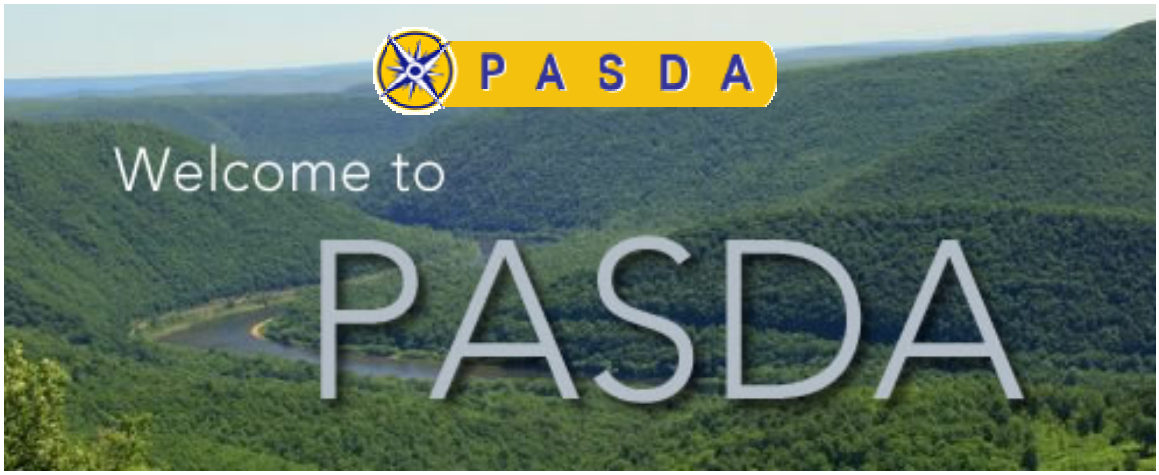
FY 2008-2009
Annual Summary Report of Activities

Pennsylvania Spatial Data Access

The Public Geospatial Data Clearinghouse for the Commonwealth of Pennsylvania



Submitted by

Maurie Caitlin Kelly, Ryan Baxter, James Spayd, Scott Dane, and Wayne Myers

Penn State Institute of Energy and the Environment

The Pennsylvania State University

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Introduction

Pennsylvania Spatial Data Access (PASDA), the public geospatial data clearinghouse for the Commonwealth of Pennsylvania marked its tenth year in 2006. PASDA, which has grown from a small website offering 35 data sets in 1996 to the expansive user centered data clearinghouse that it is today, has become a staple of the GIS community in Pennsylvania. Users come from a broad spectrum of organizations and backgrounds, from teachers and citizens to businesses and government agencies, PASDA provides free access to data, applications, and customization tools to meet the needs of every user. PASDA was developed by the Pennsylvania State University as a service to the citizens, governments, and businesses of the Commonwealth. PASDA is a cooperative project of the Governor's Office of Administration, Office for Information Technology, Geospatial Technologies Office and Penn State Institutes for Energy and the Environment of the Pennsylvania State University. Funding is provided by the Pennsylvania Office for Information Technology, Geospatial Technologies Office. The Pennsylvania State University provides additional substantial support to PASDA for system administration, database technologies administration, and infrastructure. PASDA has served for the past twelve years as the Commonwealth's node on the National Spatial Data Infrastructure (NSDI), Geospatial One Stop, and the National Biological Information Infrastructure.

About PASDA

Pennsylvania Spatial Data Access (PASDA) is Pennsylvania's official public access geospatial information clearinghouse.

PASDA was developed as a research and outreach program by the Pennsylvania State University as a service to the citizens, governments, and businesses of the Commonwealth. PASDA is a cooperative project of the Governor's Office of Administration, Office for Information Technology, Geospatial Technologies Office and Penn State Institutes of Energy and the Environment of the Pennsylvania State University. Funding and support is provided by the Pennsylvania Office for Information Technology, Geospatial Technologies Office.

In addition, Penn State University provides substantial support to the PASDA program through contributions such as system administration, database administration support, and infrastructure. Penn State partners include Institutes of Energy and the Environment, the Center for Environmental Informatics, and the College of Earth and Mineral Sciences. PASDA has received additional financial support via successful grants through Penn State Institutes of Energy and the Environment from the Federal Geographic Data Committee CAP and Don't Duck Metadata programs on the following projects: the Pennsylvania Watershed Atlas, Pennsylvania Framework Data: A Local Approach (with PAMAGIC), and Conservation & Watershed Organization Metadata Outreach Project. In addition, PASDA has received financial support from the US Geological Survey National Biological Information Infrastructure, the US Department of Agriculture Geospatial Innovations in America initiative, and the Penn State GIS Council.

In addition to those listed above, contributing partners throughout the twelve years of the program include the College of Agricultural Sciences and the E-Education Institute. PASDA supports cooperation and collaboration across state and local boundaries by serving as the Commonwealth's node on the National Spatial Data Infrastructure (NSDI), Geospatial One Stop, and the National Biological Information Infrastructure.

Our Purpose

PASDA was developed in 1996 by the Pennsylvania State University and has served as the clearinghouse node for Pennsylvania for the past twelve years.

The purpose of Pennsylvania Spatial Data Access (PASDA) is to serve as a comprehensive geospatial data digital library by providing free, universal access to geospatial data and information by, for, and about the Commonwealth of Pennsylvania.

The Keystones of PASDA

The success of PASDA is based on a long-term vision that incorporates the ideas of free access to data, outreach, and community service. The keystones in the success of the program are:

Collaboration--PASDA understands that collaboration among the geospatial community benefits everyone in the Commonwealth. Collaboration saves money, time, and makes the most of the limited resources of data providers.

Cooperation--PASDA cooperates with all levels of government, non-profits, academia, business, and citizens to support the geospatial data infrastructure and access to data. Continuity--PASDA works with data providers to ensure continuity of data access and storage.

Active Engagement--PASDA engages the geospatial community to foster understanding and data sharing.

Efficiency--PASDA's streamlined processes make data sharing fast and easy for our partners.

Free Access--PASDA provides data storage, data access and retrieval, and metadata services free of charge.

PASDA will continue to provide free storage of geospatial data, as well as build partnerships that enhance ease of access and benefit the data provider, and to develop data access resources and innovative tools to enhance the use and benefits of geospatial data for all citizens of the Commonwealth and geospatial community.

The data made available through PASDA is provided by our data partners to encourage the widespread sharing of geospatial data, eliminate the creation of redundant data sets,

and to further build an inventory (through the development and hosting of metadata) of available data relevant to the Commonwealth. PASDA serves as a resource for locating data throughout the Commonwealth through its data storage, interactive mapping/webgis applications, and metadata/documentation efforts.

PASDA Staff

PASDA is a cooperative project developed with funding from the Geospatial Technologies Office and substantial support from the Pennsylvania State University to provide the greatest possible benefit to the GIS stakeholders in the Commonwealth. The management of PASDA is the responsibility of the PASDA Director at Penn State Institutes of Energy and the Environment (PSIEE). The PASDA staff includes:

- Maurie Caitlin Kelly, Director
- Ryan E. Baxter, Information Technology Coordinator
- James F. Spayd, Data Systems and Metadata Coordinator
- Scott B. Dane, Data Manager (PASDA/PAMAP) and Outreach
- Wayne Myers, Co-Director of the Office for Remote Sensing and Spatial Information Resources

Note: In addition, the PASDA staff would like to gratefully acknowledge the continued assistance and support of Chris Pfeiffer, Computer Systems Network Administrator for PSIEE. Although Chris is no longer officially a PASDA staff member, his continued dedication to the project has proved invaluable.

PASDA Services

The data made available through PASDA is provided by our data partners to encourage the widespread sharing of geospatial data, eliminate the creation of redundant data sets, and to further build an inventory (through the development and hosting of metadata) of available data relevant to the Commonwealth. PASDA serves as a resource for locating data throughout the Commonwealth through its data storage, interactive mapping/webgis applications, and metadata/documentation efforts. PASDA services are provided free of charge to all users and data providers. The data on PASDA is provided by federal, state, local and regional government agencies, non-profit organizations, and academic institutions throughout the region.

Data Storage and Access
PASDA works directly with state and federal agencies, local and regional governments, non-profit organizations, and academic institutions to access to the widest variety of data possible. There is no fee to store or provide access to data via the PASDA clearinghouse.

Inventory and Documentation (Metadata)
PASDA will create FGDC standard metadata free of charge for any agency, organization, or data stakeholder. The metadata will also be hosted by PASDA for the purposes of developing the state data inventory.

Data Liaison Activities
PASDA staff work directly with state agencies to identify, document, and provide access to agency data. PASDA works directly with state and federal agencies, local and regional governments, non-profit organizations, and academic institutions to access to the widest variety of data possible. There is no fee to store or provide access to data via the PASDA clearinghouse.

Metadata Training
PASDA staff provide free metadata training and training in the use of PASDA for individual organizations and groups. PASDA offers formal training twice a year at different locations throughout the Commonwealth. If you would like to participate in or host a metadata or PASDA training session, please contact pasda@psu.edu.

Educational Outreach
PASDA works with non-profit organizations such as watershed groups and K-12 schools to promote the knowledge and use of GIS. PASDA develops lessons, tutorials, and guidelines for new GIS users.

Presentations & Seminars
PASDA staff offer seminars and presentations at meetings, conferences, and schools.

User Assistance
PASDA is committed to providing timely user assistance with the PASDA website and the data available through PASDA. Since PASDA is not the originator of the data found on the site, specific questions about data sets are often best directed toward the data contact listed in the metadata. However, feel free to contact PASDA with any question

Acquiring Data from PASDA Offline
PASDA does not provide offline data reproduction services, either on digital media or paper. All data available on the PASDA website can be obtained on digital media on a cost recovery basis.

Summary of Major Activities & Accomplishments

A summary of activities for this year includes a dramatic increase in both the available data and services of PASDA. Though the size of the staff at PASDA has diminished, and significant budget cutbacks were implemented in late 2008, PASDA continued to serve our users and the Commonwealth with the same degree of quality and effectiveness demonstrated in previous years. This was accomplished through additional support from Penn State University and ongoing streamlining of processes and procedures. In addition to ongoing activities of the PASDA clearinghouse as listed in the previous section of this report, the primary efforts of PASDA throughout the 2008-2009 fiscal year focused on seven major areas:

- Acquisition and integration of new data and development of new data partnerships;
- Support for the PAMAP program and the enterprise approach to accessing imagery and LIDAR;
- Development of enhanced visualization capabilities for data;
- Increased efficiency and effectiveness in applications, services, website, and systems through the centralization of hardware and software operations and upgrade of systems;
- Ongoing support for the GTO;
- Outreach and acquisition of user feedback/input through a PASDA User Session

Within these broader activities, several efforts deserve specific mention.

New Data and Partnerships

Throughout the past year, PASDA has had the opportunity to extend its data partnerships throughout the Commonwealth and the region. In addition to continuing partners and new data from sources such as the PA Fish and Boat Commission, PA DEP, PennDOT, PA DCNR, City of Philadelphia, Lancaster County, Chester County, Heritage Conservancy, Natural Lands Trust, and other long-term PASDA partners, we have had the opportunity to work with a number of new partners.

One of the highlights of this past year was the increase of data made available from local governments. In addition to partners from Allegheny County, Philadelphia, Lancaster County, Juniata County, and Chester County providing additional data sets, Lycoming County joined with PASDA to provide floodplain, parcel, and building points data for visualization through our Open Layers Preview Data option.

PASDA also acquired data from SEPTA, 3 Rivers 2nd Nature project, National Renewable Energy Lab, and PA Cleanways.

Support for the PAMAP Program and Enterprise Imagery Solutions

LIDAR

The PAMAP program has dramatically increased the amount of data available as well as increasing the hardware needs for PASDA. As the statistics demonstrate, the data, applications and map services available through PASDA for PAMAP are heavily used. In addition to providing these services to the PAMAP program, PASDA also provides assistance with metadata and works with project management and partners to maintain streamlined data flow from PAMAP to PASDA. PASDA also provides support to users seeking or utilizing PAMAP data in the form of both e-mail and phone assistance.

The DCNR PAMAP Program continues to be a substantial data provider to the PASDA clearinghouse. PASDA currently hosts and provides access to approximately 15 terabytes of PAMAP data on the FTP site and in our relational database. PASDA provides storage

for the data for the program as well as access services, tools, and utilities such as the Pennsylvania Navigator.

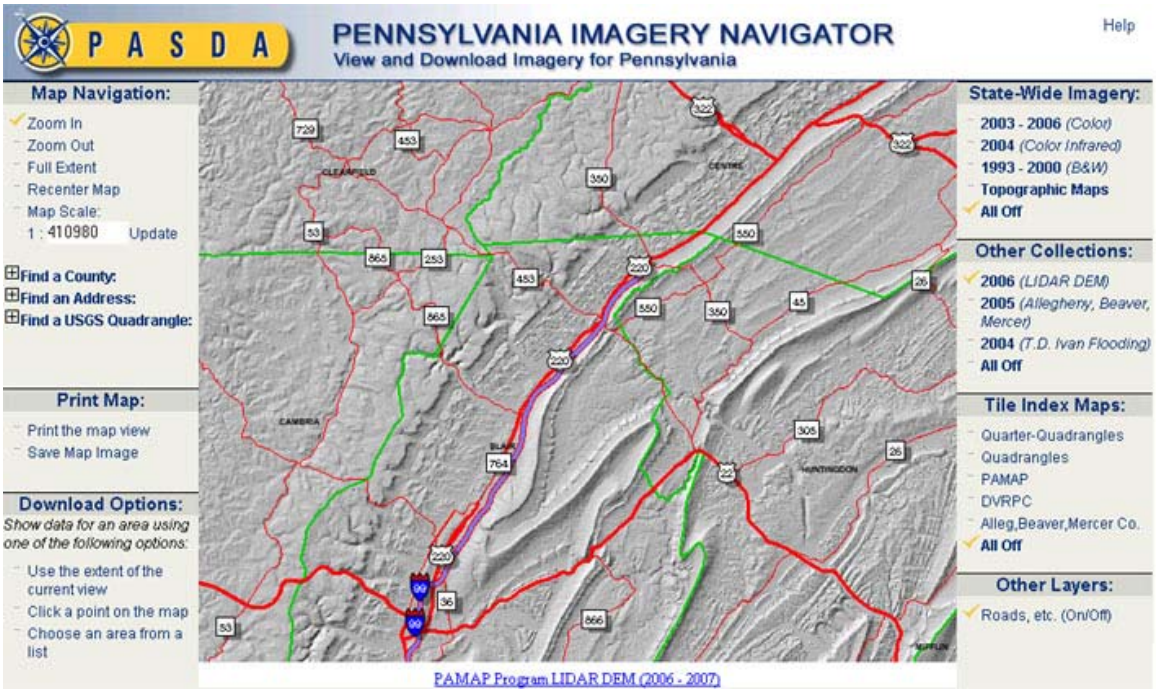

Figure 1. LIDAR Hillshade in Imagery Navigator

The most pressing need and major accomplishment related to the PAMAP program over the past year has been the inclusion of the LIDAR (DEMS, countours, breaklines) into both the FTP and relational database. Currently, PASDA maintains access tools to this data as well and developed a hillshade data (Figure 1) set from the DEM.

PASDA Special Award for Excellence

At the 2009 PA GIS Conference, the PASDA staff were grateful to be given the first Special Award for Excellence from the Pennsylvania Mapping and Geographic Information Consortium. This award recognized PASDA for exhibiting “technical innovation, consistent and responsive service to data users, responsible use of limited resources, and excellence in GIS for the benefit of all Pennsylvanians” as well as the outstanding contributions of the director and staff of PASDA.”

Enhancement of visualization capabilities

PASDA has significantly increased the potential use and accessibility of data available through the site by developing new visualization capabilities using Open Layers. Over the past few years, PASDA developed KML/KMZ files that allowed users to view data in Google Earth. However, the use of Google Earth required users to download and utilize

software on their local computer. With the Open Layers/Data Preview Option (Figure 2), users do not need special software to view and identify data.

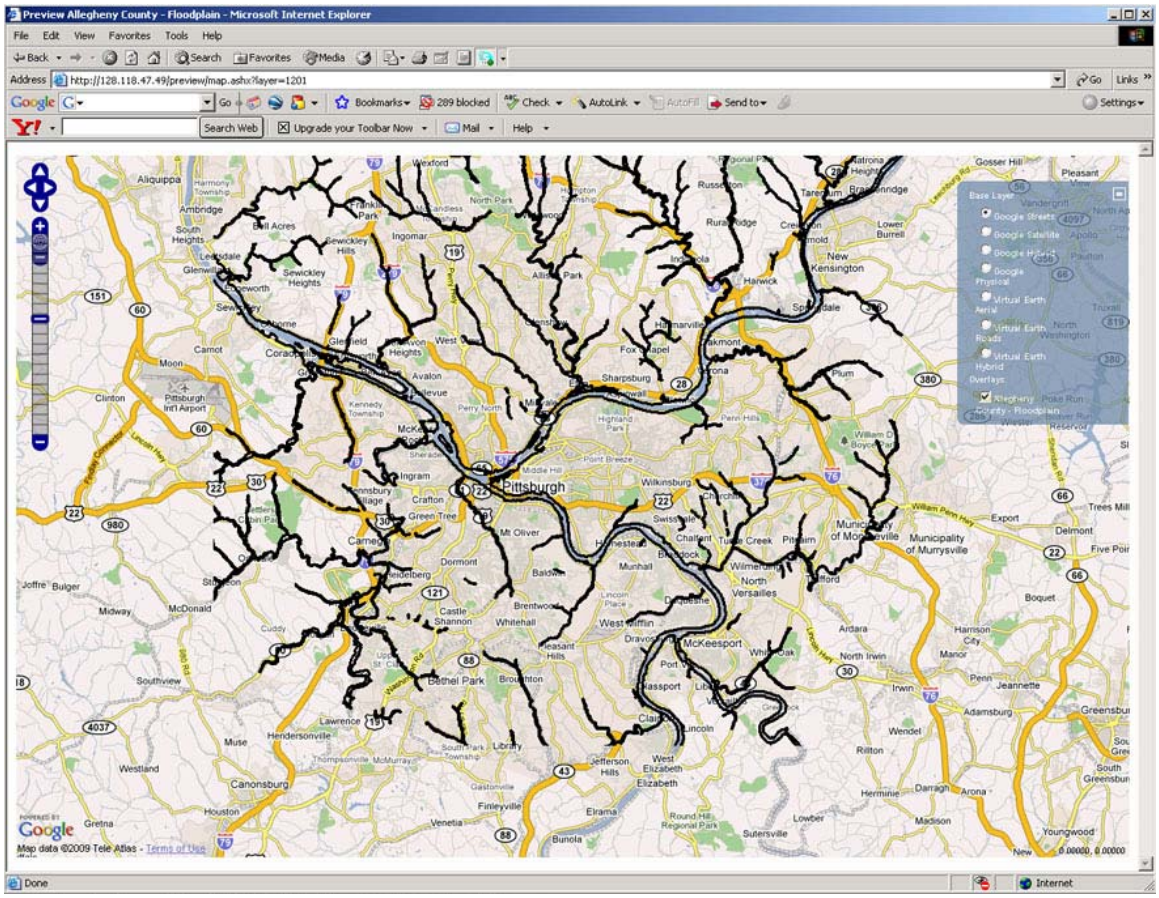

Figure 2. Open Layers Data Preview Option

The Beta Version of Data Preview was unveiled at the 2009 PA GIS Conference and provided users with the opportunity to view data from PennDOT and Allegheny County. The Data Preview option final version has since become part of the standard data processing procedures for PASDA staff. All data is now available in the Data Preview as well as download, clipping/reprojecting, Google Earth, and as maps services/WMS services.

Hardware/Software Reconfiguration

One major goal of the past year was to increase the efficiency and effectiveness of the overall PASDA hardware and software architecture. Hardware that supports PASDA was located in three distinct functional areas—Land and Water Research Building, the Center for Academic Computing, and the Earth and Engineering Sciences Building. The connectivity in the Land and Water Research Building was inferior to that of the other two locations as well as not providing a climate controlled environment. The plan

included the migration of all production equipment out of the Land and Water building to the Earth and Engineering Sciences Building including applications servers, FTP capabilities, and some development servers. Only the PASDA relational database would remain solely at the Academic Computing Center. As part of this process, all equipment was moved, existing software upgraded, and new backup and operational plans were developed and implemented.

GTO Support

PASDA has provided ongoing support to the Geospatial Technologies Office in the areas of metadata development, data acquisition, database loading, data standards, and imagery/raster data. PASDA provided extensive support to the Geospatial Technologies Office during the fiscal year. This support included metadata review and development; applications support and development; database support; data acquisition support; outreach and education; and consultations on architecture, infrastructure, and data issues. Some examples of support include James Spayd, metadata and data systems coordinator for PASDA, worked with GTO to develop templates for state agency data to be used in the GTO enterprise architecture and developed metadata for existing data in the GTO database. PASDA staff also provided assistance to GTO in emergency response support, GIS Day, development of map services, and data acquisition.

Map Services

In FY 2008-2009 PASDA continued serving and developing map services for most incoming data. These services have been extremely successful and well received. As part of its data processing procedures, PASDA creates map services for all of the state wide data from providers as well as data that covers regional areas. In addition, PASDA will create map services for our data providers in local government agencies as well. Users continue to access the map services via desktop GIS software or they can view them in Google Earth. All services are OGC compliant, WMS services. The success of the map services continues to be demonstrated by the use statistics. The most heavily used services continue to be those for imagery products such as PAMAP data, DVRPC aerial photography, the PA DOQQs, and the NAIP.

PASDA Strategic Planning/User Session

The PASDA User Session was held on October 3rd 2008 at the Penn Stater Conference Center. In attendance were people from across the Commonwealth including state, local, and federal government representatives, non-profit, academic, and business representatives. The session was held in order to gather input from a wide range of users on the progress, needs, and future of PASDA. The final report of this session is available on the PASDA website.

PA GIS Council Strategic Plan

PASDA worked with CCAP, GTO, PSU Harrisburg, PAMAGIC, and others throughout the year to develop a strategic plan for a PA GIS council. This plan, which has been endorsed by several organizations in the state, gathered input from individuals across the state .

PAView

PASDA is a member of the Executive Committee for the PaView project. This project is a national effort to develop educational information and promote access to data resources such as satellite imagery and aerial photography. PASDA works with PaView members at California University of PA, Penn State, DCNR, and GTO to manage and populate the website and provide direct access to data via the PASDA clearinghouse.

Emergency Support

PASDA continues to respond as needed to support emergency services for the Commonwealth. In response to the Commonwealth's need for support and to enhance response time, PASDA developed an Emergency Application Support Template. The template will be used to allow for immediate response to application development needs related to emergency events.

Meetings, Conferences, Training, Presentations, & Papers

PASDA staff participated in numerous meetings, conferences, and delivered presentations at many of these events. Of particular interest are:

- ESRI 2008 International Users Conference—two collaborative presentations with PSU EMS
- LIDAR Seminar—participated in workshop
- GIS Day at the Capitol Rotunda—member of organization committee
- PA GIS Conference—participated as exhibitor
- Regional Hazards Teleconferences and presentations—participant for GTO
- Northwest PA GIS Conference—exhibitor and presenter
- PAMAP Advisory Board—participant
- PAView Executive Committee meetings
- CCAP PA GIS Council project board meetings
- Presentation for State College Middle School social sciences and science teachers
- Presentation for PSU Geography classes
- Presentation at Lafayette College
- Judge for Pennsylvania Geography Bee sponsored by National Geographic

Procedural Documents Submitted to GTO

- PASDA Dashboard Documents

- PASDA statistics
- PASDA weekly/monthly reports
- Final Report: PASDA User Session 2008

User Assistance & Feedback

PASDA continued to serve a wide variety of users with diverse needs in FY 2008-2009. Questions ranged from e-mails inquiring about data availability to more in depth questions related to data use and applicability. Approximately 500 inquiries per month are answered.

Examples of User Feedback:

"I want to express my thanks for the support the Commonwealth is providing to the Pennsylvania Spatial Data Access (PASDA) program. I am a resident of the Commonwealth and wholeheartedly support my tax dollars being invested in this program.Access to spatial data is essential for a broad spectrum of programs and initiatives from municipal services to environmental protection and business development. By making data readily and easily available Pennsylvania will be more able to compete with both other states and other countries. Please continue to fund PASDA."

"PASDA is so far above and beyond any other GIS clearinghouse in my opinion."

"I cannot say enough great things about PASDA. When I started at Allegheny County as the GIS Manager, a majority of the work done by the GIS group was fulfillment of map and data requests for the public. This effort was taking time away from other important aspects of GIS in the county such as our intradepartmental GIS support work and our enterprise GIS data and resource maintenance and management activities. Leveraging PASDA as a resource to distribute our data to the public has been AWESOME! We have seen a drastic reduction in the amount of public requests we handle for data distribution and map production. We just point the requestor to PASDA and rarely do we hear back from them. This is a testament to the usability of the PASDA site and is supported by the usage statistics for Allegheny County data; Over 2000 total downloads and over 22000 map service hits from April - August of this year alone!

The PASDA staff has been great to work with and make it very easy for Allegheny County to publish and update our GIS data on PASDA. Keep up the great work!"

"PASDA is an easy to use web site that provides terabytes of information to the public for free. The fact that the data is free is the #1 method to disseminate the data to as many users as possible. Without PASDA, our organization would not be able to use GIS to the degree that we do."

"Yes, PASDA is the primary go-to source for GIS data in Pennsylvania and, especially with the new design of the site, has fulfilled this mission admirably."

"PASDA has a history of providing cutting edge leadership in data sharing. I would say that PASDA is the standard for other states to follow in terms of the inward focus to creating data sharing in PA and outward focus to provide data access to other states and the federal gov't."

"I think PASDA has done an excellent job serving as PA's SDI. There is a wealth of geospatial data and information available on the website."

"Many thanks, too, to Ryan Baxter and his colleagues at Pennsylvania Spatial Data Access (PASDA) for working behind the scenes to help give the 2nd PBBA its fantastic mapping capabilities. PASDA has been at the foundation of much of what we have done with the 2nd PBBA."

"The PASDA site has been an invaluable resource to me up to this point, and I have been extremely impressed with the data available. Please accept my compliments on the site overall."

" Formal recognition for PASDA's great service and your steadfast leadership is long overdue. Over the years many individuals have taken aim at PASDA; claiming that they would do things better/cheaper/faster. Invariably, while they were talking, you were delivering. I know it has not been easy so... thank you for your perseverance. We could not do our jobs without PASDA."

"Thank you for getting back to us! Also while I have your ear – THANK YOU for this service the data you make available is extremely helpful"

"Maurie,

I wanted to send you a quick note to give thanks to PASDA for their role in our GIS week events. First, thank you for posting our events on your front page. It is quite the honor to have our events listed in such a prominent location. Secondly, and more importantly, I want to thank you for Ryan's visit. His talk this afternoon was great. The students and faculty that were present learned about the services that PASDA provides, and I am certain now have a greater sense of understanding of what goes on behind the scenes when they press "download." Ryan certainly has a vested involvement in the services offered by PASDA, and his enthusiasm towards the services and towards PASDA's growth was seen in his presentation and demonstration. I myself, a user of PASDA for 8 years, learned a few new things today.

It was a pleasure to have Ryan visit, and I hope that Lafayette can continue to use PASDA as a data provider, as well as grow our relationship as collaborators and helpers in all things GIS."

"Dear PASDA,
I just wanted to write and express my gratitude for the wonderful service your website provides.

Thanks again for the service, and your time!"

From the PASDA User Session—

Do you believe that having the PASDA clearinghouse has saved you or your organization time and money?

1. Yes Absolutely, without PASDA GIS would be ten times as slow and 100 times more expensive

2. Yes we check regularly for data updates and also refer many users who seek data

3. ABSOLUTELY!! PASDA is a welcomed tool for data distribution for the City of Philadelphia.

5. Yes it has. We often refer people to the site and have heard from people that have accessed our county data and contact us to request more data.

6. Absolutely saves time and money have a one stop shop for PA GIS Data and now it is worth more with the latest map services and news information.

7. Yes. PASDA creates opportunity for software companies such as ESRI by making data easily available and helping create demand for the use of GIS software to help users solve their problems and perform their daily work.

8. PASDA has saved my organization a tremendous amount of time. My organization also needs to find data in MD and NY and it is always very difficult to acquire data in those states. If only every state had a PASDA.

9. YES....With the cost of storage of data on the Web, and the ease of use of telling a person who calls in to check out the PASDA web site for info

10. Definitely. There's an amazing amount of data you can get for free, plus you don't have to spend the time and effort to track down the individuals that would give you the data. Also, it's great to be able to download and get what you want instantly rather than waiting on CDs, DVDs, etc.

11. Typically most Counties charge for their GIS data and you have to wait to receive the data.

12. Yes, thousands of dollars and many, many hours have been saved by our non-profit by using PASDA. We would not use GIS to the degree that we do without PASDA.

13. Yes. Try to go to other states and download or connect to spatial data at no cost to the user and you realize what a great resource PASDA is!!!! It's hard to quantify the value. We use is so much I almost take it for granted.

14. Yes, absolutely. Both for acquiring data and serving our data to the public.

15. The National Weather Service has worked with data obtained from the PASDA website, and this has saved us the time (and "time is money") of searching elsewhere for GIS data.

16. Yes! Allows quick retrieval of current data

17. Absolutely.

19. Yes. Time saved in answering requests for data directly translates to time spent maintaining core datasets.

20. Data distribution through PASDA has enabled GIS staff to focus more on data creation and maintenance; GIS user support and other activities more important to our mission

21. Yes most definitely! Our organization constantly uses PASDA and its resources daily. Not only has PASDA been a huge asset to us internally, we continually mention it to our clients and many of them use it as well.

22. Yes and it allows me to do what I should be doing at work as opposed to handling data requests.

24. It provides a data distribution function that we would not be able to provide.

25. Yes because I was able to get deeper into your website than I had been before. I actually discovered some data that I can use when I get back to work.

26. Yes, the PASDA clearinghouse has saved our organization a great, great deal of time and money. We would receive so many requests for our data sets that it would be overwhelming. This allows us to better focus on our agency mission.

Examples of PASDA Users:

The following represents a partial list of PASDA users.

State Government: Almost all state government agencies and their regional offices access data and services through PASDA. These include PADEP, PADCNR, DMVA, PEMA, L&I, PHMC, Game Commission, Fish and Boat Commission, PennDOT, Health, and Agriculture, CareerLink, Public Welfare, DCED, State Police, Civil Air Patrol.

Federal Government: A wide range of Federal agencies access data and services through PASDA. These include FEMA, EPA, NOAA, NWS, Homeland Security, Dept. of Labor, Census Bureau, Dept. of Energy, National Renewable Energy Lab, Chesapeake Bay Program, National Park Service, USGS, Fish and Wildlife Service, US Army Corps of Engineers, US District Attorney's Office, Army National Guard, US National Hurricane Center.

Regional Government: Regional governments within Pennsylvania as well as those which include Pennsylvania in a multi-state, cross jurisdictional, or watershed governing structure represent a significant number of those who access data through PASDA. These include: Delaware Valley Regional Planning Commission, SEDA-COG, Southwest

Pennsylvania Commission, Northern Pennsylvania Commission, Northwest Pennsylvania Commission, Tri County Planning Commission, Susquehanna River Basin Commission, Ohio River Commission, and Delaware River Basin Commission, SEPTA.

Local Government: Almost all counties, urban areas, and many smaller municipalities are using GIS in Pennsylvania. The following are examples of the large component of users who access data and services through PASDA: City of Philadelphia, Allegheny County, Chester County, Centre County, Bucks County, York County, Adams County, Delaware County, Montgomery County, Clarion County, Erie County, Westmoreland County, Schuylkill County, Clinton County, Clearfield County, Blair County, Somerset County, Bradford County, Tioga County, Lackawanna County, Luzerne County, Potter County, Carbon County, City of Pittsburgh, Antrim Township, Reading PA, Berks County, Greene County, Morgan Township, Elk County Tax Assessor.

Business/Industry: Business and industry represents a major component of GIS users in the state. Those who access data and services via PASDA include: SYS Energies, XTO Energy, GeoDecisions, GeographIT, HRG, Gannett Fleming, BAE, ESRI, EADS Group, Hershey Medical Center, Reading Hospital, Dewberry, Cabot Oil, Dupont, Synergist Technology Group, Duquesne Light, Global Mapping Solutions, Dominion Transmission, Range Resources LLC, Hunter Insurance, Keystone Consultants, Gibson Thomas Engineering, GAI Consultants, Red Oak Consulting, Urban Research, Magellan Data and Mapping, KMJ Consulting, The Palmerton Group, Larson Design Group, Potomac Hudson Engineering, Blazosky Inc, Meridian Land Group, UGI Utilities, Sewall Assoc, Alion Science and Technology, Motorola, Skelly and Loy, Pioneer Hi Bred International, AllTell Networks, NSIA Inc, Timberframe Services, Arcada Engineers, Penn General Energy, GeoJet Information Solutions.

Media: Wall Street Journal, Citizens Voice, Philadelphia Inquirer, Newsweek, Centre Daily Times, Voters Voice, Patriot News, Post Gazette, WITF, Wilkes-Barre Times Leader.

Non-Profit: The use of GIS in non-profit organizations including community groups, conservation organizations, water quality monitoring associations, and the like has grown at a fast pace over the past few years. These organizations represent a significant proportion of users who access data and services through PASDA. Some of these include the Center for Public Integrity, Heritage Conservancy, Clearwater Conservancy, Nature Conservancy, Western Pennsylvania Conservancy, Stream Restoration Inc, Hollow Oak Land Trust, Breeding Bird Atlas Program, Chesapeake Bay Foundation, Canaan Valley Institute, Center for Coalfield Justice, PA Training and Technical Assistance Center, Partnership for the Delaware Estuary, CCAP, Rettew Assoc, PA Democratic Party, Eastern PA Coalition for Abandoned Mines, PennFuture, Western PA Watersheds, Brownfield Action Network, PA Environmental Council, Natural Lands Trust, PA Center for Environmental Education, Ben Franklin Technology Center, PA Association of Conservation Districts, PA Association of Township Supervisors, Sierra Club, Appalachian Mountain Club.

Academic/K-12: Most universities, colleges, and technical schools have some programs that include a GIS component. Many K-12 schools in Pennsylvania have GIS as well. Some of these include University of Pennsylvania, Temple, Drexel, University of Pittsburgh, Carnegie Mellon, Indiana University of Pennsylvania, Clarion University, California University, Kutztown, Bryn Mawr, Haverford, Bucknell, Shippensburg, Juniata, Lock Haven University, Penn State, Harrisburg Area Community College, York Advanced Skills Center, Dickinson University, Wilkes University, East Stroudsburg, Allegheny College, Slippery Rock, PA Academy of Science, Millersville, Broughal Middle School, Tuplehocken Middle School, Gettysburg College, State College Area Schools, Wissahickon Middle School, Mansfield University, Lafayette College, West Chester University, Dover Area High School.

A general list of users includes: NW PA Commission, SYS technologies, PA State data center, Army Corps of Engineers (Phila), Natural Lands Trust, SEDA COG, PA Game Commission, York County Planning Commission, Pennsylvania Natural Heritage Program, Applegate Services, Snyder Bros Inc, Keystone Consulting Engineers, Bankson Engineers, Etna Technical Center, PA Game Commission (North Central Region), Wind Ridge Engineering, Reconnecting America, Mountain Measurement, Valley Rural Electric Coop, Kimball, U of Pitt, Stiffler McGraw & Assoc., BAE, Dewberry, URS, Kimball, DCNR urban forestry, Chester County planning, Carnegie Mellon Heinz School, Allegheny County, Potesta & Assoc., Antrim Township, Valley Recreation Associates, CNXGas, KWH Associates, Athenian Properties, Jeffries, Randall, & Dewey, PA Game Commission, Amy S. Greene Environmental, DCNR BIT, Chiles & Sillivan, Hampton Technical Associates, NW PA Commission, SYS Technologies, City of Allentown, PA State Data Center, Army Corps of Engineers (Baltimore), USDA, PA Fish and Boat, US Army Corps (Philadelphia), L Robert Hillman, SRA International, Game Commission, CDS Business Mapping, Rettew Assoc., Antrim Township, Potesta & Assoc., Accuweather, Cintrus Energy, Clarion University, National Renewable Energy Lab, Montgomery County, Bucks County, Polshek Architects, MDNR Fisheries Service, Southwestern Energy Company, Yale University, Sentinel USA, SEPTA, Tuscarora State Forest, XTO Energy, PA Dept of Ag, DEP, DVRPC, Light-Heigel Assoc., Clearwater Conservancy, Greenhorn and Omara, Valley Rural Electric, UGI Utilities, Wilbur Smith Assoc., First America, PennDOT, Urban Research Group, Newark Energy, Civil and Environmental Consultants, Williamsport Police Department, BAE, Dewberry, URS, Klukan Engineering, York County, PennDOT, Computer Sciences Corporation, ITS-EPA Contract, Eastern Kentucky Environmental Research Institute, ENSR, Larson Design Group, ERDC/CRREL (Army Corps), Natural Lands Trust, PA Breeding Bird Atlas, Regional Floodplain Management North Atlantic Division--U.S. Army Corps of Engineers, Woodland Design Associates, Katfish Design, Chesapeake Bay Program, GES Online, PA Ag, Red Barn Consulting, Western Production Company, Municipal Authority of Westmoreland County, Lancaster Area Sewer Authority, DragonFly TV, Democratic Committee (PA), Voter Justice Team (Obama Campaign), Sampson Consulting, Hamilton College, PA DEP, SAI, Schuylkill River National Heritage Area, Michael Baker Inc, I3, PA Bureau of Forestry, Botsford Surveying, HACC, PA Bureau of Mine Safety, PA TopoGeo, Greenhorn & Omara, Photo Science, GAI Consulting, PA Game Commission, PA BBA, Global Mapping Solutions, Whitman, Requardt & Assoc.,

NW PA Commission, State Comptroller (NJ), PSU Forest Land Management Office, Simola consulting, versatrans, Radnor township school district, Allegheny County public works dept., Iowa state, Univ, Temple Univ, NW Pa commission, Clarion Univ, Amfire Mining, PA Fish and Boat Comm, State College Middle School, Valley Electric, Hampton Tech Assoc, Hedge Rowles Corp, PA DEP, PSU Forest Management, Tennessee Tech, First Energy, DCED, Erie County, PA DEP, Hampton Tech Assoc, City of Philadelphia, oil and gas engineer, Drexel University, URS Corp, PAMAP program, Valley Rural Electric, Whitmar Exploration, XTO Energy, UGI utilities, NSIA, IMO & Allen, PennDOT, Juniata College, Beaver County Planning, HF Lenz Co., US Office of surface mining, Carroll Engineering, GeographIT, Juniata County, NRCS, Breeding Bird Atlas Program, Game Commission, PCEE,GeoTech Engineering, PAMAP program, Allegheny County, Moody & Assoc, Sweetland Engineering, SAIC, PA DEP, Office of State Comptroller NJ, Philadelphia Inquirer, Voter Justice Team, Avencia Inc., Kimball Assoc., Montgomery County, York Planning, Chester County, PA Fish and Boat, Workforce Assessment Center, Snyder Crop Services, Joyce Surveying, Allegheny County, PA Dept of Health, Susquehanna River Basin Commission, Northampton County, McCormick Taylor, Jim Borbeau Land Service, Fox & Fox Inc, Landmark Forestry, Lancaster General Hospital, Lycoming County, Environmental Resources Management Inc., Chester County Planning Commission, Chester County Department of Information Services, SEDA COG, NTM Engineering, Chester County, Iowa State University, PA Fish and Boat Commission, 3 Rivers Project, Carnegie Mellon University, Pittsburgh Tribune Review, Philadelphia Enquirer, Harrisburg Patriot, Inland Electronic Navigational Chart Team, Engineering Research and Development Center, U.S. Army Topographic Engineering Center (TEC), University of Texas at Austin, GeoTech Engineering, Hanover Engineering, Obama GIS Team, PA DEP, Washington county, K2 Engineering, Corporation for a Skilled Workforce, Chesapeake Bay Program, Walton Surveying, Lancaster County, Western Pennsylvania Conservancy, Valley Rural Electric Coop, Walton Surveying/Geologist, Baer and Evans Surveyors, Stream Restoration Inc., ARM Group, McCormick Taylor, Keystone Consultants, SAI Consulting Engineers, Swanson School of Engineering/University of Pittsburgh, Wilbur Smith Associates, Pennoni Associates, Pennsylvania General Energy, PSU Dept of Landscape Arch, Johnson, Mirmiran, & Thompson, Civil and Environmental Consultants, Lafayette College, GeographIT, PAMAP Program, Carnegie Mellon University, 3 Rivers Second Nature Project, Allis Information Management, GeoTech Engineering, Alpha Natural Resources, Penn State Harrisburg, City of Philadelphia, University of Wolverhampton (UK), Lycoming County, Spotts, Stevens, & McCoy, Bucknell University, Tetra Tech, Chesapeake Bay Program, KV Group, EDR Inc., EADS Group, CMX Inc, New Tech Engineering.