

A Key to Government That Works

**State Geospatial Coordinating Board
As Created under Act 178**

Briefing by
PA Mapping and Geographic Information Consortium (PaMAGIC)
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State Geospatial Coordinating Board Formation Request

The use of digital mapping, geographic information systems (GIS), and geospatial technologies (hereinafter referred to as GIS) is ubiquitous among all levels of government, business, education, and non-profit organizations. The reason is that relationships among people, infrastructure, and natural systems are simply clearer when arrayed on maps, and management decisions are simpler when supported by reliable data attached to the map. The singular weakness in Pennsylvania GIS is that it depends on data and applications from all levels of government, but that analysis and sharing is typically uncoordinated, making complete data much less available to those who need it.

Pennsylvania took a major step toward “Government that Works” in the last days of 2014 with the passage of Act 178, creating the State Geospatial Coordinating Board (SGCB). It is an Advisory Board to the Governor supported by the Office of Administration, and “... *is established to provide advice and recommendations to the Governor and the citizens of this Commonwealth on geospatial issues, and provide uniform data standards, coordination and efficiency in geospatial policy and technology issues among Federal, State and local government agencies, academic institutions and the private sector.*” The rapid formation and thoughtful operation of the first SGCB will support efficiency and future-oriented thinking for the Commonwealth.

The PA Mapping and Geographic Information Consortium (PaMAGIC) has been a steadfast advocate for coordinated GIS since 1996, and during the last few legislative sessions coordinated advocacy among entities actively seeking passage. PaMAGIC and our advocacy partners are available to help the SGCB be effective as quickly as practical. To that end as well, this briefing contains the following sections:

- Coordinating Board Membership Roll and Status
- Inherent Values of GIS Coordination
- Current Opportunities Specific to Pennsylvania

We are prepared to facilitate formation and success of the Geospatial Coordinating Board in any manner useful to the Commonwealth. In particular we can provide both historical and technological perspective, contact information for other knowledgeable individuals, and ideas on the operations of the Board. Initial contacts from PaMAGIC are:

Eric Jespersen, President 2013-2015; ecj@epix.net and 717-475-7869

Dave Gilbert, SGCB Representative-designee, dgilbert@geodecisions.com and 814-360-4150

The two things we respectfully request of the Wolf Administration are:

1. Formation and initial meeting of the SGCB by May of 2015. *Act 178 took effect 60 days after passage and gubernatorial acceptance, and so became available for use on December 22, 2014.*
2. Expect and encourage intelligent work and positive results from the SGCB. *Advocates labored over 10 years to secure passage of legislation and are ready to serve the Commonwealth. The legislation also includes a sunset date of June 30, 2020 and the five years will pass quickly.*

Coordinating Board Membership Roll and Status

Nineteen (19) voting members:

Three members appointed by the Governor.

1. A county commissioner.
2. A member of the Pennsylvania Society of Land Surveyors.
3. An individual with expertise in data development and sharing.

Three members appointed by the President pro tempore of the Senate in consultation with the Majority and Minority Leaders of the Senate.

4. A representative of a municipal authority,
5. An elected local government official representing a rural community.
6. An elected local government official representing a suburban community.

Three members appointed by the Speaker of the House of Representatives in consultation with the Majority and Minority Leaders of the House of Representatives.

7. A local elected official representing an urban community.
8. An employee of a county emergency management agency.
9. An individual with expertise in geospatial technology.

10. The Secretary of Administration (OA) (or designee):
11. The Secretary of Environmental Protection (DEP) (or designee):
12. The Secretary of Conservation and Natural Resources (DCNR) (or designee):
13. The Director of the Emergency Management Agency (PEMA) (or designee):
14. The Secretary of Transportation (DOT) (or designee):
15. The Secretary of General Services (DGS) (or designee):
16. Designee of the County GIS Professionals Association of Pennsylvania (GIS Pros)
17. Designee of the Pennsylvania Mapping and Geographic Information Consortium (PaMAGIC)
18. Designee of the County Commissioners Association of PA (CCAP)
19. Designee of the Pennsylvania Chapter of the Management Association for Private Photogrammetric Surveyors (PA-MAPPS)

Eight (8) non-voting members:

1. The Commonwealth's mapping liaison from the United States Geological Survey (USGS).
2. Designee of the Pennsylvania One Call System (POCS).
3. The chairman of the Pennsylvania Public Utility Commission (PUC) (or designee).
4. Designee of the Geographic Information System Consortium of the Pennsylvania State System of Higher Education.
5. Designee of the Pennsylvania Municipal Authorities Association (PMAA)
6. Designee of the American Planning Association, Pennsylvania Chapter (APA-PA)
7. The Director of Pennsylvania Spatial Data Access (PASDA)
8. The Commissioner of the PA State Police (PSP) (or designee)

Note: Representatives shown in green are already identified, and those shown in red are in process of selection, and in blue potential selections for Executive and Legislative consideration are being compiled.

Inherent Values of GIS Coordination

The values described below clearly support “Government that Works”, and have the potential for positive impacts at every level of government in PA. The Commonwealth is the key for connecting local governments and citizens with regional and national opportunities; the makeup of the Coordinating Board reflects that importance with state predominating but county and local governments a strong second.

Efficiency - Geographic information is unique among information assets because many uses will focus on a single location or feature. A single water body may be of interest to one agency for its' flooding potential, to another agency as a public water supply, to another for fishing potential, and to another as part of a greenway. Each agency needs the same data, the accurate and up to date delineation of the stream feature. The best way to maintain the feature is to create it once and maintain it in a single system to support multiple uses. The most expensive way to maintain the feature is to have all potential users create their own version for their particular use, but that's how it is done for many data sets in PA. In most cases local government is ready and willing to share their GIS data with state and federal agencies only to find that no efficient mechanism exists to facilitate that sharing.

Enhanced decision-making - This benefit is as simple as the old saying, “a picture is worth a thousand words”, and the maps usually associated with GIS are particularly graphic. This particular aspect is the reason that state and local agencies already make the investment in GIS data discussed above, and shared data yields a more common operating picture among the various levels of government. Near real-time data (updated at least daily) exists at numerous local government levels and is used in local decision making, but much of that data is not available for state and federal agencies, so they make decisions based on GIS data which is a year or more old. Conversely, GIS data originated by some agencies resides in an information silo and is not easily disseminated to local government for their use.

Regulatory consistency - In current practice we often use different data at different levels of government to regulate the same feature. As an example, municipalities approve stormwater facilities with one set of data provided by developers, the EPA and academia estimate Chesapeake Bay loading with incomplete and gross-scale data, and DEP uses a collection of still different programmatic data. Furthermore, there are no current plans nor budget to base future assessments on uniform authoritative data.

In a positive but completely unpredicted example, the PAMAP program (2006-2008) provided a common topographic base map of surface conditions prior to the Marcellus Shale development, which also served as a common backdrop and geographic basis for natural gas developers, county emergency management departments, and regulatory staff at DEP and SRBC.

Accelerated advancement – When one agency or department succeeds with a new technology or application, others follow. This process is naturally accelerated when working in a collaborative environment where early adopters guide later entrants. The County GIS Professionals of PA regularly train each other at minimal or no cost to the trainees, and state agency specialists train each other across departments. Such cross-training could work between state and county in some cases, especially with regional staff of state agencies who work with county data.

Public Safety - Better decisions are made with a common operating picture built from complete, accurate and intelligent information. Much of the specific data needed is county-based – addresses, road names, offender registries, risk-assessment – but wholesale sharing is complicated by lack of standards and limited financial support to counties. The Emergency Operations Center at the new PEMA headquarters will not meet its potential in time of crises if operational data and applications do not easily flow from and to local governments and county EMA in daily interactions.

Current Opportunities Specific to Pennsylvania

Although the topics pertinent to the SGCB are numerous, PaMAGIC includes a number of topics that are either tractable within the first year or two, or urgent but will take a longer time in resolution. They are presented here in the order of time needed to make significant progress, quickest first.

Intergovernmental Data Exchange Agreements - Despite the disparate capabilities of the various local governments in PA there is a uniform willingness to share information that is paid for publicly and which would provide benefit when shared among governments. That willingness to share contrasts sharply with the seeming inability to create some common legal agreements for sharing; in some cases it has taken nine months for data-sharing agreement between the Commonwealth and a single county. In another case, over a year and a half have passed in pursuit of a simple data maintenance agreement between a federal agency and a state agency. There are enough precedents and examples to build upon such that getting data agreements among all state and county agencies is possible within a year.

Technical aspects of data-sharing are manageable as well. The Commonwealth has offered shared web-based services (addressing, access to contracted data) to any willing local government for many years. For county-to-state sharing, the South Central Task Force has an agreement and technology that allows web-access of all the data shared among its counties with any state agency that desires it. Similar access among nearly all counties is technologically possible within two years or less.

Digital Permit Data Integration- Much of our base mapping was created in the 1990's and is spatially incompatible with the modern imagery and contour data. Permit applications nowadays include high accuracy field standards and digital data, but agencies require paper maps, review the application, and dutifully file the maps without changing the digital base map. The technology exists to not only reference digital versions but to incorporate the data into an authoritative version of the base map.

The DEP Office of Oil and Gas Management is embarking on a limited trial in which gas well and access road permit data is supplied in a fixed digital format and in conformance with published standards. Ideally, the data will be incorporated into the permanent authoritative data, and every agency would have access to the same data. If successful, the trial should be rapidly expanded to accept the field study data from analysis of alternatives, including accurate stream and wetland limits, archeological sampling, habitat studies and more so that our mapping improves every day.

Flood Insurance Reform Impact Assessment - The National Flood Insurance Program is undergoing dramatic changes, and subsidized insurance is being phased out, and some drastic changes to individual policies are expected. Cumulative effects on whole neighborhoods or even towns could be severe. Complete analysis of probable changes to communities over the long run is only possible with data from public information at all levels of government and from private businesses. Although the SGCB's work would not be fruitful in resolving immediate crises for individuals, it is exactly the forum needed to aid decision making for the long run. Counties possess information about every assessed property within the floodplains such as the existence of floodable basements, whether it is commercial or residential, and its taxed value. Federal and state officials have the risk and claim history, flood hazard models, economic census, and more. This compartmentalization creates a situation in which analyzing the statewide impacts is nearly impossible without aggregating data from County government, regional economic development entities and banks, and there is no mechanism nor resources to do the aggregation.

Shared Imagery Acquisition - Statewide imagery is an example of a success in data efficiency; PAMAP was conceived in 2001 as a way to coordinate and consolidate mapping operations in the state across

levels of government, and successfully produced one full cycle of data between 2006 and 2008. That first modern base map of the Commonwealth included high-resolution aerial photography (orthoimagery) and LiDAR-derived elevation data (contours). PAMAP data significantly reduced redundant mapping by individual agencies and county governments, and resulted in considerable cost savings at all levels of government; the program had a budget line item for two years but is currently zeroed out. The County GIS Professionals have stated that shared data development and a program of predictable and periodic update to official imagery is a priority for the SGCB.

Next Generation 9-1-1 - GIS has become a core technology in the Public Safety realm. As an example of public expectations, Next Generation 9-1-1 (NG 9-1-1) has as a basic premise that any 'smart device' will be able to communicate bi-directionally with a PSAP (public safety answering point); this will absolutely require a robust and highly coordinated GIS initiative throughout the Commonwealth. NG 9-1-1 will necessarily build upon past projects within some regional emergency task forces, the wholesale sharing and use of the PAMAP imagery and LIDAR data, Wireless E911 funding of base data in rural Counties, GPS-guided dispatch of volunteer fire companies, and others. The clear principle is that overall coordination and state leadership in the acquisition, maintenance, and sharing of GIS data is critical for Public Safety at all levels of government in the Commonwealth. The concept of a Common Operating Picture is a fallacy without shared data and capabilities.

Integrated Water Data - Our ability to manage the water resource depends on our understanding of surface flow, groundwater, floodplains and wetlands, public water and wastewater systems, and storm water infrastructure - but we created separate maps and databases for each regulatory program in the era before GIS. We do not have a unified and accurate GIS that is designed to accommodate the federal, state and local government and private sector needs for the management, use, and conservation of our water resources. Happily, the actions needed to create unified data will make natural partnerships more obvious, and be a first step in creating them.

The State Water Plan completed in 2008 found a wealth of data we collect that cannot be readily incorporated or mapped, and determined that success in managing our water resource depends on our ability to discover and use that information. State Water Planning could be re-invigorated by SGCB focus on data integration and management.

Pipeline Mapping and Data Management - Data regarding pipelines is resident within many programs and agencies here in the Commonwealth, and there is no single repository for the data. The most recent official statewide map of interstate transmission was created by the DCNR Topographic and Geologic Survey in the 1980's, and it did not contain information on thousands of miles of legacy oil and gas gathering lines. Since the development of shale gas began, both transmission and gathering lines have proliferated, with many of the gathering lines carrying higher pressure than transmission lines. Permitting is divided among federal agencies, local conservation districts, and DEP, and the permanent mapping of pipelines is highly variable in intent and practice among them. The PUC has responsibility for public utilities and for pipeline operators' registry, but does not maintain much detailed information about pipeline locations. Rules requiring membership in the PA One Call System have not kept pace with the risk. Information about the network of pipes, including both modern and legacy systems, should be better known and maintained.