Oregon/Washington Bureau of Land Management

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

STRUCTURES
SPATIAL DATA STANDARD

Culvert construction in western Oregon.

Document Revisions

Revision	Date	Author	Description	Affected Pages
1.0	4/26/2010	Stanley Frazier, Pamela Keller	1st released version.	All
1.0	2/13/2013	Stanley Frazier, Pamela Keller	Revised version	All
1.1	6/4/2013	Pamela Keller	Added attribute ALTERNATIVE to feature classes STRCT_P_POINTS and STRCT_P_ARC. Wording added to show UNKNOWN as an allowable entry.	Sections: 4.2 ,4.4, 7.2. 7.3, 7.7, 7.11, 7.21, 7.28, 7.41
1.1	11/15/2016	Eric Hiebenthal	Added Document Revisions Section	Revision History
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1.3	03/17/2017	Kyler Diershaw	Added automatic TOC	TOC
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			Updated dom_COORD_SRC domain	A.3
			Updated dom_INITIATIVE domain	A.5
			Updated dom_REASON domain	A.8
			Updated dom_STATUS_P domain	A.9
			Updated dom_WORKAGENT domain	A.14
1.5	02/20/2019	Al Thompson	Reformat and edit	All
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1.7	6/9/2020	Dana Baker-Allum	Updated Structure Type domains as per change request	A.11-A.14
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2.0	8/25/2020	Dana Baker-Allum	Added Mineral Activity to dom_REASON	A.9
2.0	10/7/2020	Dana Baker-Allum	Corrected values in structure type domains.	

	Navigation
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1.   General Information

This dataset represents constructed features called structures. Structures are discrete, physically existing things that support treatment, recreation, or other management activities. Structures have a construction focus including materials, condition, and maintenance. Structures are line or point features used as building blocks. A fixed buffer width, added as an attribute to the point or line, is enough for determining acres as needed.

- Dataset (Theme) Name: Structures
- Dataset (Feature Class):   STRCT_PT, STRCT_ARC

Structures might be associated with one or more of the following databases:

- Range Improvement Project System (RIPS)
- Facility Assets Management System (FAMS)
- Ground Transportation (GTRN)
- Recreation Management Information System (RMIS)
- Watershed Enhancement Tracking System (WETS)
- Interagency National Hydrography Dataset (NHD)
- United States Geological Survey (USGS)
- Geographic Names Information System (GNIS)
- State of Oregon databases

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.

Roles	Responsibilities
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 Schedules

The DRS/GRS/BLM Combined Records Schedule under Schedule 20/52a3 (Electronic Records/Geographic Information Systems) lists Structures 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-year tech refresh update cycle.

1.4   Security/Access/Sensitivity

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

This data is not sensitive, and there are no restrictions on access to this data from either within the BLM or external to the BLM.

1.5   Keywords

Keywords used to locate this dataset include:

- BLM Thesaurus: Facility, Energy, Range, Recreation, Disturbance, Geospatial.

- Additional keywords: structures, construction, improvements, range improvements, and resource improvements.

- ISO Thesaurus Keywords: biota, economy, environment, location, farming, and structure.

1.6   Subject Function Codes

BLM Subject Function codes used to describe this dataset include:

- 1283 - Data Administration

- 9175 - Land Treatment

2   Dataset Overview

2.1   Usage

This dataset depicts structures on maps and provides information useful to the maintenance of structures on the ground, and for reporting on construction activity. The BLM, as a public land management agency, is required to identify land-altering actions including construction. Proposed structures must undergo planning at some level. The National Environmental Protection Act cumulative effects analysis requires accounting for both completed and proposed structures. Structure reporting usually counts rather than measures the structures, with linear structures tallied by mile. Structures are often combined (spatial overlay) with polygon feature classes for a variety of analytical purposes. For example, miles of fence in a watershed or the number of erosion control devices in a Resource Area.

Non-BLM structures (structures under the control of another agency or private party) can be included in this data set when necessary for cartographic or analytical purposes. Take care to identify clearly non-BLM features when shown.

2.2   Sponsor/Affected Parties

The sponsor for this dataset is the Deputy State Director, Resource Planning, Use and Protection. This dataset represents BLM structures, and matching interagency data across the landscape is not necessary.

2.3   Relationship to Other Datasets

Structures, defined as constructed features, may have links to the FAMS application database. In addition, structures often have meaning outside of being constructed things. Structures built to support rangeland management (fences, water developments) need links to RIPS. They might be infrastructure for a recreation site. The structure itself is not a recreation site but may be associated with a recreation site feature (RECSITE). Link structures built to support a land area treatment to that treatment with TRTLINK. It is important to consider the relationships between structures and associated areas treated or potentially treated because it may not be immediately obvious. Capture these treated area polygons on one of the treatment feature classes (BURN, REVEG, HARV, MECH, CHEM, BIO, and PROT). Some structures function as treatments all by themselves; so, the core attributes for PLANID, REASON, REASON2, INITIATIVE, and INITIATIVE2 are included.

There should be a large amount of coincidence between STRCT_ARC and the polylines (arc) of Grazing Allotments and Pastures (GRA) and/or polylines of PROT (protection feature class from treatments). If GRA arcs have DEF_FEATURE = "FENCE," there should be a corresponding arc on STRCT_ARC with TYPE = "Fence." However, it is important to note that fences on STRCT_ARC might be slightly different (longer or shorter extent) than the polylines of GRA or PROT. There will be more fences in STRCT_ARC than are found in GRA or PROT. The STRCT_ARC represents the true physical location of a fence; GRA and PROT represent areas that may include boundary segments other than fences.

Link structures related to water to the relevant physical water feature in the NHD. Fill in the NHD_REACHCODE linking field for the appropriate structures. The NHD does not include the attribute information needed for BLM water structure management, use, and planning purposes. You will find structures dataset attributes and additional detail in Section .

Another existing database application is the WETS database. Even though WETS allows for the creation of GIS

spatial features within the application, it is not the master location for spatial features. Features from NHD, structures, treatments, GTRN or other GIS master datasets, can be copied into the WETS and attributes attached. Select spatial features with a riparian or water restoration benefit from structures using the REASON or REASON2 attributes.

Even though roads, railroads, and trails are constructed features, the OR/WA corporate GTRN dataset will continue to serve as master data for these spatial features. Point features, like gates and cattleguards, however, are found in STRCT_PT. Road closure devices are indicated by REASON = "Road Access Restriction" with a STRCT_PT_TYPE of Gate, Road Barrier, or Sign. The STRCT_MAT provides the physical material of the road closure or blockage.

Power, communication (phone, optic, cable), and gas lines are generally not BLM owned or managed entities. BLM acquires utility lines are from other agencies, but OR/WA BLM often needs to make modifications to reduce the complexity of lines, as well as customize attributes. As such, these data fall into the OR/WA corporate data category of external source (value-added) and are stored in a separate feature class. Structures allow inclusion of these entity types for when OR/WA BLM is the appropriate creator and maintainer of the data.

There is considerable duplication between STRCT_PT, NHD, RECSITE and the USGS point layer GNIS. The GNIS is simply points for cartographic display and includes all kinds of locations. The GNIS contains point locations for recreation sites (RECSITE) like parks and campgrounds, as well as, constructed features such as offices, towers, wells, dams, bridges and many more. These are not completed nor intended to be. They are map label locations and, more importantly, the official names of natural features. The GNIS also contains cartographic locations for landform labels (peaks, valleys, flats, etc.). To avoid duplication with other OR/WA BLM corporate data, consider GNIS the master spatial data location only for the landform label points. There should be regular synchronization of point locations from the other themes to GNIS and, conversely, GNIS provides the official name for relevant spatial features (notably water features). There is often an additional "local" name necessary for data differentiation and linkage to other databases.

All the above are examples of "one-to-many" relationships where there may be many structures related to one treatment polygon, one recreation site polygon or recreation site point, one range improvement project, or one "facility" in FAMS. It may also be necessary to go from one structure to many smaller structures. For example, one pipeline might have many valves, one wind tower might have details about support points, and one campground might have many water spigots and toilets. Keep these details, if necessary, in separate tables linked to structures with STRCT_ID and/or to recreation sites or other facilities with FAMSKEY and/or to treatments with TRTLINK. These tables can have simple XY coordinates for mapping. You can keep examples of such small structure locations in a separate XY table:

- Small Signs (Boundary/Information/Fire Prevention/Fee)
- Power Pole/Box, Communication Pole/Box
- Water Spigot/Valve/Vent/Pump/Drain
- Sewage Sump, Propane Tank
- Traffic Counter Road/Trail
- Fire Ring, Picnic Table
- Fence Gate/Stile/Jack
- Fence Pull Pile
- Claim Marker

Consider a recreation Site, a Structure, and a Small Structure associated item by following the FAMS logic for a Site, an Asset, and an Optional Asset. All structures should create an entity on STRCT_PT or STRCT_ARC (with possible association to treatment feature classes or to Recreation Sites). The small structures stored in a separate table, if they may have only minimal additional information or a great deal of detailed information.

Define the relationship to Sampling Points (described in the SAMPLE_PT data standard) by intent or purpose of the entity. Define structures by their construction characteristics. Define sampling Points by their purpose, which is resource measurement, and monitoring at a specific point and time (often repeatedly). Think of things like mineral drill holes, geothermal test wells, and seismic test stations as small structures, but they are inherently

Sampling Points.

The most important related applications are Micro*Storms, National Fire Plan Operations and Reporting System, NHD, FAMS and RIPS. The linking field is understood for these applications. Other applications which may need to upload spatial features from the structures feature classes are Timber Sale Information System, Stewardship Contracting Information Database, and IRDA. Linkage to these systems is not yet determined. Information about small structures that can always be represented as points is kept in separate tables that can be linked to STRCT_PT or STRCT_ARC with STRCT_ID.

Structures are also related to the ODF Fish Passage Barrier and Culvert datasets. Fish Passage Barriers and Culverts datasets relate to the Structure Points.

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, 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.
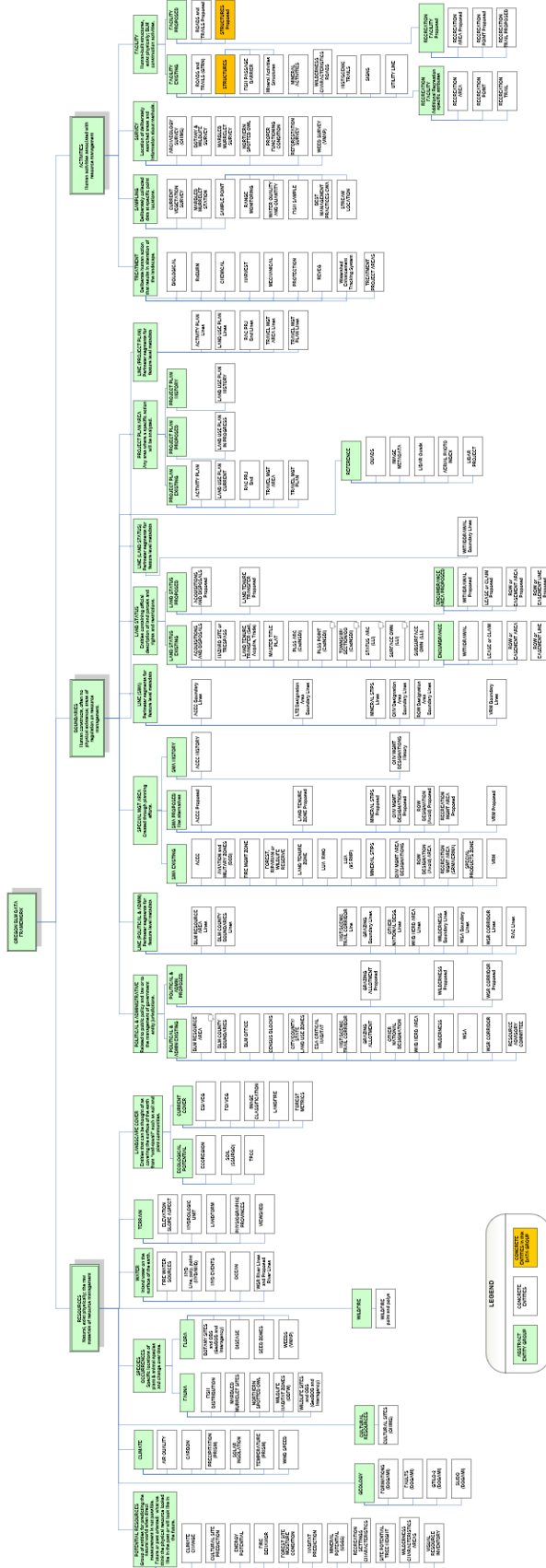
Figure 1   Oregon Data Framework Overview

Physical data populates 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, Structures Data Organization Structure for a simplified schematic of the entire ODF showing the overall organization and entity inheritance. The Structure entities are highlighted. For additional information about the ODF, contact the. State Data Administrator.

For each feature class of the structures group, the categories/groups it is part of are:

ODF

        Activities

                Facilities

                        Structures

                        STRCT_PT

                        STRCT_ARC
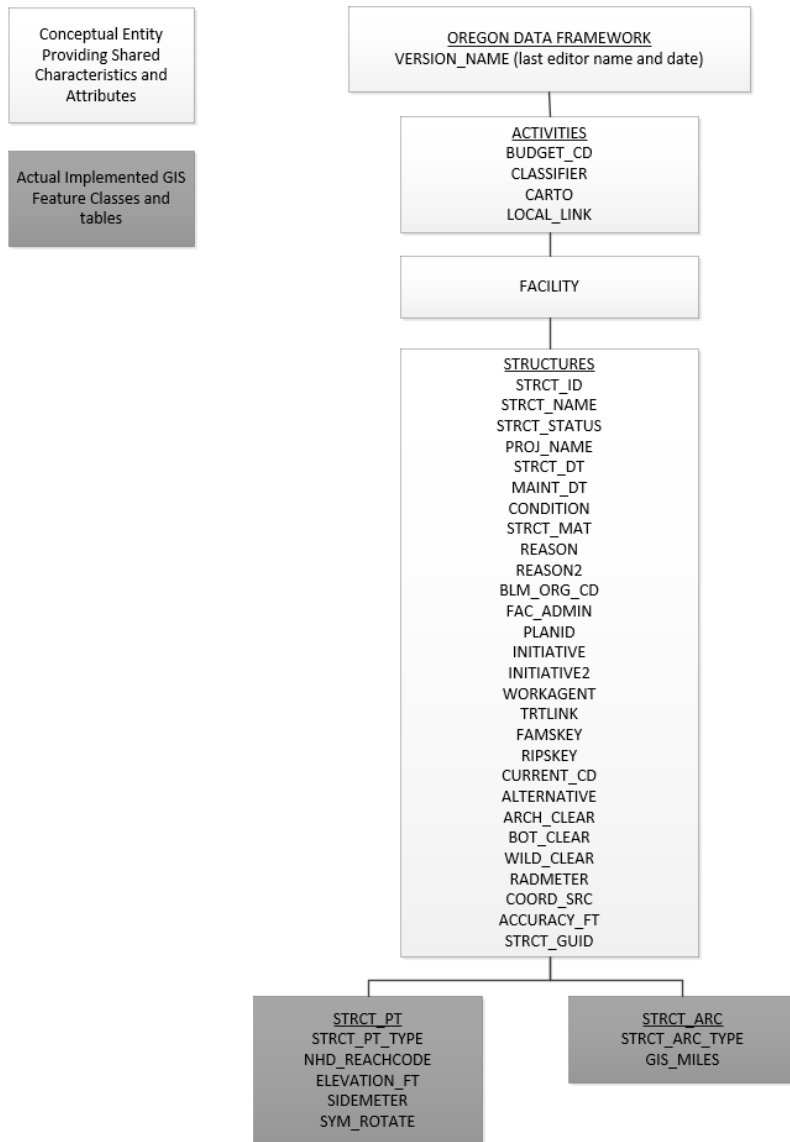
Figure 2   **Data Organization Structure**

2.5   Relationship to DOI Enterprise Architecture Data Resource Model

The Department of the Interior's (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. Complete documentation and simple data structures that make sharing easier address data sharing. The Attribute Characteristics and Definitions section addresses data description. The data organization and structure portions of this document addresses data context. In addition, the DOI Data Resource Model categorizes data by use of standardized data subject areas and information classes. For this dataset, these are as follows:

- Data Subject Area: Geospatial

- Information Class: Location

For a complete list of all DOI Data Subject Areas and Information Classes, contact the State Data Administrator.

3   Data Management Protocols

3.1   Accuracy Requirements

Since structures have a physical existence on the ground, it is possible to map their locations with a high degree of accuracy. Accuracy is, however, variable because of a wide variety of sources. The claimed +/- range is captured in the attribute ACCURACY_FT. Entering structure locations using the Global Positioning System (GPS) or by careful mapping improves the accuracy.

3.2   Collection, Input, and Maintenance Protocols

Input structures from one of the following sources:

- From GPS coordinates

- Using Digital Orthophoto Quad backdrops for heads-up digitizing

- Copied from existing digital data

- Digitized from paper maps

Capture the source of the coordinates in the attribute COORD_SRC. It is possible, and likely, that there will be multiple structure points in the same location, so it is important to check for unintentional duplicates. Structures that are associated with a treatment should have the TRT_ID from the relevant treatment feature class and REASON filled in.

To collect mobile data, a staff member must first obtain the appropriate mobile editor user account within the BLM ArcGIS Online (AGOL) organization. Then, administrators will add Structures mobile editors to the designated group in AGOL which allows them to access the editable feature service. Specific decisions about how to manage AGOL users can be made at the District or Field Office level.

Once added to the correct group, users can log in to the S1 Mobile for Android Application and download an editable replica of the Structures dataset to their device for offline use in the field. This application allows users to create Structures features.

When the user returns to the office and re-establishes wireless internet connectivity on the device, they will then choose the option to sync and submit their data from the mobile application. This will add the created, updated, and/or deleted features/records to a BLM SDE Version queue. Authorized editors will then import this mobile version into ArcGIS Desktop, where they will review the data, perform any needed corrections or updates, and submit the version for automated Quality Assurance/Quality Control (QAQC), reconcile, and posting. The automated QAQC process performed during version submission will check the version for missing values in required fields, values outside of applied range and/or coded value domains, and other data rules.

Structures associated with a physical water feature found in NHD should have a matching NHD_REACHCODE with the appropriate reach unique identifier. You can use the same reach code on more than one structure. Fill in the NHD and NHD_REACHCODE physical water feature as soon as possible.

There are three kinds of proposed structures:

1. New construction

2. Reconstruction

3. Removal

1.   The final constructed shape and location might be different from the proposed. Adjust the shape, fill in the appropriate linking fields (especially NHD_REACHCODE and RIPSKEY), change the STRCT_STATUS to Completed and adjust other attributes as needed.

2.   Delete the relevant proposed features when a proposal is no longer valid.

3.3   Update Frequency and Archival Protocols

Updates are potentially frequent but usually involve only a few structures. District resource specialists should check the themes frequently for spatial and attribute accuracy within their districts and inform the GIS editor when features are ready to move from Proposed to Completed.

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, the Resource Science Data team of the BLM Division of Resources, Lands, Minerals and Fire 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   Structures Geodatabase Schema (Simplified)

The following tables list attributes 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. The tables list the core required attributes first, but non-core attributes may be listed adjacent to related attributes to avoid confusion in the GIS tables. There are no aliases unless specifically noted. Appendix A, Domains (Valid Values) lists the domains used in this data standard at the time this data standard was approved. Domains can be changed without a re-issue of the data standard so those shown in the Appendix may not be current. You can find current domains on the internal OR/WA SharePoint data management page. Some of the domains used in this data standard are also available at the following public web site: https://www.blm.gov/site-page/oregon-data-management. For domains not listed at that site contact the State Data Administrator.

4.1   STRCT_PT (Structure Points)

Attribute Name	Data Type	Length	Default Value	Required	Domain
STRCT_ID	Integer	Long		Yes	
STRCT_NAME	String	40		Yes	
STRCT_PT_TYPE	String	30		Yes	dom_STRCT_PT_TYPE
STRCT_STATUS	String	20		Yes	dom_STATUS
PROJ_NAME	String	100		No	
STRCT_DT	String	8		Yes	
MAINT_DT	String	8		No	
CONDITION	String	20		No	dom_CONDITION
STRCT_MAT	String	30		No	
REASON	String	30		Yes	dom_REASON
REASON2	String	30		No	dom_REASON
BLM_ORG_CD	String	5		Yes	dom_BLM_ORG_CD
FAC_ADMIN	String	3	UN	Yes	dom_JURIS_CODE
CLASSIFIER	String	30		No	
PLANID	String	100		No	dom_PLANID
INITIATIVE	String	20		No	dom_INITIATIVE
INITIATIVE2	String	20		No	dom_INITIATIVE
BUDGET_CD	String	50		No	
WORKAGENT	String	40		No	dom_WORKAGENT
TRTLINK	Integer	Long		No	
FAMSKEY	String	8		No	
RIPSKEY	String	6		No	
NHD_REACHCODE	String	14		No	
CURRENT_CD	String	1	C	Yes	dom_CURRENT_CD
CARTO	String	20		No	
ELEVATION_FT	Integer	Short		No	
ALTERNATIVE	String	10		No	

Attribute Name	Data Type	Length	Default Value	Required	Domain
ARCH_CLEAR	String	8		No	
BOT_CLEAR	String	8		No	
WILD_CLEAR	String	8		No	
SIDEMETER	Double	16,2		No	
RADMETER	Double	16,2		No	
SYM_ROTATE	Integer	Short		No	dom_Degree0to359
LOCAL_LINK	String	30		No	
COORD_SRC	String	7		No	dom_COORD_SRC
ACCURACY_FT	Integer	Short		No	
FILEPATH	String	150		No	
STRCT_GUID	GUID			Yes *	
COMMENTS	String	255		No	
VERSION_NAME	String	50	InitialLoad	Yes *	

* Values automatically generated

4.2   STRCT_ARC (Structure Lines)

Attribute Name	Data Type	Length	Default Value	Required	Domain
STRCT_ID	Integer	Long		Yes	
STRCT_NAME	String	40		Yes	
STRCT_ARC_TYPE	String	30		Yes	dom_STRCT_ARC_TYPE
STRCT_STATUS	String	20		Yes	dom_STATUS
PROJ_NAME	String	100		No	
STRCT_DT	String	8		Yes	
CONDITION	String	20		No	dom_CONDITION
MAINT_DT	String	8		No	
STRCT_MAT	String	30		No	
REASON	String	30		Yes	dom_REASON
REASON2	String	30		No	dom_REASON
BLM_ORG_CD	String	5		Yes	dom_BLM_ORG_CD
FAC_ADMIN	String	3	UN	Yes	dom_JURIS_CODE
CLASSIFIER	String	30		No	
PLANID	String	100		No	dom_PLANID
BUDGET_CD	String	50		No	
INITIATIVE	String	20		No	dom_INITIATIVE
INITIATIVE2	String	20		No	dom_INITIATIVE
WORKAGENT	String	40		No	dom_WORKAGENT

Attribute Name	Data Type	Length	Default Value	Required	Domain
TRTLINK	Integer	Long		No	
FAMSKEY	String	8		No	
RIPSKEY	String	6		No	
CURRENT_CD	String	1	C	Yes	dom_CURRENT_CD
CARTO	String	20		No	
GIS_MILES	Decimal	12,6		Yes	
ALTERNATIVE	String	10		No	
ARCH_CLEAR	String	8		No	
BOT_CLEAR	String	8		No	
WILD_CLEAR	String	8		No	
RADMETER	Double	16,2		No	
LOCAL_LINK	String	30		No	
COORD_SRC	String	7		No	dom_COORD_SRC
ACCURACY_FT	Integer	Short		No	
FILEPATH	String	150		No	
STRCT_GUID	GUID			Yes *	
COMMENTS	String	255		No	
VERSION_NAME	String	50	InitialLoad	Yes *	

*   Values automatically generated

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 in OR/WA, but it is not "wall-to-wall" and may cover only a small percentage of the total. Total coverage will not increase greatly over time. See the metadata for this dataset for more precise description of the extent.

6 Spatial Entity Characteristics

- STRCT_PT
   - Description: Instance of Structures Existing group.
   - Geometry: Simple point features.
   - Topology: No topology rules enforced.
   - Integration Requirements: None.
- STRCT_ARC
   - Description: Instance of Structures Existing group.
   - Geometry: Simple line features.
   - Topology: No topology rules enforced.
   - Integration Requirements: None.

7 Attribute Characteristics and Definitions

In alphabetical order.

7.1 ACCURACY_FT

Geodatabase Name	ACCURACY_FT
BLM Structured Name	Accuracy_Feet_Measure
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
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. This is the correct value when the COORD_SRC is another GIS theme (Digital Line Graphs, Cadastral National Spatial Data Infrastructure and Digital Elevation Model) because that theme determines the accuracy. However, if COORD_SRC is MAP (digitized from a paper map) or GPS, a value of "0" indicates a missing value 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.
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 ALTERNATIVE

Geodatabase Name	ALTERNATIVE
BLM Structured Name	Alternative_Text
Inheritance	Inherited from entity PROPOSED FACILITY
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Identifier for the alternative during the planning process (e.g., A, B, C, D, E). Free choice values for different plans, can be concatenated when same polygon applies to multiple alternatives (BCD, ACD, etc.) This field should not be used for records with a status of completed.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: A, 1, B3, B3A1C
Data Type	String (10)

7.3   ARCH_CLEAR

Geodatabase Name	ARCH_CLEAR
BLM Structured Name	Archaeological_Clearance_Date
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Date the proposed structure area received archaeological clearance. Use YYYYMMDD or YYYYMM or YYYY format. UNKNOWN is an allowable entry.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 20091022, 200109, 1999, UNKNOWN
Data Type	String (8)

7.4   BLM_ORG_CD

Geodatabase Name	BLM_ORG_CD
BLM Structured Name	Administrative_Unit_Organization_Code
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	A combination of the BLM administrative state and field office that has administrative responsibility for the spatial entity. This includes determining the office to cover the entity for planning purposes and the office that 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, identify the office to the district or even the state level rather than to the resource area level.
Required/Optional	Required
Domain (Valid Values)	dom_BLM_ORG_CD
Data Type	String (5)

7.5 BOT_CLEAR

Geodatabase Name	BOT_CLEAR
BLM Structured Name	Botanical_Clearance_Date
Inheritance	Inherited from entity PROPOSED STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Date the proposed structure area received botanical clearance. Use YYYYMMDD, YYYYMM, or YYYY format. UNKNOWN is an allowable entry.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 20091022, 200109, 1999, UNKNOWN
Data Type	String (8)

7.6 BUDGET_CD

Geodatabase Name	BUDGET_CD
BLM Structured Name	Funding_Program_Code
Inheritance	Inherited from entity ACTIVITIES
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Primary funding program activity for a structure.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 1020, 1040, 1220, 1060MX
Data Type	String (50)

7.7 CARTO

Geodatabase Name	CARTO
BLM Structured Name	Cartographic_Text
Inheritance	Inherited from entity ACTIVITIES
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Free text field for each office to use as desired for cartographic (selection and display) purposes. Blanks and special characters not advised.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: Major, Minor, 1, 2, 3, Show, NoShow, and Private
Data Type	String (20)

7.8 CLASSIFIER

Geodatabase Name	CLASSIFIER
BLM Structured Name	Classifier_Name
Inheritance	Inherited from entity ACTIVITIES
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Name (mixed case, first and last) of the subject matter specialist most knowledgeable about the construction project (contact). Simple name of a person has been determined not to be a privacy issue, so these attribute values are published with the web-based downloadable data.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: Mary Smith, John Doe
Data Type	String (30)

7.9 COMMENTS

Geodatabase Name	COMMENTS
BLM Structured Name	Comments_Text
Inheritance	Not Inherited
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Free text for comments about the structure.
Required/Optional	Optional
Domain (Valid Values)	No domain.
Data Type	String (255)

7.10 CONDITION

Geodatabase Name	CONDITION
BLM Structured Name	Physical_Condition_Code
Inheritance	Inherited from entity COMPLETED STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	General physical condition of a structure.
Required/Optional	Optional
Domain (Valid Values)	dom_CONDITION
Data Type	String (20)

7.11 COORD_SRC

Geodatabase Name	COORD_SRC
BLM Structured Name	Coordinate_Source_Code
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	The actual source of the GIS coordinates for the polylines. If the line 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.
Required/Optional	Optional
Domain (Valid Values)	dom_COORD_SRC
Data Type	String (7)

7.12 CURRENT_CD

Geodatabase Name	CURRENT_CD
BLM Structured Name	Feature_Current_Code
Inheritance	Inherited from entity COMPLETED STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Whether the structure is currently existing or historic. Only meaningful for existing structure feature classes, not applicable to proposed structure. Whether an entity is considered **historic** depends on the type of structure. Date/age does not determine this but whether the entity is now removed, obsolete, replaced, or erased in some sense.
Required/Optional	Required (default value "C")
Domain (Valid Values)	dom_CURRENT_CD
Data Type	String (1)

7.13 ELEVATION_FT

Geodatabase Name	ELEVATION_FT
BLM Structured Name	Elevation_Feet_Measure
Inheritance	Not Inherited
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Height of the ground above mean sea level.
Required/Optional	Optional
Domain (Valid Values)	No Domain. Examples: 3200, 425, 10067
Data Type	Short Integer

7.14 FAC_ADMIN

Geodatabase Name	FAC_ADMIN
BLM Structured Name	Facility_Administration_Code
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Broad governmental or private organization with administrative responsibility for the structure.
Required/Optional	Required
Domain (Valid Values)	dom_JURIS_CODE
Data Type	String (5)

7.15 FAMSKEY

Geodatabase Name	FAMSKEY
BLM Structured Name	FAMS_Identifier
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	The FAMS equipment or asset number.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: L1512888, L1513406
Data Type	String (8)

7.16 FILEPATH

Geodatabase Name	FILEPATH
BLM Structured Name	Filename_Path_Text
Inheritance	Not Inherited
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Computer storage location for a photo file (e.g., jpg), Word document, spreadsheet or other associated document. The value in this field serves as a hyperlink to that location and the file it opens. 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
Data Type	String (150)

7.17 GIS_MILES

Geodatabase Name	GIS_MILES
BLM Structured Name	GIS_Miles_Measure
Inheritance	Not Inherited
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Length of a linear feature in miles. Must be recalculated with every edit submission. The miles will be automatically calculated when the feature classes are published. The BLM_ORG_CD will be used to determine the appropriate projection.
Required/Optional	Required (automatically generated)
Domain (Valid Values)	No domain
Data Type	Decimal (12,6)

7.18 INITIATIVE

Geodatabase Name	INITIATIVE
BLM Structured Name	Structure_Initiative_Name
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	The initiative, priorities, or plan objective the structure falls under.
Required/Optional	Optional
Domain (Valid Values)	dom_INITIATIVE
Data Type	String (20)

7.19 INITIATIVE2

Geodatabase Name	INITIATIVE2
BLM Structured Name	Structure_Initiative_Two_Name
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	The secondary initiative, priorities, or plan objective the structure falls under.
Required/Optional	Optional
Domain (Valid Values)	dom_INITIATIVE
Data Type	String (20)

7.20 LOCAL_LINK

Geodatabase Name	LOCAL_LINK
BLM Structured Name	Local_Database_Identifier
Inheritance	Inherited from entity ACTIVITIES
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	District or other agency legacy identifier or database link for a structure (other than RIPS and FAMS).
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 127UB, 35-1, 4102
Data Type	String (30)

7.21 MAINT_DT

Geodatabase Name	MAINT_DT
BLM Structured Name	Structure_Last_Maintenance_Date
Inheritance	Inherited from entity EXISTING STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	The last date maintenance or inspection was performed on the structure. Use YYYYMMDD, YYYYMM, or YYYY format. UNKNOWN is an allowable entry.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 20091022, 200109, 1999, UNKNOWN
Data Type	String (8)

7.22 NHD_REACHCODE

Geodatabase Name	NHD_REACHCODE
BLM Structured Name	National_Hydrography_Reach_Code
Inheritance	Inherited from EXISTING STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	STRCT_PT
Definition	The 14-digit unique reach identifier assigned in the NHD. It is the linking field to the related physical water feature stored in the NHD.
Required/Optional	Optional
Domain (Valid Values)	No domain but must match the NHD reach code exactly. Examples: 17100309003866, 18010206003913
Data Type	String (14)

7.23 PLANID

Geodatabase Name	PLANID
BLM Structured Name	Plan_Name_Text
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	The official name/identifier for the plan or project authorizing the action. Provides link to project or planning area boundary polygon.
Required/Optional	Optional
Domain (Valid Values)	dom_PLANID
Data Type	String (100)

7.24 PROJ_NAME

Geodatabase Name	PROJ_NAME
BLM Structured Name	Project_Name_Text
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	District-assigned name for a project that encompasses several structure types and/or structure features. It is not the same as the plan or project authorizing the action (PLANID,) and there may be many PROJ_NAME for one PLANID.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: Diamond Pipeline, Silvies Wildlife Habitat
Data Type	String (100)

7.25 RADMETER

Geodatabase Name	RADMETER
BLM Structured Name	Buffer_Radius_Measure
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Buffer radius, if applicable, for creating an area from the structure point or line.
Required/Optional	Optional
Domain (Valid Values)	No domain
Data Type	Decimal (16,2)

7.26 REASON

Geodatabase Name	REASON
BLM Structured Name	Primary_Reason_Benefiting_Resource_Text
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	The reason for the action or benefiting resource. Considered only officially acknowledged and recognized reasons or benefits for a treatment, and REASON will contain only the most important. List a secondary reason or benefit in REASON2. Some choices are more general, and the most specific choice should be used, e.g. Sage-grouse rather than Birds-General. Add specific species of concern as needed.
Required/Optional	Required
Domain (Valid Values)	dom_REASON
Data Type	String (30)

7.27 REASON2

Geodatabase Name	REASON2
BLM Structured Name	Secondary_Reason_Benefiting_Resource_Text
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	A secondary benefiting resource ("reason" for the structure). Consider only officially acknowledged and recognized benefits or reasons for a particular type of structure. List additional benefits (same domain) in a linked table. Some choices are more general. Use the most specific choice.
Required/Optional	Optional
Domain (Valid Values)	dom_REASON
Data Type	String (30)

7.28 RIPSKEY

Geodatabase Name	RIPSKEY
BLM Structured Name	RIPS_Identifier
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	The RIPS Key. Currently six characters, all digits, but this may change. Links to RIPS database application.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 716308, 716184, 004132

Data Type	String (6)

7.29 SIDEMETER

Geodatabase Name	SIDEMETER
BLM Structured Name	Side_Meter_Measure
Inheritance	Not Inherited
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Length in meters to either side of the point for creating a line from a point, if applicable.
Required/Optional	Optional
Domain (Valid Values)	No domain
Data Type	Decimal (16,2)

7.30 STRCT_ARC_TYPE

Geodatabase Name	STRCT_ARC_TYPE
BLM Structured Name	Structure_Line_Type_Text
Inheritance	Not Inherited
Alias Name	None
Feature Class Use/Entity Table	STRCT_ARC
Definition	Type of structure. There are different domains for Line (ARC) and Point (PT) feature classes and for existing and proposed structures.
Required/Optional	Required
Domain (Valid Values)	dom_STRCT_ARC_TYPE
Data Type	String (30)

7.31 STRCT_DT

Geodatabase Name	STRCT_DT
BLM Structured Name	Structure_Date
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	For Completed structures, this is the date the structure was completed. For all other statuses, this is the planned starting date of the proposed structure. Use YYYYMMDD, YYYYMM, or YYYY format. UNKNOWN is an allowable entry.
Required/Optional	Required
Domain (Valid Values)	No domain. Examples: 20091022, 200109, 1999, UNKNOWN

Data Type	String (8)

7.32 STRCT_GUID

Geodatabase Name	STRCT_GUID
BLM Structured Name	Structures_Global_Unique_Identifier
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Unique number identifier for the structure entity. Automatically generated.
Required/Optional	Required
Domain (Valid Values)	No domain.
Data Type	GUID

7.33 STRCT_ID

Geodatabase Name	STRCT_ID
BLM Structured Name	Structure_Identifier
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Unique number identifier for the structure entity. Multiple **units** of a structure are given unique STRCT_IDs. The STRCT_ID is unique across all structure feature classes. Multiple units or phases of a structure project are tied together by STRCT_NAME and PLANID, as applicable. Can be used to link to a table with detailed information and/or additional structures associated with this structure, if needed. For example, individual water spigots, valves, pumps, utility boxes, dumpsters, fire rings, boat docks, fence stiles or rock jacks, vehicle counters, etc. The associated table can include XY coordinates for detail maps, if necessary, but are all tied to the one STRCT_ID (or FAMSKEY) location. Each line segment on STRCT_ARC has a unique STRCT_ID so a single pipeline, for example, might have many STRCT_ID. Fill empty STRCT_ID using the "Unique ID Generator" tool and check for duplicate IDs with the "Unique ID QA/QC" tool. See UniqueIDGenerator_UserGuide.docx under the arcgistools SharePoint site.
Required/Optional	Required
Domain (Valid Values)	No domain
Data Type	Long Integer

7.34 STRCT_MAT

Geodatabase Name	STRCT_MAT
BLM Structured Name	Structure_Materials_Text
Inheritance	Inherited from STRUCTURE

Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Materials/methods used in the structure. Appropriate value depends on structure type. For example, materials used for road closure devices have standard values of Cable (for gates), Earth Berm, Boulder, Concrete, Guard Rail, Log, Brush Pile, and Living Vegetation.
Required/Optional	Optional
Domain (Valid Values)	No domain
Data Type	String (30)

7.35 STRCT_NAME

Geodatabase Name	STRCT_NAME
BLM Structured Name	Structure_Name
Inheritance	Inherited from COMPLETED STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Free text name that identifies the structure, preferably with a place reference, and structure type reference. The name is one-to-one with STRCT_ID and the two together provide stronger identification if neither is changed. Naming conventions need to be standardized by programs and offices and enforced to avoid confusion and loss of information.
Required/Optional	Required
Domain (Valid Values)	No domain. Examples: Leemann Pipeline, Hunter Ranch Fire Fence, Pass Creek Riparian Fence, High Horse Spring, Stonehouse Peak Cattleguard, Sand Valley Well, and Skidoo Spring Trough.
Data Type	String (40)

7.36 STRCT_PT_TYPE

Geodatabase Name	STRCT_PT_TYPE
BLM Structured Name	Structure_Point_Type_Text
Inheritance	Not Inherited
Alias Name	None
Feature Class Use/Entity Table	STRCT_PT
Definition	Type of structure. There are different domains for ARC and PT feature classes and for existing and proposed structures.
Required/Optional	Required
Domain (Valid Values)	dom_STRCT_PT_TYPE
Data Type	String (30)

7.37 STRCT_STATUS

Geodatabase Name	STRCT_STATUS
BLM Structured Name	Facility_Status_Code
Inheritance	Inherited from STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Status of the structure.
Required/Optional	Required
Domain (Valid Values)	dom_STATUS
Data Type	String (20)

7.38 SYM_ROTATE

Geodatabase Name	SYM_ROTATE
BLM Structured Name	Symbol_Rotation_Degree_Number
Inheritance	Not Inherited
Alias Name	None
Feature Class Use/Entity Table	STRCT_PT
Definition	This field defines the on-the-ground alignment of the structure, used for more accurate cartographic representation, if desired.
Required/Optional	Optional
Domain (Valid Values)	dom_Degree0to359
Data Type	Short Integer

7.39 TRTLINK

Geodatabase Name	TRTLINK
BLM Structured Name	Treatment_Identifier
Inheritance	Inherited from STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Links the structure to an associated treatment, if any. The TRTLINK is the unique TRT_ID of the treatment feature.
Required/Optional	Optional
Domain (Valid Values)	No domain
Data Type	Long Integer

7.40 VERSION_NAME

Geodatabase Name	VERSION_NAME
BLM Structured Name	Geodatabase_Version_Text
Inheritance	Inherited from entity ODF
Alias Name	None
Feature Class Use/Entity Table	All feature classes
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.
	Only appears in the transactional (edit) version. Public version, used internally for mapping or analysis, does not contain this attribute.
Required/Optional	Required (automatically generated)
Domain (Valid Values)	No domain. Examples: sfrazier.GRA-121211-11034
Data Type	String (50)

7.41 WILD_CLEAR

Geodatabase Name	WILD_CLEAR
BLM Structured Name	Wildlife_Clearance_Date
Inheritance	Inherited from entity PROPOSED STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Data the proposed structure area received wildlife clearance. Use YYYYMMDD, YYYYMM, or YYYY format. UNKNOWN is an allowable entry.
Required/Optional	Optional
Domain (Valid Values)	No domain. Examples: 20091022, 200109, 1999, UNKNOWN
Data Type	String (8)

7.42 WORKAGENT

Geodatabase Name	WORKAGENT
BLM Structured Name	Workagent_Text
Inheritance	Inherited from entity STRUCTURE
Alias Name	None
Feature Class Use/Entity Table	All feature classes
Definition	Who did the work (or the type of procurement instrument)?
Required/Optional	Optional
Domain (Valid Values)	dom_WORKAGENT

Data Type	String (40)

8   Layer Files (Publication Views)

Master corporate feature classes/datasets maintained in the edit database (currently ORSOEDIT) are "published" to the user database (currently ORSOVCTR) in three ways:

1.   Copied completely with no changes (replicated).

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

3.   Minor changes made (e.g., clip, dissolve, union with ownership) to make the data easier to use.

The "PUB" in their names indicated the Publication feature classes. 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 a simple documented process and can be deleted and recreated at any time.

Layer files created for Structures should either exclude "historic" (removed, obsolete) structures (CURRENT_CD = H) or display with different symbology.

Structures published externally have:

- The attribute VERSION_NAME removed because it has no meaning outside of the internal editing environment.

- Proposed structures removed (STRCT_STATUS = "COMPLETED").

- Privately owned structures removed (FAC_ADMIN = PV, PVI or PVN).

- The attribute CLASSIFIER removed for of privacy reasons.

9   Editing Procedures

9.1   Managing Overlap (General Guidance)

"Overlap" means there are potentially more than one feature in the same feature class that occupies the same space ("stacked" polygons). Depending on the query, acres will be double counted.

In this discussion, an area entity may consist of more than one polygon, and a line entity may consist of more than one arc. They would have multiple records in the spatial table (with identical attributes). Multi-part features are not allowed. Multi-part features are easily created inadvertently and not always easy to identify. If they are not consciously and consistently avoided, feature classes will end up with a mixture of single and multi-part features. Multi-part features can be more difficult to edit, query, and select, along with impacting overall performance.

Overlap is only allowed in the ODF in limited and controlled scenarios. In each case, the "cause" of the overlap (the attribute changes that "kick off" a new feature which may overlap an existing feature) is carefully defined and controlled. In other words, in feature classes that permit overlap for a change in spatial extent, there is always a new feature created which may overlap an existing feature, but in addition there are certain attribute(s) that will result in a new feature even if there is no spatial change. The feature classes (and the one feature dataset) that allow overlap, and the attributes that lead to a new, possibly overlapping feature, are described below.

9.1.1 Overlapping Points

Generally, these are allowed and do not cause a problem since points have no spatial extent. However, it is easy to inadvertently create more than one point making it important to search for and delete duplicates. Overlapping points should only occur when the attributes are significantly different between the features.

9.2   Editing Quality Control

Duplicate features. Checking for undesired duplicates is critical. Polygons or arcs that are 100% duplicate are easily found by searching for identical attributes along with identical Shape_Area and/or Shape_Length. Searching for partially overlapping arcs or polygons is harder, and each case must be inspected to determine if the overlap is desired or not.

To avoid overlapping polygons on the same area, polygons from different input themes are incorporated with the Union spatial overlay tool, not copied.

Union rather than Intersect is used to prevent unintended data loss.

Gap and overlap slivers. These can be hard to find if there are no topology rules. A temporary map topology can be created to find overlap slivers. Gap slivers can be found by constructing polygons from all arcs and checking polygons with very small area.

Buffer and dissolve considerations. Where polygons are created with the buffer tool, the correct option must be selected. The default option is "None," which means overlap will be retained. Sometimes the overlap should be dissolved, and the option changed to "All." Lines resulting from buffer have vertices too close together, especially around the end curves. They should be generalized to thin the vertices. If the dissolve tool is used on polygons or arcs, the "Create multipart features" should be unchecked.

GPS considerations. GPS linework is often messy and should always be checked and cleaned up as necessary. Often vertices need to be thinned (generalize) especially at line ends. Multi-part polygons are sometimes inadvertently created when GPS files with vertices too close together or crossing lines or spikes are brought into ArcGIS. Tiny, unwanted polygons are created but are "hidden" because they are in a multi-part.

Be careful when merging lines. Multi-part lines will be created if there are tiny unintentional (unknown) gaps and it can be difficult to find these unless the multi-parts are exploded.

Null geometry. Check any features that have 0 or very small Shape_Area or Shape_Length. If a feature has 0 geometry and you cannot zoom to it, it is probably an inadvertently created "Null" feature and should be deleted.

Very small features may also be unintended, resulting from messy line work.

Check tolerances. In general, set Cluster Tolerance as small as possible. This is 0.000000009 Degree (0.000007 degree is approximately 1 meter).

Snapping considerations. Where line segments with different COORD_SRC meet, the most accurate or important (in terms of legal boundary representation) are kept unaltered, and other lines snapped to them. In general, the hierarchy of importance is PLSS (CadNSDI points/lines) first, with DLG or SOURCEL next, then DEM, and MAP last. When snapping to the data indicated in COORD_SRC (as opposed to duplicating with copy/paste), be sure there are the same number of vertices in the target, and source theme arcs. When the DEF_FEATURE is "SUBDIVISION," snap the line segment to PLSS points, and make sure there are the same number of vertices in the line as PLSS points.

Check that all date fields contain valid dates in YYYYMMDD, YYYYMM or YYYY format. If an attribute has a domain, check for invalid values. The values must be exact.

Check for capitalization and spacing differences in attribute values that should be the same. Check for leading or trailing blanks what will make a different value even if it looks identical.

9.3   Theme Specific Guidance

There is much in the data standard that addresses editing and provides guidance especially in the Data Management Protocols (Section 3).

Fill empty STRCT_ID using the "Unique ID Generator" tool with structures. The UniqueIDGenerator_UserGuide.docx under the ArcGIS tools SharePoint site explains how to use the tool. Use the "Unique ID QA/QC" tool to check for duplicate IDs. Editors can manually change the STRCT_ID values so duplicates may result when new IDs are generated. The duplicates need to be inspected by the editor to determine if the original record or the new record needs to be given a new, unique ID.

Geodatabase attachments have been enabled for this theme in edit database. This allows for photos to be collected in the field on a mobile device and attached to the Structure record. However, when the collected data is finalized as corporate data, the attachments are removed from the edit environment and relocated to a network repository. The FILEPATH field in Sample Points will store the location of where the attachments of interest exist.

10 Abbreviations and Acronyms

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

Table 2   Abbreviations/Acronyms Used

Abbreviations	Descriptions
BLM	Bureau of Land Management
DEM	Digital Elevation Model
DOQ	Digital Orthophoto Quad
DRG	Digital Raster Graphic
FAMS	Facility Assets Management System
FOI	Forest Operations Inventory (Western Oregon districts)
FOIA	Freedom of Information Act
FPB	Fish Passage Barriers
GCD	Geographic Coordinate Database
GIS	Geographic Information System
GPS	Global Positioning System
GRA	Grazing Allotments and Pastures (OR/WA BLM GIS dataset)
IRDA	Interagency Restoration Database Application
NAD	North American Datum
NARA	National Archives and Records Administration
NEPA	National Environmental Protection Act
NHD	National Hydrography Database
NISIMS	National Invasive Species Information Management System
NFP	National Fire Plan
NFPORS	National Fire Plan Operations and Reporting System
ODF	Oregon Data Framework
OR/WA	Oregon/Washington BLM Administrative State
RIPS	Range Improvement Project System
RMIS	Recreation Management Information System
SCID	Stewardship Contracting Information Database
SDE	Spatial Data Engine
USGS	United States Geological Survey

A   Domains (Valid Values)

The domains listed below are those that were in effect at the time the data standard was approved and may not be current. Domains change without a reissue of the data standard. You can find current domains 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/site-page/oregon-data-management. For current lists, contact the State Data Administrator.

NOTE	The domain CODE, as seen in the geodatabase, is added to the DESCRIPTION. For example, the domain CODE has the description of "ADMIN" and the DESCRIPTION is "ADMIN−Access only for BLM administrative purposes."

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_CONDITION

Condition Text. General terms for describing overall condition of a feature. Ordinal values listed in descending order.

Code	Value
Excellent	Excellent
Good	Good
Fair	Fair
Poor	Poor
Non-Functional	Non-Functional
Unknown	Unknown

A.3   dom_COORD_SRC

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

Code	Value
CADNSDI	CADNSDI - Coordinates from or snapped to the CadNSDI dataset. CADNSDI is the cadastral national spatial data infrastructure publication data set for rectangular and non-rectangular public land survey system (PLSS) data.
CFF	CFF - Lines duplicated or buffered from Cartographic Feature Files (USFS)
DEM	DEM - Digital Elevation Model (30 m 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
DOQ	DOQ - Screen digitized linework over Digital Orthoquad backdrop
DRG	DRG - Screen digitized linework over Digital Raster Graphic backdrop

Code	Value
GCD	GCD - Lines snapped to Geographic Coordinate Database Points
GPS	GPS - Lines obtained from a Global Positioning System device
IMG	IMG - Linework derived from interpretation of satellite or other non-photographic imagery
LiDAR	LiDAR - LiDAR points, lines, or polygons generated through interpretation or analysis. Features containing points, lines, or polygons generated through interpretation or analysis of LiDAR point clouds, LiDAR-derived surfaces, and photos.
MAP	MAP - Digitized linework from paper map
MTP	MTP - Lines duplicated from Digital Master Title Plat
SOURCEL	SOURCEL - Source Layer from BLM GIS
SRV	SRV - Survey methods were used to create the linework (e.g., COGO)
TIGER	TIGER - Tiger Data
TRS	TRS - Coordinates only given as a legal description (township, range, section)
UNK	UNK - Unknown coordinate source
WOD	WOD - WODDB Photogrammetric

A.4 dom_CURRENT_CD

Feature Current Code. Whether the entity is now removed, obsolete, replaced or erased in some sense. Has also been known as Treatment Current Code, Structure Current Code.

Code	Value
C	C - Entity is still present on the ground
H	H - Entity is obsolete, obliterated or removed
N	N - Not applicable, entity still proposed

A.5 dom_Degree0to359

Degrees (0 to 359). Range domain-defining direction in degrees.

Code	Value
0	Min value
359	Max value

A.6 dom_INITIATIVE

Initiative Name. The initiative, priorities, or plan objective the activity falls under. Values listed in most likely order of occurrence.

Code	Value
ARRA	ARRA - American Recovery and Reinvestment Act of 2009
BARR	BARR - Burned Area Rehabilitation and Restoration
CWPP	CWPP - Community Wildfire Protection Plan

CWWR	CWWR - Clean Water and Watershed Restoration
ESR	ESR - Emergency Stabilization and Rehabilitation
HFI	HFI - Healthy Forests Initiative
HFR	HFR - Hazardous Fuels Reduction
HLI	HLI - Healthy Lands Initiative
JFS	JFS - Joint Fire Science
PIPE	PIPE - Pipeline Initiative to aid timber sale readiness
RCIS	RCIS - Rescission Act
SRSA	SRSA - Secure Rural Schools (County Payments)
STEW	STEW - Stewardship Contracting
WUI	WUI - Wildland-Urban Interface

A.7 dom_JURIS_CODE

Jurisdiction Organization Code. Management entity that has administrative responsibilities or jurisdiction for a geographic location.

Code	Value
BL	BL - Bureau of Land Management
BP	BP - Bonneville Power Administration
BR	BR - Bureau of Reclamation
CE	CE - Corps of Engineers
CG	CG - U.S. Coast Guard
DA	DA - U.S. Dept. of Agriculture (except the Forest Service)
DD	DD - U.S. Dept. of Defense (except the Corps of Engineers)
FA	FA - Federal Aviation Administration
FC	FC - Federal Energy Regulatory Commission
FS	FS - U.S. Forest Service
FW	FW - U.S. Fish and Wildlife Service
GS	GS - U.S. Geological Survey
GSA	GSA - General Services Administration
IA	IA - Bureau of Indian Affairs and Tribal Units
LG	LG - Local Government
NP	NP - National Park Service
PV	PV - Private Lands
PVI	PVI - Private, Industrial
PVN	PVN - Private, Nonindustrial
PVU	PVU - Private, Urban
SDT	SDT - State Transportation Department
ST	ST - State Managed Lands

Code	Value
STF	STF - State Forests
STL	STL - State Division of Lands
STP	STP - State Parks
STW	STW - State Wildlife Refuges
UN	UN - Undetermined

A.8 dom_PLANID

Plan Name Text. The official name for the plan or project. This is a lengthy list of domain values. The domains are available at the following web location, or contact the State Data Administrator for a copy. https://www.blm.gov/site-page/oregon-data-management . Too lengthy to list. Contact the contact the State Data Administrator. for a copy.

A.9 dom_REASON

Reason or Benefit Text. Reason for or benefit from an action.

Code	Value
Access	Access - Road rights limit ability to obtain legal access to certain units or portions of units
Administration	Administration - BLM has numerous structures that are administrative in nature such as office and storage buildings, fire lookouts, housing quarters, etc.
Aspen	Aspen - Action protects or improves health of Aspen
Bald Eagle	Bald Eagle - Action benefits Bald Eagle
Biomass Value	Biomass Value - Commodity production
Birds-General	Birds-General - Habitat improve, restore, or protect
Communication	Communication - Communication Towers and Relays
Contract Default/Buyback/other	Contract Default/Buyback/other
Cultural	Cultural - Protection of cultural resources
EDRR	EDRR - Early Detection Rapid Response
Fire Rehab	Fire Rehab - Restoration after fire
Fish-General	Fish-General - Habitat improve, restore, or protect
Forest Regeneration	Forest Regeneration - Action to improve, restore, or protect the establishment of a forest stand
Forest Stand	Forest Stand - Improve, restore, or protect
Fuels Reduction	Fuels Reduction - Ladder, Surface, Canopy
Green Tree Retention	Green Tree Retention - Retain trees to provide for various long-term ecological functions. This is in the Western Oregon RMP and fits the use for retained areas within regeneration harvest units.
Human Safety	Human Safety - Health and safety measures

Code	Value
Invasive Control	Invasive Control - Remove or contain invasive species. Weed control must be entered into NISIMS first.
Livestock	Livestock - Commodity production
Log Value	Log Value - Commodity production
MAMU	MAMU - Marbled Murrelet habitat improve, restore, or protect
Mineral Activity	Mineral Activity -
Mngt Dec/Agreement/Settlement	Mngt Dec/Agreement/Settlement
NSO	NSO - Northern Spotted Owl habitat improve, restore, or protect
Operations	Operations - Harvest operation limitations prevent reaching certain units or portions of units
Post-Treat Cleanup	Post-Treat Cleanup - Pile, Burn
Pre-Treat Prep	Pre-Treat Prep - Soil/site preparation
Rangeland Veg	Rangeland Veg - Improve, restore, or protect
Recreation Use	Recreation Use - Benefits recreation use
Research	Research - Study area
Restore Forest Growth	Restore Forest Growth - Actions such as late precommercial thin to improve growth of a forest stand
Riparian Veg	Riparian Veg - Improve, restore, or protect
Road Access Restriction	Road Access Restriction - Road closure or blockage
Sage-grouse	Sage-grouse - Action benefits Sage-grouse
Salvage Harvest	Salvage Harvest - Removal of dead, dying, or damaged trees. Trees damaged or dying because of injurious agents other than competition, to recover their economic value. Salvage Harvest is a category that is used for RMP monitoring and reporting.
Sensitive Fish	Sensitive Fish - Protect or improve specific fish populations or habitat
Sensitive Plants	Sensitive Plants - Protect or improve specific plant populations or habitat
Sensitive Species	Sensitive Species - Habitat improve, restore, protect. This will accommodate BLM's directives on all sensitive species whether they be wildlife, lichens, or some other category.
Slope Stability	Slope Stability - Erosion control
Soils	Soils - Protect or improve soils.
Stand Conversion	Stand Conversion - Conversion of hardwoods or non-commercial species to a commercial forest stand.
Stocking Stand Condition	Stocking Stand Condition - Forest conditions do not meet required tree stocking levels. There are portions of deferred harvest units that would not make sense to separate into a "proposed unit", yet we would still want to track as to why it was not entered at the time of treatment. Portions of riparian areas (eligible for thinning but do not meet stocking requirements) and areas too small to be an operational unit. There are entire portions of the stands that would never be appropriate for commercial thinning and are waiting for a regeneration treatment
Streambank Stability	Streambank Stability - Erosion control

Code	Value
Tree Disease	Tree Disease - Action to limit the spread or define the extent of a particular tree disease.
Unknown	Unknown - Benefiting resource not specifically identified
Utility Infrastructure	Utility Infrastructure - Utility Infrastructure Linear telephone and power line features.
Water Quality	Water Quality - Watershed improve, restore, or protect
Water Use	Water Use - Water source and flow management
Wetlands	Wetlands - Improve, restore, or protect
Wilderness Character	Wilderness Character - Protection measure
Wildhorses	Wildhorses - Action benefits Wild horses
Wildlife-General	Wildlife-General - Habitat improve, restore, or protect

A.10 dom_STATUS

Facility Status Code. The status of a proposed facility, structure, or application. Values listed in most likely order of process.

Code	Value
Initial	Initial - Pre-application or scoping, action not yet started
Pending	Pending - Active proposal, application filed
Suspended	Suspended - Activity halted
Rejected	Rejected - Considered by BLM and found unsuitable
Relinquished	Relinquished - Proposal relinquished by the proponent
Closed	Closed - Realty case closed; proposal expired
Completed	Completed - Completed facility, structure, or application.

A.11 dom_STRCT_ARC_TYPE

Structure Arc Type Code. Type of linear constructed feature.

Code	Value
Barrier	Barrier - Obstacle intended to restrict vehicles
Dike	Dike
Ditch	Ditch
Fence	Fence
Fence (Drift)	Fence (Drift)
Fence (Reconstruct)	Fence (Reconstruct) - Proposal to reconstruct
Fence (Remove)	Fence (Remove) - Proposal to remove
Fence (Snow)	Fence (Snow)
Firebreak (Perm)	Firebreak (Perm) - Firebreak Permanent
Firebreak (Temp)	Firebreak (Temp) - Firebreak Temporary
Other	Other
Phoneline	Phoneline - Includes fiber optic
Pipeline (Gas)	Pipeline (Gas)
Pipeline (Geothermal)	Pipeline (Geothermal)
Pipeline (Oil and Gas)	Pipeline (Oil and Gas)
Pipeline (Reconstruct)	Pipeline (Reconstruct) - Proposal to reconstruct
Pipeline (Water)	Pipeline (Water)
Powerline	Powerline
Unknown	Unknown

A.12 dom_STRCT_PT_TYPE

Structure Point Type Code. Type of point constructed feature.

Code	Value
Airport	Airport
Airstrip	Airstrip - Small, fixed wing
Amphitheatre (Fire Circle)	Amphitheatre (Fire Circle)
Bat Grate	Bat Grate - or bat gate
Bench	Bench
Boat Ramp	Boat Ramp
Bridge	Bridge
Building (Hospital)	Building (Hospital)
Building (Occupied)	Building (Occupied) - Other than offices, schools, and hospitals
Building (Office)	Building (Office)
Building (School)	Building (School)
Building (Unoccupied)	Building (Unoccupied)
Bulkhead	Bulkhead - Bulkhead or Wall
Buoy	Buoy - An anchored float for mooring or marking hazards
Cascades	Cascades
Cattleguard	Cattleguard
Cattleguard (Reconstruct)	Cattleguard (Reconstruct) - Proposal to reconstruct
Cattleguard (Remove)	Cattleguard (Remove) - Proposal to remove
Corral	Corral
Culvert	Culvert
Culvert (Reconstruct)	Culvert (Reconstruct) - Proposal to reconstruct
Culvert (Remove)	Culvert (Remove) - Proposal to remove
Dam	Dam - Barrier across a watercourse
Erosion Structure	Erosion Structure - Streambank, head cut, or slope stabilization
Fee Station	Fee Station
Fence (Gate)	Fence (Gate)
Fence (Tie)	Fence (Tie) - Crib, rock, jack, rim, tree
Fire Guard Station	Fire Guard Station
Fire Ring	Fire Ring
Fish Cleaning Station	Fish Cleaning Station
Fish Ladder	Fish Ladder
Fish Screen	Fish Screen
Fuel Tank	Fuel Tank
Gas Fixture	Gas Fixture - Propane tank, meter, or valve
Gate (Locked)	Gate (Locked) - A locked road gate

Code	Value
Gate (Pedestrian)	Gate (Pedestrian)
Gate (Seasonal)	Gate (Seasonal) - A road gate locked seasonally
Gate (Unlocked)	Gate (Unlocked) - An unlocked road gate
Greywater Sump	Greywater Sump
Guzzler	Guzzler
Guzzler (Reconstruct)	Guzzler (Reconstruct) - Proposal to reconstruct
Guzzler (Remove)	Guzzler (Remove) - Proposal to remove
Heliport	Heliport
Helispot	Helispot
Hitching Post or Rail	Hitching Post or Rail
Instream Material	Instream Material - Boulders, large woody debris, and/or gravel (see STRCT_MAT)
Instream Material (Remove)	Instream Material (Remove) - see STRCT_MAT for type of material
Locale	Locale - A place not just a building and not necessarily with buildings
Mine (Active)	Mine (Active)
Mine (Historic)	Mine (Historic)
Mineral Pit or Pile	Mineral Pit or Pile
Nest Platform	Nest Platform
Other	Other
Permit Box	Permit Box - non-fee
Picnic Table	Picnic Table
Playing Field or Structure	Playing Field or Structure
Power Fixture	Power Fixture - Pole, transformer, box, and/or hookup
Pumphouse	Pumphouse
Refuse Container	Refuse Container
Reservoir	Reservoir - Includes ponds
Reservoir (Reconstruct)	Reservoir (Reconstruct) - Proposal to reconstruct
Reservoir (Remove)	Reservoir (Remove) - Proposal to remove
Retaining Wall	Retaining Wall
Road Barrier	Road Barrier - Road or Trail blocked by a human placed barrier or naturally occurring vegetation excluding gates or signs
Sediment Trap	Sediment Trap - Includes silt basins
Sewer or Septic	Sewer or Septic
Shelter	Shelter
Slash Pile	Slash Pile - Wood or other debris pile
Spring Development	Spring Development
Spring Development (Reconstr)	Spring Development (Reconstr) - Proposal to reconstruct
Spring Development (Remove)	Spring Development (Remove) - Proposal to remove

Code	Value
Staging or Parking Area	Staging or Parking Area
Stairs or Steps	Stairs or Steps
Tent Pad	Tent Pad
Tide Gate	Tide Gate - A gate through which water flows when the tide is in one direction and that closes automatically when the tide is in the opposite direction
Toilet	Toilet
Tower (Communication)	Tower (Communication) - Includes repeaters
Tower (Fire Lookout)	Tower (Fire Lookout)
Tower (Lighthouse)	Tower (Lighthouse)
Tower (Wind)	Tower (Wind)
Town	Town
Trough	Trough
Trough (Reconstruct)	Trough (Reconstruct) - Proposal to reconstruct
Trough (Remove)	Trough (Remove) - Proposal to remove
Unknown	Unknown
Utility Pole	Utility Pole
Viewing Platform	Viewing Platform
Water Diversion	Water Diversion
Water Fixture	Water Fixture - Vent, valve, spigot, pump, or hookup
Water Ford (Armored)	Water Ford (Armored) - A hardened improved water crossing
Water Ford (Natural)	Water Ford (Natural) - A natural unimproved water crossing
Water Tank	Water Tank
Waterfall	Waterfall
Waterhole	Waterhole - Includes dugouts
Waterhole (Reconstruct)	Waterhole (Reconstruct) - Proposal to reconstruct
Weather Station	Weather Station - RAWS
Weir Sill	Weir Sill - Feature built across a stream to raise its level
Well (Geothermal)	Well (Geothermal)
Well (Monitoring)	Well (Monitoring)
Well (Oil and Gas)	Well (Oil and Gas)
Well (Piezometer)	Well (Piezometer)
Well (Reconstruct)	Well (Reconstruct) - Proposal to reconstruct
Well (Water)	Well (Water)

A.13 dom_WORKAGENT

Workagent Text. Who did the work (or the type of procurement instrument).

Code	Value
Coop Agreement	Coop Agreement - ODFW, ODA, County, etc.
Federal Labor	Federal Labor -
GNA Grantee	GNA - Good Neighbor Agreement Grantee
IDIQ Contract	IDIQ Contract - non-Stewardship
Landowner	Landowner
Micro-Purchase	Micro-Purchase - Check or Credit Card limited amount purchase
Permittee	Permittee
Purchase Order	Purchase Order
Service Contract	Service Contract
Stewardship Contract	Stewardship Contract
Timber Sale	Timber Sale
Unknown	Unknown
Volunteer	Volunteer