NOAA DATA

Open Data and Policy Framework ETTAC Meeting

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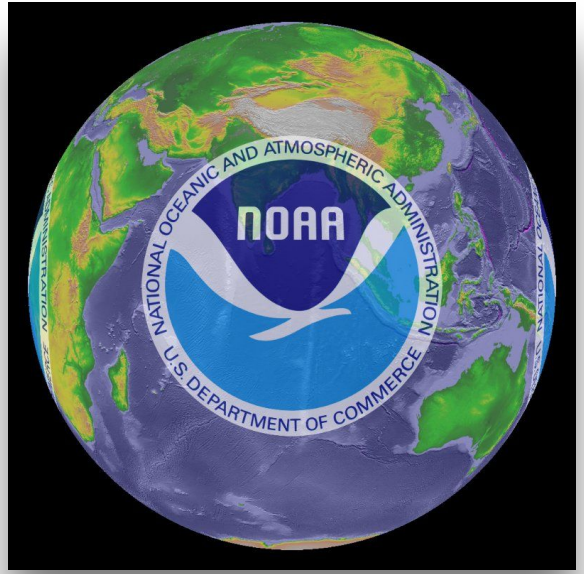
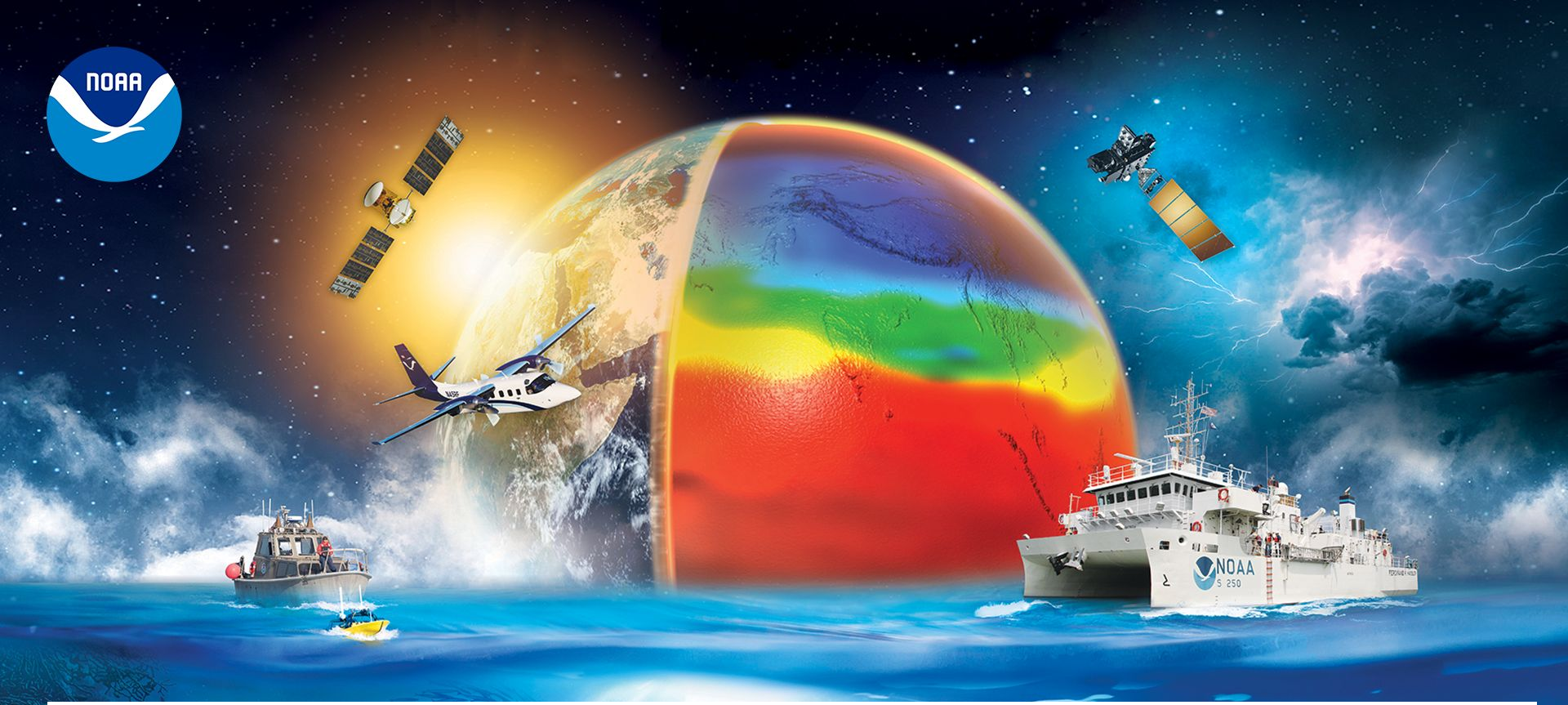
February 3, 2026

Outline

- Commerce CDO Opening Comments
- NOAA Data Diversity
- Federal Data Policy Landscape
- NOAA Data Sharing Examples
- Considerations for Federal Data Sharing





- Missions
- Platforms and Systems
- Data Formats
- Volumes
- Standards
- Users

The Value of NOAA Data

The U.S. weather forecasting services sector had revenues of $10.2 billion in 2024, underpinned by NOAA data

NOAA observations sustain the Ocean Enterprise—a network of 814 firms employing 325,000 workers

NOAA's ENSO and Winter Outlook forecasts influence financial decision-making for firms with a combined market capitalization of up to $13.4 trillion, helping to mitigate weather-related financial uncertainty

Ongoing Value of NOAA Data efforts from NOAA PRSSO

NOAA Data is Open by Default

- **The value of NOAA data lies in their use** -- the more the data are used, the greater the total benefit to society and the economy
- NOAA aims to **harness the opportunities of a rapidly growing commercial sector**
- Providing NOAA data with an **open license and in open, usable formats** is essential to maximizing their value -- including new opportunities as we modernize into the cloud

Primary Statutes and Requirements for Open Data and Information Services

- ❑ **Foundations for Evidence-Based Policymaking Act (2018)**
- ❑ **Geospatial Data Act (2018)**
- ❑ **Open Data Policy and Public Access to Research Results (PARR) *(2013 & 2022 OSTP memos)***
- ❑ **Information Quality Act (2001)**
- ❑ **Restoring Gold Standard Science EO (2025)**
- ❑ **Freedom of Information Act (FOIA) (1966)**
- ❑ **Privacy Act (1974)**

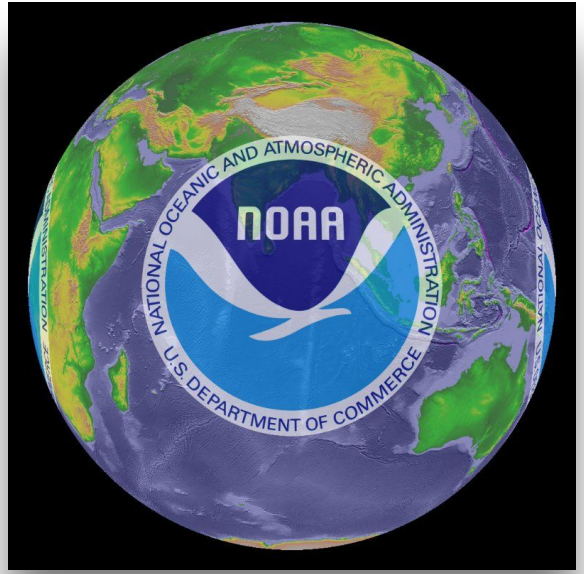
FAIR Principles

- **F**indable
- **A**ccessible
- **I**nteroperable
- **R**e-usable

The Foundations for Evidence-Based Policymaking Act (44 U.S.C. § 3520) establishes the responsibilities of the Federal CDO:

- **Lifecycle data management** including managing agency data assets in an open format under an open license, standardization, sharing, and publication – Ensure agency data conforms to **data management best practices**
- Develop and maintain a **comprehensive data inventory** of all data assets maintained by the agency that is interoperable with the Federal Data Catalog
- **Coordinate with agency officials on data needs**
- Engage agency employees, the public, and contractors in using public data assets and **encourage collaborative approaches** on improving data use
- Maximize the use of data in the agency, including for the production of evidence, cybersecurity, and the **improvement of agency operations**

Data Sharing Examples



NODD: *technology-focused (cloud hosting)*

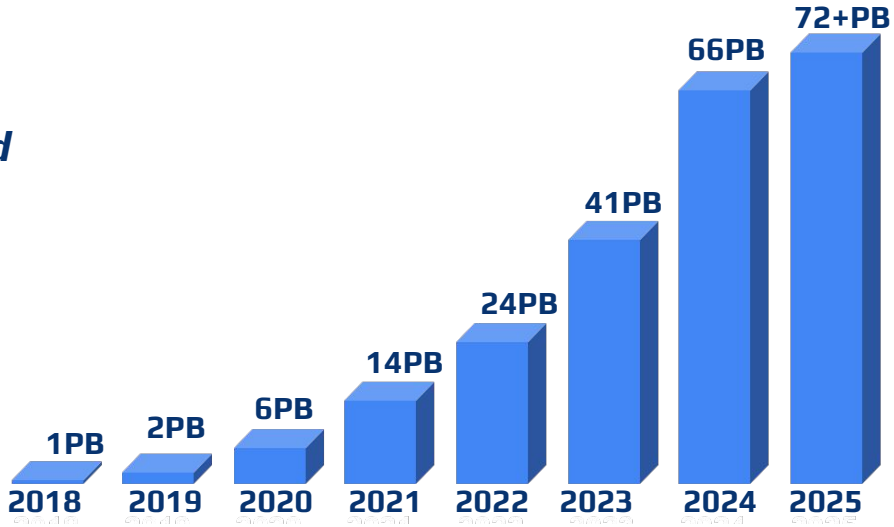
NOAA Open Data Dissemination (NODD)

Providing free & open access to hundreds of NOAA's valuable environmental datasets via three cloud service providers (CSPs)

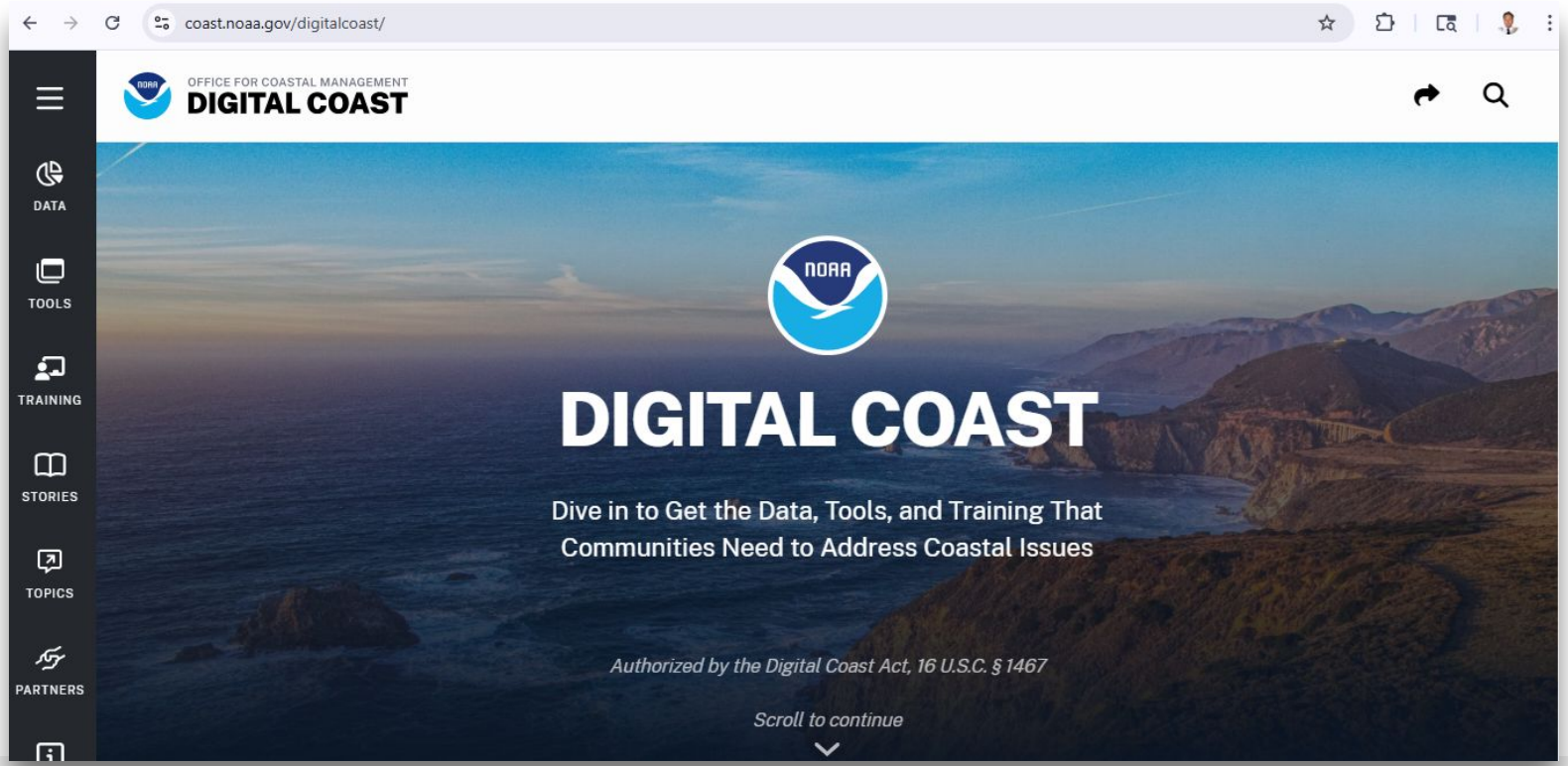
Microsoft Azure | aws | Google Cloud

Available Data Types:

- *Atmospheric*
- *Oceanic*
- *Fisheries*
- *Weather*
- *Climate*
- *Near Real-Time*
- *Period of Record*
- *Forecasting products*
- *Model Data*
- *And More!*

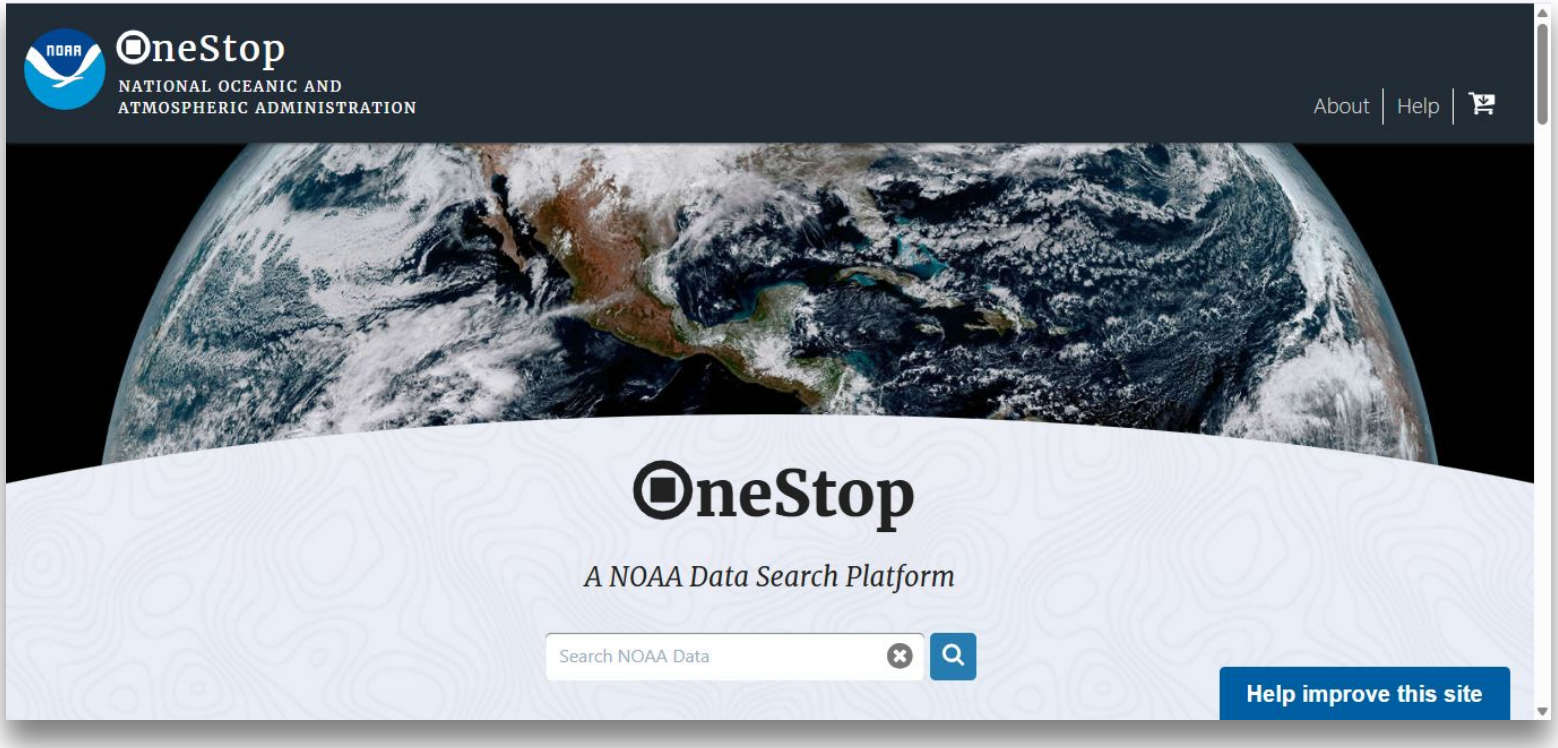


NOAA's Digital Coast: *user-focused (coastal & ocean)*

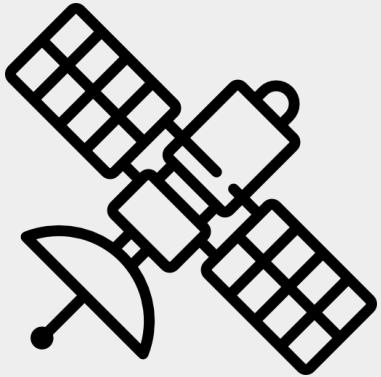


NOAA's GeoPlatform: *technology-focused (GIS services)*

NOAA's OneStop: *metadata catalog (feeds data.gov)*

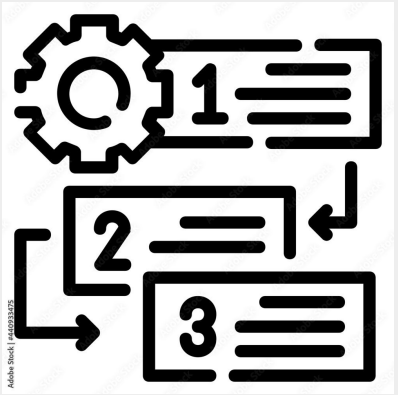


Challenges and Opportunities -> Data Sharing

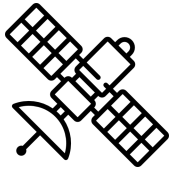


Data Volumes and Types

Cloud & AI Adoption and Modernization



Licensing, IP, and Privacy



Data Volumes and Types

- Exploding volumes from a vast array of new observing platforms require new methods for data processing, including AI/ML
- Requiring updated capital investment methodologies to determine optimal data architectures to support modeling improvements
- Adapting to newer formats & standards (audio, video, eDNA)
- Tools and technical assistance are oftentimes required to support end users adapting their applications to new data sources

Cloud & AI Adoption and Modernization

- Rapid migration from legacy on-prem systems to cloud
- Multi cloud deployments are enhanced by multi cloud data mesh architectures to provide open access to all data
- User requirements are changing → less desire to download large datasets, instead prefer to bring compute to the data
- Search and discovery must adapt to growing usage of LLM and similar methods → focused data community efforts to develop AI-ready data standards

Licensing, IP, and Privacy

- NOAA desire for as much of our data as possible to be available via full & open licenses (Creative Commons schema)
- Growing partnerships for commercial data to supplement gov't backbone → requires negotiations on open access
- R&D with industry and academia on new sensors and methods → intellectual property considerations factor into data access
- AI introducing a range of data privacy risks → growing area of information law and policy

NOAA Data Goal: Managing data as strategic assets to enhance a data driven culture focused on access, re-use, and interoperability

Thank you!

Please contact us with any questions:

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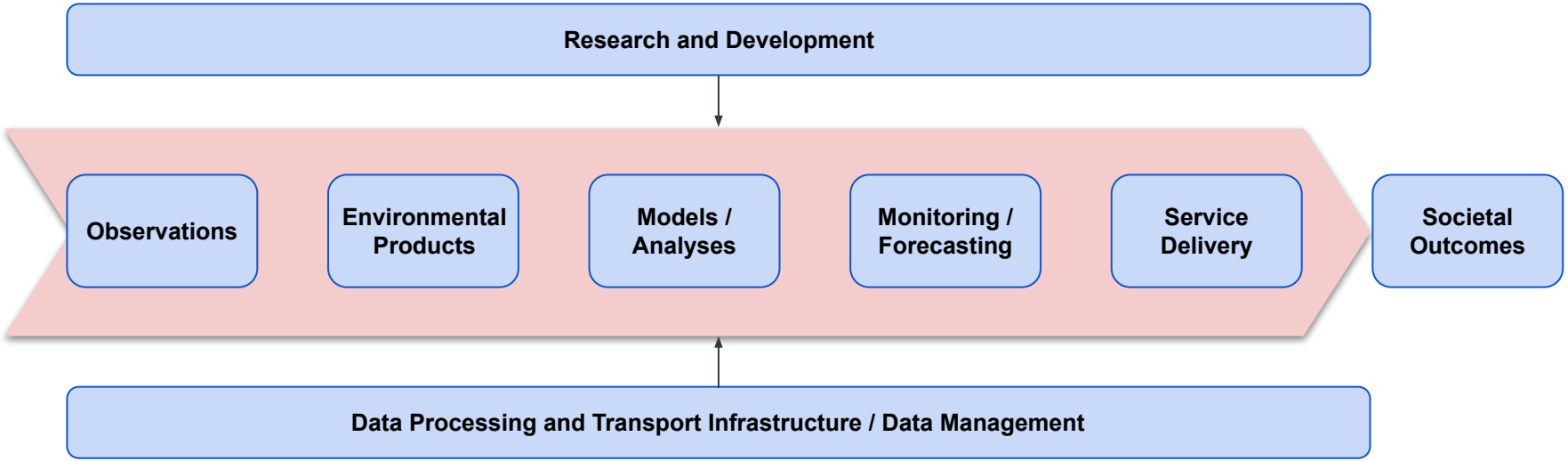
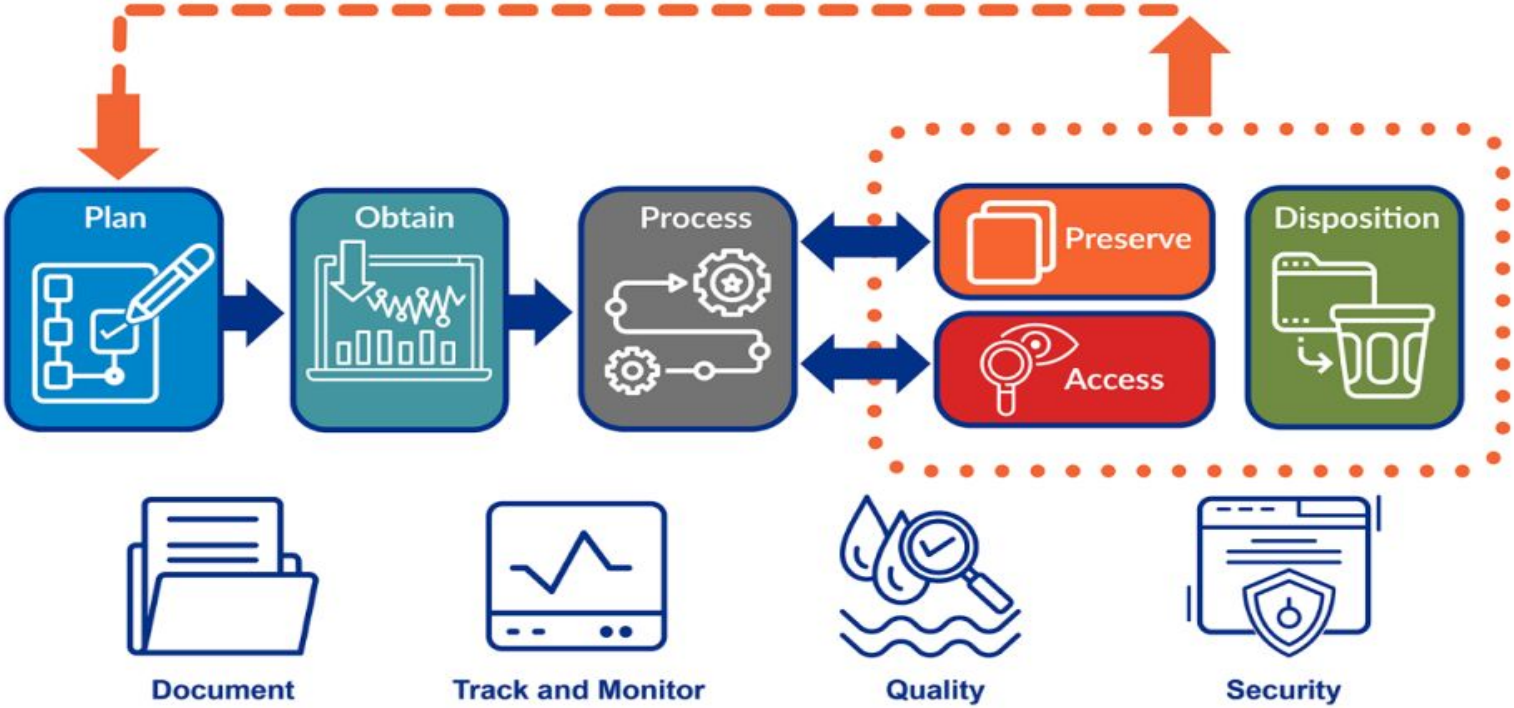
BACK-UP & BACKGROUND SLIDES

The value chain illustrates the value of NOAA data from observations to outcomes



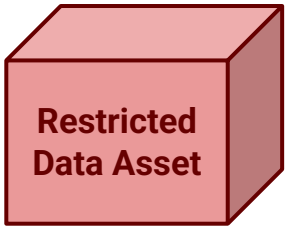
NOAA Data Lifecycle



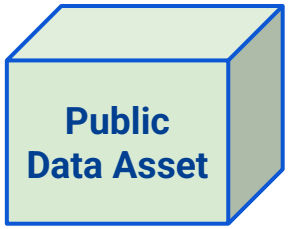
Each data asset category requires levels of documentation, metadata, and stewardship to ensure proper access and use

- ❑ file-level metadata

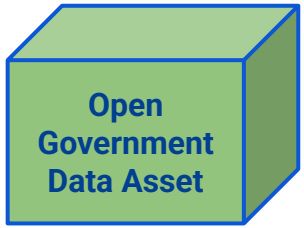
- ❑ file-level metadata
- ❑ **asset-level metadata**



- ❑ file-level metadata
- ❑ asset-level metadata
- ❑ **persistent identifiers**
- ❑ **exemption documentation**



- ❑ file-level metadata
- ❑ asset-level metadata
- ❑ **persistent identifiers**
- ❑ **public-release documentation**



- ❑ file-level metadata
- ❑ asset-level metadata
- ❑ persistent identifiers
- ❑ public-release documentation
- ❑ **machine-readable**
- ❑ **open license**
- ❑ **open standard**
- ❑ **open format**