

**PENNSYLVANIA DATA ACCESS**  
**PASDA ANNUAL REPORT**  
**2021-2022**



# Background

Pennsylvania Spatial Data Access ([PASDA—https://www.pasda.psu.edu](https://www.pasda.psu.edu)), the official public geospatial data clearinghouse for the Commonwealth of Pennsylvania marked its 27<sup>th</sup> year in 2022. PASDA, which has grown from a small website offering 35 data sets in 1995 to the expansive user-centered open data portal that it is today, has become an integral part of the GIS community in Pennsylvania.

PASDA is a cooperative project of the Governor’s Office of Administration, Office for Information Technology, 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. Penn State provides significant contributions to PASDA including system administration support and infrastructure from the Institute for Computational and Data Sciences (ICDS) and the College of Earth and Mineral Sciences.

PASDA was developed as a service to the citizens of the Commonwealth of Pennsylvania. The purpose of PASDA is to serve as the Commonwealth’s comprehensive and coordinated open geospatial data portal that provides free public access to geospatial data and information by, for, and about the Commonwealth of Pennsylvania.

## PASDA Users

PASDA was accessed by over 6 million users in FY 21/22. Users come from a broad spectrum of organizations and backgrounds, from teachers and citizens to businesses and government agencies.

PASDA serves a diverse software user community as well and the staff work diligently to provide easy access to data, applications, and customization tools to meet the needs of every user.

## PASDA's Role

PASDA provides access to credible and authoritative source data. Maintaining PASDA as a coordinated and comprehensive open data portal eliminates the creation of data silos that can frustrate and complicate public access to data.

One of the primary purposes of PASDA is to facilitate data sharing in a streamlined environment, making the process fast and easy for data sharing stakeholders. Any state, local, or federal government, non-governmental agency, or academic institution can freely share its geospatial data through PASDA.

Data on PASDA is indexed by search engines such as Google to ensure wide dissemination and broad impact. In addition, the metadata may be harvested via a web accessible folder (WAF) for integration into other search engines/repositories. PASDA is currently integrated with the US data repository [Data.gov](#), esri's AGOL, and the Big 10 Alliance Geoportal. PASDA staff collaborate with individuals and organizations at the national level to ensure that it meets standards for metadata and data delivery.

An additional meaningful role PASDA plays is as an archive for geospatial data. PASDA creates an archival copy of all data that is stored in long term archival storage via ICDS that will ensure that access to the data in perpetuity.

## PASDA Staff

The PASDA project has 2.7 FTE. Our staff members are:

- Maurie Kelly, Director
- Ryan Baxter, Information Technology Coordinator
- James Spayd, Database Systems and Data Specialist
- Scott Dane, Data Manager

# 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.
- **Innovation**—PASDA continues to be the leader in geospatial data portal operations and services.
- **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 applications, and metadata/documentation efforts.

# PASDA Services

PASDA provides a number of key services to the Commonwealth. PASDA services and support includes:

- Data Storage
- Data Management
- Metadata Development
- Metadata Training
- Data Search and Retrieval
- Data Download (in multiple formats)
- Map Services/APIs/KMLs
- Data Preservation and Archiving
- Online Mapping Apps
- Data Previewer
- PA Imagery Navigator
- PA Atlas
- PA Mine Map Atlas
- PA Lidar Navigator
- PennPilot
- PA Flood Risk Assessment Tool
- User Support
- Offline Data Access
- Integration with Additional Resources

## FY 2021/2022 Highlights

PASDA currently hosts over 900TB of data from 98 different data providers. Some of the largest acquisitions this year were in the form of LiDAR and imagery.

## LiDAR Acquisitions

PASDA received the USGS PA Western LiDAR (flown in 2019-2020) in 2021/22. These data cover a significant section

COUNTY	YEAR	# Tiles	DETAILS
Clarion	2020	207	<b>COLLECTION:</b> PA Western 2019-2020 QL2 Lidar (North)
Crawford	2020	348	<b>PROGRAM:</b> USGS 3DEP Program
Erie	2020	287	<b>CONTRACTOR:</b> NV5 Geospatial (Quantum Spatial)
Forest	2020	148	<b>ACQUISITION:</b> Dec 8, 2019 to May 2, 2020
Jefferson	2020	212	<b>LIFTS:</b> 34
Mercer	2020	242	<b>DESCRIPTION:</b> 2.5-ft Hydro-flattened Bare Earth DEM in GeoTIFF format
Venango	2020	226	<b>TILE SIZE:</b> 10,000 ft x 10,000 ft
Warren	2020	289	<b>PROJECTION:</b> PA State Plane North FIPS 3701, NAD 1983 (2011), NAVD88 (GEOID 12b), US Feet
Allegheny	2020	258	<b>COLLECTION:</b> PA Western 2019-2020 QL2 Lidar (South)
Armstrong	2020	237	<b>PROGRAM:</b> USGS 3DEP Program
Beaver	2020	163	<b>CONTRACTOR:</b> NV5 Geospatial (Quantum Spatial)
Butler	2020	255	<b>ACQUISITION:</b> Nov 18, 2019 to Mar 22, 2020
Cambria	2020	226	<b>LIFTS:</b> 38
Fayette	2020	274	<b>DESCRIPTION:</b> 2.5-ft Hydro-flattened Bare Earth DEM in GeoTIFF format
Greene	2020	206	<b>TILE SIZE:</b> 10,000 ft x 10,000 ft
Indiana	2020	276	<b>PROJECTION:</b> PA State Plane South FIPS 3702, NAD 1983 (2011), NAVD88 (GEOID 12b), US Feet
Lawrence	2020	125	
Somerset	2020	354	
Washington	2020	294	
Westmoreland	2020	363	

*Figure 1. Western PA LiDAR*

of the state. The 20 counties are all QL2 LiDAR. The Natural Resources Conservation Service (NRCS) PA office funded data collection for 11 western Pennsylvania counties, the Federal Emergency Management Agency (FEMA) funded the remaining nine counties. USGS managed the effort and provided QC.

County, Susquehanna County, Franklin County, Wyoming County, Cumberland County, Perry County, Dauphin County, York County, Wayne County, Columbia County, Montour County, Pike County, Carbon County, Lackawanna County, Monroe County, Luzerne County.

## PEMA Imagery

The PEMA Statewide Aerial Imagery Program continued throughout 2021/2022.

As data was delivered, it was backed up, uploaded to pre-staging site, map services were created (or mosaics), then data was added where applicable to the statewide cache.

Data received: Luzerne County, Adams

## New Data Partners

In 2021/2022, PASDA worked with the Service Delivery Task Force of the PA GeoBoard to bring more local data partners on board. This involved meetings and Zoom sessions with a number of PA state data sharing agreement signatories and resulted in several new data partners including Huntingdon, Fulton, Perry, Blair, Somerset, Wyoming, and Luzerne counties.



and the GeoBoard leadership team. This report was accepted by the GeoBoard and published to the website in 2022.

## Outreach & Meetings

- Weekly Geospatial Services status meetings
- Weekly PASDA staff meetings
- Monthly meetings with system administration staff including ICDS and EMS computing
- Member, PA GIS Day Committee
- Member, PA GIS Conference Committee
- Member, Keystone GIS Education Committee
- Member, PA View Executive Committee
- Exhibited at PA GIS Day
- Presented and exhibited at NW PA GIS Conference
- Presented for PASDA and the Services Task Force at the PA GIS Conference
- Exhibited at PA GIS Conference
- Presented at PA Flood Plain Managers Annual Conference
- Presented at PA NENA Conference
- Participated in PA Geospatial Advisory Board meetings
- Participated in GeoBoard Governance Task Force
- Participated in GeoBoard Services Delivery Task Force
- Participated in GeoBoard Elevation Working Group Meetings
- Participated in GeoBoard Parcel Working Group Meeting
- Participated in GeoBoard joint task force meetings

## PASDA Stats

PASDA Total Site Hits: 590,636,118

PASDA Site Total Users: 6,018,226

PASDA Downloads: 1,670,696

Map Service Requests: 224,315,734

Imagery Navigator: 10,006,295

PennPilot/Historic Imagery

App: 17,708,551

PA LiDAR Navigator: 1,530,274

PA Mine Map Atlas: 5,792,165

PA Flood Risk Assessment

Tool: 1,729,387

All Imagery Related

Services: 51, 517,157

Most accessed state data services:

1. PennDOT: 40,773,598
2. PA Fish and Boat Commission: 32,266,264
3. PEMA Imagery: 18,957,992
4. Pennsylvania Game Commission: 12,141,051
5. PA DEP: 11,740,925

Most accessed county data:

6. Allegheny County: 4,064,328



- Somerset County
- Butler County
- Montgomery County
- Wyoming County
- Perry County
- Fulton County
- Crawford County
- Carbon County
- Bucks County
- Bradford County
- Lycoming County
- Venango County
- Monroe County

### State Agencies:

- PA DEP
- PA State Police
- PA Fish and Boat Commission
- PA Game Commission
- PA DEP Mine Maps
- PennDOT
- PA DCNR
- PEMA
- PA Dept. of Health
- Federal Agencies:
- FEMA
- Centers for Disease Control
- USDA
- US Census Bureau

### Regional Governments:

- Delaware Valley Regional Planning Commission
- Susquehanna River Basin Commission

### Non-Governmental Organizations/ Higher Education

- Eastern PA Coalition for Abandoned Mine Reclamation
- WeConserve PA
- PA Sea Grant
- Penn State University OPP
- Penn State University Libraries

## System Architecture & Enhancements

PASDA is part of a peak Terascale networked computing system supported by Penn State High Performance Computing at ICDS with a high bandwidth parallel storage system. The computing system incorporates architectural and functional heterogeneity in the form of reconfigurable computing, graphical processing unit accelerators and chip multiprocessors and their clusters. The architecture consists of multiple servers in a redundant configuration that allows each server to handle client requests, with central disk storage acting as the primary data storage location, the capacity for substantial additional storage and scalability as needed, and a daily tape backup system that keeps two backup copies of all PASDA data. Each server has a dedicated 1 Gbps Ethernet connection for transferring data to and from the PASDA system.



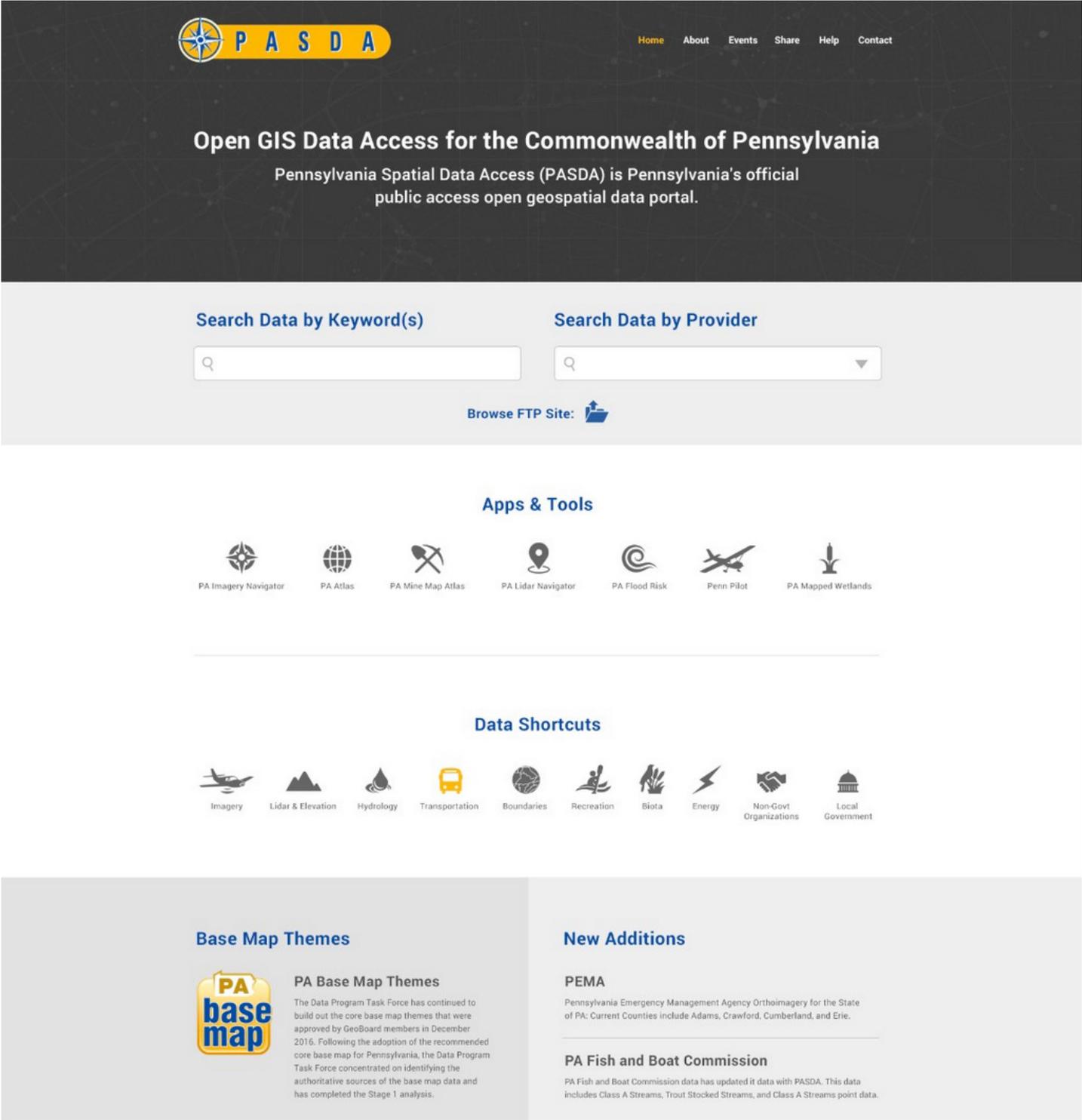


Figure 5. New PASDA website design.



## Search Results

[Return to Search](#)

Date	Title	Provider
2023	<p><b>Abandoned Mine Land Inventory Points</b></p> <p>This data set portrays the approximate location of Abandoned Mine Land Problem Areas containing public health, safety, and public welfare problems created by past coal mining. It is a subset of data contained in the Office of Surface Mining (OSM) Abandoned Mine Land Inventory. This layer identifies AML Points representing specific locations within an AML Inventory Site, examples include AML discharge. This data set provides information needed to implement Title IV Abandoned Mine Reclamation, of the Surface Mining Control and Reclamation Act (SMCRA) of 1977. One of the major uses of this data set is for the reporting of annual Abandoned Mine Land Program accomplishments to Congress. In addition, the data is used in the National Atlas of the United States for geographic display and analysis at the national level, and for large regional areas.</p> <p><a href="#">Metadata</a>   <a href="#">Download</a>   <a href="#">Preview</a>   <a href="#">KMZ</a>   <a href="#">Spreadsheet</a>   <a href="#">GeoJSON</a>   <a href="#">Add Mapservice to ArcMap: Image or Feature</a>   <a href="#">More Options...</a></p>	Pennsylvania Department of Environmental Protection
	<p><b>Abandoned Mine Land Inventory Polygons</b></p> <p>This data set portrays the approximate location of Abandoned Mine Land Problem Areas containing public health, safety, and public welfare problems created by past coal mining. It is a subset of data contained in the Office of Surface Mining (OSM) Abandoned Mine Land Inventory. This layer identifies AML Polygons representing specific areas to large to be represented by points within the entire, AML Inventory Site, examples include AML discharge, highways. This data set provides information</p>	Pennsylvania Department of

Figure 6. New PASDA search results design

organizations we were able to identify. For most organizations listed, there were multiple contacts throughout the year. Many user organizations have received help on multiple occasions, but are only mentioned once in the list.

## **Assistance provided to the Following (some examples):**

GeoData, Lancaster Conservancy, Temple University, Sproul Forest District DCNR, Urban Engineers, PA Open Data Portal, NTM Engineering, PA DEP (multiple), City of Philadelphia, PA Sea Grant, Tom Ridge Environmental Center, Lancaster County, Kansas State University, PA Office NRCS, Brynn Mawr College, PA Fish and Boat Commission, Bucks United, Butler County, Tree Pittsburgh, US Census Bureau Slippery Rock Watershed Coalition, U.S. Army Engineer Research and Development Center, Natural Lands Trust, Amazon, EcoDistricts, PA DCNR Geologic Survey, Yale University, PA Dept of State, US Pacific Northwest National Lab, Streamline Engineering, Saint Joseph's University, Bureau of Oil and Gas wells DEP, Huntingdon County, Catalyst Companies, USGS, Erie County, Brownfield Science and Technology Inc, PA DMVA, Penn State Mont Alto, Adams County, West Chester University of PA, HACC, T and M Associates, Blair County, West Virginia University, Allegheny

County, Arcadis, Penn State Shenango, Gateway Engineers, Fulton County, Victor Wetzel Associates, Duquesne Light, Lafayette University, LegalServer, PA Office of Administration (infrastructure and economic development, Philabundance, Watkins Synergetics, Davey Resource Group, Cornell University, Transglobal Services LLC, Golder Associates, PA Dept of Health, Cengery Power, LS Power Development LLC, SWCA Environmental Consultants, Kleinfelder Inc, Johns Hopkins University, Kimley Horn Inc, Crawford County, Water Words that Work, PA Association of Conservation Districts, Remington Vernick Engineers, Civil and Environmental Consultatns, Ed Wilson Consulting, Keystone Collections Group, PA Game Commission, ES Railroad Towers Society, KSF and Associates, Western PA Conservancy, PA State Police, Boucher and James, Inc, US Army Corps Baltimore, PA Turnpike Commission, KCI Technologies, Millersville University, Venango County, Woodare and Curran, PennDOT, Potter County, PA Historic and Museum Commission, Gannett Fleming, Glenn Hawbaker Inc, GeoTechnology Associates, Schuylkill River Greenways, Civil Solutions, P. Joseph Lehman Inc, Michael Baker International Inc, Quantum Spatial, Entech Engineering, Clarion County, Bucks County Planning Commission, Frech and Pickering Creek Land Trust, PennDOT District 3-0, EPACAMR, Rutgers Medical School, EDR

Lightbox, Allegheny National Forest, Green Environmental Consulting, CH Planning Limited, Gerhardt Engineering, Union and Snyder Counties, PEMA, PA Rural Health/PFF project, Chester County, Rosebud Mining, Adams County, Range Resources, EADS Group, RESPEC, PA Commonwealth Charter Academy, Villanova Center for Resilient Cities, Google, Ed Wilson Consulting, American Farmland Trust, ERM, Hershey Medical Center, McCormick Taylor Inc, Compugig, RK&K Inc, PA American Water Inc, Vote 411, Onxmaps, PA Utilities Commission, US EPA, CubeSmart Self Storage, Keyrock Energy LLC, IEQT, Arthur A. Swallow Associates LLC, Tioga County, Haselton Baker Risk Group, Symmetry ,Luzerne County, Somerset County, Ray Geiger Inc, Aqua America Inc, Pennsylvania General Energy Co., Fazio Consulting LLC, Natural Resource Partners, Clauser Environmental, Dewberry, AECOM, Apex Design and Engineering, Temple University, Dauphin County, Manchester University, Edinboro University, Harshman CE Group, Chesapeake Bay Program, Hampton Technical Associates, Intertek, Data Trust, Allegheny County, United Electric Cooperative, Penn State Altoona, Diehm and Sons Inc, Trimble, Larson Design Group, Meck tech Inc, Stahl Sheaffer Engineering, Steckbeck Engineering and Surveying, Advanced Resources International, US Army Corps Detroit, IVERA Group, Pike

County Conservation District, Dawood Engineering, Municipal Authority of Westmoreland County, Langan Associates, Hunt Valley Environmental LLC, GHD Inc, Tetrattech, Taylor Engineering, Nature Conservancy, Lockard Surveying, University of Pennsylvania, WeConservePA, Stifler McGraw, US DOE, EnviroSure, City of Philadelphia, FEMA, National Weather Service.



*Figure 7. PASDA Pennsylvania Imagery Navigator*



July 1, 2021-June 30, 2022  
Completed by Maurie Caitlin Kelly  
Penn State Institutes of Energy and the Environment  
The Pennsylvania State University  
August 20<sup>th</sup> 2022