

# The Chesapeake Geospatial Roadmap: Supporting the Analysis and Mapping Needs of Multiple Audiences

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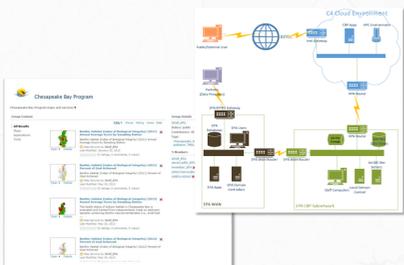
## 1 Partnership

The Chesapeake Bay Program (CBP) is a unique regional partnership that brings together leaders and experts from a vast range of agencies and organizations. Each CBP partner uses their own resources to implement Bay restoration and protection activities. Partners work together through the CBP goal teams, workgroups and committees to collaborate, share information and set goals. The CBP Geographic Information Systems (GIS) Team supports the work of the CBP Partnership and its corresponding committees, goal implementation teams, workgroups and action teams.



## 2 Infrastructure

The CBP GIS target architecture includes a combination of on-site and cloud components for data storage, analysis and geoprocessing, metadata cataloging, and data distribution. ArcGIS Desktop is leveraged for many GIS analysis projects, while ArcGIS Server and ArcGIS Online are being used for web mapping and web map application development. Other software tools used by the GIS Team include ENVI, ERDAS, and R.



## About

The Chesapeake Geospatial Roadmap represents a collection of integrated resources, procedures, and activities aimed at increasing efficiencies to address the geospatial needs of the Chesapeake Bay Program. For the first time, these factors are being considered in an integrated manner as part of an overarching system to support the Partnership.

## 3 People

The GIS Team is administratively aligned with the Chesapeake Bay Data Center, which is led by the U.S. Environmental Protection Agency (EPA). The GIS Team is composed of geospatial analysts, geographers, and environmental scientists from the U.S. Geological Survey's Eastern Geographic Science Center (EGSC) and the University of Maryland Center for Environmental Science (UMCES). The GIS Team prepares maps, conducts analyses, and develops applications to address Partnership needs, including support for the Chesapeake Bay Total Maximum Daily Load (TMDL).



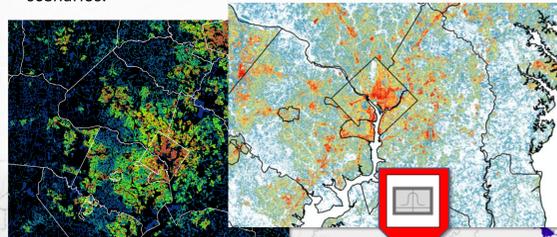
## 4 Geospatial Data and Services

GIS Team members apply the best available data to their projects. Among the wide variety of derived products include environmental indicators, data inputs to the suite of Chesapeake Bay Program models, and data layers to support the Chesapeake Watershed Agreement's Goals, Outcomes, and Management Strategies. These data are used to publish services for use by CBP Partners and other interested parties.



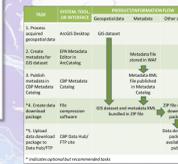
## 5 Analysis

The GIS Team leverages EPA's Enterprise License Agreement with the Environmental Systems Research Institute (ESRI) to conduct multi-media investigations of Chesapeake Bay restoration and conservation challenges. Analysis projects range from simple data aggregation for representation in various communication products to complex land change modeling applications under various growth management scenarios.



## 7 Procedures and Workflows

The GIS Team is developing a standardized set of workflows for desktop and web GIS based on policies, standards and best practices. These workflows outline formal procedures for developing, documenting, displaying and distributing geospatial data and services. CBP leverages a customized version of data and service publishing guidelines developed by ESRI and EPA.



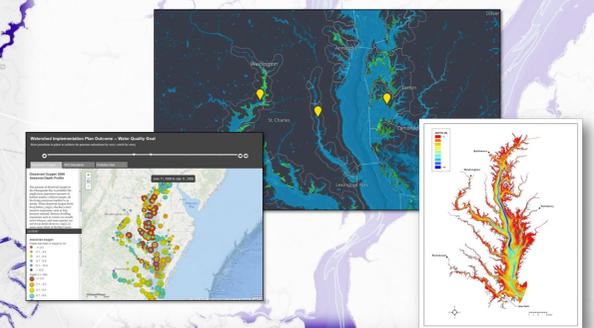
## 10 Data Discovery

The Bay Resource Library on [www.chesapeakebay.net](http://www.chesapeakebay.net) provides a searchable interface for discovery of CBP published maps. Metadata records for data and services are findable through the Chesapeake Bay Metadata Catalog, which in turn populates EPA's Environmental Dataset Gateway and data.gov. Spatial data resources will be findable directly from the CBP Data hub (<http://www.chesapeakebay.net/data>).



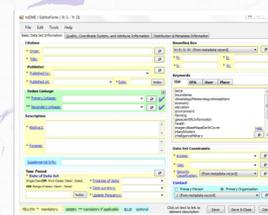
## 9 Mapping and Visualization

Static and dynamic maps and data visualizations are developed to address the needs of a wide range of internal and external audiences. Where possible, the mapping and visualization capabilities of ArcGIS Online are used to create web maps and web mapping applications. When necessary, custom JavaScript or Flex applications are developed to provide for unique functionality and interactivity.



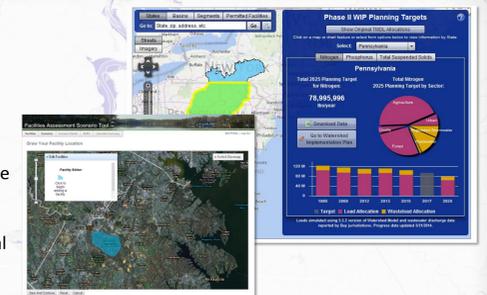
## 6 Metadata

Metadata is developed for CBP maps, data and services. Map documentation occurs within a standard content management system which is also used to document other resources populating CBP web sites. Data are documented leveraging EPA's Metadata Editor (EME) within ArcCatalog. Services are documented using a standalone version of EME and/or the Chesapeake Bay Metadata Catalog.



## 8 Applications

Applications answer specific questions or provide access to focused information important to the CBP's audiences. These range from simple map viewers to enable the interested public to explore geospatial data layers to more complex transparency and accountability dashboards for use by internal and external oversight groups.



Note: Any use of trade, firm, or product names is for description purposes only and does not imply endorsement by the U.S. Government.