Chesapeake Bay Program Metadata Specification

February 26, 2026
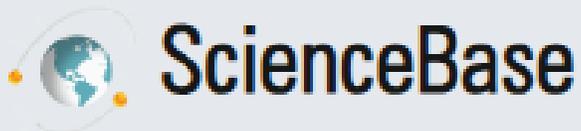
Agenda

- About the Data Governance Workgroup
- Goals
- Progress
- Metadata specification
- Data deliverable guidance

About the Workgroup

- Initiated in Fall 2024

- Includes members from multiple internal CBPO teams
    - Data Center
    - GSAT
    - Web Team
    - CBPO Data Managers
    - ChesapeakeData/DataHub representatives

- Focused initially on development of products to guide data management processes

Workgroup Goals

- Build trust in CBPO data products by documenting and addressing **data quality** issues

- Create ownership and accountability among data stewards by **defining standards, policies, and practices**

- Create and enhance **value** in our data products

- Eliminate **redundant**, confusing data storage regimes and address necessary technological updates

- Ensure **our authoritative data products** are findable, internally and externally

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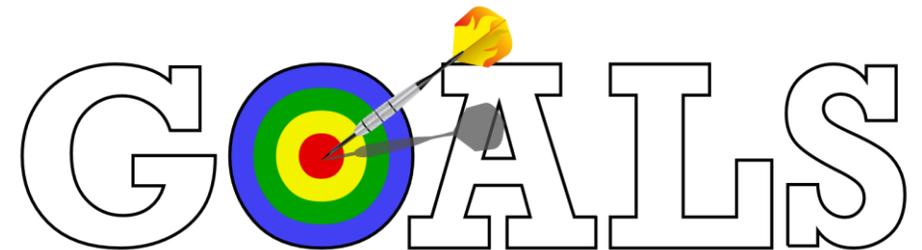
Progress to Date

- Collectively developed resources to guide data management and publishing:
  - Data Lifecycle Stages
  - Data Governance Charter
  - [Data Publishing Guidance](#)
  - [Metadata Specification](#)
  - [Data Archiving Guidance](#)
  - [Data Resource Deliverable Guidance](#)

  Aligned with Data Lifecyle

- Supported Related Efforts
  - DataHub Modernization Requirements Gathering

- [Data Governance Web Page](#)

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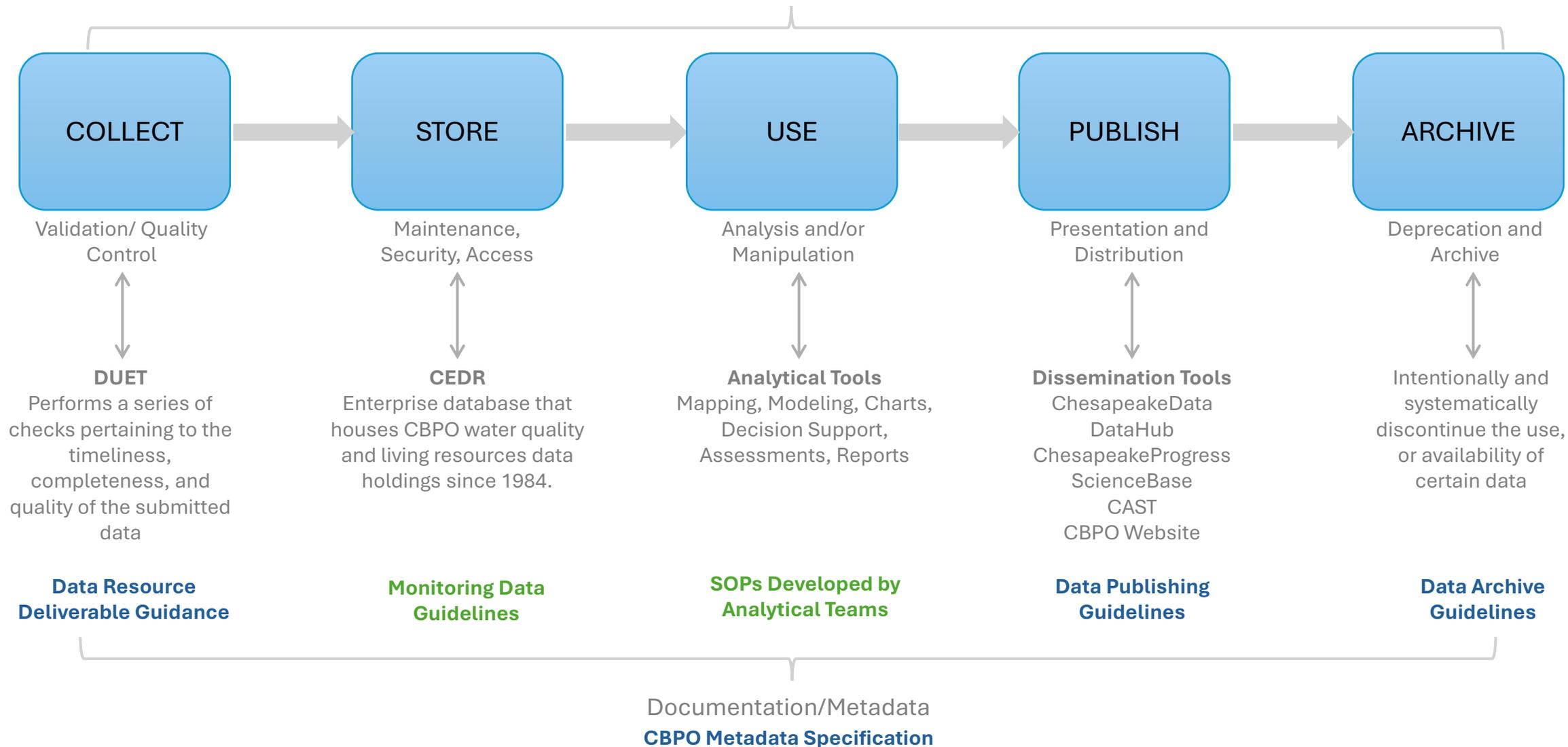
CBPO Guiding Principles

Principle	Description
Discovery and Accessibility	The CBPO will enable stakeholders to effectively and efficiently find, access, and use data resources by making them easily accessible and in non-proprietary formats, where possible.
Classification	The CBPO will promote data classification by utilizing standardized, rich, and consistent metadata with federal and agency guidance to enable users to discover, access, evaluate, and use the data resources.
Quality	The CBPO will ensure data resources used and shared are of known quality. The CBPO will ensure, to the extent possible, data resources are complete, timely, accurate, authentic, and valid.
Data Standards	The CBPO will facilitate cross-organizational collaboration, data resources sharing, and integration by promoting data resource consistency and reusability across partners and platform systems.
Value	The CBPO will ensure data resources are relevant and aligned with its mission, strategic plan, capabilities, and lifecycle data management needs. The CBPO will prioritize efforts to address data resource gaps and needs.
Transparency	The CBPO will provide visibility into the processes and methods used to collect, store, manage, and publish data resources.
Interoperability	The CBPO will promote common data resources, architecture, standards, processes and technologies across partners and platforms. To the extent possible, CBPO will identify authoritative data resource systems and establish common data schemas.

These principles will be used to develop the policies, procedures, and standards that will form the backbone of our data governance program.

Chesapeake Bay Program Data Lifecycle Stages

CBPO Data Governance Workgroup Charter

COLLECT	STORE	USE	PUBLISH	ARCHIVE
Validation/ Quality Control	Maintenance, Security, Access	Analysis and/or Manipulation	Presentation and Distribution	Deprecation and Archive

DUET
Performs a series of checks pertaining to the timeliness, completeness, and quality of the submitted data

CEDR
Enterprise database that houses CBPO water quality and living resources data holdings since 1984.

Analytical Tools
Mapping, Modeling, Charts, Decision Support, Assessments, Reports

Dissemination Tools
ChesapeakeData
DataHub
ChesapeakeProgress
ScienceBase
CAST
CBPO Website

Intentionally and systematically discontinue the use, or availability of certain data

Data Resource Deliverable Guidance

Monitoring Data Guidelines

SOPs Developed by Analytical Teams

Data Publishing Guidelines

Data Archive Guidelines

Documentation/Metadata
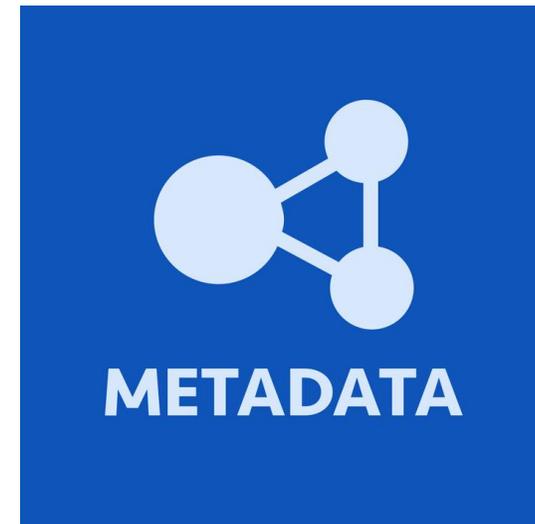**CBPO Metadata Specification**

CBPO Metadata Specification

- Finalized in May 2025

- Key Sections
  - Metadata Requirements
    - Level 1, Level 2, Level 3
  - Defined Value Lists
  - Common Tools and Examples

- Link to Document

Metadata Discussion

- What is the **goal** in implementing new metadata requirements?

  - Support ChesapeakeData Search?

  - Require Consistency Across Platforms?
    - At the minimal level or detailed level?

  - What is Reasonable to Expect Moving Forward?

- What needs to be **supported** via metadata?
  - ChesapeakeData
  - FGDC CSDGM Requirements
  - STAC?
  - ISO/Data.gov?

Metadata Discussion

- Some Key CBP Metadata Considerations
  - 1998 CIMS Specification

  - DataHub
    - Water Quality FGDC Records
    - Living Resources Look-up Tables

  - Chesapeake Progress
    - Detailed A&M Documents

  - ChesapeakeData
    - Minimal Metadata to Support Search

  - **S**(patio)**T**(emporal)**A**(sset)**C**(atalog)
    - Relies on metadata
    - Requires a spatio-temporal component to work effectively

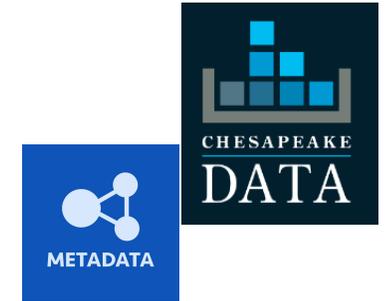**Detailed Documentation
Delivered by Providers**

**Analysis and Methods
Documents (detailed)**

**Minimal but consistent
information**

ChesapeakeData Metadata Requirements

* = required field

1. First and Last Name*
2. E-mail address*
3. Title of Data Resource*
4. URL of Data Resource
5. Summary of Data Resource*
6. Description of Data Resource*
7. Data Resource Topic(s)*
   - Defined list
8. Data Resource Type*
   - Downloadable Dataset
   - Story Map
   - Tool
   - Scientific Paper
   - Supplemental Document
9. Credit or Attribution*
10. Terms of Use
11. Additional Information

1-meter Land Use/Land Cover Change Viewer

Private Member ⓘ
Chesapeake Geoplatform

[View Document]

Summary

Compare aerial imagery produced in 2013-2014 and 2017-2018 with high-resolution land use/land cover change data for 2013-2018.

Open the Data Resource: https://lulc-1718.cicapps.org

The 1-meter Land Use/Land Cover Change Viewer is a three-panel viewer depicting land use/land cover change from 2013/14 to 2017/18. The viewer was developed to support the release of the 2022 edition of the Chesapeake Bay Program's 1-meter LULC and change data. The first two panels show the National Agriculture Imagery Program imagery used for the change analysis, while the third panel overlays the data, indicating areas with land use change.

Tool   Downloadable Dataset

Details

🔗 **Web Link**
Document Link

🕐 **December 14, 2024**
Date Updated

📅 **June 26, 2024**
Published Date

📄 **29 B**
Document file size

🌐 **Public**
Anyone can see this content

🔒 **No License Provided**
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Leverage Existing CBPO Metadata Guidance

- CIMS Metadata Guidelines: https://archive.chesapeakebay.net/cims/metasep.pdf

- Metadata Levels:

  - Level 1: Minimal for Searching

  - Level 2: Includes Attributes and Quality Information

  - Level 3: Includes Spatial Reference Information

Chesapeake Data Level

May be linked from Chesapeake Data record

Chesapeake Bay Program

September 1998

CBPO Metadata Levels

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Level 1
StoryMaps, Graphics, Documents

Metadata includes basic descriptive information

Level 2
Tabular Data without Spatial Information
Metadata includes all level 1 content as well as attribute definitions and quality assessments

Level 3
Spatial Data Resources
Metadata includes all level 2 content as well as spatial reference and positional accuracy information

Each level inherits requirements of preceding level

Level 1: StoryMaps, Documents, Reports, Graphics, Visual Presentations

Includes basic identification information to support discovery and access to data resources

Level 2: Tabular Data without Spatial Coordinates

Includes data quality and attribute information to support user needs for analytical and visual interpretation

Level 3: Geospatial Data Layers and Tabular Data with Spatial Coordinates

Includes spatial reference information and positional accuracy to support user needs for mapping, modeling and analysis

Level 1- Purpose and Applicability

- Original CIMS Definition
    - The purpose of Level 1 Metadata is to provide for the desired **search functionality**.
    - The elements in Level 1 metadata will furnish the minimum information about a dataset or document required to **search for and select** a particular dataset or document, to view and download.
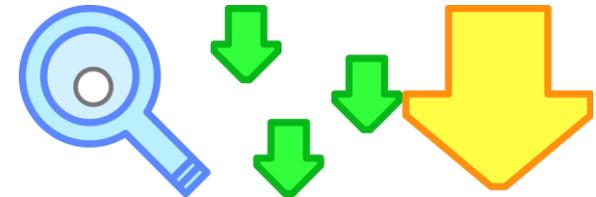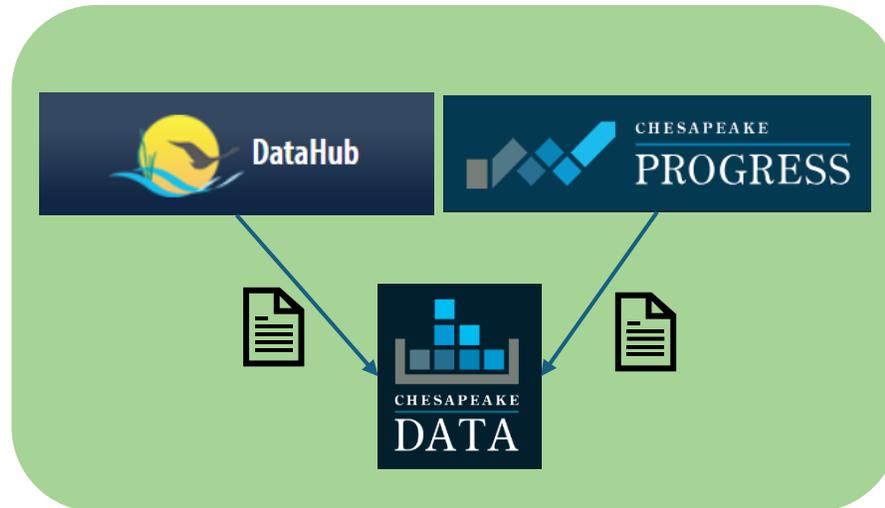
Level 2 - Purpose and Applicability
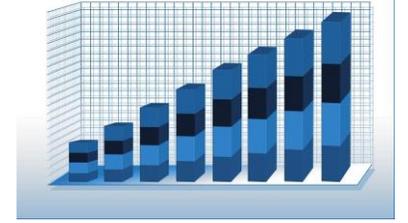
- Original CIMS Definition
    - The elements in Level 2 metadata are required to query and analyze the tabular data in CIMS. This level of metadata are not usually needed for nontechnical documents.
    - Level 2 contains those metadata elements in Level 1 as well as additional elements from sections 2 and 5 - **Data Quality** and **Entity & Attribute Information**

    - Applicable to tabular datasets that are not spatially referenced.
        - Geospatial or spatially referenced data are data that contain coordinates (e.g., latitude and longitude).
        - Non-geospatial data or data that are not spatially referenced are data that do not include coordinates in the data itself.
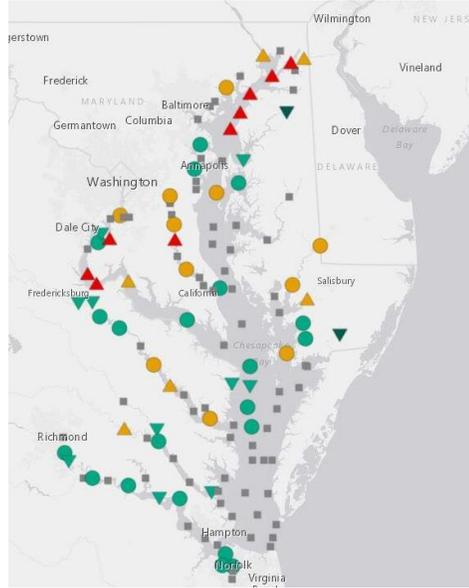
Level 2 - Elements

- Data Quality
  - Attribute accuracy
  - Logical consistency *(an explanation of the fidelity of relationships in the data set and tests used. Is it needed for level 2?)*
  - Completeness of data
  - Data lineage – all the steps that happened to create the current data set

- Entity and Attribute Information
  - Provide detailed attributes in metadata
  - Provide a link to a published attribute look up table/document

https://www.fgdc.gov/csdgmgraphical/dataq/logconfq.htm

Level 3 - Purpose and Applicability
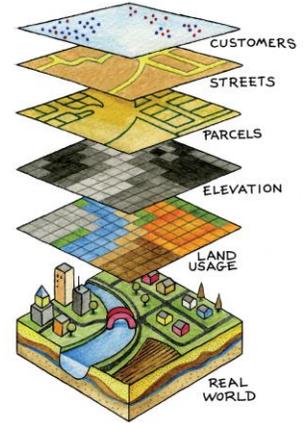
- Original CIMS Definition
  - The purpose of level 3 metadata is to begin to provide the information necessary to initiate queries and analyses of **spatially referenced data** including tabular datasets with coordinates, maps, and GIS coverages.

  - The elements in Level 3 metadata will supply the information about a dataset necessary to **query and analyze a particular dataset or sets.**

Level 3 - Elements

- Horizontal Positional Accuracy Report
- Vertical Positional Accuracy Report (where applicable)
- Spatial Data Organization Information (vector/raster)
- Spatial Reference Information (coordinate system)

CBPO Data Resource Deliverable Guidance

- Finalized in September 2025

- Key Sections
    - CBPO Data Resource Environment
    - Data, Information, and Document Delivery Requirements
    - Deliverable Serving vs. Submission Requirements
    - Geospatial Data Requirements
    - CBPO Metadata Specification
    - Numeric Data Reporting Guideline
    - Date and Time Guideline

- Link to Document

Data Resource Deliverable Guidance

- **Data, Information and Document Delivery Requirements:** Describes how data resource content should be delivered to CBPO, including acceptable data formats.
- **Deliverable Serving vs. Submission Requirements:** Describes requirements for electronic data submission and service provision.
- **Geospatial Data Requirements:** Describes requirements for submitting data that contains geospatial coordinates.
- **CBPO Metadata Specification:** Describes requirements for data documentation.
- **Numeric Data Reporting Guideline:** Describes requirements for reporting numeric information, including value precision, true zeros, missing data, and parameters not sampled.
- **Date and Time Guideline:** Describes requirements for reporting date and time information.

Figure 1. CBPO Data Resource Types

Questions?