Delaware Geological Survey
FY 2028 Budget Presentation

Mission: *to provide objective earth science information, advice, and service to our stakeholders: the citizens, policy makers, industries, and educational institutions of Delaware.*



View from Roosevelt Inlet towards Cape Henlopen

Delaware Geological Survey

Reliable Science. Public Value.



Who We Are

- A research and public-service unit of the University of Delaware, serving as the state's geological survey
- A skilled, dedicated team that takes pride in its work and in providing sound science that serves Delaware
- A resource for essential advice, products, and data to State agencies and all Delawareans

Delaware Geological Survey

Reliable Science. Public Value.



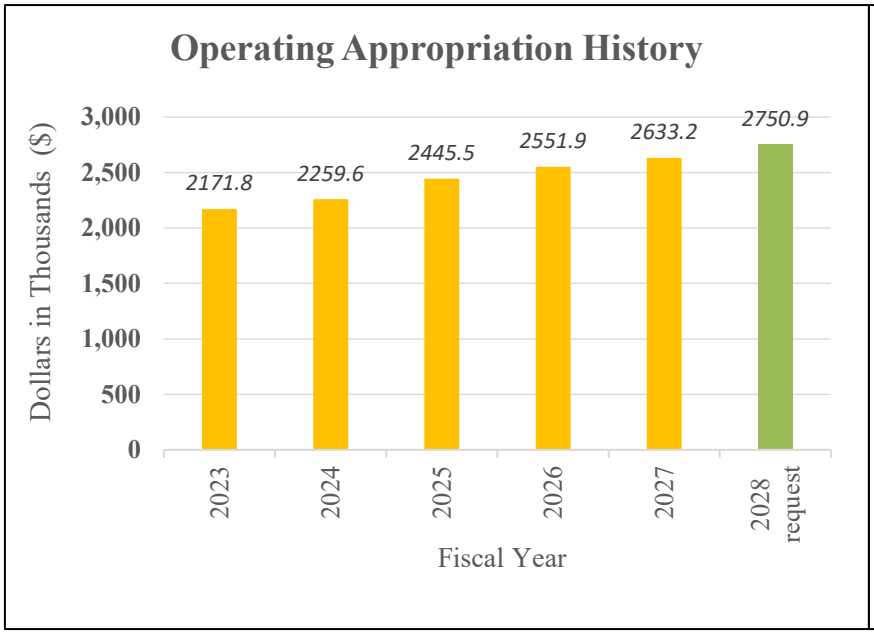
Who We Are

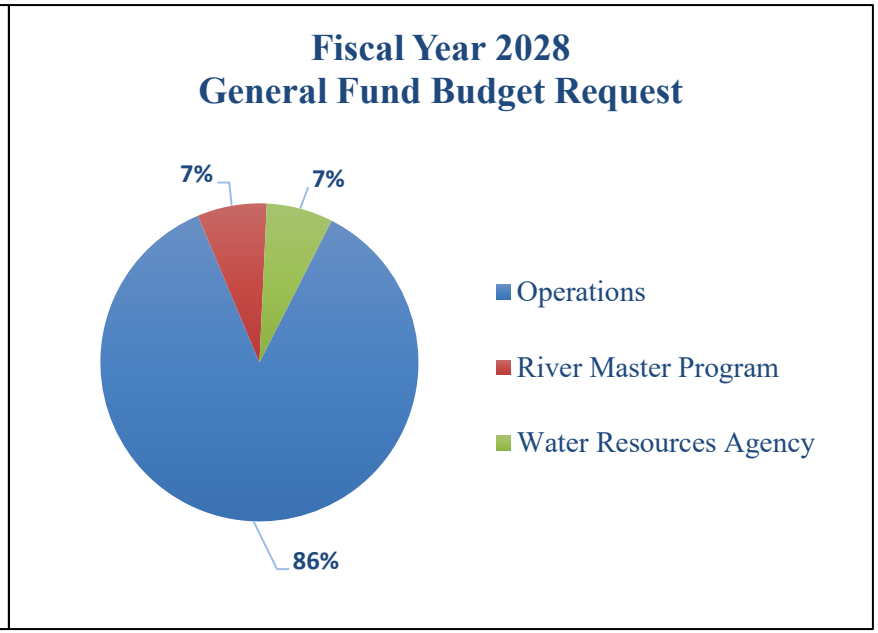
- An experienced team: 8 of our 20 staff have 20 years or more experience at the DGS
- Broad expertise in geology, water science, and technology: 6 of 16 science staff hold PhDs in their fields
- State appropriation supports 15 professional, technical, and support staff
- Five staff are in project positions supported by external funds; part-time student interns are also valuable contributors

Delaware Geological Survey

FY 2028 Budget Overview

- FY2028 request includes FY Base adjusted for salary contingency plus two modest Budget Enhancements (Door Opener + 1% Increase Request)
- Base Budget includes pass-through lines for Office of Delaware River Master and UD Water Resources Agency plus embedded pass-through for UD Delaware Environmental Observing System (DEOS)





Delaware Geological Survey

FY 2028 Budget Lines

Category	FY2026 Actual	FY2027 Budget	FY2028 Base	Inflation & Volume Adjustment	One-Time	FY2028 Request
Operations	2280.8	2280.8	2344.2*	0	26.3	2370.5
River Master Program	127.3	166.5	166.5	28.0	0	194.5
Water Resources Agency	185.9	185.9	185.9	0	0	185.9
TOTAL	**2594**	**2633.2**	**2696.6**	**28.0**	**26.3**	**2750.9**

** Includes continuing $80K pass through for UD Center for Environmental Monitoring and Analysis (CEMA) for the Delaware Environmental Observing System (DEOS)*

- DGS efficiently and effectively uses our appropriated state funds
  - Shared UD systems minimize state's overhead
  - Access to UD resources supports value-added science
  - Every state dollar leverages around 40 cents of external funds
- **$28.0K** Inflation & Volume Adjustment = door opener request for state's Delaware River Master obligation
- **$26.3K** One-Time = 1% Increase request for IT upgrades

Delaware Geological Survey

FY 2025 Program Overview

How DGS Science Serves Delaware

- **Water Security** — Monitoring and modeling Delaware's aquifers and surface-water systems
- **Safe and Sustainable Growth** — Geologic maps and data supporting land-use and infrastructure planning
- **Resilient Communities** — Coastal and floodplain analyses informing hazard mitigation and recovery
- **Open Access to Science** — Online mapping and borehole tools making data available statewide
- **Partnerships for the Public Good** — Coordinated programs with DNREC, DEMA, OSPC, USGS, and others

Delaware Geological Survey

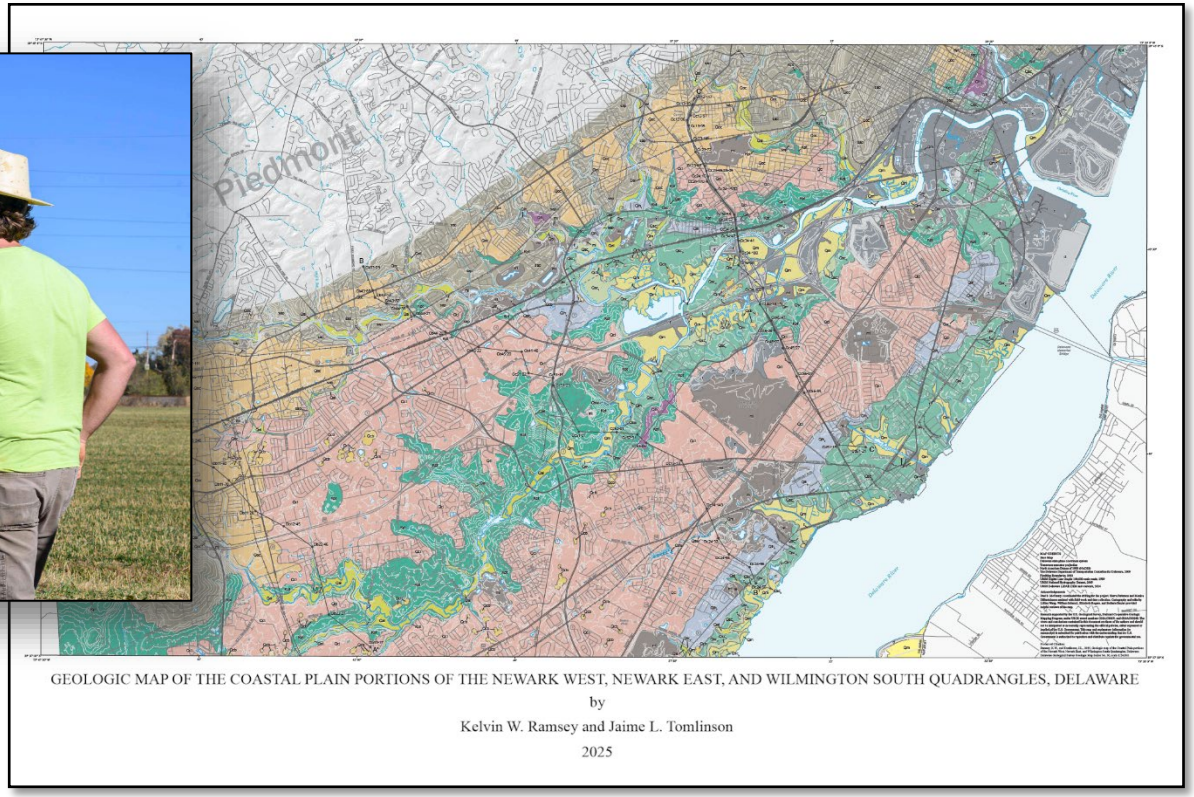
Mapping Delaware Geology

Modern Geologic Maps in Digital Formats:

Understanding the land where we build and the subsurface where our water is found



The DGS Drilling Program:
How We Map Geology in Delaware



GEOLOGIC MAP OF THE COASTAL PLAIN PORTIONS OF THE NEWARK WEST, NEWARK EAST, AND WILMINGTON SOUTH QUADRANGLES, DELAWARE

by

Kelvin W. Ramsey and Jaime L. Tomlinson

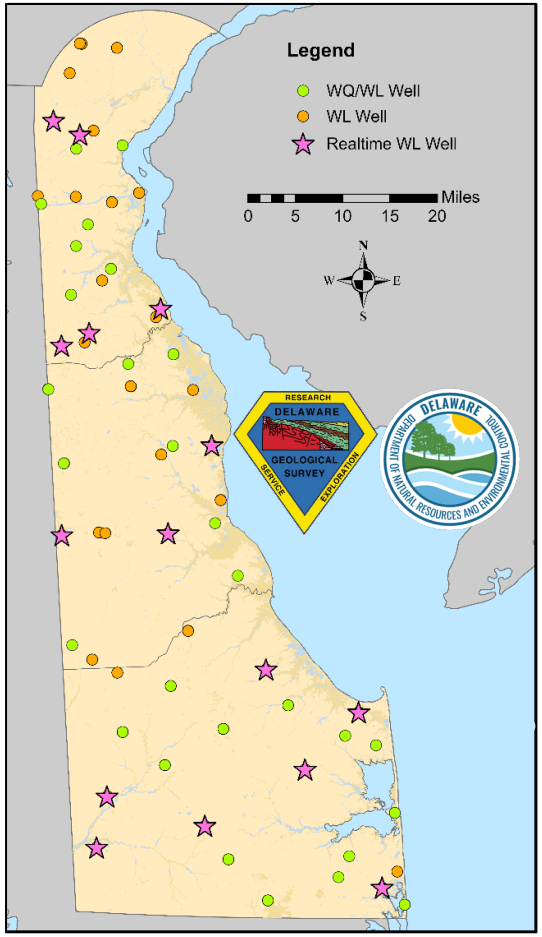
2025

Delaware Geological Survey

Statewide Network for Water Data and Resilience

- **Groundwater Monitoring Network**
  - Status: 177 wells, 17 aquifers
  - Data: > 49 million automated water levels
  - Salinity: Six new wells (James Farm and Lewes UD campus, expanding long-term SWI network from 3 to 9 wells)
  - Projects coordinated with DNREC, wells funded by Bond Bill
- **USGS Gaging Program:** 10 stream gages and 7 tide gages in cooperative DGS-USGS program
- Supports DNREC, DEMA, NWS operations and programs on water supplies and flooding hazards

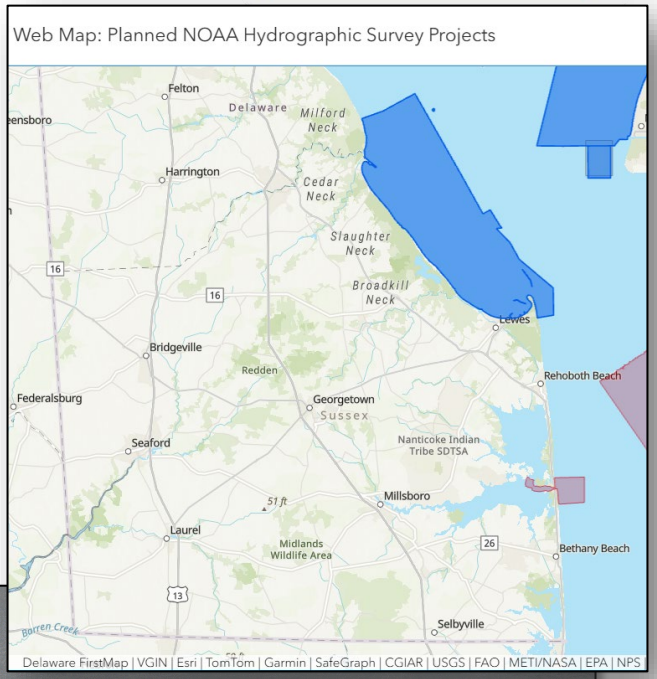


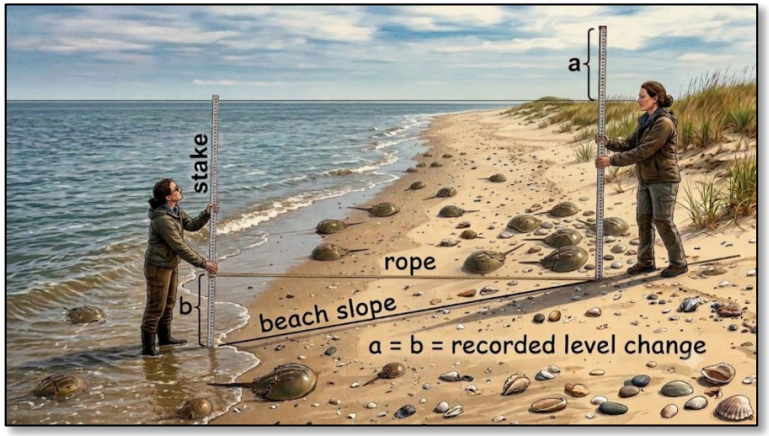


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Monitoring Delaware's Coast

- **Beach-camera network:** 175,000+ images annually track shoreline change and storm impacts
- **Citizen scientist beach profiling:** Beach-elevation measurements by volunteer residents document beach changes near cameras
- **Delaware Bay bottom survey:** DGS initiated & coordinates collaboration for a 2027 modern bottom survey of SW Delaware Bay funded by the NOAA Brennan Ocean Mapping Fund ($500K) with cost share by DNREC ($150K)



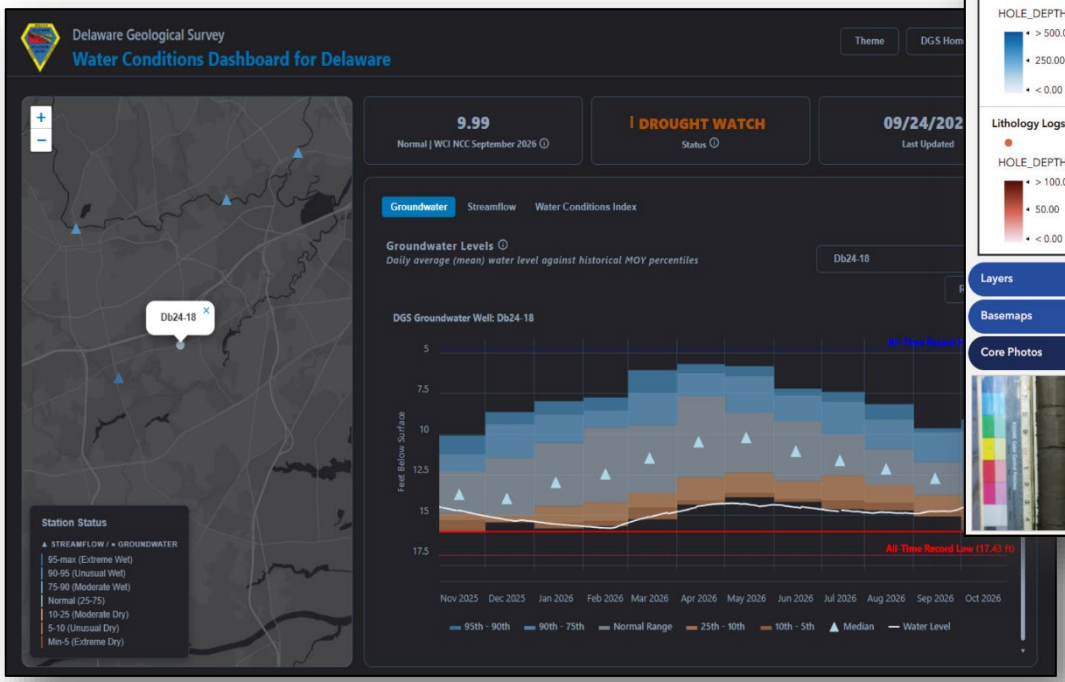


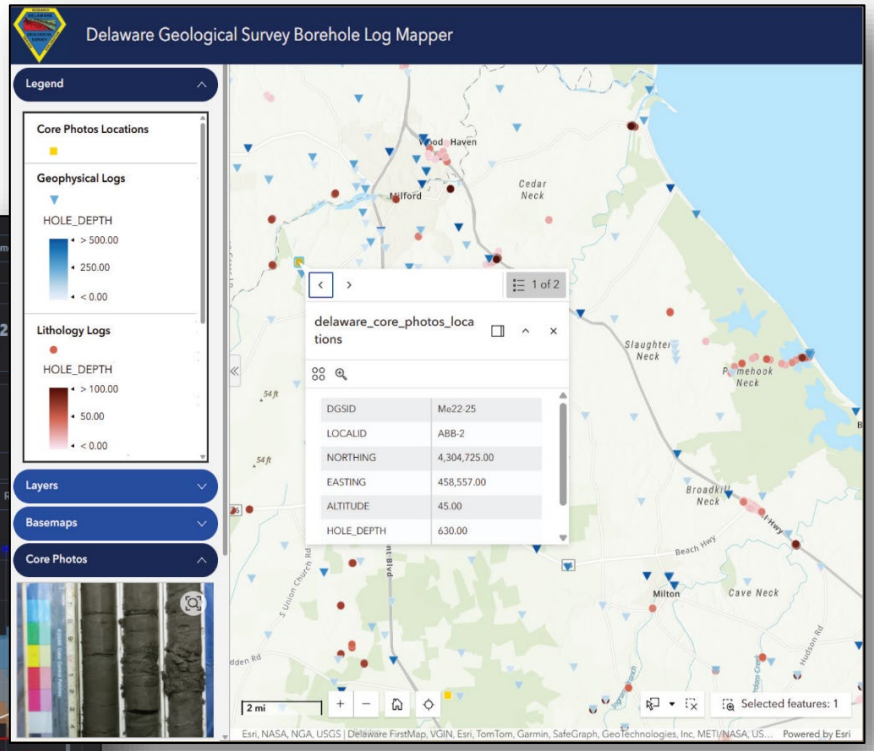


Delaware Geological Survey

Delivering Data That Meets Stakeholder Needs

- **DGS Borehole Log Mapper: Core Photo Module**
- **Water Conditions Dashboard**
- **DGS Data Access via FirstMap**



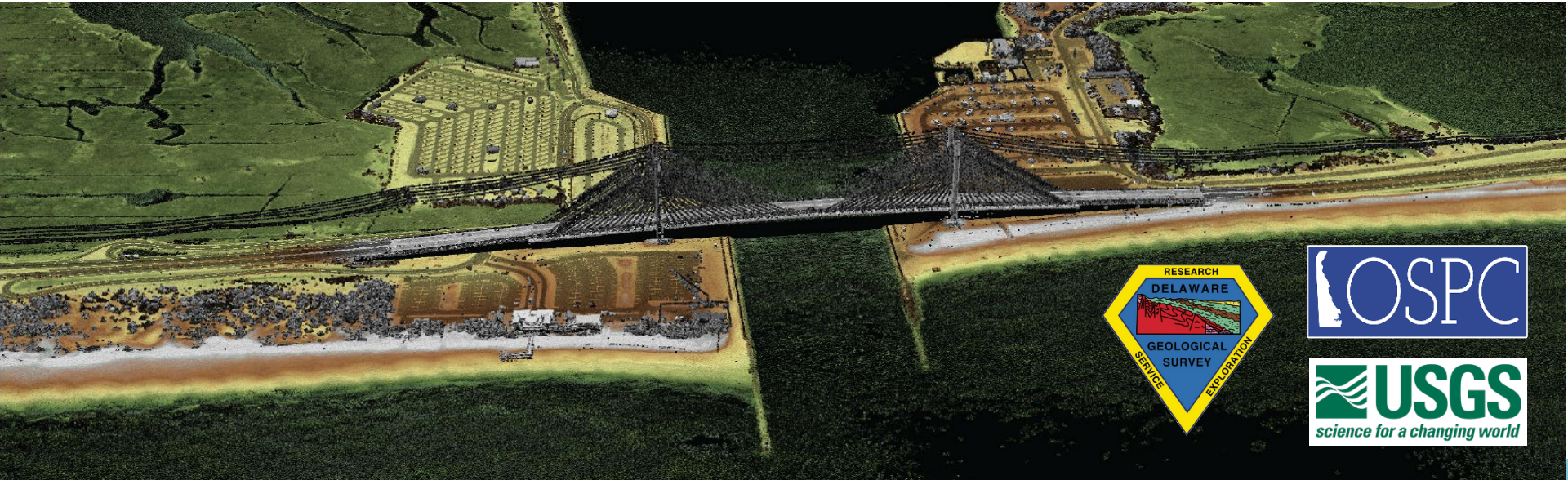


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Supporting Delaware's Geospatial Framework

Creating a high-resolution digital terrain model for Delaware

- **Project coordination:** DGS supports OSPC by coordinating USGS collection and processing of statewide 3D elevation and hydrography data
- **2023 Statewide LiDAR:** DGS reviewed data quality and created products such as seamless statewide + countywide 3D elevation models used for flood mapping, infrastructure planning, and environmental resilience



Delaware Geological Survey

Partnerships in Action for Delaware

RESEARCH
DELAWARE
GEOLOGICAL
SURVEY
SERVICE
EXPLORATION

Water Supply + Coastal

Storm Emergency Response

Geospatial / Map Data

Federal Cooperation

Delaware Geological Survey

Performance Measures

IPU	Performance Measure Name	Fiscal Year 2025 Actual	Fiscal Year 2027 Budget	Fiscal Year 2028 Governor's Recommended
90-01-02	***Delaware Geological Survey***			
	# of geologic mapping square miles (cumulative)	2993	3050	3110
	# of DGS well records in database	60698	61724	62000
	# of water level records in database (millions)	49.7	52.1	57.6
	# of water salinity records in database [salt water intrusion monitoring] (millions)	8.9	10.1	9.4
	# of stream gages	10	10	10
	# of tide gages	7	7	7

Delaware Geological Survey

Performance Measures

FY25-26 COMPLETED PRODUCTS

- DGS Geologic Map No. 31, *Geologic Map of the Kenton Quadrangle, Delaware*
- DGS Open File Report No. 57, Groundwater Monitoring Procedures Part 2: Equipment and Procedures for Collection of Water-Quality Samples from Monitoring Wells
- DGS Open File Report No. 58, Delaware's Saltwater Intrusion Monitoring Network: Data Gap Assessment
- *DGS 2025-2026 Annual Report of Programs & Activities*
- *Delaware Geological Survey Borehole Log Mapper: Core Photo Module (ESRI Experience web application v2026)*
- *Water Conditions Dashboard for Delaware (beta-testing)*

Delaware Geological Survey

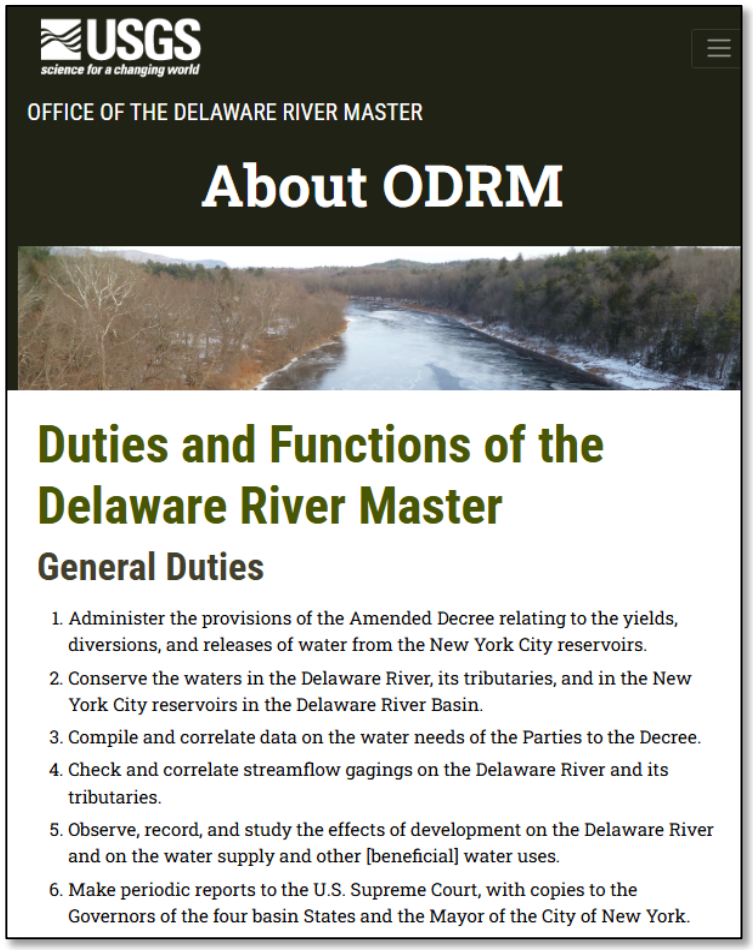
Performance Measures

FY27-28 PRODUCTS IN PROGRESS

- DGS Geologic Map No. 32, *Geologic Map of portions of the Marydel and Harrington Quadrangles, Delaware*
- DGS Report of Investigations No. 87, *Geological Characterization of Miocene sediments of the Marshy Hope core site (Nb53-08), northwest Sussex County, Delaware*
- DGS Report of Investigations No. 88, *Geological Characterization of the Sandtown core site (Kb33-26), western Kent County, Delaware*
- DGS Report of Investigations No. 89, *Vertical Land Motion in Delaware*
- DGS Report of Investigations No. 90, *Back-barrier Flooding in Slaughter Beach, Delaware*
- DGS Report of Investigations No. 91, *Stratigraphic Geometry and Facies Characteristics of the Potomac Formation near the Chesapeake and Delaware Canal, Delaware, on the basis of a Reflection Seismic Survey and Well Data*
- DGS Open File Report No. 58, *The Middle Atlantic Stratigraphic Equivalency Project: Establishing Interstate Stratigraphic Relationships from Virginia to New Jersey*
- DGS Open File Report No. 59, *The Potomac Formation in Five Core Sites in New Castle County, Delaware*

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Delaware River Management Framework



Budget Enhancement Inflation/Volume Increase: **Delaware River Master**

- U.S. Supreme Court 1954 Decree requires Delaware to pay 25% of costs of operating this office
- ODRM analyzes river conditions and water releases, helping the Decree Parties agree on flow management decisions that affect the lower Delaware River and Bay
- FY2028: $28K increase requested for Delaware's required share of ODRM costs

USGS science for a changing world

RESEARCH DELAWARE GEOLOGICAL SURVEY SERVICE EXPLORATION

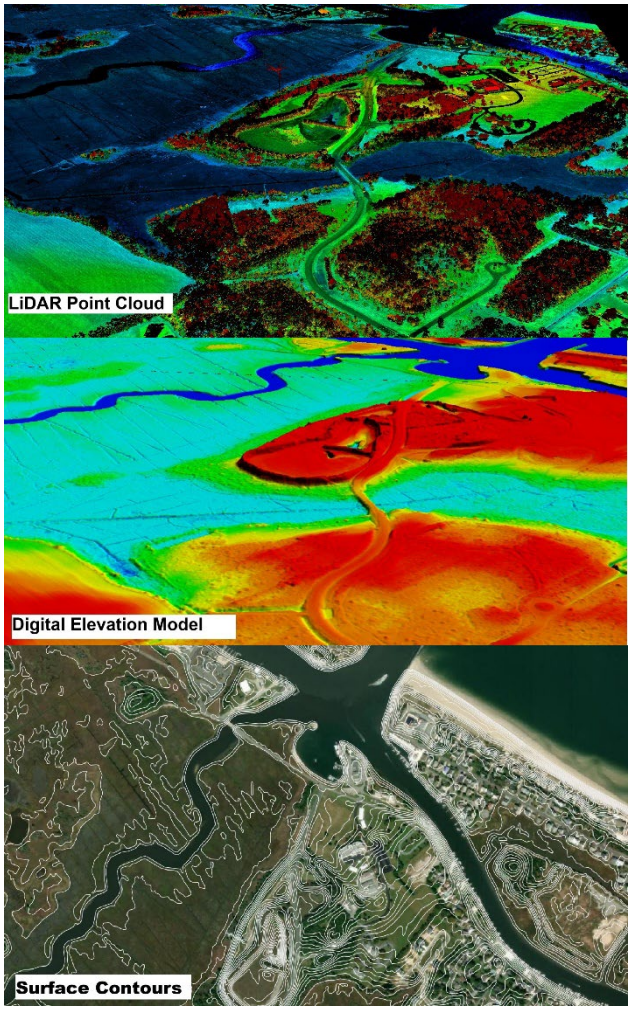
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Technology Investments

Budget Enhancement
One-Time 1% Increase Request
Scientific Computing Workstations

- DGS requests $26.3K toward the $31.7K cost of replacing two workstations; accumulated overhead funds can cover the remaining $5.4K
- Two of four comparable workstations are out of warranty. Newer systems would improve speed and capacity for LiDAR, groundwater modeling, and large-dataset analysis, including machine learning

Data Processing



Delaware Geological Survey

Reliable Science. Public Value.



- Providing objective, research-based earth science in service to Delaware
- Mapping Delaware's geology and water to support informed decisions
- Understanding our changing Earth, from underground aquifers to a dynamic coast

We appreciate the State's continued support for this work.