Oregon/Washington Bureau of Land Management

NATIONAL SYSTEM OF PUBLIC LANDS
U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Hydrography

Spatial Data Standard

John Day River near Cottonwood Canyon. Photo by Greg Shine, BLM.
Taken on December 21, 2018

Document Revisions

Revision	Date	Author	Description	Affected Pages
1.0	8/16/2018	Dana Baker-Allum, Shelley Moore, Jay Stevens	Initial Release	All
2.0	4/24/2025	Dana Baker-Allum, Jay Stevens, Tamiko Stone	Redesign of the edit dataset to simplify it for editing. The new design is like the old publication dataset format.	All

Navigation

This document is easier to view if the Microsoft Word Navigation pane is displayed (View -> Navigation Pane). If viewing in PDF format, open the document in Acrobat and click the Contents button.

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Contents

1   General Information

Hydrography (HYD) is the designated dataset for tracking the water drainage network with features such as rivers, streams, canals, lakes, ponds, coastline, and springs.

In the 1.0 version of this data standard, the purpose of the dataset was to provide a temporary location for recording pending edits not yet implemented in the USGS National Hydrography Dataset (NHD). Starting at the 2.0 version of the data standard, the data has been simplified and designed to provide a transactional dataset to meet OR/WA BLM data requirements.

- Dataset (Theme) Name: HYD
- Dataset (Feature Class): HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY

1.1   Roles and Responsibilities

To find the latest contact information for the employees assigned to these roles, see https://www.blm.gov/about/data/oregon-data-management.

- State Data Steward - the State Data Steward responsibilities include approving data standards and business rules, developing Quality Assurance/Quality Control procedures, identifying potential Privacy issues, and managing that data as a corporate resource. The State Data Steward coordinates with field office data stewards, the State Data Administrator, Geographic Information System (GIS) coordinators, and national data stewards. The State Data Steward reviews geospatial metadata for completeness and quality.

- GIS Technical Lead - the GIS Technical Lead works with data stewards to convert business needs into GIS applications and derive data requirements and participates in the development of data standards. The GIS technical lead coordinates with system administrators and GIS coordinators to manage the GIS databases. The GIS technical lead works with data editors to ensure the consistency and accordance with the established data standards of data input into the enterprise Spatial Database Engine (SDE) geodatabase. The GIS technical lead provides technical assistance and advice on GIS analysis, query, and display of the dataset.

- State Data Administrator - the State Data Administrator provides information management leadership, data modeling expertise, and custodianship of the state data models. The State Data Administrator ensures compliance with defined processes for development of data standards and metadata, and process consistency and completeness. The State Data Administrator is responsible for making data standards and metadata accessible to all users. The State Data Administrator coordinates with data stewards and GIS coordinators to respond to national spatial data requests.

- State FOIA/Privacy Act Team Lead - the State FOIA/Privacy Act team lead assists the state data steward to identify any privacy issues related to spatial data. The State FOIA/Privacy Act team lead also provides direction and guidance on data release, fees, and classification under the appropriate Freedom of Information Act exemption.

- State Records Administrator - the state records administrator classifies data under the proper records retention schedule.

1.2   FOIA Category

These data fall under the standard Records Access Category 1B - BLM Records that may contain protected information that must be considered for segregation prior to release. See section 8 Publication Views for more information on which data are available to the public.

1.3   Records Retention Schedule

The DRS/GRS/BLM Combined Records Schedule, under Schedule 20/52 (4) (Electronic Records/Geographic Information Systems), lists this theme **(Hydrography)** as one of the themes that are significant for BLM's mission, however it is assigned to another Federal Agency **(USGS)** by OMB Circular A-16, Appendix E.

This dataset is TEMPORARY records per NARA, but they are important records that must be retained and managed by the agency until no longer needed for agency business which may be many decades.

Oregon/Washington (OR/WA) Bureau of Land Management (BLM) Guidebook for Management of Geospatial Data (v1) Section 15.2 - Corporate Data Online Archives prescribes:

"Vector annual archives are retained online for 12 years. Each year, data that has reached 12 years old is copied off-line to be retained until no longer needed (determined by data stewards and program leads) with format and readability maintained in a five (5) year "tech refresh" update cycle."

1.4   Security/Access/Sensitivity

The Hydrography set of themes do not require any additional security other than that provided by the General Support System (the hardware/software infrastructure of the Oregon/Washington (OR/WA) Bureau of Land Management (BLM)).

This dataset is not sensitive and there are no restrictions on access to this data from within the BLM. See section 8 Publication Views for more information on which data are available to the public.

There are or no privacy issues or concerns associated with these data themes.

1.5   Keywords

Keywords that can be used to locate this dataset include:

- BLM Thesaurus: Hydrology

- Additional keywords: Hydrography, Hydrology, Riparian, Rivers, Streams, Water, Watercourses

- ISO Thesaurus: environment, inlandWaters, oceans

1.6   Subject Function Codes

BLM Subject Function codes used to describe this dataset include:

- 1283 - Data Administration

- 7000 - Soil, Water, and Air Management

- 6720 - Aquatic Resource Management

- 6762 - Stream Management

- 9167 - Geographic Information System (GIS)

2   Dataset Overview

2.1   Usage

This dataset is used for planning, analysis, and cartography.

2.2   Sponsor/Affected Parties

The sponsor for this data set is the Deputy State Director for the Division of Resources, Lands, and Minerals.

Hydrography data has historically been matched across jurisdictional boundaries and coordinated with partner agencies and organization. Affected parties include (but may not be limited to):

- U.S. Forest Service

- U.S. Geological Survey

- National Oceanographic and Atmospheric Administration

- U.S. Department of the Interior - National Park Service

- State of Oregon - Department of Fish and Wildlife

- State of Oregon - Department of Forestry

- State of Oregon - Department of State Lands

- State of Washington - Department of Ecology

- State of Washington - Department of Natural Resources

- State of Washington - Department of Fish and Wildlife

2.3   Relationship to Other Datasets, Databases, or Files

As of the 2025 release of this data standard, the OR/WA BLM Hydrography dataset no longer has a direct relationship to the USGS National Hydrography Dataset (NHD) dataset. Prior to 2025, updates to OR/WA BLM Hydrography were submitted to the USGS on a regular basis. With the retirement of the NHD data model and associated tools, this is no longer possible. For more information about the NHD, see their website at https://nhd.usgs.gov/.

Within the Oregon Data Framework, this dataset is related to other datasets, including:

- Fish Distribution (Species Specific) - Fish presence information recorded by species is spatially related to this dataset. Features from this dataset may be copied to the Fish dataset. It is recommended that these features stay in alignment to support data analysis.

- Fish Sample - Fish Sample point features, typically field collected, can be used to update the Fishbearing attribute in the hydrography data.

- Stream Locations - Stream Location point features, typically field collected, can be used to update the hydrography data.

- Structures - Some natural point features within this dataset may be duplicated to the OR/WA BLM Structures data standard where there is a need to capture Fish Passage information.

- Wild and Scenic Rivers (WSR) - WSR features are built by buffering the HYD_FLOWLINE_ARC centerline streams.

2.4 Data Category/Architecture Link

This data theme is a portion of the Oregon Data Framework (ODF) shown in Figure 1, Oregon Data Framework (ODF) Overview on page 9. The illustration is a simplified schematic of the entire ODF showing the overall organization and entity inheritance. The ODF utilizes the concept of inheritance to define specific instances of data. The ODF divides all OR/WA resource-related data into three general categories:

- Activities
- Resources
- Boundaries

These general categories are broken into sub-categories that inherit spatial characteristics and attributes from their parent category. These sub-categories may be further broken into more specific groups until the basic data set cannot be further sub-divided. Those basic data sets inherit all characteristics of all groups/categories above them. The basic data sets are where physical data gets populated. Those groups/categories above them do not contain actual data but set parameters which all data of that type must follow.
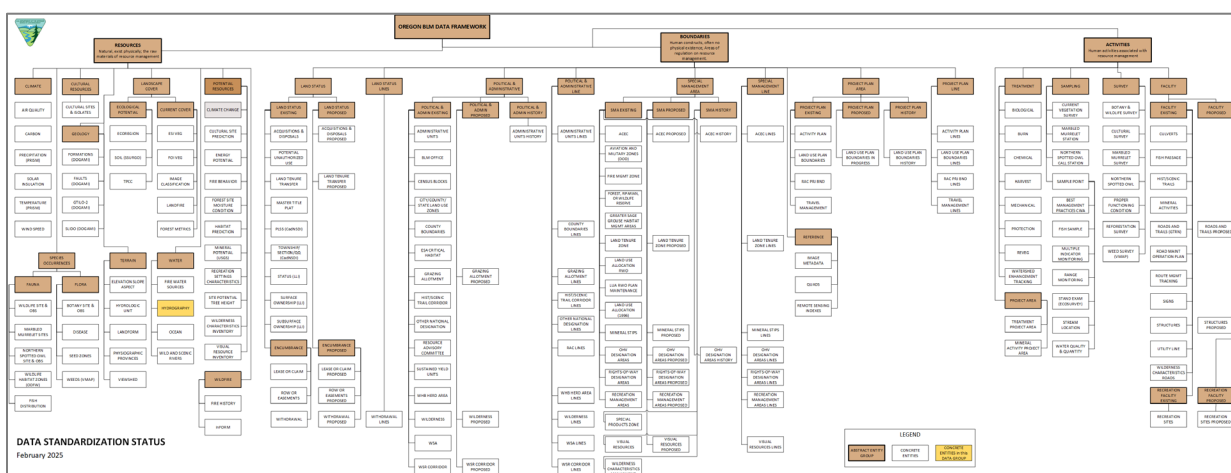
Figure 1   **Oregon Data Framework Overview**

For an easier to view version of the Oregon Data Framework diagram, go to: https://gis.blm.gov/ORDownload/DataFramework/BLM_ODF_Model_Mini_Status.pdf.

Physical data is populated in the basic data sets. Those groups/categories above them do not contain actual data but set parameters that all data of that type must follow. See Figure 2, Data Organization Structure for a simplified schematic of the entire ODF showing the overall organization and entity inheritance. The Hydrography entities are highlighted. For additional information about the ODF, contact the State Data Administrator. The State Data Administrator's contact information can be found at the following link: https://www.blm.gov/about/data/oregon-data-management.

In the ODF, Hydrography is considered a Resource and is categorized as follows:
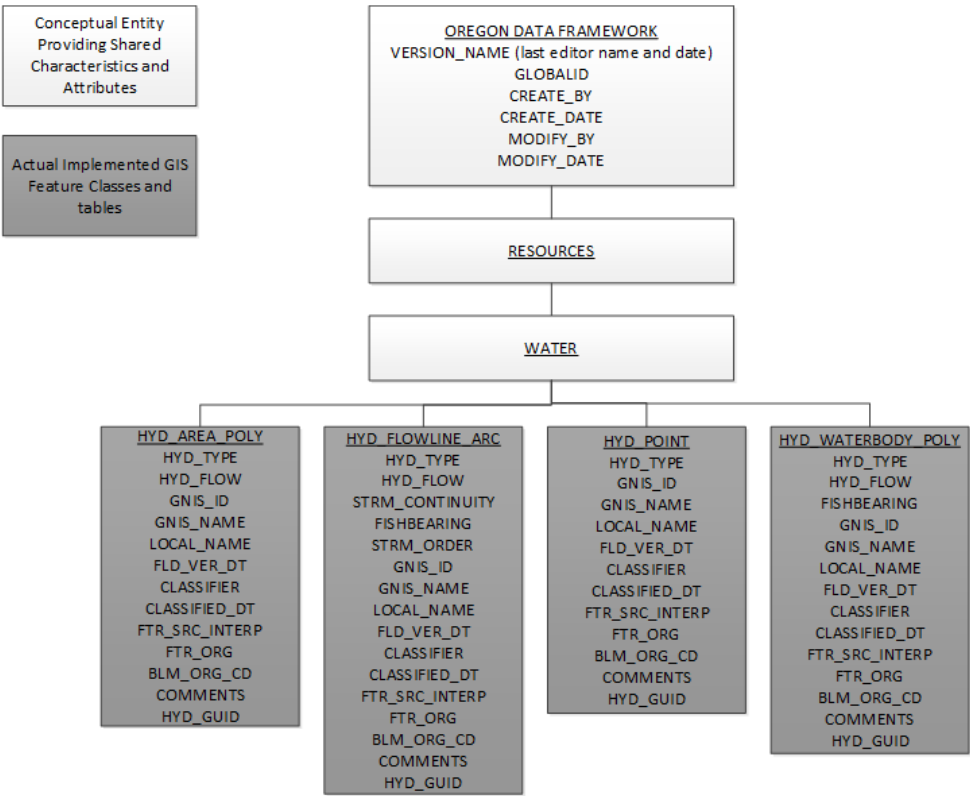
Figure 2   **Data Organization Structure**

2.5   Relationship to DOI Enterprise Architecture Data Resource Mode

The Department of the Interior (DOI) Enterprise Architecture contains a component called the Data Resource Model. This model addresses the concepts of data sharing, data description, and data context. This data standard provides information needed to address each of those areas. Data sharing is addressed through complete documentation and simple data structures which make sharing easier. Data description is addressed through the section on Attribute Descriptions. Data context is addressed through the data organization and structure portions of this document. In addition, the DOI Data Resource Model categorizes data by use of standardized Data Subject Areas and Information Classes. For this data set, the Data Subject Area and Information Class are:

- Data Subject Area: Geospatial

- Information Class: Location

3 Data Management Protocols

3.1 Accuracy Requirements

This dataset is mapped at a scale of 1:24,000 or better. On-going efforts to redelineate hydrography using LIDAR data will improve the accuracy and quality of the data over time. Editors can document when a feature has been field verified using the HYD_VER_DT field.

3.2 Collection, Input, and Maintenance Protocols

Data will be created, as needed, by natural resource and GIS staff using GIS software. Trained editors will use the OR/WA Version Management tools to automatically load the correct editable layers to the user's map document and perform a wide range of valuable background processes to improve data integrity. The version check-in process performs data quality checks before allowing the user to submit their version. Please see Section 9 Editing Procedures for additional editing guidance.

3.3 Update Frequency and Archival Protocols

Data is updated as needed, but at least annually. In addition, it is archived annually at the end of the fiscal year.

3.4 Statewide Monitoring

The State Data Stewards are responsible for checking consistency and completeness across districts for the theme(s) that is relevant to their programs.

Each year, geospatial staff of the BLM Division of Resources, Lands, and Minerals meets with each state data steward for every corporate geospatial theme to conduct an annual review of the data. During the annual review, geospatial staff present the state data stewards with a report detailing Quality Assurance/Quality Control (QAQC) results performed on the data. The QAQC does the following:

- Checks that all attribute values conform to the range or coded-value domains to which they are applied.

- Checks that all attributes marked as required in the data standard have values.

- Checks for duplicate features which have the same geometry and attributes.

- Checks for overlapping features if forbidden by the data standard.

- Checks for invalid geometry.

- Other checks as necessary (can be customized according to the data standard).

In addition to this report, geospatial staff conduct a qualitative needs assessment with the steward to identify any unmet needs or problems with the status of the data. At the conclusion of the review, the team records the steward's approvals of the datasets reviewed. These approvals are then added to the corporate metadata.

4   Hydrography Schema (simplified)

General Information: Attributes are listed in the order they appear in the geodatabase feature class. The order is an indication of the importance of the attribute for theme definition and use. There are no aliases unless specifically noted. The domains used in this data standard can be found in Appendix A. These are the domains at the time the data standard was approved. Domains can be changed without a re-issue of the data standard. Current domains are found on the internal OR/WA SharePoint data management page. Some of the domains used in this data standard are also available at the following web site: https://www.blm.gov/about/data/oregon-data-management.

For domains not listed at that site contact: State Data Administrator.

4.1   HYD_AREA_POLY Feature Class (Hydrography Area Polygons)

For domain and default values, see Section 7 Attribute Characteristics and Definition (In alphabetical order) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
HYD_TYPE	String	30	Stream or River	Yes	dom_HYD_TYPE_AREA
HYD_FLOW	String	15	Perennial	Yes	dom_STRM_PERIODICITY
GNIS_ID	String	10		No	
GNIS_NAME	String	65		No	
LOCAL_NAME	String	50		No	
FLD_VER_DT	Date			No	
CLASSIFIER	String	30		No	
CLASSIFIED_DT	Date			No	
FTR_SRC_INTERP	String	40	Unknown	Yes	dom_HYD_FTR_SRC_INTERP
FTR_ORG	String	10	BLM	Yes	dom_HYD_FTR_ORG
BLM_ORG_CD	String	5	OR000	Yes *	dom_BLM_ORG_CD
COMMENTS	String	255		No	
VERSION_NAME	String	50		Yes ***	
HYD_GUID	GUID			Yes *	
GLOBALID	GUID			Yes *	
CREATE_BY	String	50		No *	
CREATE_DATE	Date			No *	
MODIFY_BY	String	50		No *	
MODIFY_DATE	Date			No *	

*   Values automatically generated

**   Enforced during quality control, may appear in data as not required

***   Maintained through versioning tools, may appear not required in database

4.2   HYD_FLOWLINE_ARC Feature Class (Hydrography Flowline Lines)

For domain and default values, see Section 7 Attribute Characteristics and Definition (In alphabetical order) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
HYD_TYPE	String	30	Stream or River	Yes	dom_HYD_TYPE_LINE
HYD_FLOW	String	15	Perennial	Yes	dom_STRM_PERIODICITY
STRM_CONTINUITY	String	20	Continuous	Yes	dom_STRM_CONTINUITY
FISHBEARING	String	3		No	dom_FISH_PRESENCE
STRM_ORDER	Short Integer			No	
GNIS_ID	String	10		No	
GNIS_NAME	String	65		No	
LOCAL_NAME	String	50		No	
FLD_VER_DT	Date			No	
CLASSIFIER	String	30		No	
CLASSIFIED_DT	Date			No	
FTR_SRC_INTERP	String	40		Yes	dom_HYD_FTR_SRC_INTERP
FTR_ORG	String	10	BLM	Yes	dom_HYD_FTR_ORG
BLM_ORG_CD	String	5	OR000	Yes *	dom_BLM_ORG_CD
COMMENTS	String	255		No	
VERSION_NAME	String	50		Yes ***	
HYD_GUID	GUID			Yes *	
GLOBALID	GUID			Yes *	
CREATE_BY	String	50		No *	
CREATE_DATE	Date			No *	
MODIFY_BY	String	50		No *	
MODIFY_DATE	Date			No *	

*   Values automatically generated

**   Enforced during quality control, may appear in data as not required

***   Maintained through versioning tools, may appear not required in database

4.3   HYD_POINT Feature Class (Hydrography Points)

For domain and default values, see Section 7 Attribute Characteristics and Definition (In alphabetical order) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
HYD_TYPE	String	30	Spring or Seep	Yes	dom_HYD_TYPE_PT
GNIS_ID	String	10		No	
GNIS_NAME	String	65		No	
LOCAL_NAME	String	50		No	
FLD_VER_DT	Date			No	
CLASSIFIER	String	30		No	
CLASSIFIED_DT	Date			No	
FTR_SRC_INTERP	String	40		Yes	dom_HYD_FTR_SRC_INTERP
FTR_ORG	String	10	BLM	Yes	dom_HYD_FTR_ORG
BLM_ORG_CD	String	5	OR000	Yes *	dom_BLM_ORG_CD
COMMENTS	String	255		No	
VERSION_NAME	String	50		Yes ***	
HYD_GUID	GUID			Yes *	
GLOBALID	GUID			Yes *	
CREATE_BY	String	50		No *	
CREATE_DATE	Date			No *	
MODIFY_BY	String	50		No *	
MODIFY_DATE	Date			No *	

*   Values automatically generated

**   Enforced during quality control, may appear in data as not required

***   Maintained through versioning tools, may appear not required in database

4.4   HYD_WATERBODY_POLY Feature Class (Hydrography Waterbody Polygons)

For domain and default values, see Section 7 Attribute Characteristics and Definition (In alphabetical order) in this document.

Attribute Name	Data Type	Length	Default Value	Required	Domain
HYD_TYPE	String	30	Lake or Pond	Yes	dom_HYD_TYPE_WTRBDY
HYD_FLOW	String	15	Perennial	Yes	dom_STRM_PERIODICITY
FISHBEARING	String	3		No	dom_FISH_PRESENCE
GNIS_ID	String	10		No	
GNIS_NAME	String	65		No	
LOCAL_NAME	String	50		No	
FLD_VER_DT	Date			No	
CLASSIFIER	String	30		No	
CLASSIFIED_DT	Date			No	
FTR_SRC_INTERP	String	40		Yes	dom_HYD_FTR_SRC_INTERP
FTR_ORG	String	10	BLM	Yes	dom_HYD_FTR_ORG
BLM_ORG_CD	String	5		Yes *	dom_BLM_ORG_CD
COMMENTS	String	255		No	
VERSION_NAME	String	50		Yes ***	
HYD_GUID	GUID			Yes *	
GLOBALID	GUID			Yes *	
CREATE_BY	String	50		No *	
CREATE_DATE	Date			No *	
MODIFY_BY	String	50		No *	
MODIFY_DATE	Date			No *	

*   Values automatically generated

**   Enforced during quality control, may appear in data as not required

***   Maintained through versioning tools, may appear not required in database

5 Projection and Spatial Extent

All feature classes and feature datasets are in Geographic, North American Datum 83. Units are decimal degrees. Spatial extent (area of coverage) includes all lands managed by the BLM OR/WA. See the metadata for this data for a more precise description of the extent.

6 Spatial Entity Characteristics

- HYD_FLOWLINE_ARC

    o Description: Instance of Water within the Resources group. Features are linear depictions of streams and centerlines of rivers.

    o Geometry: Line

    o Topology: No topology enforced. However, overlapping features are not allowed.

    o Integration Requirements: None

- HYD_POINT

    o Description: Instance of Water within the Resources group. Hydrography point features include springs and seeps, rapids, falls, etc.

    o Geometry: Point

    o Topology: No topology enforced. However, overlapping features are not allowed.

    o Integration Requirements: None

- HYD_AREA_POLY

    o Description: Instance of Water within the Resources group. Represents the areal extent of the water for wide streams or rivers. These features typically encompass HYD_FLOWLINE_ARC artificial path features. The artificial path carries the critical attributes of the stream or river, whereas the HYD_AREA_POLY represents the geometric extent.

    o Geometry: Polygon

    o Topology: No topology enforced. However, overlapping features are not allowed.

    o Integration Requirements: None

- HYD_WATERBODY_POLY

    o Description: Instance of Water within the Resources group. Waterbodies are polygons depicting lakes, ponds, estuaries, swamps, marshes, etc.

    o Geometry: Polygon

    o Topology: No topology enforced. However, overlapping features are not allowed.

    o Integration Requirements: None

7 Attribute Characteristics and Definition (In alphabetical order)

7.1 BLM_ORG_CD

Geodatabase Name	BLM_ORG_CD
BLM Structured Name	Administrative_Unit_Organization_Code
Inheritance	Not Inherited
Alias Name	BLM Org Code
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	A combination of the BLM administrative state and field office that has administrative responsibility for the spatial entity. This includes which office covers the entity for planning purposes and which office is the lead for GIS edits. Another agency or individual may have the physical management responsibility for the on-the-ground entity. This field applies particularly when a spatial entity crosses resource area or district boundaries, and the administrative responsibility is assigned to one or the other rather than splitting the spatial unit. Similarly, OR/WA BLM may have administrative responsibility over some area that is physically located in Nevada, Idaho, and California and vice versa. When appropriate, the office can be identified only to the district or state level rather than to the resource area level. This field is auto calculated on record creation. However, it can be changed to correct the value.
Required/Optional	Required
Domain (Valid Values)	dom_BLM_ORG_CD
Data Type	String (5)

7.2 CLASSIFIED_DT

Geodatabase Name	CLASSIFIED_DT
BLM Structured Name	Classified_Date
Inheritance	Not Inherited
Alias Name	Classified Date
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	The date the classifier recorded or updated the feature. This value is not necessarily the same date as MODIFY_DATE, because the MODIFY_DATE field is automatically updated during database maintenance.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 10/22/2009, 9/1/2001
Data Type	Date

7.3   CLASSIFIER

Geodatabase Name	CLASSIFIER
BLM Structured Name	Classifier_Name
Inheritance	Not Inherited
Alias Name	Classifier
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	Name (mixed case, first and last) of the subject matter specialist most knowledgeable about the hydrographic feature. This field is not auto calculated and should be set to the hydrologist name or data source, not the GIS editor.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: Mary Smith, John Doe
Data Type	String (30)

7.4   COMMENTS

Geodatabase Name	COMMENTS
BLM Structured Name	Comments_Text
Inheritance	Not Inherited
Alias Name	Comments
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	Free text for comments about the hydrographic feature.
Required/Optional	Optional
Domain (Valid Values)	No domain
Data Type	String (255)

7.5   CREATE_BY

Geodatabase Name	CREATE_BY
BLM Structured Name	Record_Created_By_Text
Inheritance	Inherited from entity ODF
Alias Name	Created By
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	The BLM login ID of the person who entered the data. The default value for this field is UNK. This field is auto populated during editing.
Required/Optional	Optional

Domain (Valid Values)	No domain. Examples: jdoe, msmith
Data Type	String (50)

7.6   CREATE_DATE

Geodatabase Name	CREATE_DATE
BLM Structured Name	Record_Created_Date
Inheritance	Inherited from entity ODF
Alias Name	Created Date
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	The date the record was entered. The default value for this field is 1/1/8888. This field is auto populated during editing.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 1/5/1999, 10/15/2021
Data Type	Date

7.7   FISHBEARING

Geodatabase Name	FISHBEARING
BLM Structured Name	Hydrography_Fishbearing_Code
Inheritance	Not Inherited
Alias Name	Fishbearing
Feature Class Use/Entity Table	HYD_FLOWLINE_ARC, HYD_WATERBODY_POLY
Definition	The overall presence of any species of native fish. This value is always set to the presence value most protective that exists in the data for that hydrography feature. The order of values is: 1. Presence Verified (most protective) 2. Presence Not Verified (second most protective) 3. Absence Verified (least protective) Records are left null if there are no native fish data on the stream or waterbody.
Required/Optional	Optional
Domain (Valid Values)	dom_FISH_PRESENCE
Data Type	String (3)

7.8   FLD_VER_DT

Geodatabase Name	FLD_VER_DT
BLM Structured Name	Hydrography_Field_Verification_Date
Inheritance	Not Inherited
Alias Name	Field Verification Date
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	The date a hydrological feature characteristic, included spatial extent, was field verified.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 1/29/2018, 12/6/2017
Data Type	Date

7.9   FTR_ORG

Geodatabase Name	FTR_ORG
BLM Structured Name	Hydrography_Feature_Organization_Code
Inheritance	Not Inherited
Alias Name	Feature Organization
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	The organization that compiled, entered, updated or deleted the hydrography data. The value may represent other organizations/agencies, or it may represent a data capture project.
Required/Optional	Required
Domain (Valid Values)	dom_HYD_FTR_ORG
Data Type	String (10)

7.10   FTR_SRC_INTERP

Geodatabase Name	FTR_SRC_INTERP
BLM Structured Name	Hydrography_Feature_Source_Interpretation_Code
Inheritance	Not Inherited
Alias Name	Feature Source Interpretation
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	The compilation map or image source and method used when adding or updating hydrography data.
Required/Optional	Required

Domain (Valid Values)	dom_HYD_FTR_SRC_INTERP
Data Type	String (40)

7.11 GLOBALID

Geodatabase Name	GLOBALID
BLM Structured Name	Global_Unique_Identifier
Inheritance	Inherited from entity ODF
Alias Name	None
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	An alpha-numeric code that serves as the universal and unique identifier for each feature within the feature class or table of a geodatabase. Software generated value. A field of type UUID (Universal Unique Identifier) in which values are automatically assigned by the geodatabase when a row is created. This field is not editable and is automatically populated when it is added for existing data.
Required/Optional	Required
Domain (Valid Values)	No domain. Example: {4747B796-44B4-4628-B069-2D496422E59F}
Data Type	GUID

7.12 GNIS_ID

Geodatabase Name	GNIS_ID
BLM Structured Name	Geographic_Names_Information_System_Identifier
Inheritance	Not Inherited
Alias Name	GNIS ID
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	Geographic Names Information System (GNIS) Feature Id. The USGS is the mandated source of this information. Not all features contained with the feature class will have GNIS names.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 01127106, 01154527
Data Type	String (10)

7.13 GNIS_NAME

Geodatabase Name	GNIS_NAME
BLM Structured Name	Geographic_Names_Information_System_Name_Text
Inheritance	Not Inherited
Alias Name	GNIS Name
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	Water feature name from Geographic Name Information System (GNIS). The name of the feature as represented within the GNIS. The USGS is the mandated source of this information. Not all features contained with the feature class will have GNIS names.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: "Cedar Creek", "Smith Creek"
Data Type	String (65)

7.14 HYD_FLOW

Geodatabase Name	HYD_FLOW
BLM Structured Name	Hydrography_Flow_Code
Inheritance	Not Inherited
Alias Name	Flow
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	Captures the transition point of the *temporal* expression of stream flow.
	A stream reach may be:
	a) **Perennial** - Perennial streams generally have a well-defined channel that contains water continuously during a year of normal rainfall, often with the streambed located below the water table for most of the year. Groundwater supplies the baseflow for perennial streams, but flow is also supplemented by stormwater runoff and snowmelt.
	b) **Intermittent** - Intermittent streams contain water for only part of the year, typically during winter and spring when the streambed may be below the water table and/or when snowmelt from surrounding uplands provides sustained flow. Streamflow may vary greatly with stormwater runoff.
	c) **Ephemeral -** Ephemeral streams flow only in direct response to large precipitation events or stormwater runoff. An ephemeral stream may or may not have a well-defined channel, the stream bed is always above the water table, and stormwater runoff is the primary source of water.
	While the periodicity of a stream is determined by the dominant or the most representative features within a reach, the distinction between perennial, intermittent, and ephemeral channels is often dependent on a wide range of temporal and spatial scales. Ephemeral and intermittent streams are common in the semiarid landscapes of eastern Oregon and have distinctly different characteristics from the perennial streams that are found in the wetter, more

	humid climate of western Oregon. While the stream flow definitions provided above give a broad understanding of these terms, relevant terminology within local Resource Management Plans should be consulted. Application of local management plans ensures that stream periodicity attribution is in alignment with land use allocations and overall management direction.
	In the Oregon Forest Practices Act, a key distinction between perennial and intermittent streams is that the former is defined as a stream that normally has summer surface flow after July 15, whereas the latter is defined as a stream that normally does not have summer surface flow after July 15. Although the stream survey date in itself won't affect a stream's periodicity, it can influence the surveyor who may or may not be able to key in on the biologic and/or geomorphic stream flow indicators used to determine the flow status of streams, which are often inconspicuous and may not be well defined at all locations or may not be evident at all times.
Required/Optional	Required
Domain (Valid Values)	dom_STRM_PERIODICITY
Data Type	String (15)

7.15   HYD_GUID

Geodatabase Name	HYD_GUID
BLM Structured Name	Hydrography_Global_Unique_Identifier
Inheritance	Not Inherited
Alias Name	Hydrography Unique Identifier
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	Unique identifier for the hydrographic feature. Automatically generated.
Required/Optional	Required
Domain (Valid Values)	No domain
Data Type	GUID

7.16   HYD_TYPE

Geodatabase Name	HYD_TYPE
BLM Structured Name	Hydrography_Type_Code
Inheritance	Not Inherited
Alias Name	Type
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	Describes the classification of the hydrography feature.
Required/Optional	Required
Domain (Valid Values)	dom_HYD_TYPE_AREA

	dom_HYD_TYPE_LINE dom_HYD_TYPE_PT dom_HYD_TYPE_WTRBDY
Data Type	String (30)

7.17 LOCAL_NAME

Geodatabase Name	LOCAL_NAME
BLM Structured Name	Hydrography_Local_Name
Inheritance	Not Inherited
Alias Name	Local Name
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	The unofficial or local name for a feature.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: "Warner Lake", "Mosby Creek", "Mohawk River Trib*"
Data Type	String (50)

7.18 MODIFY_BY

Geodatabase Name	MODIFY_BY
BLM Structured Name	Record_Last_Modified_By_Text
Inheritance	Inherited from entity ODF
Alias Name	Modified By
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	The BLM login ID of the person who last edited the data. The default value for this field is UNK. This field is auto populated during editing.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: jdoe, msmith
Data Type	String (50)

7.19 MODIFY_DATE

Geodatabase Name	MODIFY_DATE
BLM Structured Name	Record_Last_Modified_Date
Inheritance	Inherited from entity ODF
Alias Name	Modified Date

Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	The date the record was last edited. The default value for this field is 1/1/8888. This field is auto populated during editing.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 1/5/1999, 10/15/2021
Data Type	Date

7.20   STRM_CONTINUITY

Geodatabase Name	STRM_CONTINUITY
BLM Structured Name	Stream_Continuity_Code
Inheritance	Not Inherited
Alias Name	Continuity
Feature Class Use/Entity Table	HYD_FLOWLINE_ARC
Definition	Captures the spatial expression of a stream channel. A stream channel can be either continuous or interrupted. Continuous channels are well-defined throughout the reach; interrupted channels have portions where a defined channel is not evident. Although continuity can change on the microscale (feet), the continuity of a channel is determined by the dominant or most representative expression in the reach (usually tens or hundreds of feet).
	In a continuous perennial stream, a majority of the stream flows at or above the stream bed. In a continuous intermittent stream, a majority of the stream expresses channel characteristics (evidence of flow and/or deposition) on the stream bed. Water, or evidence of water, may be found flowing or in pools. Continuous flow in a reach may go subsurface for short distances at certain times of the year.
	The majority of an interrupted stream is expressed beneath the ground's surface. Perennial or intermittent flow, if spatially interrupted, is nearly or entirely subsurface. Evidence of scour and/or deposition is nearly or entirely absent. Headwater streams with dramatic changes in gradient (high to low) or highly permeable substrate can flow subsurface and reappear downstream when the gradient increases again or ground water surfaces. Channels with well-defined beds and banks, and bed-forms showing annual scour or deposition may not be present in areas of spatial interruption, but these areas connect defined upstream and downstream channels. Spatial interruption can be caused by both natural and artificial disruptions.
Required/Optional	Required
Domain (Valid Values)	dom_STRM_CONTINUITY
Data Type	String (20)

7.21   STRM_ORDER

Geodatabase Name	STRM_ORDER
BLM Structured Name	Hydrography_Stream_Order_Number
Inheritance	Not Inherited
Alias Name	Stream Order
Feature Class Use/Entity Table	HYD_FLOWLINE_ARC
Definition	A dimensionless measure of the position of a stream in the hierarchy of tributaries. This attribute is calculated using data from the NHD Flow table and the Stahler process. See paper: https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1752-1688.2004.tb01057.x for more information. Stream order is recalculated by an automated process as needed.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 1, 5, 9
Data Type	Short Integer

7.22 VERSION_NAME

Geodatabase Name	VERSION_NAME
BLM Structured Name	Geodatabase_Version_Text
Inheritance	Inherited from entity ODF
Alias Name	Version Name
Feature Class Use/Entity Table	HYD_AREA_POLY, HYD_FLOWLINE_ARC, HYD_POINT, HYD_WATERBODY_POLY
Definition	Only appears in the transactional (edit) version. Public version (which is also the version used internally for mapping or analysis) does not contain this attribute. Name of the corporate geodatabase version previously used to edit the record. InitialLoad = feature has not been edited in ArcSDE. Format: username.XXX-mmddyy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation.
Required/Optional	Optional
Domain (Valid Values)	No domain
Data Type	String (50)

8 Publication Views

8.1 General

Master corporate feature classes/datasets maintained in the edit database are "published" to the user database in several ways:

- Copied completely with no changes (replicated).

- Copied with no changes except to omit one or more feature classes from a feature dataset.

- Minor changes made (e.g., clip, dissolve, union with ownership) to make the data easier to use. Feature classes that have been changed are indicated by "PUB" in their name. They are created through scripts that can be automatically executed and are easily rebuilt from the master data whenever necessary.

8.2 Specific to This Dataset

An internal publication dataset will be created that meets these requirements:

- Remove fields used for edit tracking: VERSION_NAME, CREATE_BY, CREATE_DATE, MODIFY_BY, MODIFY_DATE.

An external publication dataset will be created that meets these requirements:

- Remove fields used for edit tracking: VERSION_NAME, CREATE_BY, CREATE_DATE, MODIFY_BY, MODIFY_DATE.

- Remove fields that reference staff names: CLASSIFIER.

- Remove fields with possible sensitive data or internal file system resources: COMMENTS.

8.3 Layer Files

Layer files are not new data requiring storage and maintenance but point to existing data. They have appropriate selection and symbolization for correct use and display of the data. They provide the guidance for data published on the web. Layer files are created by simple, documented processes, and can be deleted and recreated at any time.

9   Editing Procedures

9.1   Theme Specific Guidance

Please refer to the OR/WA BLM internal Hydrography Edit Guide.

9.1.1 Calculation Data Rules

The following are a list of calculation rules that occur during editing. Calculation rules are used to automatically populate attributes in a field. These are in addition to the default values defined in Sections 4 and 7.

- All feature classes: a new GUID value will be filled in the HYD_GUID field on record create.

9.1.2 Constraint Data Rules

The following are a list of data constraint rules that are enforced during editing. Constraint rules specify allowable combinations of values between two or more fields in a record. They are used to ensure that specific conditions are met.

- There are no constraint data rules for this theme.

9.1.3 Data Check-in Validation Rules

The following are a list of rules that are enforced on edit version check-in.

- There are no custom check-in data rules for this theme.

10   Abbreviations and Acronyms

Does not include abbreviations/acronyms used as codes for data attributes or domain values.

Table 1   Abbreviations/Acronyms Used

Abbreviations	Descriptions
ARC	GIS line feature
BLM	Bureau of Land Management, U.S. Department of the Interior
CADNSDI	Cadastral National Spatial Data Infrastructure
DEM	Digital Elevation Model
DLG	Digital Line Graphs
FOIA	Freedom of Information Act
FOIVEG	Forest Operations Inventory
GIS	Geographic Information System
GNIS	Geographic Names Information System
GPS	Global Positioning System
GTRN	Ground Transportation GIS dataset
IDP	Interdisciplinary
NAD	North American Datum
NARA	National Archives and Records Administration
NEPA	National Environmental Policy Act
ODF	Oregon Data Framework
OR/WA	Oregon/Washington BLM Administrative State
POLY	GIS polygon feature
PUB	Publication
RMP	Resource Management Plan
USFS	United States Forest Service, U.S. Department of Agriculture
USGS	United States Geological Survey, U.S. Department of the Interior
SDE	Spatial Database Engine
WEB	Worldwide Web (internet)

A   Domains (Valid Values)

These are the domains at the time the data standard was approved. Domains can be changed without a re-issue of the data standard. Current domains are found on the internal OR/WA SharePoint data management page. Some of the domains used in this data standard are also available at the following web site: http://www.blm.gov/or/datamanagement/index.php

For domains not listed at that site contact: contact the State Data Administrator.

A.1   dom_BLM_ORG_CD

Administrative Unit Organization Code. Standard BLM organization codes generated from the national list. This is a subset of OR/WA administrative offices and those in other states that border.

This is a lengthy domain used by multiple datasets. For the full list of values go to: https://gis.blm.gov/ORDownload/Domains/dom_BLM_ORG_CODE.xls

A.2   dom_FISH_PRESENCE

Fish Presence Code. The code to indicate if the species is present at the geographic extent of the feature.

Code	Description
PV	PV - Presence Verified
PNV	PNV ‑ Presence Suspected, Not Verified
AV	AV ‑ Absence Verified

A.3   dom_HYD_TYPE_AREA

Hydrography Area Type Code. The type of hydrographic feature represented by an area feature.

Code	Description
Bay or Inlet	Bay or Inlet
Canal or Ditch	Canal or Ditch
Dam or Weir	Dam or Weir
Foreshore	Foreshore
Rapids	Rapids
Sea or Ocean	Sea or Ocean
Stream or River	Stream or River
Wash	Wash

A.4 dom_HYD_TYPE_LINE

Hydrography Line Type Code. The type of hydrographic feature represented by a flowline feature.

Code	Description
Artificial Path	Artificial Path
Canal or Ditch	Canal or Ditch
Coastline	Coastline
Pipeline	Pipeline
Stormwater	Stormwater
Stream or River	Stream or River
Underground Conduit	Underground Conduit

A.5 dom_HYD_TYPE_PT

Hydrography Point Type Code. The type of hydrographic feature represented by a point feature.

Code	Description
Rapids	Rapids
Rock	Rock
Sink or Rise	Sink or Rise
Spring or Seep	Spring or Seep
Waterfall	Waterfall

A.6 dom_HYD_TYPE_WTRBDY

Hydrography Waterbody Type Code. The type of hydrographic feature represented by a waterbody feature.

Code	Description
Estuary	Estuary
Ice Mass	Ice Mass
Lake or Pond	Lake or Pond
Playa	Playa
Reservoir	Reservoir
Swamp or Marsh	Swamp or Marsh
Treatment or Disposal Pond	Treatment or Disposal Pond

A.7 dom_HYD_FTR_ORG

Hydrography Feature Organization Code.   The organization that is the source of the hydrography feature, used for metadata.

Code	Description
BLM	BLM - Bureau of Land Management
Canada	Canada - Canadain NHN Data
CDEC	CDEC - California Data Exchange Center
CDFW	CDFW - California Department of Fish and Wildlife
DOGAMI	DOGAMI – Oregon Department of Geology and Mineral Industries
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
WAECY	WAECY - Washington Department of Ecology
WDFW	WDFW - Washington Department of Fish and Wildlife
Unknown	Unknown

A.8 dom_HYD_FTR_SRC_INTERP

Hydrography Feature Source Interpretation Code. The compilation map or image source and method used when adding or updating hydrography data.

Code	Description
Aerial Imagery Photointerpretation	Aerial Imagery Photointerpretation - feature is delineated from imagery or aerial photography
LiDAR DEM Surface Flow Modeling	LiDAR DEM Surface Flow Modeling - feature delineated through modeling of LiDAR DEM
LiDAR DEM Terrain Interpretation	LiDAR DEM Terrain Interpretation - Feature delineated through supervised interpretation of LiDAR DEM or derivatives
Field Survey GPS	Field Survey GPS - inception point is field-verified, or channel is modified based on field work
Legacy Data	Legacy Data - legacy data with old or unknown data source
Other Modeled	Other Modeled - external source data or model used to adjust delineation
Unknown	Unknown - source of data is not known

A.9 dom_STRM_CONTINUITY

Stream Continuity Code.   Spatial expression of a stream channel.

Code	Description
Continuous	Continuous - flowing water forms a channel with defined bed/banks and evidence of annual scour and deposition
Interrupted	Interrupted - portions of the channel are not evident or well-defined

A.10 dom_STRM_PERIODICITY

Hydrography Periodicity Code. Temporal expression of water flow. This list is ordered by importance of codes.

Code	Description
Perennial	Perennial - Stream that contains flowing water, generally on a year-round basis
Intermittent	Intermittent - Stream that contains flowing water for only part of the year, typically during winter and spring
Ephemeral	Ephemeral - Stream that flows during and shortly after large precipitation events
Not Applicable	Not Applicable - Periodicity does not apply to the type of hydrographic feature
Unknown	Unknown - The periodicity is not known