Oregon/Washington Bureau of Land Management

STREAM LOCATION POINTS

SPATIAL DATA STANDARD

Photo of a BLM employee collecting data at a stream. Photo provided by Roseburg District, OR/WA BLM

Version 2.0 **April 24, 2020**

Document Revisions

Revision	Date	Author	Description	Affected Pages
1.0	6/13/2018	Shelley Moore	1st released version	All
1.1	8/17/2018	Eric Hiebenthal	Updated list of attributes to remove from publication to include CREATE_USER and FILEPATH.	Section 8.2, Page 24.
1.2	11/2019	Matt Groce	Updated sections pertaining to STRM_FLOW, STRM_LOC_TYPE, SRVY_LOC, and STRM_FLOW_INDCTR; added Appendix B	All
1.3	3/17/2020	Al Thompson	Format to meet new template.	All
1.4	4/24/2020	Dana Baker-Allum	Updated to reflect all change requests and other minor edits. Added POINT_TYPE, NHD_EDITS. Removed STRM_FLOW_INDCTR	Many
2.0	4/24/2020	Eric Hiebenthal	2nd released version	All.

Navigation

This document uses hyperlinks to display additional information on topics. External links are displayed with an underline. Internal links are blue text, not underlined. After clicking on an internal link, press the **Alt +left arrow** keys to return to the original location from the target location.

Contents

1 General Information

The Stream Location Points dataset represents field collected spatial locations and basic information about the physical characteristics of surface water features, including: inception points (stream origins), periodicity/continuity transitions, channel confluences, complex stream courses, seeps/springs, dry draws/swales, wetlands, lakes/reservoirs or natural ponds, unstable areas, and other locations representing field collected information within a stream network.

It is not the intent of this dataset to capture the output data from a modeling exercise.

The Stream Location Points dataset is a sub-class of the Oregon Data Framework Sample Points dataset theme. For ease of maintaining data in OR/WA edit environment, this data is presented as a separate dataset from other sample point data types.

- Dataset (Theme) Name: Stream Location Points (STRM_LOC_PT)
- Dataset (Feature Class): STRM_LOC_PT

1.1 Roles and Responsibilities

Table 1 provides a list of the roles and describes the responsibilities for each role. Current personnel assigned these Roles, can be found at the following link: https://www.blm.gov/about/data/oregon-data-management..

Table 1 Roles and Responsibilities

Roles	Responsibilities
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 Records Administrator	The State Records Administrator assists the state data steward to identify any privacy issues related to spatial data. The state records administrator also provides direction and guidance on data release and fees. The state records administrator classifies data under the proper records retention schedule and determines the appropriate Freedom of Information Act category.

1.2 FOIA Category

Public

1.3 Records Retention Schedule

The DRS/GRS/BLM Combined Records Schedule, under Schedule 20/52a3 (Electronic Records/Geographic Information Systems), lists this theme as one of the system-centric themes that are significant for BLM's mission that must be permanently retained.

"PERMANENT. Cutoff at the end of each Fiscal Year (FY) or when significant changes and additions have been made, before and after the change. Use BLM 20/52a. Transfer to the National Archives every three years after cutoff. Under the instruction in 36 CFR 1235.44-50 or whichever guidance is in place at the time of the transfer. Submissions are full datasets and are in addition to, not replacements of, earlier submissions."

According to the DRS/GRS/BLM Records Schedules, Schedule 20, Item 52a3, the NOC is responsible for transfer to NARA.

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

This theme does not require any additional security other than that provided by the General Support System (the hardware/software infrastructure of the OR/WA BLM).

This dataset is not sensitive and there are no restrictions on access to this data, either from within the BLM or external to the BLM. This dataset falls under the standard Records Access Category 1A-Public Data.

There are no privacy issues or concerns associated with this data theme. A privacy impact assessment was submitted for this dataset on 4/27/2020.

1.5 Keywords

Keywords used to locate this dataset include (thesaurus):

- BLM Thesaurus: Hydrology, Geospatial
- International Organization for Standardization (ISO) Thesaurus: inlandWaters
- Additional keywords: Streams, Hydrography

1.6 Subject Function Codes

BLM Subject Function codes that can be used to describe this dataset include:

- 1283 - Data Administration
- 7000 – Soil, Water, and Air Management
- 9167 – Geography and Mapping

2 Dataset Overview

2.1 Usage

This dataset records field collected data points representing basic information about the physical characteristics of surface water features. In turn, these data points help inform a more accurate spatial depiction of the linear stream location, which are updated in the USGS National Hydrography Dataset (NHD). These data points also inform the attribute transitions for periodicity and continuity, which are in turn depicted on the linear features in the NHD data and the Hydrography Events datasets, respectively.

2.2 Sponsor/Affected Parties

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

2.3 Relationship to Other Datasets, Databases, or Files

The Stream Location Points dataset is a sub-class of the OR/WA Sample Points dataset. In addition to the geometry type and core attributes inherited from Sample Points, the Stream Location Points dataset contains additional attributes that are specific to the dataset.

The Stream Location Points dataset allows for faster and easier data collection of linear physical stream characteristics contained within the USGS National Hydrography Dataset (NHD) Flowline, Hydrography Edit (HYD_EDIT), and Hydrography Events (HYD_EVENTS) datasets. Information collected in the Stream Location Point dataset should be used to update the HYD_EDIT and/or HYD_EVENTS datasets immediately after returning from the field.

Field collected Stream Location Points can be used to make updates to the NHD datasets. Point locations representing stream origins (inception), seeps/springs, wetlands, non-flowing bodies of water (e.g., lakes, reservoirs, pools, or ponds), stream confluences, complex stream courses, non-stream channels, and periodicity/continuity transitions help inform the spatial location or attribute information of the NHD Flowline dataset. When the geometry and/or attribute information of an NHD feature needs to be modified, users should follow the procedures in the HYD_EDIT User Guide to make edits to the HYD Edit Templates.

In addition, the information from the field collected Stream Location Points dataset is intended to directly inform the HYD_EVENTS. All point locations inform that the stream was verified in the field (STRM_VER_ARC) and points that have continuity attribution help inform the continuity dataset (STRM_CONTINUITY_ARC). Users should follow the procedures in the HYD_EVENTS User Guide

to update the linear data in the corresponding datasets in the HYD_EVENTS based on the field collected Stream Location Point dataset immediately after returning from the field. Note, if an attribute associated with a HYD_EVENT feature (e.g., continuity or field verification date) needs to be modified on a feature that also has associated geometry or NHD attribute edits, the HYD Edit templates can be used to convey the change to the corresponding HYD EVENT dataset.

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 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.

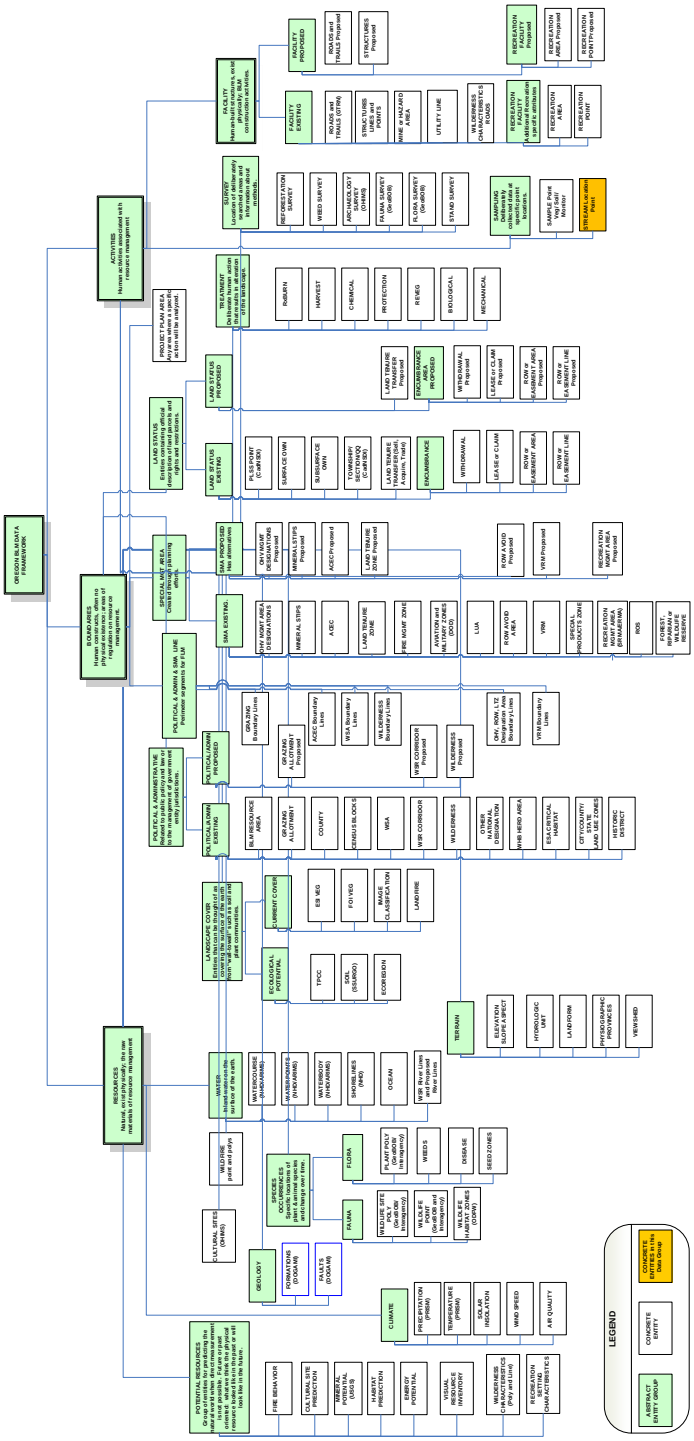

Figure 1 Oregon Data Framework Overview

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 Stream Location Points entities are highlighted. For additional information about the ODF, contact the State Data Administrator. 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, Stream Location Points is considered an activity and categorized as follows:

ODF

Activities

Sampling

Sample Points

Stream Location Points

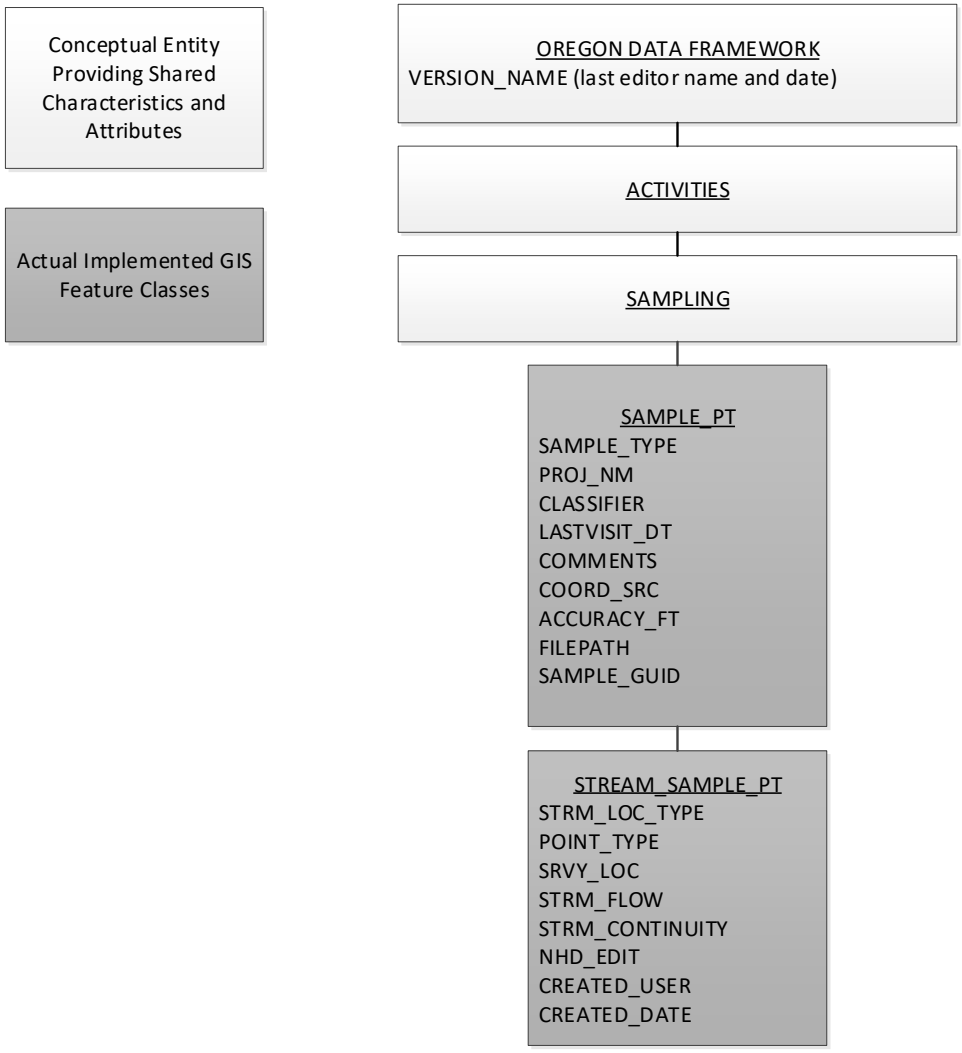

Figure 2 Data Organization Structure

2.5 Relationship to DOI Enterprise Architecture Data Resource Model

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

Steam Location Points require a high level of positional accuracy in order to be useful for intended purposes. Accurate location is critical to being able to distinguish points that are supposed to be different from points that are supposed to be in the same location. The attribute ACCURACY_FT provides the accuracy of each sample point.

3.2 Collection, Input, and Maintenance Protocols

Stream Location Points are intended to record field collected data points. As such, most data points will be input from GPS coordinates. The source of the coordinates is captured in the attribute COORD_SRC.

It is possible, and likely, that there will be multiple Stream Location Points in the same location, representing different stream location types (e.g., inception points often coincide with seeps/springs or wetlands), so it is important to check for unintentional duplicates. As Stream Location Points are updated with more current information, a case-by-case decision needs to be made whether to keep or delete past representations of the same information. For example, there may be use in retaining points with periodicity attribution over time, whereas the utility of retaining inception points over time might be more limited.

Field verification of Stream Location Points can happen at any time of the year. The preferred period will vary based on the type of Stream Location Point being collected. For additional guidance, refer to the definitions in Section 7.17 (Stream Location Type).

3.3 Update Frequency and Archival Protocols

Data is updated annually, after field season, or as needed. Data will be captured once a year during the corporate database annual archive, which occurs at the end of the calendar year.

3.4 Statewide Monitoring

Each year, the Resource Science Data team of the BLM Division of Resources, Lands, Minerals, and Fire meets with the state data stewards 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 checks include:

- All attribute values conform to the range or coded-value domains to which they are applied
- All attributes marked as required in the data standard have values
- Duplicate features which have the same geometry and attributes
- 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 data steward to identify any unmet needs or problems with the current status of the data. At the conclusion of the review, the team records the data steward's approval of the datasets reviewed. This approval is then added to the corporate metadata.

In addition to the annual data QAQC process described above, a separate process will be developed to identify features that are not coincident with NHD Hydrography or the accompanying Hydrography Event datasets. This process will be run on a schedule to be determined in the future. This process should be done based on the Created Date and not the Last Visit Date in order to check data that was entered after the field visit date.

4 Stream Location Points 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 the Appendix. 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 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.

4.1 STRM_LOC_PT (Stream Location Points Feature Class)

Attribute Name	Data Type	Length	Default Value	Required	Domain
SAMPLE_TYPE	String	30	Stream Location	Yes**	A.1 dom_SAMPLE_TYPE
STRM_LOC_TYPE	String	30		Yes	dom_STRM_LOC_TYPE
POINT_TYPE	String	10		Yes	dom_POINT_TYPE
SRVY_LOC	String	30		No	dom_STRM_SRVY_LOC
STRM_FLOW	String	30		No	dom_STRM_PERIODICITY
STRM_CONTINUITY	String	20		No	dom_STRM_CONTINUITY
PROJ_NM	String	50		No	
CLASSIFIER	String	30		No	
LASTVISIT_DT	String	8		Yes**	
COMMENTS	String	255		No	
FILEPATH	String	150		No	
NHD_EDITS	String	15		No	dom_YN_NA
COORD_SRC	String	7	UNK	No	dom_COORD_SRC

ACCURACY_FT	Integer	Short	0	No	
VERSION_NAME	String	50		Yes*	
SAMPLE_GUID	GUID			Yes	
CREATED_USER	String	255		No*	
CREATED_DATE	Date			No*	

* Values automatically generated

** Enforced during quality control

*** Domain not implemented

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 in Western Oregon. See the metadata for this data for a more precise description of the extent.

6 Spatial Entity Characteristics

- STRM_LOC_PT (Stream Location Points Feature Class)
  - Description: Sub-class of Sample Point in the Sampling group.
  - Geometry: Simple point features.
  - Topology: No topology enforced. Points may be coincident.
  - Integration Requirements:
  - Point locations representing stream origins (inception), seeps/springs, wetlands, non-flowing bodies of water (e.g., lakes, reservoirs, pools, or ponds), stream confluences, complex stream courses, non-stream channels, and periodicity help inform the spatial location or attribute information of the USGS National Hydrography Dataset (NHD) datasets. In most instances, the location or attribute information of the NHD Waterbody, Flowline, and Point datasets should be modified to match the Stream Location Point.
  - Point locations describing changes of continuity help inform the attribute information in the Hydrography Events datasets. The Hydrography Events dataset for continuity (STRM_CONTINUITY_ARC) should be updated based on the Stream Location Point.
  - All points inform that the stream was verified in the field. The Hydrography Events dataset for stream verification (STRM_VER_ARC) should be updated based on the Stream Location Point.
  - Coincident points are allowed in this dataset. Editors should check for and delete unintentional duplicate records, i.e., stacked records with the same attribution.

7 Attribute Characteristics and Definition

In alphabetical order.

7.1 ACCURACY_FT

Geodatabase Name	ACCURACY_FT
BLM Structured Name	Accuracy_Feet_Measure
Inheritance	Inherited from SAMPLING
Alias Name	Accuracy (ft)
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	How close, in feet, the spatial GIS depiction is to the actual location on the ground. There are several factors to consider in GIS error: scale and accuracy of map-based sources, accuracy of GPS equipment, and the skill level of the data manipulators. A value of "0" indicates no entry was made. This is the correct value when the COORD_SRC is another GIS theme (Digital Line Graphs (DLG), Geographic Coordinate Database (GCD), and Digital Elevation Model (DEM)) because the accuracy is determined by that theme. However, if COORD_SRC is MAP (digitized from a paper map) or GPS, a value of "0" indicates a missing value that should be filled in either with a non-zero number or "-1." A value of "-1" indicates that the accuracy is unknown, and no reliable estimate can be made. When the data is collected in a field mobile collection application, the value in this field will be automatically calculated. The field will calculate the estimated GPS accuracy to the 95% confidence interval to meet the National Standard for Spatial Data Accuracy (NSSDA) requirements.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 3 (for high accuracy GPS), 40 (best possible for USGS 24K topo map), 200
Data Type	Short Integer

7.2 CLASSIFIER

Geodatabase Name	CLASSIFIER
BLM Structured Name	Classifier_Name
Inheritance	Inherited from SAMPLING
Alias Name	Investigator
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	Name of the subject matter specialist most knowledgeable about the on-the-ground location where the sample point was collected. When the data is collected in a field mobile collection application, the value in this field will be automatically populated on import of the data to ArcGIS from the Created User field, which uses the Active Directory (AD) ID. The Classifier value can be modified in an ArcGIS desktop application prior to submitting the data to the database. Multiple names should be comma delimited, full names should be mixed case and include first and last names.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: Mary Smith, John Doe, msmith, jdoe
Data Type	String (30)

7.3 COMMENTS

Geodatabase Name	COMMENTS
BLM Structured Name	Comments_Text
Alias Name	Comments
Inheritance	Inherited from SAMPLING
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	Free text for comments about the sample point.
Required/Optional	Optional
Domain (Valid Values)	No domain.
Data Type	String (255)

7.4 COORD_SRC

Geodatabase Name	COORD_SRC
BLM Structured Name	Coordinate_Source_Code
Inheritance	Inherited from SAMPLING
Alias Name	Coordinate Source
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	The actual source of the GIS coordinates for the points. If the point is copied from another theme, and already has COORD_SRC, it should be reviewed and may need to be changed for use in this dataset. When the data is collected in a field mobile collection application, the value in this field will be automatically calculated. The field will calculate the quality of the GPS coordinate source used.
Required/Optional	Optional
Domain (Valid Values)	dom_COORD_SRC
Data Type	String (7)

7.5 CREATED_DATE

Geodatabase Name	CREATED_DATE
BLM Structured Name	Created_User_Date
Inheritance	Not Inherited
Alias Name	None
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	The date the sample point is added to the database, either in a field mobile data collection application or in an ArcGIS desktop application. This field cannot be edited by the user. This field is automatically generated from the date on the database GMT (UTC). When the data is collected in a field mobile collection application, the value in this field will populate the Last Visit Date field on import of the data to ArcGIS.
Required/Optional	Optional (automatically generated)
Domain (Valid Values)	No domain
Data Type	Date

7.6 CREATED_USER

Geodatabase Name	CREATED_USER
BLM Structured Name	Created_User_Text
Inheritance	Not Inherited
Alias Name	None
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	The username of the person who adds the data to the database, either in a field mobile data collection application or in an ArcGIS desktop application. This field cannot be edited by the user. This field is automatically generated from the user's Active Directory (AD) ID. When the data is collected in a field mobile collection application, the value in this field will populate the Classifier field on import of the data to ArcGIS.
Required/Optional	Optional (automatically generated)
Domain (Valid Values)	No domain
Data Type	String (255)

7.7 FILEPATH

Geodatabase Name	FILEPATH
BLM Structured Name	Filename_Path_Text
Inheritance	Inherited from SAMPLING
Alias Name	Filepath
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	Computer storage location for a photo file (e.g., jpg), Word document, spreadsheet or another associated document. The value in this field serves as a hyperlink to that location and the file it opens. The value could also be a directory or dataset that opens for further browsing (where multiple files are being referenced).
Required/Optional	Optional
Domain (Valid Values)	No domain. Example: G:\corp\BLM_NonSDE\ResourcePhotos
Data Type	Variable Characters (150)

7.8 LASTVISIT_DT

Geodatabase Name	LASTVISIT_DT
BLM Structured Name	Last_Visit_Sample_Date
Inheritance	Inherited from SAMPLING
Alias Name	Visit Date
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	The last date that a sample was taken or measured at this point. When the data is collected in a field mobile collection application, the value in this field will be automatically populated on import of the data to ArcGIS from the Created Date field, which uses GMT (UTC), as it is assumed that the field visit date is the same as the date the data was captured in the database. The Last Visit Date value can be modified prior to submitting the data to the database. When the data is entered in an ArcGIS desktop application, this field will not be automatically populated from the Created Date as it is assumed that the field visit date is not the same as the date the data was captured in the database.
Required/Optional	Required
Domain (Valid Values)	No domain. Examples: 20080624, 1998, 200109, UNKNOWN
Data Type	String (8)

7.9 NHD_EDITS

Geodatabase Name	NHD_EDITS
BLM Structured Name	NHD_Edits_Text
Inheritance	Not Inherited
Alias Name	NHD Edits
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	Indicates whether edits to the NHD Flowline, NHD Point, NHD Waterbody, or NHD Area datasets have been completed.
Required/Optional	Optional
Domain (Valid Values)	dom_YN_NA
Data Type	String (3)

7.10 POINT_TYPE

Geodatabase Name	POINT_TYPE
BLM Structured Name	Point_Type
Inheritance	Not Inherited
Alias Name	Point Type
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	Specifies where the point is being taken in relation to the feature being recorded.
Required/Optional	Required
Domain (Valid Values)	dom_POINT_TYPE
Data Type	String (10)

7.11 PROJ_NM

Geodatabase Name	PROJ_NM
BLM Structured Name	Project_Name
Inheritance	Inherited from SAMPLING
Alias Name	Project Name
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	The name of the associated project to the point that is being measured, monitored or otherwise sampled.
Required/Optional	Optional
Domain (Valid Values)	No domain
Data Type	String (50)

7.12 SAMPLE_GUID

Geodatabase Name	SAMPLE_GUID
BLM Structured Name	Sample_Globally_Unique_Identifier
Inheritance	Inherited from SAMPLING
Alias Name	None
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	Unique identifier for the Sample Point feature class. The field is used to link table records to sample points.
Required/Optional	Required (generated automatically in the field mobile collection application, generated by using a custom OR/WA BLM unique ID tool in an ArcGIS desktop application)

Domain (Valid Values)	No domain. Example: {C36B32EA-88D2-4ACA-9B20-1199A6FADA49}
Data Type	GUID

7.13 SAMPLE_TYPE

Geodatabase Name	SAMPLE_TYPE
BLM Structured Name	Sample_Type_Code
Inheritance	Inherited from SAMPLING
Alias Name	Sample Type
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	The reason for taking the sample at this location. "Stream Location" is the only valid value for this dataset. "Stream Location" is a single domain value in the larger Sample Type domain. It is important to populate this field correctly so that the field is attributed correctly when this data is combined with the parent and/or other sub-classes of the sample point dataset(s).
Required/Optional	Required
Domain (Valid Values)	dom_SAMPLE_TYPE "Stream Location" (default value) is the only valid value.
Data Type	String (30)

7.14 SRVY_LOC

Geodatabase Name	SRVY_LOC
BLM Structured Name	Survey_Location_Code
Inheritance	Not Inherited
Alias Name	Survey Location
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	The physical location of the surface water feature along the stream channel. Stream Location Points that do not correspond directly on a stream should be recorded as Non-stream/NA.
Required/Optional	Optional
Domain (Valid Values)	dom_STRM_SRVY_LOC
Data Type	String (30)

7.15 STRM_CONTINUITY

Geodatabase Name	STRM_CONTINUITY
BLM Structured Name	Stream_Continuity_Code
Inheritance	Not Inherited
Alias Name	Stream Continuity
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	Captures the transition point of the spatial expression of a stream channel. A stream channel may be: a) **Continuous** - Continuous channels are well-defined throughout the reach. In a continuous perennial stream, most of the stream flows at or above the stream bed. In a continuous intermittent stream, most 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. b) **Interrupted** - Interrupted channels have portions where a defined channel is not evident. Most 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. Stream Location Points capturing interrupted or spatially intermittent stream reaches should be treated differently than Stream Location Points that represent locations of a mapped or modeled stream channel that field surveys have verified is not present (i.e., Stream Location Type is 'No stream'). Stream Location Points capturing interrupted or spatially intermittent stream reaches help inform the spatial location or attribute information of the NHD datasets. These locations should be treated differently than Stream Location Points that represent locations of a mapped or modeled stream channel that field surveys have verified is not present (i.e., Stream Location Type is 'No stream') and do not inform the NHD. 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).
Required/Optional	Optional

Domain (Valid Values)	dom_STRM_CONTINUITY
Data Type	String (20)

7.16 STRM_FLOW

Geodatabase Name	STRM_FLOW
BLM Structured Name	Stream_Flow_Code
Inheritance	Not Inherited
Alias Name	Stream Periodicity
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
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	Optional
Domain (Valid Values)	dom_STRM_PERIODICITY
Data Type	String (30)

7.17 STRM_LOC_TYPE

Geodatabase Name	STRM_LOC_TYPE
BLM Structured Name	Stream_Location_Type_Code
Inheritance	Not Inherited
Alias Name	Stream Location Type
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	The purpose for recording a Stream Location Point, including: a) **Inception Point** - The inception point, or stream origin, is the point where flow first appears on the land with enough force to disturb the substrate creating a lasting sign of flow (Nadeau 2015). The inception point is the beginning of the channel or the most upslope expression of well-defined bed and banks, and bed-forms showing annual scour or deposition. Stream origins are often wetlands, springs, seeps or headcuts. When the stream location type is inception point: • Professional judgement at the time of the survey is the basis for delineation. • Field verification can happen at any time of the year. Late winter through spring (February-June) is the preferred period because it is easier to see and hear higher flows, flow may extend to the inception point, and reduced vegetation cover makes channels more visible. • If a surveyor suspects the re-emergence of flow from a spatially interrupted reach, continue upslope until there is no evidence of a channel with well-defined bed and banks, and bed-forms showing annual scour or deposition. b) **Confluence** - Location where two or more streams join to form a single channel. c) **Course point** - The actual location of the stream channel, typically captured for complex courses. d) **No stream** - mapped or modeled stream channel that is not present, as verified by field surveys. e) **Seep/spring** - a location where groundwater emerges onto the land surface, sometimes just a trickle after a rain event and sometimes in a continuous flow. f) **Dry draw/swale** - a slight depression in the landscape that serves as a vegetated flow path, but lacks differentiation between bed and bank and may contain standing water or an ephemeral stream

	g) **Wetland** - low-lying areas where water covers the soil or is present for an extended period. h) **Lake/Reservoir/Pool/Pond** - large body of non-flowing surface water that can occur naturally or be man-made. i) **Unstable area** - area above or adjacent to stream channel that is likely to deliver material (e.g., sediment and wood) to the stream upon failure. j) **Other** - other field collected information about locations within a stream network
Required/Optional	Required
Domain (Valid Values)	dom_STRM_LOC_TYPE
Data Type	String (30)

7.18 VERSION_NAME

Geodatabase Name	VERSION_NAME
BLM Structured Name	Geodatabase_Version_Text
Inheritance	Inherited from ODF
Alias Name	Version Name
Feature Class Use/Entity Table	STRM_LOC_PT (Stream Location Points Feature Class)
Definition	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. Example: sfrazier.FIRE_POLY-121210-111034 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.
Required/Optional	Required (automatically generated)
Domain (Valid Values)	No domain
Data Type	String (50)

8 Layer Files (Publication Views)

8.1 General

Master corporate feature classes/datasets maintained in the edit database (currently ORSOEDIT) are published to the user database (currently ORSOVCTR) 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) in order 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 (ORSOEDIT) data whenever necessary.

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.

8.2 Specific to This Dataset

Publication datasets will be created for Stream Location that meet these requirements:

- A stand-alone Stream Location dataset will be created for internal use.
- The Stream Location Points sub-class feature class will be appended to the larger sample points dataset.
    - The optional fields in the Sample Point dataset that are not included in the Stream Location Point data will be left blank when the data is appended. The fields that will be blank in the combined dataset include: SAMPLE_ID, SAMPLE_GRP, SAMPLE_METH, ESTABLISH_DT, DIRECTION, LENGTH_FT, RATING1, RATING2, RATING3, OTHERNAME
- Fields used for data tracking will be removed from the stand-alone Stream Location Points and appended sample points datasets before publishing to the internal datasets. This includes the following fields: CREATED_USER, CREATED_DATE, VERSION_NAME.
- Additional fields not already removed from the internal datasets that reference staff names will be removed from the stand-alone Stream Location Points and the appended sample points data before publishing to public-facing websites. This includes the following fields: CLASSIFIER.
- Fields that reference resources that are only available to internal users will be removed from data before publishing to public-facing websites. This includes the following fields: FILEPATH.

9 Editing Procedures

9.1 Overlapping Points

Overlapping points are allowed, and expected, in this dataset. As an example, the point that captures the upper extent of a perennial stream flow may overlap the point that captures the lower extent of an intermittent stream flow. Editors should check for and delete unintentional duplicate records, i.e., stacked records with the same attribution.

9.2 Editing and Quality Control Guidelines

The Stream Location Points dataset is a sub-class of Sample Points. Refer to the ODF Sample Points data standard for topology guidance for Sample points.

The Stream Location Point dataset is a field collection dataset intended to allow for easier data collection of attribute or location information about the linear stream. As soon as the point data is collected, the location of the USGS National Hydrography Data (NHD) flowline data and/or the periodicity or continuity attribution and the field data collection points should be reconciled.

Point locations representing stream origins (inception), seeps/springs, wetlands, non-flowing bodies of water (e.g., lakes, reservoirs, pools, or ponds), stream confluences, complex stream courses, non-stream channels, and periodicity transitions help inform the spatial location or attribute information of the USGS National Hydrography Dataset (NHD) flowline dataset. The Hydrography Edit (HYD_EDIT) Template should be updated for the NHD spatial location or attribute information. Point locations describing continuity help inform the attribute information in the Hydrography Events datasets. The Hydrography Events dataset for continuity should be updated based on the Stream Location Point. All points inform that the stream was verified in the field. The Hydrography Events (HYD_EVENTS) dataset for stream verification should be updated based on the Stream Location Point.

As Stream Location Points are updated with more current information, a case-by-case decision needs to be made whether to keep or delete past representations of the same information. For example, there may be use in retaining points with periodicity attribution over time, whereas the utility of retaining inception points over time might be more limited.

While field data collection can happen any time of the year, the type of Stream Location Point being collected might guide the preferred time of year.

- When the stream location type is inception point:
  - Professional judgement at the time of the survey is the basis for delineation.
  - Field verification can happen at any time of the year. Late winter through spring (February-June) is the preferred period because it is easier to see and hear higher flows, flow may extend to the inception point, and reduced vegetation cover makes channels more visible.
  - If a surveyor suspects the re-emergence of flow from a spatially interrupted reach, continue upslope until there is no evidence of a channel with well-defined bed and banks, and bed-forms showing annual scour or deposition.
- When periodicity information is recorded at a Stream Location Point:
  - Professional judgement at the time of the survey is the basis for classification.
  - Field verification can happen at any time of the year. July through October is the preferred period depending on total rainfall relative to normal precipitation, and the start of the rainy season. Individual Districts, at their discretion, may choose to resurvey stream reaches classified outside of the preferred period. The transition from intermittent to perennial flow varies from year to year, and project planning may benefit from additional surveys.

- Quality control (QC) checks will be done on submission of the data to ensure integrity between fields (see Appendix B for additional guidance regarding valid values for Stream Location Points).
    - SAMPLE_TYPE must equal Stream Location in order to crosswalk into a valid SAMPLE_TYPE domain value.
    - When STRM_LOC_TYPE is equal to 'Inception', then STRM_SRVY_LOC must be populated with 'Upper extent'.
    - When STRM_LOC_TYPE is equal to 'Confluence', then STRM_SRVY_LOC must be populated with 'Mid-point'.
    - When STRM_LOC_TYPE is not equal to 'Wetland' or 'Lake/Reservoir/Pool/Pond', then POINT_TYPE must be populated with 'Center'.
    - When STRM_LOC_TYPE is equal to 'No stream' or 'Unstable area', then STRM_SRVY_LOC must be populated with 'Non-stream/NA'.
    - When STRM_LOC_TYPE is equal to 'Inception', 'Course point', 'Confluence', 'Seep/spring', 'Dry draw/swale', or 'Other', then STRM_FLOW, and STRM_CONTINUITY may be optionally populated.
    - When STRM_LOC_TYPE is equal to 'Other', then the COMMENTS field must be populated with a detailed description of the feature being recorded.

9.3 Snapping Guidance

The Stream Location Points datasets represents field collected data points related to physical parameters associated with the stream network. As such, the NHD stream location delineation, the NHD attribution for periodicity, and the BLM event feature class representing continuity should be snapped to the Stream Location Point, or vice versa. Refer to the vertical integration guidelines for further information.

9.4 Vertical Integration

The NHD Flowline dataset and the Stream Location Points dataset should be vertically integrated. Judgement, and documented data accuracy, should be used to assess whether the linear dataset or the point dataset holds the higher accuracy. The less accurate dataset should be snapped to the dataset with higher accuracy. For example, if the linear stream has been delineated using LiDAR, then it is likely the point should be snapped to the stream. It is possible the location of the linear stream representation and the Stream Location Point will both need to be moved to reach the highest accuracy.

9.5 Theme Specific Guidance

The Stream Location Points datasets represents field collected data. It is not the intent of this dataset to capture the output of data from a modeling exercise.

When data is collected in a field mobile collection application, the following post-processing steps will be completed on import to ArcGIS:

- The CLASSIFIER field will be populated from the CREATED_USER field. The BLM domain values will be stripped so that only the AD username is populated in the CLASSIFIER field. The CLASSIFIER field can be modified to include additional names and/or to change the format of the name prior to version submission.
- The LASTVISIT_DT field will be populated from the CREATED_DATE field, which is automatically captured from the device.

The Stream Location Points dataset is a sub-class of Sample Points. In the ArcGIS edit environment, data from other sample point types will not be included in the editable dataset. Stream Location Points will be appended to the larger Sample Point dataset on publication.

10 Abbreviations and Acronyms

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

Table 2 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
GIS	Geographic 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
NHD	USGS National Hydrography Dataset
POLY	GIS polygon feature
PUB	Publication
RMP	Resource Management Plan
ODF	Oregon Data Framework
OR/WA	Oregon/Washington BLM Administrative State
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)

B 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. 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 the State Data Administrator for current lists. The State Data Administrator's contact information can be found at: https://www.blm.gov/about/data/oregon-data-management

B.1 dom_COORD_SRC

Coordinate Source Code. The source of the geographic coordinates - lines, points, polygons.

Code	Description
CADNSDI	CADNSDI – Lines from or snapped to the CADNSDI dataset
CFF	CFF – Lines duplicated or buffered from Cartographic Feature Files
DEM	DEM − Digital Elevation Model (30m or better accuracy) used for creation of contours
DIS	DIS – Lines generated to connect discontinuous features
DLG	DLG − Lines duplicated or buffered from (24K scale accuracy) USGS Digital Line Graphs Typical Accuracies (40 feet)
DOQ	DOQ – Screen digitized linework over Digital Orthoquad backdrop
DRG	DRG − Screen digitized linework over Digital Raster Graphic (USGS) backdrop
GCD	GCD − Lines snapped to Geographic Coordinate Database Points
GPS	GPS − Coordinates obtained from a Global Positioning System device
IMG	IMG – Coordinates derived from interpretation of non-photographic imagery
LiDAR	LiDAR - LiDAR points, lines, or polygons generated through interpretation or analysis.
MAP	MAP − Digitized coordinates from hardcopy map or onto a map backdrop
MTP	MTP − Lines duplicated from Digital Master Title Plat
SOURCEL	SOURCEL – Coordinates duplicated from a BLM GIS source layer
SRV	SRV − Survey methods were used to create the linework
TIGER	TIGER – Tiger data
TRS	TRS – Coordinates only given as a legal description (township, range, section)
UNK	UNK − Unknown coordinate source
WOD	WOD – WODDB (Western Oregon Digital Database) Photogrammetric

B.2 dom_POINT_TYPE

Point Type Code. Specifies where the point is being taken in relation to the feature being recorded.

Code	Description
Center	Center – A point corresponding to the geometric center of the feature.
Perimeter	Perimeter – A point, that may be part of a series of points, representing the outline of the area feature

B.3 dom_SAMPLE_TYPE

Sample Type Code. The purpose for taking the sample. The following is a subset of the full domain that represents those values that are valid for this data standard.

Code	Description
Stream Location	Stream Location

B.4 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

B.5 dom_STRM_LOC_TYPE

Stream Location Type Code. The purpose for taking the Stream Location Point. To facilitate ease of data entry, this list has been ordered so that most likely used codes are at the top of the list.

Code	Description
Inception Point	Inception Point
Confluence	Confluence
Course Point	Course Point
No Stream	No Stream
Seep/Spring	Seep/Spring
Dry Draw/Swale	Dry Draw/Swale
Wetland	Wetland
Lake/Reservoir/Pool/Pond	Lake/Reservoir/Pool/Pond
Unstable Area	Unstable Area
Other	Other

B.6 dom_STRM_PERIODICITY

Stream Periodicity Code. Temporal expression of stream 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

B.7 dom_STRM_SRVY_LOC

Stream Location Survey Location. The extent along the stream that a periodicity or continuity transition occurs. To facilitate ease of data entry, this list has been ordered so that most likely used codes are at the top of the list.

Code	Description
Upper extent	Upper extent – Upper extent of a stream feature or a transition in periodicity/ continuity
Mid-point	Mid-point – Mid-point data capture
Lower extent	Lower extent – Lower extent of a stream feature or a transition in periodicity/continuity
Non-stream/NA	Non-stream/NA – Point does not fall on a stream or survey location is not applicable

B.8 dom_YN_NA

Yes No Not Applicable Code. Generic domain for Yes/No/Not Applicable coding.

Code	Description
Y	Yes
N	No
NA	Not Applicable

C Valid Values for Stream Location Points and Related Attributes

STRM_LOC_TYPE - the stream or surface water feature being recorded	**SRVY_LOC** - the physical location along the stream channel that a Stream Location Point is recorded				**Stream Periodicity** (STRM_FLOW) – Temporal expression of stream flow	**Stream Continuity** (STRM_CONTINUITY) – Spatial expression of a stream channel
	Upper extent Upper extent of a stream feature or a transition in periodicity/ continuity	***Mid-point*** Mid-point data capture	***Lower extent*** Lower extent of a stream feature or a transition in periodicity /continuity	***Non-stream/ NA*** Point does not fall on a stream or the survey location is not applicable		
[1, 3] **Inception** - beginning of the stream channel	X				X	X
[1, 3] **Confluence** - where two or more streams join		X			X	X
[1, 3] **Course Point** – actual location of the stream channel	X	X	X		X	X
[1, 3] **No stream** - mapped or modeled stream channel that is not present, as verified by field surveys				X		
[3] **Seep/spring** - location where flowing groundwater emerges onto the land surface, sometimes just a trickle and sometimes as continuous flow	X	X	X	X	X	X
Dry draw/swale - a slight depression in the landscape that serves as a vegetated flow path, but lacks any differentiation between bed and bank and may contain standing water or an ephemeral stream	X	X	X	X	X	X
[3] **Wetland** - low lying areas where water covers the soil or is present for an extended period				X		
[3] **Lake/Reservoir/Pool/Pond** - body of non-flowing surface water				X		

Unstable area – an area above or adjacent to a stream channel that is likely to deliver material (e.g., sediment, wood) to the stream upon failure				X		
Other - additional field collected information about locations within a stream network	X	X	X	X	X	X

[1] **Hydrography Editing (HYD_EDIT) – Stream Location Points that help describe pending edits to the NHD.**

[2] **Hydrography Events (HYD_EVENTS) – All Stream Location Point locations inform that the stream was verified in the field (STRM_VER_ARC) and points that have continuity attribution help to inform the continuity dataset (STRM_CONTINUITY_ARC) in the Hydrography Events.**

[3] **USGS National Hydrography Dataset (NHD) - Stream Location Points that inform the spatial location or describe attribute information in the NHD Flowline, NHD Point, NHD Waterbody, or NHD Area datasets.**

D References

Nadeau, Tracie-Lynn. 2015. Streamflow duration assessment method for the Pacific Northwest. EPA 910-K-14-001, U.S. Environmental Protection Agency, Region 10, Seattle, WA.