

DRAFT

Strategic Plan Draft
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EXECUTIVE SUMMARY

The Pennsylvania State Geospatial Coordinating Board (GeoBoard) was established in 2014 under Act 178 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 creation of the GeoBoard was in direct recognition of the importance of Geographic Information Systems (GIS) in understanding, managing, and governing in today's world. Emergency response, policing and safety, environmental protection, natural resource management, human services, infrastructure integrity, taxation, and many other sectors depend geospatial data to create informed decisions - they all depend on GIS.

How the GeoBoard Functions

The GeoBoard includes members from a broad section of interests, including Commonwealth agencies, professional associations, legislative representatives, and others (Appendix D). The GeoBoard leverages this diverse membership to take advantage of unique opportunities, opportunities which exist only because these members are working together. It provides a forum where the needs and opportunities of the GIS community can be openly discussed, developed, and acted upon. Additionally, the GeoBoard evaluates priorities and advocates for effective and efficient use of Pennsylvania's GIS resources.

Purpose of the GIS Strategic Plan

This Strategic Plan lays the foundation for the future of Pennsylvania's GIS environment through goals and objectives developed during the past year's planning process (Appendix A). The Plan details the current status of GIS including accomplishments, challenges, and opportunities that can be taken advantage of. Finally, the Plan guides the GIS community, collectively towards the future state of the Commonwealth's geospatial technologies.

Strategic Goals

1. Create a Sustainable Business Model
2. Facilitate the Development of Statewide Authoritative Datasets
3. Ensure and Promote Public Access to Geospatial Data and Services
4. Enhance Collaboration, Cooperation, and Coordination

INTRODUCTION

The Pennsylvania State Geospatial Coordinating Board (GeoBoard) was established in 2014 under Act 178 (Appendix B) 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.”

According to Act 178, the GeoBoard has the following powers and duties:

- 1. Recommend data development priorities and interoperability standards for data sharing across agencies and different units of government across this Commonwealth.*
- 2. Monitor national and state trends, identify issues of potential interest and concern to the Commonwealth and submit annual reports to the Governor and the General Assembly and other reports as necessary.*
- 3. Define and prioritize strategic opportunities where maps and spatial analysis activities could enhance the business of government and provide more cost-effective services to citizens. This may include recommendations of specific geospatial technology investments in the Commonwealth.*
- 4. Develop task forces as needed to formulate recommended positions or actions. The task force membership may be comprised of board members or designees appointed by the board. The board shall consider any task force recommendations at its next meeting.*

VISION STATEMENT

Through the work of the GeoBoard and its partners, geospatial activities throughout the Commonwealth will be enhanced through open communications, collaborative efforts, unified planning, and coordinated implementation, resulting in effective and efficient use of Pennsylvania’s GIS resources.

MISSION STATEMENT

The GeoBoard shall provide advice and recommendations to the Governor, the General Assembly, and the public on geospatial issues, uniform data standards, coordination and efficiency in geospatial policy, and technology across different sectors.

GEOBOARD LEADERSHIP TEAM

The Leadership Team is an unofficial title given to the collective group comprised of the GeoBoard Chair, Vice Chair, and all task force chairs (Appendix D). The Leadership Team strives to ensure GeoBoard operations comply with Act 178 intent and with Commonwealth requirements for advisory boards. Additionally, the Leadership Team acts as a focused communication platform where they engage in open dialogue, debate, and frequent interaction to advance the mission of the GeoBoard.

TASK FORCES

As identified in Act 178, under official duties and responsibilities, the GeoBoard may develop task forces as needed to formulate recommendations and perform actions. To date, three task forces have been established by the GeoBoard: Data Program Task Force, Governance Task Force, and Service Delivery Task Force. Members of each task force can be found in Appendix D

Data Program Task Force

Per the Data Program Task Force Charter ratified 3/7/2016 by the GeoBoard, the mission of the Data Program Task Force is to:

“The mission of the Data Program Task Force is to identify initiatives and approaches that remove barriers to sharing geospatial data across the commonwealth and promote cost-effective approaches to data sharing, driving operational efficiencies and value-add solutions.”

Governance Task Force

Per the Governance Task Force Charter ratified 3/7/2016 by the GeoBoard, the mission of the Governance Task Force is to:

“The mission of the Governance Task Force is to document the geospatial governance process in the Commonwealth (to include all governmental entities), establish a list of major priorities or initiatives to address the needs of the broader geospatial community, evaluate approaches to accomplishing initiatives within existing budget constraints, identify opportunities for collaboration to meet common objectives and coordinate activities across other geospatial governing bodies.”

Service Delivery Task Force

Per the Service Delivery Task Force Charter ratified 3/7/2016 by the GeoBoard, the mission of the Service Delivery Task Force is to:

“The mission of the Service Delivery Task Force is to evaluate how geospatial services are delivered today in the Commonwealth, evaluate how other states and counties deliver geospatial services and identify recommendations for how geospatial services should be delivered in the commonwealth to maximize investments.”

PENNSYLVANIA GIS OVERVIEW

Accomplishments

- Pennsylvania was one of the first four states in the US to develop and deploy a free public access GIS data clearinghouse – the Pennsylvania Spatial Data Access (PASDA). PASDA has operated uninterrupted for 21 years.

- Many Pennsylvania state agencies were early adopters of GIS technology and have highly advanced and innovative GIS architectures and services.
- Many local (county, municipal, and city) governments incorporate innovative and highly developed GIS data and services into their daily operations.
- Pennsylvania has a vigorous private sector GIS community consisting of a wide array of businesses and industries.
- Pennsylvania's academic institutions have sophisticated GIS education and research programs – advancing the science and training the next generation of GIS professionals.
- Nonprofit organizations, from watershed conservation to human services, are leveraging GIS technologies in their efforts. For example: Pennsylvania One Call employs GIS collaborative mapping daily to improve the safety of Pennsylvania's citizens and ensure the integrity of the Pennsylvania's underground infrastructure.
- Multiple professional organizations (PA County GIS Pros, PAMAGIC, etc.) within the Commonwealth have active and engaged GIS professionals dedicated to advancing Pennsylvania's GIS capabilities.
- The PAMAP program (2001-2008) resulted in the creation of invaluable ortho-imagery and topographic data such as LiDAR and associated products.
- In 2014 the Pennsylvania Legislature passed Act 178 establishing the Pennsylvania Geospatial Coordinating Board (GeoBoard).

Challenges

- Budget and governance issues in 2008 effectively eliminated the State's geospatial leadership and regressed sharing and collaboration of previous years. This elimination led to missed opportunities, redundant and inefficient data development, and disjointed advancement.
- While significant spatial data holdings exist, some core data layers are fragmented and lack defined stewardship and ownership.
- Key governance aspects are missing including sustainable funding, leadership and accountability, strategic investment and planning, and performance evaluation. These factors must be defined and mechanisms put in place to see them come to fruition.
- An organized and consistent outreach and awareness process must be implemented to ensure the value of collaborative and sustainable GIS investment and operations is recognized by decision makers.
- Effective long-term governance must include representation from, and shared decision making by: local, city, county, and state government representatives.
- Lack of dedicated and sustainable funding mechanism for the operation and oversight of the GeoBoard hinders progress

Opportunities

- The GeoBoard is committed to working with other organizations in support of their strategic goals and initiatives such as Pennsylvania Emergency Management Agency's (PEMA) strategic plan for Next Generation 911 (NG911), US CENSUS Bureau, Pennsylvania's local government goals, and others as they are developed.
- PEMA has completed a strategic plan for Next Generation 911. This initiative will provide a new foundation for building data, and collaborating across county, state, and federal governments, educational institutions, non-profits, and private entities.
- Next Generation 911 will require high accuracy, locally generated (county), data to be successful. This endeavor will require increased cooperation and data sharing across entities.
- Increasing amounts and frequency of data, also known as "Big Data" will require developers to have greater access to resources and infrastructure; this could encourage more collaborative approaches.
- Stakeholder needs and expectations are growing as is the interest in innovative and specific / niche services and applications to solve problems and respond to needs.
- Access to data is becoming increasingly important across broad user communities—from GIS professionals to citizens. Providing easy access to GIS data that meets the needs of these diverse communities offers opportunities to enhance and build on our current public data access infrastructure.
- With greater access to data and advanced technology there is a greater opportunity for accountability and transparency.
- Mobile and digital communications are becoming the operational norm. These platforms provide an opportunity to reach new audiences and develop more services that address changing social interaction patterns.
- Long-term budget constraints and fluctuations in funding are both a challenge and an opportunity to work more closely together and identify common needs. This will lead to greater inter-organizational cooperation where we can share responsibilities but also lessen costs and improve results.
- Advances in geospatial science provide tools and information to model and manage critical aspects of the natural environment throughout the Commonwealth such as floodplain management, invasive species impacts, conservation of our land, water, and air quality, etc.
- Advances in geospatial science provide tools and information to model and manage critical aspects of the human environment throughout the Commonwealth such as cultural appreciation and preservation, socio-economic research, economic strategizing, infrastructure asset and facility management, etc.

STRATEGIC PLAN

PURPOSE

The Commonwealth of Pennsylvania has never had a relevant, comprehensive, and inclusive GIS strategic plan. By creating this plan, the GeoBoard, and the Commonwealth's GIS community, intend to develop a collaborative, purposeful, and effective approach toward GIS that will benefit GIS stakeholders and all citizens of the Commonwealth. The purpose of this Plan is to position Pennsylvania to be more effective and efficient in its collective GIS of the future. Targets of this future state are:

- Geographic information is acknowledged as a public asset by a broader constituency.
- The Commonwealth's base layers are seamless, current, accurate, and freely accessible.
- Data is maintained over time and archived consistently for future use.
- Collaboration, cooperation, and coordination among organizations within Pennsylvania are the norm.
- Duplication of effort is effectively eliminated; data should be created once, maintained as necessary, and used many times.
- Resources are allocated to support GIS operations and projects across the Commonwealth in a sustainable, long lasting manner.
- Pennsylvania's GIS industry attracts and retains talent by fostering personal and professional growth through employment, academic research, education, and participation opportunities.
- All levels of government (federal, state, county, and local) as well as educational stakeholders, utilities, nonprofit organizations, and the private sector can be involved in planning, creating, distributing, funding, and enhancing the collective geospatial capabilities of the Commonwealth.

STRATEGIC GOALS

This plan represents the input acquired by the GeoBoard during an intense planning process (Appendix A). This input has been collected into four overarching strategic goals, goals designed to achieve the future vision of geospatial technologies in the Commonwealth. The GeoBoard task forces will be responsible for taking this Plan forward, continuing discussion, and collaboratively developing implementation details.

The four key strategic goals for the GeoBoard are:

1. Create a Sustainable Business Model

2. Facilitate the Development of Statewide Authoritative Datasets
3. Ensure and Promote Public Access to Geospatial Data and Services
4. Enhance Collaboration, Cooperation, and Coordination

Each strategic goal is further supported by actionable objectives based on input from the GIS community, research into the issue, and other relevant information.

Strategic Goal 1: Create a Sustainable Business Model

To foster an engaging and beneficial environment for stakeholders, the GeoBoard should create a sustainable business model that encourages growth, cooperation, and collaboration. This model must include opportunities for input from all stakeholder groups and allow the GeoBoard to conduct long term planning and strategizing.

Implementation Objectives

Sustainable Funding

Purpose: Sustainable funding for GIS in the Commonwealth allows for long term planning, cooperative initiatives, and the sharing of resources across organizations.

Approach: Work cooperatively with GeoBoard members and with external organizations to identify potential funding opportunities and communicated this information to the broader community.

Status: Not yet commenced

Entity: Governance Task Force

Address GIS Leadership

Purpose: This plan recognizes the need for committed GIS leadership. Many other states have addressed GIS leadership by creating the position of GIS Coordinator or Geographic Information Officer (GIO). This individual facilitates collaboration and cooperation across entities and serves to develop awareness and enhance communication in the state.

Approach: The GeoBoard will explore options and offer a leadership recommendation. Initial duties this leadership role would carry out include:

- Interface with the GeoBoard and support the implementation of the GeoBoard Strategic Plan goals and initiatives.
- Identify opportunities and present solutions that enhance coordination, collaboration, and cooperation.
- Facilitate communication across (and within) the Commonwealth's organizations.
- Coordinate with federal agencies, interstate entities, neighboring states, and private industry to strengthen Pennsylvania's GIS community.
- Promote awareness and education of GIS throughout the Commonwealth.
- Identify and communicate potential funding sources such as grants, private funding, pooled funding opportunities, etc. where applicable and permissible.

Status: Not yet commenced

Entity: GeoBoard Leadership Team

Sustainable Personnel

Purpose: Sustainability of GIS personnel in non-leadership positions throughout the state is pivotal to the success of Pennsylvania's GIS future.

Approach: Champion the importance of highly skilled GIS staff to the success of Pennsylvania's GIS future.

Status: Not yet commenced

Entity: Unidentified

Develop & Implement a GeoBoard Interaction Workflow

Purpose: The process of identifying and prioritizing the Pennsylvania GIS community's needs, challenges, opportunities, and risks is undefined. The GeoBoard requires mechanisms to improve its interaction capabilities.

Approach: Develop a process facilitating communication from the GIS community to the GeoBoard.

Status: Not yet commenced

Entity: Unidentified

Sustainability of the GeoBoard

Purpose: It is important to periodically review the GeoBoard to ensure current functions are necessary, it is fulfilling its mission, and its operations are optimized.

Approach: A temporary subcommittee will be created to conduct an evaluation of the GeoBoard. The subcommittee will follow review guidelines to ensure all aspects of the GeoBoard are evaluated and optimized to be the most effective and efficient they can be.

Status: Not yet commenced

Entity: GeoBoard Review Subcommittee (*temporary subcommittee to be dissolved after completion*)

Strategic Goal 2: Facilitate the Development of Statewide Authoritative Datasets

The GeoBoard will support the development, promotion, and adoption of statewide authoritative datasets to create a seamless statewide base map.

Implementation Objectives

Establish and Develop Statewide Basemap Data Layers

Purpose: Basemap data layers are key building blocks supporting the Commonwealth's GIS data infrastructure. Identifying authoritative data or facilitating their development and then encouraging their use will simplify collaboration, reduce costs, and improve decision making across Pennsylvania.

Approach: Identify and define the key basemap layers for Pennsylvania

Status: Underway – 12 basemap layers have been defined for the Commonwealth; development in progress

Entity: Data Program Task Force

Define Data Authors & Promote Effective Data Stewardship

Purpose: Sound, defensible decisions depend on accurate information and data. Proper data stewardship ensures data integrity is maintained as it is created, updated, and enhanced.

Approach: Establish responsibility for production and ongoing maintenance of GIS data. For each basemap theme, define standards and guidelines for accuracy, precision, security, update frequency, and archiving.

Status: Not yet commenced

Entity: Data Program Task Force, Governance Task Force

Establish & Implement Strategy for Recurring Statewide Remotely Sensed Data

Purpose: Remotely sensed data (which includes a vast array of products) is vital to GIS data development. Additionally, remotely sensed data is directly used for a vast array of purposes including emergency management, public safety, economic development, etc. A recent survey of GIS practitioners identified a lack of current ortho-photography as the largest data gap.

Approach: With the impending implementation of Next Generation 911 (NG911), PEMA has developed a NG911 Strategic Plan. Within this plan, PEMA has identified a pressing need to acquire remotely sensed data, specifically, ortho-photography, in 2018 and beyond. The GeoBoard will collaborate with PEMA and its stakeholders to realize the plan set forth and expand it beyond basic ortho-photography.

Status: In progress

Entity: Data Program Task Force, PEMA, PA GIS Pros

Strategic Goal 3: Expand Access to Geospatial Data and Services

Data is an asset, a driver of economic development, a vital decision making tool, and a historical record. Access to geospatial data is, therefore, incredibly valuable to Pennsylvania's citizens. The GeoBoard should develop and advocate policies to ensure access is available. Evaluation of PA's current service delivery environment, review external approaches, identification of service delivery best practices must occur.

Implementation Objectives

Ensure Effective Deployment of Geospatial Services

Purpose: Geospatial services are critical to developing an effective GIS community. Easily accessible GIS data and services can be used to support many important functions in the Commonwealth.

Approach: Explore, facilitate, and promote awareness of the applications and services available to the Commonwealth's citizens, businesses, and governments.

Status: Not yet commenced
Entity: Service Delivery Task Force

Enhance the existing Pennsylvania Spatial Data Access (PASDA) Infrastructure

Purpose: A robust data sharing and access infrastructure enables data discovery and retrieval, maintains source data quality and authenticity, and adds value to the GIS community. PASDA has served as Pennsylvania's free public access GIS data portal for over 20 years and is positioned to elevate its operation.

Approach: Form a subcommittee to solicit ideas from PASDA's stakeholder groups (operators, users, and contributors to PASDA) to identify additional opportunities for PASDA.

Status: In process
Entity: Service Delivery Task Force, PASDA

Explore Strategic / Business Driven Applications (Specialized & Complex)

Purpose: Applications and services can be developed to create an environment for collaborative development, analysis, and data enhancement – providing a significant opportunity for collaboration and cooperation

Approach: Engage service providers to find common goals and identify areas of collaboration in service development to drive efficiencies.

Status: Not yet commenced
Entity: Service Delivery Task Force

Define a Procedure and Expand GIS Data Archiving

Purpose: Data is an asset that belongs to both current and future generations of Pennsylvania's citizens. Managing and curating data is a long term and important goal that saves money, time, and effort and preserves our economic investment.

Approach: Adopt a data archiving processes based on best practices and available technology. This process will be utilized by PASDA to ensure the long term preservation of GIS data in the Commonwealth. In addition, PASDA will engage GIS data providers in this process including state, regional, and local government agencies as well as other GIS data stakeholders to safeguard robust historic datasets for the Commonwealth's future generations.

Status: In process

Entity: PASDA, Service Delivery Task Force

Strategic Goal 4: Enhance Collaboration, Cooperation, and Coordination

Collaboration, cooperation, and coordination are the keys to an effective and robust GIS infrastructure and community. Effective regional and statewide communication will act as the vehicle for which these three notions are accomplished, resulting in reduced redundant GIS efforts within the Commonwealth, saving Pennsylvanians' time and money.

Implementation Objectives

Promote Data Sharing Across Entities

Purpose: Data sharing across entities is paramount to successfully reducing redundant efforts.

Approach: Develop a model geospatial data sharing agreement that can be used across Commonwealth entities.

Status: In process

Entity: Data Program Task Force, PA Office of Administration

Enhance GeoBoard Communications

Purpose: Communicate the GeoBoard's activities in an efficient, consistent, and understandable manner. A standardized communications process will guarantee reliable and accurate information is being conveyed, ensuring credibility is maintained.

Approach: Develop formal templates and standardized communication models for a varied audience. Tailor communications to the specific audiences need and level of understanding.

Status: In process

Entity: GeoBoard Leadership Team, GeoBoard General Membership

Increase Direct Outreach & Engagement with the Community

Purpose: Direct outreach and engagement with stakeholders is vital to the success of the GeoBoard and fosters a collaborative environment of open communication.

Approach: Members of the GeoBoard will be active participants in the GIS community - attending and presenting at conferences and meetings across the Commonwealth. It is recommended that the GeoBoard create a group that will focus on enhancing our outreach and engagement with stakeholders.

Status: In process

Entity: GeoBoard Leadership Team, GeoBoard General Membership, Task Force Members

Enhance Involvement of GIS Community in GeoBoard Initiatives

Purpose: The GeoBoard and associated Task Forces / Subcommittees are all operated on a strictly volunteer basis. Recognizing individual time is limited and turnover is inevitable, the GeoBoard can mitigate continuity disruptions by actively and continuously recruiting new participants.

Approach: Develop measures to encourage the GIS community to become more active in GeoBoard activities. Offer a variety of participatory activities and tasks, estimate time commitments, and finite service durations primarily in Task Force activities.

Status: In process

Entity: GeoBoard Leadership Team, Governance Task Force

IMPLEMENTATION

IMPLEMENTATION PLAN

Complementing documents called Implementation Plans will be developed to detail individual tasks necessary to successfully achieve a particular objective (as outlined above). Implementation Plan items, contributing parties, and completion timeframes will be developed jointly by all task forces and input to a standardized template.

ENSURING SUCCESS & PROGRESS

Measuring Success

Every strategic plan requires careful monitoring and updating to determine if the objectives set forth are being advanced successfully. This monitoring is often done through a set of metrics applied to determine the success of each goal.

PA State GIS Strategic Plan Implementation Metrics

Metrics for this plan will be developed and monitored at the Implementation Plan level. These metrics will consist of measurements to determine if a task has been successful. These task success / failures will then roll up to the objective level (*i.e.* once all tasks have been successful, the objective is a success), and then an additional roll up from the objective level to the goal level will determine if a strategic goal has been met.

Ensuring Continued Progress

To achieve the future state envisioned by the Pennsylvania State Geospatial Coordinating Board, continued progress must occur. Neither regression nor stagnation is an option in Pennsylvania's GIS Community, and likewise they are not an option for this Strategic Plan.

PA State GIS Strategic Plan Continued Progress

Sustained success of the Strategic Plan requires the plan be flexible and accommodating to future GIS circumstances and developments within the Commonwealth. To ensure this flexibility occurs, the Plan shall be reviewed and updated on a consistent and continuing basis in an organized and systematic manner. Such systematic review will guarantee a consistent product is generated and progresses alongside Pennsylvania's GIS development.

Strategic Plan Review and Update

Purpose: The Strategic Plan is written as a living document, created to adapt to the changing situations and ensure progress is maintained throughout the entirety of its life. In order to

ensure these changing situations are reflected in the Strategic Plan, a periodic review must be conducted.

Approach: Systematic review of this Strategic Plan shall be undertaken to ensure goals & objectives are progressing and/or being met as designed, create future goals & objectives, account for unforeseen circumstances and developments, capture changes in GIS opportunities & challenges, evaluate whether the Plan is meeting the needs of the collective GIS community in Pennsylvania, and so on.

Timeline: The review & update period shall occur biennially, commencing immediately following the 4th quarter PA State Geospatial Coordinating Board on even number years and continue until the 1st quarter PA State GeoBoard Meeting – where the updated Plan shall be voted for acceptance (Figure ZZZ).

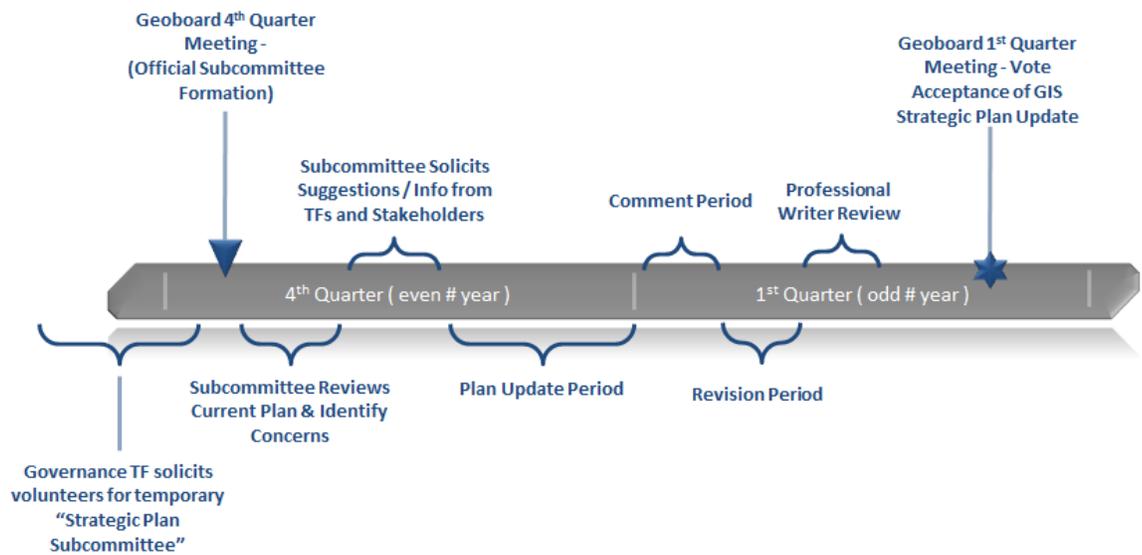


Figure ZZZ: Timeline of the Strategic Plan Review and Update Process

Entity: Strategic Plan Subcommittee – The Strategic Plan Subcommittee shall be formed by and fall under the guidance of the Governance Task Force, but be comprised of members representing all GeoBoard Task Forces active at the time of review as well as the GeoBoard Leadership Team.

Final Conclusions

This Plan lays out a conceptual map to Pennsylvania's GIS future. Successful implementation of this plan will require hard work and dedicated resources. New levels of cooperation, collaboration, and coordination amongst entities must be attained. Once implemented, the presented strategies should yield a long term sustainable GIS environment for the Commonwealth, and propel Pennsylvania to the forefront of the national GIS community.

Appendix A

The Planning Process

The strategic planning process, which culminated in this plan, was initiated in the summer of 2016. The planning process activities spanned numerous meetings, visioning sessions, surveys, and assessments. Each of these activities is described in more detail below:

Planning Process Activities

Community Input Sessions at the 2016 PA GIS Conference

Purpose: The GeoBoard wanted to provide an opportunity for attendees to interact with the (recently formed) board members in person to ask questions, voice concerns, and provide input.

Approach: Leadership team of the GeoBoard presented as the opening keynote speakers for the conference. Interactions occurred during this session (Q&A), as well as immediately after the session in a more information timeframe. Additionally, a separate session with all present members of the GeoBoard was held, which was open to the public.

Timeline: 2016 PA GIS Conference – held May 2016

Entity: GeoBoard Leadership Team, GeoBoard General Membership

Online Stakeholder Survey

Purpose: GeoBoard required input from organizations in the state in order to identify key objectives that the GeoBoard should include in its strategic plan.

Approach: An assessment of current services across PA was completed as part of the GIS survey in August of 2016. This survey addressed issues such as service providers, data consumers, etc. The over 200 respondents included individuals from state, local, and federal agencies, higher education, NGOs, and the private sector.

Timeline: August 2016

Entity: GeoBoard General Membership, Commonwealth's GIS Community

Individual and Joint Task Force Planning Sessions

Purpose: Needed to identify critical GIS Community needs and undertake research on how other government organizations are addressing these needs. Issues researched included state-wide data management and sharing, enterprise service delivery models, and comprehensive governance models.

Approach: The GeoBoard Task Forces met numerous times individually to gather the specific needs for their Task Force. After needs were hashed out individually, Joint Task Force meetings were held to conflate and consolidate similar the individual Task Force session results.

Timeline: June 2016 – May 2017

Entity: GeoBoard General Membership, GeoBoard Task Forces

Assessment of the State of GIS in PA

Purpose: Planning process showed the GeoBoard needed a wholesale evaluation of the state of GIS in Pennsylvania. This evaluation sought information on the following: precedent GIS collaboration efforts, spatial data availability and management, existing service delivery models, precedent GIS governance models, and conclusions noting gaps and pertinent needs to attain a better future state of GIS.

Approach: The GeoBoard leveraged pre-existing information as well as sent out survey notices to all stakeholders identified. Respondents included individuals from state, local, and federal agencies, higher education, NGOs, and the private sector.

Timeline: November 2016 – January 2017

Entity: GeoBoard General Membership, Commonwealth's GIS Stakeholders

Best Management Assessment

Purpose: To ensure Pennsylvania was proceeding in the best direction possible, a review of other, similar, state approaches were explored to obtain best practices for implementation of a GeoBoard and its activities.

Approach: A team of researchers was identified and reviewed other GIS setups, services, production, and set up meetings/discussions with state GIOs and coordinators. In addition, local government services were examined. Best practices were identified and included approaches from Indiana, New York, Ohio, Virginia, and Massachusetts. These included services such as the development of a statewide municipal boundary data set and map service, a statewide building data set and map services, remotely sensed imagery data development and map services.

Timeline: June 2016 – May 2017

Entity: GeoBoard Task Forces

Visioning Sessions

Purpose: To assess current state of GIS in PA and discuss vision and common goals for the GeoBoard and consolidate future state goals to create basis for a strategic plan.

Approach: The GeoBoard Task Forces and GeoDecisions met twice – once in December 2016 and again in January 2017. These meetings included opportunities for feedback from the Task Force members as well as visioning exercises that helped to identify goals related to basemap development, delivery of services, and long term strategic direction.

Timeline: December 2016 – January 2017

Entity: Geoboard Task Forces, GeoDecisions

Appendix B

Act 178

ADMINISTRATIVE CODE OF 1929 - STATE GEOSPATIAL COORDINATING
BOARD

Act of Oct. 22, 2014, P.L. 2881, No. 178 Cl. 71
Session of 2014
No. 2014-178

SB 771

AN ACT

Amending the act of April 9, 1929 (P.L.177, No.175), entitled "An act providing for and reorganizing the conduct of the executive and administrative work of the Commonwealth by the Executive Department thereof and the administrative departments, boards, commissions, and officers thereof, including the boards of trustees of State Normal Schools, or Teachers Colleges; abolishing, creating, reorganizing or authorizing the reorganization of certain administrative departments, boards, and commissions; defining the powers and duties of the Governor and other executive and administrative officers, and of the several administrative departments, boards, commissions, and officers; fixing the salaries of the Governor, Lieutenant Governor, and certain other executive and administrative officers; providing for the appointment of certain administrative officers, and of all deputies and other assistants and employes in certain departments, boards, and commissions; and prescribing the manner in which the number and compensation of the deputies and all other assistants and employes of certain departments, boards and commissions shall be determined," providing for the State Geospatial Coordinating Board.

The General Assembly of the Commonwealth of Pennsylvania hereby enacts as follows:

Section 1. The act of April 9, 1929 (P.L.177, No.175), known as The Administrative Code of 1929, is amended by adding a section to read:

Section 432.1. State Geospatial Coordinating Board.--

(a) There is established a State Geospatial Coordinating Board within the Governor's Office of Administration. The board 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.

(b) (1) The State Geospatial Coordinating Board shall consist of the following members:

(i) The Secretary of Administration or a designee.

(ii) The Secretary of Environmental Protection or a designee.

(iii) The Secretary of Conservation and Natural Resources or a designee.

(iv) The Director of the Pennsylvania Emergency Management Agency, or its successor agency, or a designee.

(v) The Secretary of Transportation or a designee.

(vi) The Secretary of General Services or a designee.

(vii) Three members appointed by the President pro tempore of the Senate in consultation with the Majority Leader and Minority Leader of the Senate. One member shall be a representative of a municipal authority. One member shall be an elected local government official representing a rural community. One member shall be an elected local government official representing a suburban community.

(viii) Three members appointed by the Speaker of the House of Representatives in consultation with the Majority Leader and Minority Leader of the House of Representatives. One member shall be a local elected official representing an urban community. One member shall be an employe of a county emergency management agency. One member shall be an individual with expertise in geospatial technology.

(ix) Three members appointed by the Governor. One member shall be a county commissioner. One member shall be a member of the Pennsylvania Society of Land Surveyors. One member shall be an individual with expertise in data development and sharing.

(x) One member designated by the County Geographic Information Systems Professionals Association of Pennsylvania.

(xi) One member designated by the Pennsylvania Mapping and Geographic Information Consortium.

(xii) One member designated by the County Commissioners Association of Pennsylvania.

(xiii) One member designated by the Pennsylvania Chapter of the Management Association for Private Photogrammetric Surveyors.

(2) The members of the board shall include persons knowledgeable in the fields related to geographic information systems, including geospatial technology, data development, architecture standards, data sharing, county government, local government, municipal planning or municipal authorities. The appointees shall serve at the pleasure of the appointing authority.

(c) The board shall also include the following nonvoting ex officio members or their designees, who shall have all the rights of other members, except for voting:

(1) The Commonwealth's mapping liaison from the United States Geological Survey.

(2) One member designated by the Pennsylvania One Call System.

(3) The chairman of the Pennsylvania Public Utility Commission or a designee.

(4) One member designated by The Geographic Information System Consortium of the Pennsylvania State System of Higher Education.

(5) One member designated by the Pennsylvania Municipal Authorities Association.

(6) One member designated by the American Planning Association, Pennsylvania Chapter.

(7) The director of Pennsylvania Spatial Data Access.

(8) The Commissioner of Pennsylvania State Police or a designee.

(d) The terms of office of members representing State agencies shall coincide with the term of the Governor. In case of a vacancy, the Governor shall make an appointment for the unexpired portion of the term. An organizational designee shall serve a term of three years. In the case of a vacancy, the appropriate organization shall provide a designee for the unexpired portion of the term. The replacement council member shall serve until an alternate designee is duly appointed by the appropriate organization for the following term.

(e) The Governor shall designate the chairperson and vice-chairperson of the board from among the members of the board, other than the ex officio members. The board shall meet not less than four times yearly. Additional meetings shall be at the discretion of the chairperson. Ten members of the board shall constitute a quorum.

(f) The members of the board shall serve without compensation. The board may, with the approval of the Governor, appoint and fix the compensation of an executive director who shall be technically qualified for the duties of the office and who shall act as secretary of the board and conduct the work of the board under its supervision.

(g) From funds appropriated for the purposes of this subsection or to the Office of Administration, the board may employ and fix the compensation of such experts, stenographers and assistants as necessary to carry out the work on the board. The board shall make a diligent effort to enlist voluntary assistance as may be available from citizens, research

organizations and other agencies in this Commonwealth or elsewhere, generally recognized as qualified to aid the board.

(h) The board shall have the following powers and duties:

(1) Recommend data development priorities and interoperability standards for data sharing across agencies and different units of government across this Commonwealth.

(2) Monitor national and State trends, identify issues of potential interest and concern to the Commonwealth and submit annual reports to the Governor and the General Assembly and other reports as necessary.

(3) Define and prioritize strategic opportunities where maps and spatial analysis activities could enhance the business of government and provide more cost-effective services to citizens. This paragraph may include recommendations of specific geospatial technology investments in this Commonwealth.

(4) Develop task forces as needed to formulate recommended positions or actions. The task force membership may be comprised of board members or designees appointed by the board. The board shall consider any task force recommendations at its next meeting.

(i) The Office of Administration shall provide administrative assistance to the board and may provide other assistance to the board upon recommendation of the chairperson, if sufficient Commonwealth resources exist.

(j) This section shall expire June 30, 2020.

Section 2. This act shall take effect in 60 days.

APPROVED--The 22nd day of October, A.D. 2014.

TOM CORBETT

Appendix C

Pennsylvania Geospatial Coordinating Board Members

Voting Members

| ORGANIZATIONAL MEMBER | NAMED REPRESENTATIVE | FORMAL REPRESENTATIVE DESIGNEE(S) |
|---|---|--|
| Secretary of Administration | Sharon Minnich | John MacMillan |
| Secretary of Environmental Protection | Patrick McDonnell | Sean Crager |
| Secretary Conservation and Natural Resources | Cindy Adams Dunn | Gail Blackmer |
| Director of Pennsylvania Emergency Management Agency | Richard Flinn, Jr. | Jeffrey Thomas |
| Secretary of Transportation | Leslie Richards | Frank DeSendi Laine Heltebride |
| Secretary of General Services | Curtis Topper | Matthew Bemberick |
| SENATE APPOINTEE: Municipal Authority | Dan Ramer | |
| SENATE APPOINTEE: Elected Local Government Official - Rural Community | William Hunt II | |
| SENATE APPOINTEE: Elected Local Government Official – Suburban Community | | |
| HOUSE APPOINTEE: Elected Local Government Official – Urban Community | | |
| HOUSE APPOINTEE: Employee of County Emergency Management Agency | Phil Colvin (County of Lancaster) | Glenn Mohler (County of Lancaster) |
| HOUSE APPOINTEE: Individual with Expertise in Geospatial Technology | | |
| GOVERNOR APPOINTEE: County Commissioner | Kathi Cozzone (County of Chester) | |
| GOVERNOR APPOINTEE: Pennsylvania Society of Land Surveyors (PSLS) | Michael D. Kreiger | Matthew Warner (Herbert, Rowland, & Grubic Inc) |
| GOVERNOR APPOINTEE: Individual with Expertise in Data Development and Sharing | Kenneth Juengling (PA Turnpike Commission) | |

Appendix D

Leadership Team & GeoBoard Task Force Members

Leadership Team

| NAME | ORGANIZATION | POSITION |
|-----------------|-----------------------------|--|
| John MacMillan | PA Office of Administration | Geoboard Chair |
| Sean Crager | PA Office of Administration | Geoboard Vice Chair Data Program TF Chair |
| Kevin M Eaton | County of Franklin | Governance TF Chair |
| Laura Simonetti | County of Mifflin | Service Delivery TF Chair |

Data Program Task Force

| NAME | ORGANIZATION | POSITION |
|------------------|-----------------------------|---------------------|
| Sean Crager | PA Office of Administration | Chair |
| | | Vice Chair |
| Andrew Shears | Mansfield University | Contributing Member |
| Barry Hutchins | County of Lycoming | Contributing Member |
| Clyde Troutman | | Contributing Member |
| Craig Neidig | USGS | Contributing Member |
| Dan Ramer | | Contributing Member |
| David Gilbert | PA MAGIC | Contributing Member |
| Eric Jespersen | PA MAGIC | Contributing Member |
| Howard Hodder | PA MAPPS | Contributing Member |
| Justin Klos | | Contributing Member |
| Justin Smith | County of Cumberland | Contributing Member |
| Ken Juengling | PA Turnpike Commission | Contributing Member |
| Matthew Warner | PSLS | Contributing Member |
| Maurie Kelly | PASDA | Contributing Member |
| Michael Shillenn | | Contributing Member |
| Patrick McKinney | County of Cumberland | Contributing Member |

| | | |
|------------------|------------------------|---------------------|
| Paul DeBarry | | Contributing Member |
| Brett B Schmid | | Contributing Member |
| Scott Hoffman | USGS | Contributing Member |
| Stephen Kocsis | County of Cambria | Contributing Member |
| Carrie Tropasso | PA DEP | Contributing Member |
| Ty Richins | PA Turnpike Commission | Contributing Member |
| William Hunt III | County of Potter | Contributing Member |

Governance Task Force

| NAME | ORGANIZATION | POSITION |
|-------------------|------------------------------|---------------------|
| Kevin M Eaton | County of Franklin | Chair |
| | | Vice Chair |
| Austin Bradley | PA Dept. of Agriculture | Contributing Member |
| Damon Anderson | Public Utilities Commission | Contributing Member |
| Eric Jespersen | PA MAGIC | Contributing Member |
| Frank M Desendi | PennDOT | Contributing Member |
| James D Ritzman | PennDOT | Contributing Member |
| Jeff Boyle | PEMA | Contributing Member |
| Jesse Suders | McCormick Taylor, Inc. | Contributing Member |
| Kathi Cozzone | County of Chester | Contributing Member |
| Matthew Bembenick | PA Dept. of General Services | Contributing Member |
| Maurie C Kelly | PASDA | Contributing Member |
| Mike Bialousz | ESRI | Contributing Member |
| Paul Metro | Public Utilities Commission | Contributing Member |
| Rita Reynolds | CCAP | Contributing Member |
| Timothy Schock | PA Data Center | Contributing Member |

Service Delivery Task Force

| NAME | ORGANIZATION | POSITION |
|-----------------|---------------------|-----------------|
| Laura Simonetti | County of Mifflin | Chair |
| | | Vice Chair |

| | | |
|----------------|--|---------------------|
| Adam Repsher | PA State Police | Contributing Member |
| Barry Hutchins | County of Lycoming | Contributing Member |
| Craig Thomas | Chester County Water Resources Authority | Contributing Member |
| Erick Coolidge | County of Tioga | Contributing Member |
| Jeffrey Thomas | PEMA | Contributing Member |
| Ken Juengling | PA Turnpike Commission | Contributing Member |
| Mary Fulton | PA Office of Administration | Contributing Member |
| Maurie Kelly | PASDA | Contributing Member |
| Steve Kocsis | County of Cambria | Contributing Member |

Appendix E

Definitions and Terms

| | |
|-------------------------------|---|
| Act 178 | Legislation which enables the GeoBoard creation as enacted in 2014 via amendment to the Administrative Code of 1929 (Appendix B) |
| Agency | A division within the organizational structure of Pennsylvania's State Government |
| Authoritative data / datasets | Data recognized to be the most accurate and precise data representing true conditions in the real world; supplants all other similar datasets |
| Base layer(s) | A consistent set of ubiquitous geospatial data that can be used collectively and is too costly to duplicate among various levels of government and the private sector |
| Basemap | The combination of base layers in a map format to create a consistent foundation of data and symbolic representation |
| Business Model | A design for the successful operation of GIS in the State which identifies funding sources, stakeholders, customer base, products, and details of service |
| Commonwealth | The geographic expanse of Pennsylvania |
| Data author | Organization / entity / individual who is responsible for creating and maintaining the data in its original form; where the data originates |
| Data Stewardship | Organization / entity / individual who is responsible for managing, combining, and leveraging geospatial data for a particular purpose |
| GIS | Abbreviation for Geographic Information Systems; a term that refers to the collective geographic data, services, architecture, and software as a holistic system |
| GIS Community | The stakeholders (both organizations and people) interested in, and leveraging, GIS within the Commonwealth |
| GIS Professionals | Specifically refers to the persons employed in a GIS field |
| GeoBoard | Abbreviation for the Pennsylvania State Geospatial Coordinating Board |
| Next Generation 911 (NG911) | Nationwide initiative which will switch the manner of which 911 information is obtained and located from current methodology (telephone companies) to GIS based location identification |

| | |
|----------------------|--|
| Ortho-imagery | Remotely sensed data specifically imagery from the orthogonal (top down) view; typically refers to 3 band products |
| PA County GIS Pros | A GIS centric organization for Pennsylvania Counties to provide opportunities for professional development, facilitate the sharing and coordinating of geospatial resources; and assist and support counties' geospatial initiatives |
| PAMAGIC | Pennsylvania Mapping and Geographic Information Consortium (PAMAGIC) is a not-for-profit organization that provides leadership and guidance in the establishment of (GIS) throughout the Commonwealth of Pennsylvania. |
| PASDA | Pennsylvania Spatial Data Access; organization serving as Pennsylvania's free public access GIS data portal / clearinghouse |
| Remotely sensed data | The term used to refer to collection of data obtained via remote sensing technology to include products such as: ortho-imagery, LiDAR, oblique imagery, infrared imagery, etc. |
| Seamless | In terms of GIS this refers to data which has no interruptions at administrative boundaries (where data authors differ) and all edges are matched |
| Services | A GIS resource (data, map, etc.) that is typically contained within a developed application making it easily accessible and - services range from complex integrated applications to individual resources access points to fit a specific need |
| Stakeholder(s) | Organizations and people with a vested interest in GIS within the Commonwealth |
| State Agencies | The collective agencies of the Pennsylvania State Government. |