging fruit for counties that don't have these systems. Established GIS entities would each have to roll up all their business processes, convert them to our standards, etc.

At one point, the County PVAs had a contract under Revenue to get a parcel data structure through the MapSync parcel management product they purchased. This was 4-5 years ago, so where that stands today is unclear. Revenue provides PVAs ESRI licenses to get information. They digitize all of their data, and the degree of cooperation in data sharing will vary. Knowing that Projects will get approved faster when the information Kentucky needs is available should be a selling point. Think about this in regards to the Six-Year-Plan and other infrastructure projects.

## The Commonwealth as Standards Rallying Point and Provider

Hosting all GIS data and web-based GIS analysis for local cities and counties would either require a standing Enterprise License Agreement or a great deal of programming to get other systems to talk to the ESRI server.

12-14 years ago, ESRI made an offer to the ADDs that most of them adopted. Today, they are all ESRI based. ADDs act as a mediator to roll up all the data in their area, but they also have to navigate a political landscape. Ironically, the KY Infrastructure Authority hires the ADDs to collect and manage the data that they then share free, only to then have that data be held by the city/county who want to sell it back to the Commonwealth (who funds the Infrastructure Authority).

There are inefficiencies in data flow between local and state government and also between state government entities themselves. For example, when KYTC does new road projects, they pay staff to drive to the county PVA and collect parcel information that they then re-enter into CADD. Often they also have to pay for that data even though the road construction is a significant economic and safety investment in the community. The ADDs are paid to collect other data sets and often multiple entities are paying for duplicate information collection. At one time the State Police and KYTC were paying the ADDs to collect road information. There were some different attributes, but the road base was the same.

Data sharing requirements in the agreement: through the maintenance process we can insert language indicating that in order to continue using our systems, they must agree to contribute back.

EASC depends on GIAC to drive standards; in other words, while they set statewide standards, they do so knowing that experts in the area of emphasis should be counted upon to draft the standards for their area: this is why Glen's role is to vet GIAC's standards to the EASC. Most of the standards the GIAC sets will be rolled into the terms and conditions used by the Commonwealth's partners, requiring them to conform to the standards we need.

The group should also attempt to provide standards for parcels. Part of this will involve defining levels of access to the data and the standards by which parcel data is collected. This is a very politically charged area. Revenue holds strong ownership of parcel information. In the past they have wanted compensation for access to the data. For GIAC to be successful in providing widespread access to parcel information, this must come from the Governor's Cabinet level. In the current state, it is not worth pursuing a standard where data will not be shared until the political will is there to make it happen.

Public Protection collects a huge amount of data, but they don't actually think about GIS: some of the GIAC's goals might be to show the usefulness of tying in this data to spatial systems.

## Going Forward: what GIAC needs

One standard we need and lack is the specification for hardware. ESRI pros need dual monitors, lots of graphics processing power, and most of them end up getting generic desktops. With the State providing required specifications, ESRI personnel might be able to get the hardware they need. Even in-house, there are people in charge of hardware who complain bitterly against anyone having more hardware than anyone else. They fail to see why and therefore they cause division and/or stonewall GIS/CADD personnel.

Two specifications have been written recently by the DGI for elevation/LIDAR data and aerial photography. Kent would like to bring these standards before the committee in future meetings, to be properly vetted. LIDAR is the use of laser pulses from above to collect extremely accurate and detailed information. Information collected by LIDAR can be useful to field biologists, archaeologists, and more because the accuracy is below two feet in precision.

We should have someone present on the current standards for the GIAC to review and either revise or "re-bless" (re-ratify?). Given that these standards (apart from LIDAR/aerial photography) are 5 years old or more, it would be useful to re-examine them and make sure they are up to date.

Ultimately, the GIAC wants to:

- Evaluate what we have
- Define our goals
- Plan the best way to reach those goals, including
- Setting standards that are in line with those goals

One possibility set as an example: Geodata must be submitted through one central site. This site provides the standards and validation. Information that clears this process/complies to the standards see their information added into the larger system. One site might make things easier, both to collect and to find later.

KSP has employees doing mapping. These people are not ADD employees or City/County employees. KYTC also has people doing this. As long as a person is trained enough to get the basic details they need, this may be a good way to share resources.

## Inconsistencies and Variation

While there are layers that are duplicated, is there any master list of all known layers and who owns them? Kim maintains a list of all layers and who owns them. The metadata provides this, but we also manually track with the master list. Some of this falls down to "what we don't know" and "what we do know, but is undocumented" (and thus ends up in the "Miscellaneous" category). Almost every agency has information that is undocumented and/or doesn't fit into our systems—surface mining and landfills are common examples. A lot of systems exist that are being backed up and being used, but because they're not documented enough to be part of the Enterprise repository, only limited parties can access it. Creating this metadata is not terribly hard or time-consuming; Kim mentions that DGI even offers free training. Based on FGDC standards, these methods then "snap together" with anyone else's data nationally who use the FGDC standards.

Granted, some data is only important to the agency collecting it and may not be useful anywhere else.

Then there are layers that aren't generally available. For example, pipeline information should be on a 'need to know' basis. Jon mentions the policy of "You can have it, unless we have some reason you

can't." This is a more open way of saying, "We'll share everything unless something in particular is a concern" (as opposed to "we only share what you ask for when you think to ask for it").

Real tax dollars are being spent inefficiently. People are being paid to collect data in a way that may not be useful or may already have been done or may better serve the County by being shared upwards to the people who provide funding for improvements. If Counties and Cities continue to see GIS as a cost sink, they will not understand how much this information contributes to programs that benefit them.

All of these entities have annual meetings where they can be approached and/or presented to.

Transportation has used SharePoint for collaboration for the past year and a half. They are rolling out the new version within the next couple of weeks. The plan is to open this up: Jon will create a workspace for GIAC. This workspace will contain all the links presented in the materials, in addition to discussion groups, calendars, tasks, and more. The GIAC can review documents, members, can post them in a color-coded way to make it easier to track ownership. In the long run, everyone being involved in the process can ensure that no one gets left out.

## Action Items:

- Kent will provide the GIAC with the current specifications for aerial photography and elevation/LIDAR data.
- Jon Clark will set up a SharePoint portal for the group
- Blake will confirm member information and distribute minutes for this kick-off meeting to all members and guest attendees.