Pennsylvania Data Access PASDA 2020-2021 Annual Report

July 1, 2020-June 30, 2021
Completed
by
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September 1st 2021

OVERVIEW of PASDA

Background

Pennsylvania Spatial Data Access (PASDA—http://www.pasda.psu.edu), the official public geospatial data clearinghouse for the Commonwealth of Pennsylvania marked its 27th 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'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 Users

PASDA was accessed by over 6 million users in FY 20/21. 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 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

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

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 Stats

PASDA Total Site Hits: 515,154,535

PASDA Site Total Users: 5,680,144

PASDA Downloads: 1,612,888

Map Service Requests: 191,076,179

Imagery Navigator: 10,680,972

PennPilot/Historic Imagery App: 15,196,960

PA LiDAR Navigator: 1,530,274

PA Mine Map Atlas: 2,708,965

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:

Allegheny County 4,064,328

FY 2020/2021 Highlights

PASDA currently hosts approximately 800TB of data from a wide array of providers. Some of the largest acquisitions this year were in the form of LiDAR and imagery.

Annual Water Data Workshop

PASDA staff supported the PA Annual Data workshop/PA Hydro workshop. In addition to attending, PASDA worked with the presenters to acquire and host the data for the workshop. This data set was added to PASDA for the 7th Annual Water Data Workshop held in February: ftp://ftp.pasda.psu.edu/pub/pasda/PAHydrographyDataset/

LiDAR Acquisitions

PASDA received the 2019 Lidar covering 23 counties. Scott Dane created a guide for how to find the lidar on PASDA for the PA Elevation Working Group. As of December 2020, a total of 36 counties were made available through PASDA. New light detection and ranging (LiDAR) for Pennsylvania was captured in 2019 and was made available via PASDA in early 2021. In addition, LiDAR has become much easier to locate with the development of the PASDA LiDAR Navigator. The development of this application was the result of the user feedback survey initiated by the SDTF in 2018/2019.

PEMA Imagery

The PEMA Statewide Aerial Imagery Program continued throughout 2020/2021.
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: Snyder, Chester, Mifflin, Butler, Luzerne, Clarion, Mercer, Pike, Venango, Armstrong, Indiana, Westmoreland, Jefferson, Monroe, Cambria, Crawford county imagery

As of July 1 2021, there were 31 deliveries from Quantum Spatial to Penn State which conveyed 80 partial or full county data deliveries. There were 83 full or partial shipments from Penn State to counties. Almost 21 TB of downloadable PEMA imagery data is available on PASDA. This includes Tiff, JP2, SID, ECW, and SID files in Survey Feet units

PEMA Imagery as of July 2021

	<<<<<<<<<<<<<<<<<<<<<<< Tiles >>>>>>>>>>>>>>>>>>>>>>>>>						<<<<< Mosaics >>>>>	
North	**TIF**	**(GB)**	**JP2**	**(GB)**	**SID**	**(GB)**	**ECW**	**SID**
10000000	39	43	39	3	39	3	67 counties	67 counties
20000000	842	1024	842	62	842	63	78 zips	78 zips
30000000	1413	1714	1413	104	1413	105	538	1430
40000000	1599	1939	1599	118	1599	118		
50000000	1526	1861	1526	112	1526	113		
60000000	1356	1664	1356	100	1356	100		
70000000	99	123	99	7	99	7		
	6874	8368	6874	506	6874	509		
South	**TIF**	**(GB)**	**JP2**	**(GB)**	**SID**	**(GB)**		
10000000	769	926	769	57	769	57		
20000000	1554	1880	1554	114	1554	115		
30000000	1614	1992	1614	119	1614	120		
40000000	1534	1872	1534	113	1534	114		
50000000	1129	1337	1129	83	1129	84		
60000000	323	363	323	24	323	24		
70000000	0	0	0	0	0	0		
	6923	8370	6923	510	6923	514		
TOTAL GB:	20,745							

Figure 1: PEMA Imagery as of July 1, 2021

With these final deliveries, PASDA received the complete set of imagery for the state.

To access this data, go to:
https://www.pasda.psu.edu/uci/SearchResults.aspx?Keyword=PEMA+Orthos

To access statewide service:
https://www.pasda.psu.edu/uci/DataSummary.aspx?dataset=5104

New Data Partners

In 2020/2021, 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 Adams, Wyoming, Perry, Carbon, Blair, Cumberland, and Monroe counties. Huntingdon, Fulton, Perry, Blair, Somerset, Wyoming, and Luzerne counties.

PA GeoBoard

PASDA continued to be an active member of the PA GeoBoard in 2021/2022. PASDA once again supported the development of the Annual Report of the GeoBoard by contributing both content and design support. PASDA staff also served as members of all of the task forces and several of the working groups and subcommittees including: Governance Task Force, Data Task Force, Services Delivery Task Force, and Elevation Working Group.   Meetings on behalf of the data sharing initiative included Perry County, Jefferson County, Wyoming County, Carbon County, Blair County, Cumberland County, Monroe County, and Philadelphia.

PASDA staff member James Spayd continued to support and update the PA Parcel Mapping service and the PA Data Sharing App. PASDA staff also and worked with the Services Task Force to encourage sharing among state and county entities.

PASDA director, Maurie Kelly, wrote a special report that provided insight into how GIS has been used throughout Pennsylvania in response to COVID 19. The information was gathered through a survey that was distributed to the membership of the PA GeoBoard, as well as the County GIS Pros and PAMAGIC membership. This report does not intend to be a comprehensive list of every initiative or application. Its purpose is to highlight some examples of how GIS was used during the first six months of the pandemic. She also participated in the PA GeoBoard strategic planning working group as well as all the task force, joint task force, and quarterly meetings. In addition to the COVID 19 report, PASDA developed a report on the PEMA Imagery project and submitted it for approval to the PA Geoboard.

Scott Dane participated in the Elevation Working Group and presented information about data access and incoming elevation data to the group.

James Spayd participated in the Joint Task Force meetings and Services Delivery Task Force meetings as well as the quarterly PA GeoBoard meetings.

Ryan Baxter participated in the Services Deliver Task Force meetings and provided guidance and information for aggregating data and creating new services.

PASDA worked with the Servcies Task Force in collaboration with the Data Task Force to ensure access to PA base map data. The base map data is hosted by PASDA and is accessible via a link on the PA GeoBoard website (https://www.pasda.psu.edu/basemap_nsdi.asp). In 2020 there were more than 12,000 users of the base map page.

PASDA, in collaboration with the Services Task Force, held a metadata informational seminar for county GIS professionals. More than 20 people attended this seminar that covered the basic requirements for geospatial metadata when sharing data.

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
- Presented 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
- Presented at PA Flood Plain Managers Annual 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
- Quarterly conference calls with Services Task Force and Jere Matthews PA Open Data Portal
- Participated in Services Task Force meetings with county data sharing agreement partners
- Participated in PA GIS Conference Presentation Selection working group
- Set up survey to send out to community about PA Geoboard goals for strategic plan
- Helped Mifflin County acquire a copy of caves of Mifflin County
- Gov task force strategic plan committee
- Executive director job description committee
- Services Task Force meeting with Civic Mapper
- Participated in Annual Water Data Workshop

- Participated in the COVID-19 Technology & GIS Hot Wash
- Participated in Cities Covid Mapping Symposium

Data Acquisitions: Highlights

2020/2021 was a busy data sharing year. The following data partners provided regular updates to their data on PASDA:

Counties:

- Adams County
- Franklin County
- Allegheny county
- Erie County
- Dauphin County
- Lancaster County
- Chester County
- York County
- Washington County
- Mifflin County
- Mercer County
- Cumberland County
- Union County
- Snyder County
- Dauphin County
- Monroe County
- Butler County
- Montgomery County
- Wyoming 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.

An outcome of the Services Task Force user feedback survey initiative was the Portal-to-Portal (P2P) initiative. P2P allows for the synchronization of data between disparate locations in an automated fashion to occur to keep data relevant and accurate. The pilot portal to portal connection was undertaken with the PA Turnpike Commission and completed successfully in summer 2020. The second phase included outreach to pilot counties. The first county to work with the initiative was Cumberland County. The P2P connection was successfully completed in fall 2020.

User Support & Assistance

NOTE: PASDA provides user support via email, phone, and in person. It is often not possible to identify the organization from which assistance is requested (for example, if a user emails us with a @gmail.com account). The following list is examples of those 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):

Venango County, City of Philadelphia, Clarion University, California University of PA, PA Turnpike Commission, Jefferson County, KCI Technologies, Millersville University, Venango County, Westmoreland County, Mercer County, Dauphin County, Mifflin County, Bucknell University Lycoming County, PA Fish and Boat Commission, Crawford County, Monroe County, Somerset County, PA Open Data Portal, USDA NRCS, EnviroSure, Dauphin County, National Aviary, Butler County,Aikens Engineering, Lockard Surveying, Elk County, Oman and Associates, Bedford county, Temple University, Juniata College, PA DCNR, US Census Bureau, FEMA Region 3, Fayette County, National Weather Service, Duquesne Light, Tetratech, Lancaster County, Adams County, Delaware Valley Regional Planning Commission, PA Land Trust Association, Forest County, Villanova University, Mercer County, University of Pennsylvania, US Army Corps Baltimore, Tioga County, PA DEP, Chesapeake Bay Program, Reading Hospital, PennDOT,Warren County, Slippery Rock Watershed Coalition,Wayne County, Natural Lands Trust, Quantum Spatial, Indiana County, Dewberry, PEMA, Potter County, Clearfield County, Cameron County, Centre County, Clinton County, West Chester University, Gateway Engineers, GeoDecisions, PA Dept of Health, Union County, PA Game Commission, PA Utilities Commission, Chester County, NV5 Geospatial, Sullivan County, Lehigh County, PA Historic and Museum Commission, Gannett Fleming, Bucks County, Glenn Hawbaker Inc, Berks County, Blair County, Susquehanna County, North Central PA Commission, Wyoming County, Beaver County, Susquehanna River Basin Commission, Pike County, Hershey Medical Center, Bradford County, Shippensburg University, York County Planning Commission, Fulton County, PA DMVA, Huntingdon County, Juniata County, Lackawanna County, Lawrence County, Columbia County, L:uzerne County, KSF LLC, Fayette County EMA, Hibbel Engineering, Penn Forestry, RAD Safety, USDA, Gateway Engineers, University of Pittsburgh, Micahel Baker Intl, The Granger Firm, Medical Solutions Inc, Midland Engineering, Norfolk Southern Corp, JHA Companies, Delaware NREC, PARE Corporation, Travel Champs, Reed Smith LLP, Eschelon AGC, Chemun County NY, Mount Joy Borough Police Department, DL Howell & Assoc, PVE LLC, AKRF Inc, GD Keener LLC, Civil and Enviornmental Consultants, US Air Force 911th Air Wing, Indiana University of PA, Surveyor 1, Trout Creek Survey, Enhanced Oil Recovery Institute, Hatch Corp, EPCAMR, NRCS, Sklar Inc, Golder Associates, Intertek, PA Dept of Agriculture, Union and Snyder Counties, Bucks County, Trumbull Corporation, McKean County, LightBox, Washington County, US Army Corps Pittsburgh, Ceeva Inc, Stahl Sheaffer Inc, Chesapeake Bay Foundation South Central, Halligan Surveying, CONSOL, Federal Reserve Bank of Philadelphia, Bloomsburg University, New Path Consulting, Patton Engineering LLC, SUNY Oswego, PA Office of the Attorney General Medical Fraud Unit, Pittsburgh Post Gazette, T3 Global Strategies, Greator Scranton Board of Realtors, Chesapeake Conservancy, PennDOT Engineering District 9-0, DEP Bureau of Waste Management, McTish, Kunkel, and Assoc, Carbon

County, DEP Bureau of Waterways and Wetlands, Hedin Environmental, Stevens-Lee Corp, Kimley-Horn Corp, PSIRC, Harshman LLC, City of Lebanon Authority, Consulting Engineer Services LLC, D.E.M. Surveying, Harrisburg University, Slippery Rock University, PEMA NFIP, Oman Surveying, GeoTech Engineering, GIS Visions, Ervin Cable Construction, Western PA Conservancy, United Environmental Services, Pare Corporation, Jones Consulting, Period Homes Restoration Work, R & R Engineering LLC, USGS Leetown, Markosky Engineering Group, EPA Region 3, SET LLC, Hunting Maps 365, CMI Compliance Place, RCPS, Venango County Regional Planning Commission, Eden Renewables LLC, Temple University, Centre County, Bucks County, Fazio Consulting, PA DEP Compliance Section | Division of Permitting. Monitoring, and Compliance, Alfred Benecsh and Company, Whitehorse Excavating LLC, EnValue Engineering, PSU Dauphin County Extension, Cowan Associates, Penn Core Consulting, Ernst Conservation Seeds, Teichos Energy LLC, Symmetry Software, Lancaster County Conservation District, Civil and Environmental Consultants, Marshall Township PA, CivicMapper, Salisbury Township PA, esri, Fourtheconomy, RoadRunner.com, Allegheny National Forest, Coleman Environmental Engineering, Omni Navitas Holdings LLC, Coterra, Borton Lawson Inc, Seneca Technologies Inc, Gen3 Surveying Inc, Bureau of Epidemiology Pennsylvania Department of Health, Mericle Inc, Fox Associates Inc, Dawood Engineering, C2C Design Group, Livic Civil, Langan Engineering, Nave Newell Inc, Herbert Rowland and Grubic Inc,, Sullivan County Planning Office, Millersville University, Susquehanna Civil Engineering Inc, BL Companies, EADS Group, Rettew Associates, Wizon Surveying, USGS NGTOC Missouri, HNT LLC, Read and Associtates LLC, Kittleson & Associates Inc, Lycoming County Department of Public Safety, York College of PA, York County Assessment Office, AECOM, Remington & Vernick Engineers,Victor Wetzel Associates, Clearfield County, Power Engineers Inc, Carnegis Mellon University, Ott Consulting Inc, GPI Inc, Penn General Energy, The Tin Man, Groundwater and environmental Services Inc, Mark Allen Surveying, Stantec Inc, University of Delaware, Ronca Construction Corp, Wisssahickon Trails, Gateway Engineers, Tree Pittsburgh, Banner Associates, Trimble Surveyors, Allegheny Professional Services LLC, Gilmore and Associates Inc, Borton Lawson, US Fish and Wildlife Service Chesapeake Bay Office, Geoscience Engineering and testing LLC, insite Group Inc, Lehigh Engineering, PA Outdoor Writers Association, KPI Technology, Charles Shoemaker Inc, Laurel Mountain Energy, Tri County Regional Planning Commision, Erdman Anthony Inc, THG GeoPhysics Inc, Curry and Associates, Berks Surveying Inc, Luzerne County 911, Lotus Environmental Consulting, AWK Engineers Inc, Faxio Consulting, Suez Inc, Silver Core Land Development Consultants, Christine Davis Consultants Inc, Mellott Engineering Inc, DH Enterprises, ASC Group Inc, ARM Group LLC, Kennedy and Assoicates LLC, PennTerra Engineering, Frostburg State University, Site Pro Surveying, Northeast Surveyors LLC, JLS Surveying, Acer Associates, Scholouch Inc, Boord-Benchek LLC, KU Resources Inc, University of North Carolina, Fisher Associates, Shoup Engineering, Gilmore and Assoicates, V.F. Britton Group, GeoStabilization International, Pennsylvania American Water, JHA Companies, Simone Collins Landscape Architecture, Prime AE Group, Schuylkill River Greenways, Chester Valley Engineers, Olympus Energy, Carbon Engineering Inc, RGS Associates, McMillen Consulting, Endeavor Professionals, Woodland Design Company, Ecotone Inc, Ruggeria Plante Design Firm, Biscon AERO, Millcreek Township, Stell Inc, Soil Services Company Inc, Otel Corp, Catania Engineering Assoc, Hampson Surveying, National Older Workers Career Center, Territ Surveying and Design LLC, Drummond Carpenter PLLC, Holmes Cunningham Engineering, McMahon and Associates, Hawbaerk Engineering, Columbia County Housing and Redevelopment Authority, Control Point Associates Inc, Morris Knowles and Associates Inc, Benchmark Engineering, Allegheny College, Franklin County Conservation District, Enviornmental Consultation Services Inc, Aqua America Inc, Triple H

Enterprises, Range Resources Inc, Howell Kline Surveying, William F. Hill and Associates, PennDOT District 6-0, Elk Lake Services LLC, Snyder Surveying, Remington Vernick Engineers, Bedford County Planning Commission, NRCS Berks County, Northeastern Forestry Concepts LLC, K2 Engineering, Deiss Halmi Engineering Inc, Ludgate Engineering Inc, Strata Consulting Inc, Porter Consulting Inc, MCM Consulting Group, RK Webster LLC, Saint Josephs Unviersity, Cedarville Engineering, PT Hendricks Surveying, Greenleaf Consulting Services LLC, Eustace Engineering LLC, PA Rural Water Association, DEP Tom Ridge Environmental Center, Diverse Resource Investments LLC, Guildford Township, Pennoni Associates, PennDOT Highway Delivery Division, SCWA Environmental Consultants, Appalachian Engineering Goup LLC, Johnson, Mirmiran, and Thompson LLC, PA DCNR Greenwood Furnace State Park, G.D. Houtman and Son Inc, CHRS Inc, Sarcinello Planning and GIS Services Inc, Patton Engineering, PA Dirt and Gravel Roads Program, Hill Crest Associates, Friends of Oppossum Lake Conservancy, Lower Frankford Township, GeoSearch, Austin Community College, Evans Machining Service Inc, JTB Surveying and Engineering, Seneca Engineering, Marc Dye Associates LLC, Delaware River Basin Commission, Navarro and Wright Consulting Engineers, Municipal Authority of Westmoreland County, Charles Shoemaker Inc, Caliber Public Safety, Zek Surveying, Bieber Land Surveying, Elizabeth Allen Land Surveying, Kerry Uhler and Associates, Maryland Enviornmental Service, UGI Utilities, Beran Environmental Services, Smith and Gardner Associates, EAC Archeology Inc, PennDOT Engineering District 11-0, Curry and Associates, Hoyt and Berenyi Inc, Barry Isett and Associates, American Water Inc, Collective Efforts LLC, Coleman Enviornmental Consulting, Gilmore and Associates, City of Altoona, CAI Technology Inc, Northeastern PA Alliance, Histoircal Information Gatherers Inc, Colonial Famiy Eyecare, PennFOrestry Company, Colebrook Run Limited, West Virginia University, HMI Techical Solutions, PA DEP Cambria District Office, Dynanmic Family Narratives Inc, Dumack Engineering, University of Wisconsin Whitewater, DC Gohn and Associates Inc, GE Renewables, PA Game Commission, Pringle Nero Land Surveying, Upstream Tech, ACDSLLC, CMC Engineering, NRCS Bedford, Theurkof Design and Planning LLC, WSP USA, Laird LA PLLC, Toole Design, Roost Architecture Inc, Geosyntec Consultants, Juniata Valley Land Surveying, WJP Engineers, University of Detroit Mercy Law School, GARVIN BOWARD BEITKO ENGINEERING, INC., Laurel Renewable Partners LLC, K & L Gates LLP, Symbium, Chester County Conservation District, Soar 2C, US Mine Safety and Health Administration.