WHAT IS GEOSCIENCE?
Geoscience is the study of the Earth and the complex geologic, marine, atmospheric, and hydrologic processes that sustain life and the economy. Understanding the Earth’s surface and subsurface, its resources, history, and hazards allows us to develop solutions to critical economic, environmental, health, and safety challenges.

By the numbers: PENNSYLVANIA
• 16,480 geoscience employees (excludes self-employed)¹
• 628 million gallons/day: total groundwater withdrawal³
• $1.85 billion: value of nonfuel mineral production in 2017⁴
• 59 total disaster declarations, including 26 flood, 16 severe storm, and 8 hurricane disasters (1953-2017)⁶
• $9.1 million: NSF GEO grants awarded in 2017¹⁴

ENERGY AND MINERALS IN PENNSYLVANIA
• $1.85 billion: value of nonfuel mineral production in 2017⁴
• Stone (crushed), cement (portland), and lime: top three nonfuel minerals in order of value produced in 2017⁴
• 45.7 million short tons: coal produced in 2016⁵
• 5.46 trillion cubic feet: natural gas produced in 2017⁵
• 6.48 million barrels: crude oil produced in 2017⁵
• 3.38 million megawatt hours: wind produced in 2017⁵

NATURAL HAZARDS IN PENNSYLVANIA
• 59 total disaster declarations, including 26 flood, 16 severe storm, and 8 hurricane disasters (1953-2017)⁶
• $170 million: individual assistance grants (2005-2017)⁶
• $137 million: mitigation grants (2005-2017)⁶
• $840 million: preparedness grants (2005-2017)⁶
• $394 million: public assistance grants (2005-2017)⁶
• 60 weather and/or climate events, each with costs exceeding $1 billion (inflation adjusted) (1980-2017)⁷

WORKFORCE IN PENNSYLVANIA
• 16,480 geoscience employees (excludes self-employed) in 2017¹
• $78,198: average median geoscience employee salary¹
• 41 academic geoscience departments²

WATER USE IN PENNSYLVANIA
• 628 million gallons/day: total groundwater withdrawal³
• 5.41 billion gallons/day: total surface water withdrawal³
• 1.39 billion gallons/day: public supply water withdrawal³
• 34 million gallons/day: water withdrawal for irrigation³
• 645 million gallons/day: industrial fresh water withdrawal³
• 73% of the population is served by public water supplies³

4 U.S. Geological Survey, Mineral Commodity Summaries 2018
5 U.S. Energy Information Administration
6 FEMA Data Visualization: Summary of Disaster Declarations and Grants (accessed May 2, 2018)

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U.S. GEOLOGICAL SURVEY (USGS)
- $1.15 billion: total USGS budget in FY 2018 (5.8% increase from FY 2017)8
- The National Cooperative Geologic Mapping Program funds geologic mapping projects with federal (FEDMAP), state (STATEMAP), and university (EDMAP) partners
- $2.8 million: Pennsylvania STATEMAP funding (1993-2016)9
- Lehigh University, Pennsylvania State University, and the University of Pittsburgh have participated in EDMAP9
- USGS streamgages collect real-time or recent streamflow, groundwater, and water-quality data in Pennsylvania

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA)
- $20.7 billion: total NASA budget in FY 2018 (5.5% increase from FY 2017)10
- $1.9 billion: total NASA Earth Science budget in FY 2018 (0% change from FY 2017)10
- Gravity Recovery and Climate Experiment (GRACE) satellites measure groundwater changes in Pennsylvania
- Soil Moisture Active Passive (SMAP) satellite measures soil moisture in Pennsylvania

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)
- $5.9 billion: total NOAA budget in FY 2018 (4.1% increase from FY 2017)11
- Next-generation geostationary (GOES) and polar orbiting (JPSS) satellites provide weather forecasting over Pennsylvania
- Deep Space Climate Observatory (DISCOVR) satellite monitors radiation and air quality over Pennsylvania
- 214 National Weather Service Cooperative Observer Program (COOP) sites in Pennsylvania12

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
- $8.1 billion: total EPA budget in FY 2018 (0% change from FY 2017)15
- 94 active Superfund sites in Pennsylvania in 201816
- $26.4 million: Drinking Water State Revolving Fund (DWSRF) grants in Pennsylvania in 201717
- $200,000: Brownfield cleanup grants awarded to Pennsylvania in 201818

FEDERAL FACILITIES IN PENNSYLVANIA
- USGS Pennsylvania Water Science Center, New Cumberland
- USGS Leetown Science Center Laboratory, Wellsboro

YOUR STATE SOURCE FOR GEOSCIENCE INFORMATION
Department of Conservation and Natural Resources
Bureau of Topographic and Geologic Survey
3240 Schoolhouse Road
Middletown, PA 17057-3534
http://www.dcnr.pa.gov/about/Pages/Topographic-and-Geologic-Survey.aspx
717-702-2017

AGI's Geoscience Policy and Critical Issues programs support well-informed public policy and decision making by providing information and facilitating dialogue between the geoscience community and decision makers at all levels.
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