

FINAL

Attachment 2



**PASTURE AND ALLOTMENT BOUNDARIES  
IMPLEMENTATION GUIDELINES**

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**Version 2.3**

**FINAL**

**United States Department of Interior  
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Program Management Office  
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Denver, Colorado

Implementation Guidelines for Pasture and Allotment Polygons

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## Part I: Introduction

This document describes the national data standard for the Grazing Boundaries geospatial dataset. It is intended as a guideline for implementation. States may extend and expand upon this guideline in order to meet their specific needs, provided that when the data is pushed up to the national level, it will meet the minimum requirements as set forth in the Data Standard. The arc information and the feature level metadata will exist in the arc feature class. The Allotment information will exist within the Pastures dataset and as such the Allotments spatial dataset will be a derived product from Pastures. For the full physical implementation, including instructions and files to build a geodatabase, please go to [http://web.blm.gov/data\\_mgt/standards/in\\_progress/grazing/dbinfo.htm](http://web.blm.gov/data_mgt/standards/in_progress/grazing/dbinfo.htm).

The attribute data required is minimal, as the majority of the analysis information will come from the RAS database. The attribute `ST_ALLOT_PAST` in the 'gra\_past\_poly' table will serve as the unique national identifier that will allow connection to the existing RAS database.

The data for inclusion in this data set shall be collected in a known datum and coordinate system. The data stored on the EGIS server in Denver shall be stored in geographic coordinates for national layers using the Bureau standard NAD 83 datum rather than in a specific projection.

There are four tables in this implementation:

1. *gra\_past\_arc* represents the arc features that will define the polygons. These arcs will have the feature level metadata attributes shown assigned to them.
2. *gra\_past\_poly* represents the polygon features that show the boundaries for the pastures.
3. *gra\_allot\_poly* represents the polygon features that show the boundaries for the allotments.
4. *gra\_hist\_allot\_poly* represents the polygon features that show historical allotments. Since the data in the RAS system is about allotments and pastures, where they are used, this is where the data connection between the geospatial feature data and the RAS application will be established.

## ***Topology***

Geodatabase and map topologies will be established to relate the active feature classes together, to maintain feature geometry and to aid in the editing of features. The implementation of this data standard requires that polygons be defined by bounding arcs. Therefore, a minimum set of geodatabase topology rules are defined as part of the geodatabase to verify the coincidence between these two feature classes.

Map topology shall be established during edit sessions. Edits to the polygon shape will be performed by modifying the bounding arc. (Historical or archived polygons will not be edited once they become inactive). For additional information, refer to the best practices document available on the Spatial Data Management subsection on the EGIS web page: <http://web.blm.gov/egis/DataManagementdocs.htm> It is recommended that these tools be used and implemented to improve data quality and integrity.

The following Geodatabase Topology Rules are the minimum that should be implemented. Additional topology rules may be added depending on data requirements for each office:

- *gra\_past\_arc* **Must Not Overlap**
- *gra\_past\_arc* **Must Be Covered By Boundary Of** *gra\_past\_poly*
- *gra\_past\_arc* **Must Not Self-Overlap**
- *gra\_past\_poly* **Must Not Overlap**
- *gra\_past\_poly* **Boundary Must Be Covered By** *gra\_past\_arc*

If you are creating new data where the polygons are being created by the bounding arcs, you may want to include the GDB topology rule “*Must not have dangles*” for the arc feature class(es). This way any gaps in the lines defining your polygon boundaries can be discovered and corrected before you construct your polygons.

## ***Data Guidelines***

Implementation of the data standards will occur at all organizational levels of the Bureau. The standards are intended to be platform-independent.

There are some attributes that are intended to eventually become system generated attributes when a system or application is developed to manage this dataset. At the present time there is no specific application for maintaining this data layer and therefore those attributes will currently need to be manually edited. Those attributes will currently be listed as generated in the attribute table.

The attributes included in this implementation are those that have been established for the national data standard and cannot be modified except through the Data Standards Maintenance process. If additional attributes or domain values are desired by individual states/offices, create a new attribute and populate with a new attribute domain assignment. Metadata for the additional attributes must be documented by that office.

The Administrative State, District and Field Office codes were part of a three-tier identification system, which has been replaced by the ten-character DOI FBMS Organization Code. For BLM national data standards, we will be using only the last eight characters of the FBMS organization code (the two-character BLM Administrative State Code and the six-character Administrative Office Code). While using these codes in combination can contribute to the creation of a unique identifier, they are also listed as separate attributes so that if the codes change at a single level, the concatenated code can then be regenerated. However, if the eight-character code is used as part of a unique identifier, the unique identifier is not re-generated if the organization code changes.

To populate the field for the Administrative Unit Code attribute in the geodatabase (ADM\_UNIT\_CD), individual offices should find the code for their specific office at the following website: [http://web.blm.gov/data\\_mgt/fpps\\_org\\_codes.htm](http://web.blm.gov/data_mgt/fpps_org_codes.htm) (click on the link for “GIS Administrative Unit Codes”). The field should be populated with the office code for the lowest level of the organization that has jurisdiction.

### ***Review Cycle***

The data for the grazing pasture areas and the grazing allotment areas should be reviewed on at least a semi-annual basis for updates. Based on program direction, the timing of this should be June and December. The data standard itself will also be reviewed annually or at the time of request by the users through the data steward.

## Part II: Data Standard Implementation Details

### *Table Information*

#### *A. Grazing Pasture Arcs (gra\_past\_arc)*

The arc features used to define the polygon features are described in the following table. These arc attributes serve as feature level metadata information. Some of these items will be system generated in the future and will not require any input effort by the users. Others have Domain values with appropriate definitions. The fifth through the ninth attributes describe the data collection method along with a description of the expected spatial accuracy.

The Grazing program has given the following guidelines for placement of the arcs in relation to ground features:

All pasture boundaries are physical features like fences or rim rock or water. Imaginary boundaries like parcels are only used when necessary to close the polygons. Similarly, even if a pasture boundary “follows” ownership, fence lines rarely follow ownership exactly and the line segments should come from fences, not from parcels. If the fence line locations have not been accurately mapped, and are supposed to follow imaginary boundaries like parcels, the boundary should follow the imaginary boundary.

During the physical implementation of Grazing Allotments and Pastures, if an Allotment does not have any associated Pasture information, one Pasture will be created from/matching the Allotment boundary. A code of “99” will be entered into the PAST\_NO (Pasture Number) field to indicate that the Pasture arcs and polygons are derived and need to be updated with real information by the appropriate office.

<b>Grazing Pasture Arcs Attributes</b>									
GIS NAME	ALIAS	DATA FORMAT	* REQ'D?	ALLOW NULLS?	DEFAULT VALUE	DOMAIN NAME	**FL META	DE-RIVED?	*** SRC
CREATE_DATE	Created Date	Date	M	No	09/09/9999		Yes	Yes	G
CREATE_BY	Created By Name	Char(30)	M	No	UNK		Yes	Yes	G
MODIFY_DATE	Modified Date	Date	M	No	09/09/9999		Yes	Yes	G
MODIFY_BY	Modified By Name	Char(30)	M	No	UNK		Yes	Yes	G
COORD_SRC_TYPE	Coordinate Source Type Code	Char(5)	M	No	UNK	DOM_COORD_SOURCE_TYPE	Yes	No	O/I
COORD_SRC2	Coordinate Source Code	Char(25)	O	Yes			Yes	No	O/I
DEF_FET_TYPE	Defining Feature Type Code	Char(15)	M	No	UNK	DOM_DEF_FEATURE_TYPE	Yes	No	O/I
DEF_FET2	Defining Feature Code	Char(30)	O	Yes			Yes	No	O/I
ACCURACY_FT	Accuracy Measurement In Feet	Long Integer(4)	M	No	-1		Yes	No	O/I
*REQ'D? (Required?): M=Mandatory O=Optional C=Conditional **FL META – Feature Level Metadata; ***SRC (SOURCE): G(enerated) O/I (Operator Input)									

GIS Name	Logical Attribute Name	Definition
CREATE_DATE	Not applicable	<p>Not on the logical model.</p> <p>This is a system generated attribute. As a new feature is added to the system its creation date will be collected and maintained. The date will be in the format of MM/DD/YYYY.</p> <p>The format for storing the date field in the geodatabase (GDB) will be MM/DD/YYYY due to ESRI software limitations. The ESRI software displays the date field according to how dates are formatted for display on the computer. The FGDC-compliant format for the date field, YYYYMMDD, is for publishing/displaying the date field. There are two methods in which the FGDC format could be used for storing the date. The date format on the computer can be reset which may introduce unintended consequences within other programs, or the date field could be defined as a text field which would leave ample room for errors being introduced to the data. Although the National Data Standards are intended to be platform-independent, the ESRI GDB format is the current platform implemented throughout the BLM. Default: 09/09/9999</p>
CREATE_BY	Not applicable	<p>This is a system generated attribute. As a new feature is added to the system the UserID of the person creating the feature will be collected and maintained. The UserID will be the persons BLM login ID. This attribute will be deleted before providing the data to the public. Default: UNK</p>
MODIFY_DATE	Location Modified Date	<p>Not on the logical model.</p> <p>This is a system generated attribute. As a feature is edited or modified while in the system its modification date will be collected and maintained. The date will be in the format of MM/DD/YYYY.</p> <p>The format for storing the date field in the geodatabase (GDB) will be MM/DD/YYYY due to ESRI software limitations. The ESRI software displays the date field according to how dates are formatted for display on the computer. The FGDC-compliant format for the date field, YYYYMMDD, is for publishing/displaying the date field. There are two methods in which the FGDC format could be used for storing the date. The date format on the computer can be reset which may introduce unintended consequences within other programs, or the date field could be</p>



GIS Name	Logical Attribute Name	Definition
		defined as a text field which would leave ample room for errors being introduced to the data. Although the National Data Standards are intended to be platform-independent, the ESRI GDB format is the current platform implemented throughout the BLM. Default: 09/09/9999
MODIFY_BY	Not applicable	This is a system generated attribute. As a feature is edited or modified while in the system UserID of the person modifying the data will be collected and maintained. The UserID will be the persons BLM login ID. This attribute will be deleted before providing the data to the public. Default: UNK
COORD_SRC_TYPE	Location Source Type Code	The name that identifies the general category for the origin of the location coordinate (Appendix A), representing a compilation of the state adopted source codes.  The domain contains those code values that would most likely be used in the determination of source codes for the data set. Attribute Domain Assignment: DOM_COORD_SOURCE_TYPE Default: UNK
COORD_SRC2	Location Source Actual Name	The name that identifies a more specific description of the coordinate source.  Suggested values for codes appear in a table (Appendix A), but the user is free to enter any value they choose. This domain is not intended to be all inclusive but may be used as a starting point for state-level lists of domain values. This list is not intended to be a substitute for the accuracy values that are found in the 'Accuracy Measurement Table'. This is an optional attribute.
DEF_FET_TYPE	Defining Feature Type Name	The name that identifies the high-level category for the actual physical or mapping characteristics (features) from which the arcs are derived. (Code values are in Appendix A) Attribute Domain Assignment: DOM_DEF_FEATURE_TYPE Default: UNK
DEF_FET2	Defining Feature Description Name	The name that identifies a more specific description of the feature from which the arcs are derived to create polygon boundaries. This information further describes the physical or mapping feature that makes up the polygon boundary.  Suggested code values appear in a table (Appendix A) but the user is free to enter any value they choose. This domain is not intended to be all inclusive but may be used as a starting point for state-level lists of domain values. This is an optional attribute.
ACCURACY_	Line Form	The Accuracy Measurement defines how close, in feet, the actual ground location is to the spatial

GIS Name	Logical Attribute Name	Definition												
FT	Accuracy Measure	<p>depiction in GIS. This value would typically be determined by one of three methods: 1) the map accuracy value, if a USGS map was used to define the boundary; 2) the expected spatial accuracy achieved with GPS; or 3) the measurement of that accuracy as is noted in the <i>National Standard for Spatial Data Accuracy (NSSDA)</i><sup>1</sup> which is a data usability standard issued by the Federal Geographic Data Committee (FGDC).</p> <p style="text-align: center;">Default: -1</p> <p><b>A value of -1 indicates that the accuracy is unknown or that no reliable estimate can be made.</b> Below is an <b>example</b> table of accuracy measurements. (Attempting to list all values in a domain table would produce an infinite list.)</p> <table border="1" data-bbox="821 594 1436 821" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="2" style="text-align: center;"><b>Accuracy Measurement Example Table</b></th> </tr> </thead> <tbody> <tr> <td style="text-align: center;"><b>1</b></td> <td style="text-align: center;"><b>+/- 1 Feet</b></td> </tr> <tr> <td style="text-align: center;"><b>10</b></td> <td style="text-align: center;"><b>+/- 10 Feet</b></td> </tr> <tr> <td style="text-align: center;"><b>15</b></td> <td style="text-align: center;"><b>+/- 15 Feet</b></td> </tr> <tr> <td style="text-align: center;"><b>20</b></td> <td style="text-align: center;"><b>+/- 20 Feet</b></td> </tr> <tr> <td style="text-align: center;"><b>100</b></td> <td style="text-align: center;"><b>+/- 100 Feet</b></td> </tr> </tbody> </table> <p><small><sup>1</sup> Federal Geographic Data Committee. 1998. <u>Geospatial Positioning Accuracy Standards Part 3: National Standard for Spatial Data Accuracy</u>, FGDC-STD-007.3-1998</small></p>	<b>Accuracy Measurement Example Table</b>		<b>1</b>	<b>+/- 1 Feet</b>	<b>10</b>	<b>+/- 10 Feet</b>	<b>15</b>	<b>+/- 15 Feet</b>	<b>20</b>	<b>+/- 20 Feet</b>	<b>100</b>	<b>+/- 100 Feet</b>
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**B. Grazing Pasture Polygons (gra\_past\_poly)**

The grazing pasture polygon features are defined in the following table. These pasture attributes may be duplicated in RAS but are considered minimum information for unique identification and cartographic purposes. Domain values are used when appropriate.

During the physical implementation of Grazing Allotments and Pastures, if an Allotment does not have any associated Pasture information, one Pasture will be created from/matching the Allotment boundary. A code of “99” will be entered into the PAST\_NO (Pasture Number) field to indicate that the Pasture arcs and polygons are derived and need to be updated with real information by the appropriate office.

There will be a minimum of 9 attributes associated with the polygon features.

<b>Grazing Pasture Polygons Attributes</b>									
GIS NAME	ALIAS	DATA FORMAT	* REQ'D?	ALLOW NULLS?	DEFAULT VALUE	DOMAIN NAME	**FL META	DE-RIVED?	*** SRC
ALLOT_NO	Allotment Number	Char(5)	M	No	UNK		No	No	O/I
ALLOT_NAME	Allotment Name	Char(50)	M	No	UNK		No	No	O/I
PAST_NO	Pasture Number	Char(2)	M	No			No	No	O/I
PAST_NAME	Pasture Name	Char(50)	M	No			No	No	O/I
GIS_ACRES	GIS Acres	Double(16.6)	M	No	0		No	Yes	G
ADMIN_ST	Administrative State Code	Char(2)	M	No		DOM_ADMIN_ST	No	No	O/I
ADM_OFCD	Administrative Office Code	Char(6)	M	No	000000		No	No	O/I
ADM_UNIT_CD	Administrative Unit Code	Char(8)	M	No	XX000000		No	Yes	O/I
ST_ALLOT_PAST	Managing State Allotment Pasture Number	Char(9)	M	No			No	No	O/I
*REQ'D? (Required?): M=Mandatory O=Optional C=Conditional **FL META – Feature Level Metadata; ***SRC (SOURCE): G(enerated) O/I (Operator Input)									

<b>GIS Name</b>	<b>Logical Attribute Name</b>	<b>Definition</b>
ALLOT_NO	Allotment Number	<p>The number that identifies an Allotment which is unique within the BLM administrative state. Note: An allotment number may never be reused within an Administrative State. If an existing allotment is divided or combined, all changed allotments should be assigned a new allotment number.</p> <p>New allotment numbers are normally assigned by the system; however users may assign unique unused numbers according to office policy. Once an allotment has been created, any office can attach authorization(s) to it. Only the office creating the allotment is allowed to modify the allotment. The leading zeros must be included in the values entered in this field. '00045' is the correct entry, not '45'.</p>
ALLOT_NAME	Allotment Name	<p>The name by which the allotment is commonly known.</p> <p>The name given to the allotment, defined as "...the basic geographic area used in administering BLM rangeland." It may include private, state, and public lands within the allotment.</p>
PAST_NO	Pasture Number	<p>The number that identifies a specific pasture within one Allotment. Note: numbering usually starts at 1 for each allotment.</p> <p>The pasture number is a two-digit number that is unique within an allotment if there is more than one pasture within the allotment. The default value for a Pasture Number is "01" if there is only one pasture within the allotment. This in effect means that the pasture is the allotment. All additional pastures shall be numbered sequentially from "01".</p>
PAST_NAME	Pasture Name	<p>A pasture name is given to an area that is a subset area of an allotment. Some allotments may have multiple pastures where a name would be appropriate while some allotments may have no pastures delineated in which case the default value should be 'NA'.</p>
GIS_ACRES	Polygon Form Acre Measure	<p>This is a calculated value of area in units of acres based on the area field created by default within the ESRI Polygon data structure. For the purposes of a 'national data layer', the data are to be stored in geographic coordinates which do not correspond to ground values. This requires that there be a standard method for calculating this attribute.</p>

GIS Name	Logical Attribute Name	Definition
		<p>The method used for these data are as follows: The data are projected into a standard projection such as the ESRI default Albers projection for the continental United States, "US Albers NAD 1983." Once the data are projected, then a calculation of "SHAPE_Area (square meters) * 0.0002471044 = acres" is applied to the existing 'area' field that is default area created by the ESRI software resulting in the field (Attribute) 'SHAPE_Area'. Please note that the figure used in this calculation is the factor for converting the US Survey Foot value for the length of a meter as opposed to the International Standard for converting meters and feet.</p>
ADMIN_ST	State Alphabetic Code	<p>An administrative unit that identifies the state or geographic area which has administrative jurisdiction over lands, and cases. The land for a case may not be physically located in the associated administrative state. Only those states that are BLM administrative states are in the domain for this entity. Example: Montana is the Administrative State for public lands in the geographic States of Montana, South and North Dakota.</p> <p>A two letter, upper case abbreviation for the administrative state office. The current list of values is: AK, AZ, CA, CO, ES, ID, MT, NM, NV, OR, UT and WY. In the FBMS Organization Codes, use the second 2 characters (after the LL). (e.g. LLAK039000)</p> <p style="text-align: center;">Attribute Domain Assignment: DOM_ADMIN_ST</p>
ADM_OFC_CD	Office.BLM Organization Code	<p>BLM administrative office (which is subordinate to the state office) that has jurisdiction and/or management authority over lands within a geographic area.</p> <p>This is a six-digit code. In the FBMS Organization Codes, use the six characters after the State designators. (e.g. LLAK030900)</p>
ADM_UNIT_CD	Administrative Office + Office.BLM Organization Code	<p>The BLM administrative unit/office that is a combination of Administrative State Code and Administrative Office Code that fully identifies the geographic area which has jurisdiction over the lands.</p> <p>This is an eight-character code. In the FMBS Organization Codes, use the last eight characters (e.g. LLAK030900). The field should be populated with the office code for</p>

<b>GIS Name</b>	<b>Logical Attribute Name</b>	<b>Definition</b>
		the lowest level of the organization with jurisdiction.
ST_ALLOT_PAST	State Alphabetic Code + Allotment Number + Pasture Number(PK)	This is a concatenation of three existing attributes (ADMIN_ST + ALLOT_NO + PAST_NO) but is not a substitute for having any of those three attributes. It is the existing unique code that identifies individual pastures throughout the entire United States. This concatenated value serves as a nationwide unique identifier that allows for a linkage from any unique Pasture polygon in the Geospatial dataset to the RAS dataset.

### C. Grazing Allotment Polygons (*gra\_allot\_poly*)

The Allotment polygon features are derived features from the Pasture Polygons. These attributes are allotment attributes that may be duplicated in RAS but are considered to be minimum information for unique identification and cartographic purposes. Domain values lists are utilized with their appropriate definitions.

There will be a minimum of 8 attributes associated with the allotment polygon features.

**Grazing Allotment Polygons Attributes**

GIS NAME	ALIAS	DATA FORMAT	* REQ'D?	ALLOW NULLS?	DEFAULT VALUE	DOMAIN NAME	**FL META	DE-RIVED?	*** SRC
ALLOT_NO	Allotment Number	Char(5)	M	No	UNK		No	No	O/I
ALLOT_NAME	Allotment Name	Char(50)	M	No	UNK		No	No	O/I
GIS_ACRES	GIS Acres	Double(16.6)	M	No	0		No	Yes	G
ADMIN_ST	Administrative State Code	Char(2)	M	No		DOM_ADMIN_ST	No	No	O/I
ADM_OFC_CD	Administrative Office Code	Char(6)	M	No	000000		No	No	O/I
ADM_UNIT_CD	Administrative Unit Code	Char(8)	M	No	XX000000		No	Yes	O/I
ST_ALLOT	Managing State Allotment Number	Char(7)	M	No	XX00000		No	No	O/I
ACTIVE_DT	Allotment Active Date	Date	M	No	09/09/9999		No	No	O/I
*REQ'D? (Required?): M=Mandatory O=Optional C=Conditional **FL META – Feature Level Metadata; ***SRC (SOURCE): G(enerated) O/I (Operator Input)									

GIS Name	Logical Attribute Name	Definition
ALLOT_NO	Allotment Number (PK)	<p>The number that identifies an Allotment which is unique within the BLM administrative state. Note: an allotment number may never be reused within an Administrative State. If an existing allotment is divided or combined, all changed allotments should be assigned a new allotment number.</p> <p>New allotment numbers are normally assigned by the system; however users may assign unique unused numbers according to office policy. Once an allotment has been created, any office can attach authorization(s) to it. Only the office creating the allotment is allowed to modify the allotment. The leading zeros must be included in the values entered in this field. '00045' is the correct entry, not '45'.</p>
ALLOT_NAME	Allotment Name	<p>The name by which the allotment is commonly known.</p> <p>The name given to the allotment, defined as "...the basic geographic area used in administering BLM range land." It may include private, state, and public lands under the jurisdiction of the Bureau of Land Management and/or other federal agencies.</p>
GIS_ACRES	Polygon Form Acre Measure	<p>This is a calculated value of area in units of acres based on the area field created by default within the ESRI Polygon data structure. For the purposes of a 'national data layer', the data are to be stored in geographic coordinates which do not correspond to ground values. This requires that there be a standard method for calculating this attribute.</p> <p>The method used for these data are as follows: The data are projected into a standard projection such as the ESRI default Albers projection for the continental United States, "US Albers NAD 1983." Once the data are projected, then a calculation of "SHAPE_Area (square meters) * 0.0002471044 = acres" is applied to the existing 'area' field that is default area created by the ESRI software resulting in the field (Attribute) 'SHAPE_Area'. Please note that the figure used in this calculation is the factor for converting the US Survey Foot value of for the length of a meter as opposed to the International Standard for converting meters and feet.</p>
ADMIN_ST	State Alphabetic Code	<p>An administrative unit that identifies the state or geographic area which has administrative jurisdiction over lands, and cases. The land for a case may not be physically located in the associated administrative state. Only those states that are BLM administrative states are in the domain for this entity. Example: Montana is the Administrative State for public lands in the geographic States of Montana, South and</p>



GIS Name	Logical Attribute Name	Definition
		<p>North Dakota.</p> <p>A two letter, upper case abbreviation for the administrative state office. The current list of values is: AK, AZ, CA, CO, ES, ID, MT, NM, NV, OR, UT and WY. In the FBMS Organization Codes, use the second 2 characters (after the LL). (e.g. <b>LLAK039000</b>)</p> <p style="text-align: center;">Attribute Domain Assignment: DOM_ADMIN_ST</p>
ADM_OFC_CD	Office.BLM Organization Code	<p>BLM administrative office (which is subordinate to the state office) that has jurisdiction and/or management authority over lands within a geographic area.</p> <p>This is a six-digit code. In the FBMS Organization Codes, use the six characters after the State designators. (e.g. <b>LLAK030900</b>)</p>
ADM_UNIT_CD	Administrative Office + Office.BLM Organization Code	<p>The BLM administrative unit/office that is a combination of Administrative State Code and Administrative Office Code that fully identifies the geographic area which has jurisdiction over the lands.</p> <p>This is an eight-character code. In the FMBS Organization Codes, use the last eight characters (e.g. <b>LLAK030900</b>). The field should be populated with the office code for the lowest level of the organization with jurisdiction.</p>
ST_ALLOT	State Alphabetic Code + Allotment Number	<p>This is a concatenation of two existing attributes but is not a substitute for having either of those two attributes. It is the existing unique code that allows identification of individual allotments throughout the entire United States. This concatenated number serves as a nationwide unique identifier that allows for a linkage from any unique Allotment polygon in the Geospatial dataset to the RAS dataset.</p>
ACTIVE_DT	Allotment Active Date	<p>The calendar date on which the boundary of an allotment is established and becomes effective. The format for the date will be MM/DD/YYYY, and will be entered only once for that polygon.</p> <p>The format for storing the date field in the geodatabase (GDB) will be MM/DD/YYYY due to ESRI software limitations. The ESRI software displays the date field according to how dates are formatted for display on the computer. The FGDC-compliant format for the date field, YYYYMMDD, is for publishing/displaying the date field. There are two methods in which the FGDC</p>

GIS Name	Logical Attribute Name	Definition
		<p>format could be used for storing the date. The date format on the computer can be reset which may introduce unintended consequences within other programs, or the date field could be defined as a text field which would leave ample room for errors being introduced to the data. Although the National Data Standards are intended to be platform-independent, the ESRI GDB format is the current platform implemented throughout the BLM.</p> <p style="text-align: right;">Default: 09/09/9999</p>

***D. Grazing Historical Allotment Polygons (gra\_hist\_allot\_poly)***

The Historical Allotment polygon features are a result of the Allotment Polygons being permanently changed as a result of a business need. The resulting allotments are no longer active within the RAS system but will be stored for historical reference. There are no arc features tied to these polygons since once a polygon is inactive and is moved to the historical polygon feature class it should not be edited further. If the polygon needs to be recreated a copy of the feature can be moved back to the active feature class and editing can be conducted there. These attributes are allotment attributes that may be duplicated in RAS but are considered to be minimum information for unique identification and cartographic purposes.

There will be a minimum of 9 attributes associated with the allotment polygon features.

### Grazing Historical Allotment Polygons Attributes

GIS NAME	ALIAS	DATA FORMAT	* REQ'D?	ALLOW NULLS?	DEFAULT VALUE	DOMAIN NAME	**FL META	DE-RIVED?	*** SRC
ALLOT_NO	Allotment Number	Char(5)	M	No	UNK		No	No	O/I
ALLOT_NAME	Allotment Name	Char(50)	M	No	UNK		No	No	O/I
GIS_ACRES	GIS Acres	Double(16.6)	M	No	0		No	Yes	G
ADMIN_ST	Administrative State Code	Char(2)	M	No		DOM_ADMIN_ST	No	No	O/I
ADM_OFCD_CD	Administrative Office Code	Char(6)	M	No	000000		No	No	O/I
ADM_UNIT_CD	Administrative Unit Code	Char(8)	M	No	XX000000		No	Yes	O/I
ST_ALLOT	Managing State Allotment Number	Char(7)	M	No	XX000000		No	No	O/I
ACTIVE_DT	Allotment Active Date	Date	M	No	09/09/9999		No	No	O/I
INACTIVE_DT	Allotment Inactive Date	Date	M	No	09/09/9999		No	No	O/I
*REQ'D? (Required?): M=Mandatory O=Optional C=Conditional **FL META – Feature Level Metadata; ***SRC (SOURCE): G(enerated) O/I (Operator Input)									

<b>GIS Name</b>	<b>Logical Attribute Name</b>	<b>Definition</b>
ALLOT_NO	Allotment Number (PK)	<p>The number that identifies an Allotment which is unique within the BLM administrative state. Note: an allotment number may never be reused within an Administrative State. If an existing allotment is divided or combined, all changed allotments should be assigned a new allotment number.</p> <p>New allotment numbers are normally assigned by the system; however users may assign unique unused numbers according to office policy. Once an allotment has been created, any office can attach authorization(s) to it. Only the office creating the allotment is allowed to modify the allotment. The leading zeros must be included in the values entered in this field. '00045' is the correct entry, not '45'.</p>
ALLOT_NAME	Allotment Name	<p>The name by which the allotment is commonly known.</p> <p>The name given to the allotment, defined as "...the basic geographic area used in administering BLM range land." It may include private, state, and public lands under the jurisdiction of the Bureau of Land Management and/or other federal agencies.</p>
GIS_ACRES	Polygon Form Acre Measure	<p>This is a calculated value of area in units of acres based on the area field created by default within the ESRI Polygon data structure. For the purposes of a 'national data layer', the data are to be stored in geographic coordinates which do not correspond to ground values. This requires that there be a standard method for calculating this attribute.</p> <p>The method used for these data are as follows: The data are projected into a standard projection such as the ESRI default Albers projection for the continental United States, "US Albers NAD 1983." Once the data are projected, then a calculation of "SHAPE_Area (square meters) * 0.0002471044 = acres" is applied to the existing 'area' field that is default area created by the ESRI software resulting in the field (Attribute) 'SHAPE_Area'. Please note that the figure used in this calculation is the factor for converting the US Survey Foot value of for the length of a meter as opposed to the International Standard for converting meters and feet.</p>
ADMIN_ST	State Alphabetic Code	<p>An administrative unit that identifies the state or geographic area which has administrative jurisdiction over lands, and cases. The land for a case may not be physically located in the associated administrative state. Only those states that are BLM administrative states are in the domain for this entity. Example: Montana is the Administrative State for public lands in the geographic States of Montana, South and</p>

GIS Name	Logical Attribute Name	Definition
		<p>North Dakota.</p> <p>A two letter, upper case abbreviation for the administrative state office. The current list of values is: AK, AZ, CA, CO, ES, ID, MT, NM, NV, OR, UT and WY. In the FBMS Organization Codes, use the second 2 characters (after the LL). (e.g. <b>LLAK039000</b>)</p> <p style="text-align: right;">Attribute Domain Assignment: DOM_ADMIN_ST</p>
ADM_OFC_CD	Office.BLM Organization Code	<p>BLM administrative office (which is subordinate to the state office) that has jurisdiction and/or management authority over lands within a geographic area.</p> <p>This is a six-digit code. In the FBMS Organization Codes, use the six characters after the State designators. (e.g. <b>LLAK030900</b>)</p>
ADM_UNIT_CD	Administrative Office + Office.BLM Organization Code	<p>The BLM administrative unit/office that is a combination of Administrative State Code and Administrative Office Code that fully identifies the geographic area which has jurisdiction over the lands.</p> <p>This is an eight-character code. In the FMBS Organization Codes, use the last eight characters (e.g. <b>LLAK030900</b>). The field should be populated with the office code for the lowest level of the organization with jurisdiction.</p>
ST_ALLOT	State Alphabetic Code + Allotment Number	<p>This is a concatenation of two existing attributes but is not a substitute for having either of those two attributes. It is the existing unique code that allows identification of individual allotments throughout the entire United States. This concatenated number serves as a nationwide unique identifier that allows for a linkage from any unique Allotment polygon in the Geospatial dataset to the RAS dataset.</p>
ACTIVE_DT	Allotment Active Date	<p>The calendar date on which the boundary of an allotment is established and becomes effective. The format for the date will be MM/DD/YYYY, and will be entered only once for that polygon.</p> <p>The format for storing the date field in the geodatabase (GDB) will be MM/DD/YYYY due to ESRI software limitations. The ESRI software displays the date field according to how dates are formatted for display on the computer. The FGDC-compliant format for the date field, YYYYMMDD, is for publishing/displaying the date field. There are two methods in which the FGDC format could be used for storing the date. The date format on the computer can be</p>

GIS Name	Logical Attribute Name	Definition
		<p>reset which may introduce unintended consequences within other programs, or the date field could be defined as a text field which would leave ample room for errors being introduced to the data. Although the National Data Standards are intended to be platform-independent, the ESRI GDB format is the current platform implemented throughout the BLM.</p> <p style="text-align: right;">Default: 09/09/9999</p>
INACTIVE_DT	Allotment Inactive Date	<p>The calendar date on which the boundary of an allotment is no longer effective because the external boundary of the allotment changed or it is no longer used as an allotment. Business Rules: Allotments with End Dates are a separate feature class from Active Allotments. The date will be in the format of MM/DD/YYYY, and will be entered only once for that polygon.</p> <p>The format for storing the date field in the geodatabase (GDB) will be MM/DD/YYYY due to ESRI software limitations. The ESRI software displays the date field according to how dates are formatted for display on the computer. The FGDC-compliant format for the date field, YYYYMMDD, is for publishing/displaying the date field. There are two methods in which the FGDC format could be used for storing the date. The date format on the computer can be reset which may introduce unintended consequences within other programs, or the date field could be defined as a text field which would leave ample room for errors being introduced to the data. Although the National Data Standards are intended to be platform-independent, the ESRI GDB format is the current platform implemented throughout the BLM.</p> <p style="text-align: right;">Default: 09/09/9999</p>

## Part III: Appendices

### *Appendix A- Domain Values and Examples*

#### **Domains Specific to Grazing**

No domain values are specific to the Grazing Data Standard.

Domain values are maintained separately from the data standard. This is due to values being more likely to have an addition or change that would not affect the data standard. Those value changes can be made without a revision to the entire standard. Individual states/offices can extend the domain table with additional values as necessary. However, metadata for the additional values must be documented by that office.

#### **Coordinate Source Type Code**

The code that identifies the general category for the origin of the location coordinate representing a compilation of the state adopted source codes. The domain contains those values that would most likely be used in the determination of source codes for the data set.

Attribute Domain Assignment: DOM\_COORD\_SOURCE\_TYPE

Default value: UNK

Allowable Codes:

<b>COORD_SOURCE_TYPE</b>	<b>Description</b>	<b>Definition</b>
MAP		Manuscripted lines. Includes hand drawing onto paper or mylar map base and capturing with a digitizing tablet and on-screen digitizing using DRG.
IMG	Imagery	DOQ or other imagery backdrops at any scale.
GPS	GPS	Lines obtained from a Global Positioning System device not using survey methods.
DLG	Digital Line Graph	Lines duplicated or buffered from (for example, 1:24K or 1:100K scale) USGS Digital Line Graph derived data including GIS themes such as BLM Streams or transportation.



CFF	Cartographic Feature Files	Lines duplicated or buffered from Cartographic Feature Files(USFS)
GCD	Geographic Coordinate Database	Lines snapped to Geographic Coordinate Database points
DEM	Digital Elevation Model	Digital Elevation Model
NHD	National Hydrologic Dataset	USGS National Hydrologic Dataset (NHD) (For example, 1:24L or 1:100K scale)
SRV	Survey	Survey methods were used to define the line feature. This normally requires using COGO or Survey Manager to input the data
TRS	Township, Range, Section	PLSS Description
LLD	Legal Land Description	A label that identifies a specific parcel or parcels of land. LLD information includes meridian, township, range, and section, as well as geopolitical information. (Note: This is not to be confused with Legal Description/Land Description, or Land Description.)
GIS	BLM GIS Layer	Another data layer within an existing BLM GIS dataset
UNK	Unknown	Unknown source (default value)
DRG	Digital Raster Graphics	A raster image of a scanned USGS standard series topographical map. The accuracy and datum of a DRG matches the accuracy and datum of the source map.
WBD	Watershed Boundary Dataset	A National geospatial database of drainage areas consisting of the 1st through 6th hierarchical hydrologic unit levels.
OTH	Other	A coordinate source type that does not appear as one of the other defined types in this list.

## Coordinate Source Code

The code that identifies a more specific description of the coordinate source. Suggested values appear in the table but the user is free to enter any value they choose. This domain is not intended to be all inclusive but may be used as a starting point for state-level lists of domain values. This list is not intended to be a substitute for the accuracy values that are found in the 'Accuracy Measurement Table'. This is an optional attribute.

**Note: This is a suggested list only for this optional attribute. Individual states/offices are free to enter other values if they choose.**

COORD_SRC_TYPE	COORD_SRC2	Description
MAP	24K map	USGS 1:24K hard-copy map
	100K map	USGS 1:100K hard-copy map
	misc map	miscellaneous paper maps, maps at varying scales
IMG	1 m doq	1 meter digital ortho quad
	air photo	
	satellite image	
GPS	GPS recreation grade	GPS recreation grade worse than 5 meter accuracy
	GPS resource grade	GPS resource grade 30cm to 5 meter accuracy
	GPS survey grade	GPS survey grade better than 30cm accuracy
DLG	24K dlg	USGS 1:24K digital line graphs
	100K dlg	USGS 1:100K digital line graphs
	250K dlg	USGS 1:250K digital line graphs
CFF		
GCD	GCDB	Geographic Coordinate Database
DEM	30 m dem	30 meter USGS Digital Elevation Model
NHD		
SRV	Cadastral Survey	Cadastral survey description based on bearing and distance from a surveyed start point
UNK	Unknown	Unknown coordinate source
DRG	24K drg	USGS 1:24K digital raster graphics
	100K drg	USGS 1:100K digital raster graphics
	250K drg	USGS 1:250K digital raster graphics
OTH	Other	Other source not listed in these domains

**Defining Feature Type Code**

The name (code) that identifies the high-level category for the actual physical or mapping characteristics (features) from which the arcs are derived (Appendix A).

Attribute Domain Assignment: DOM\_DEF\_FEATURE\_TYPE

Default value: UNK

Allowable Codes:

<b>DEF_FEATURE</b>	<b>Description</b>	<b>Definition</b>
ER_SLOPE	Erosion Slope Landform	This combines two standard landform classifications. The two were combined to reduce confusion between erosion and slope landform features. The detailed description includes: rim, ridges, toe of slope, etc.
COAST_FLUV	Coastal Fluvial Landform	This combines two standard landform classifications. The two were combined to reduce confusion between coastal and fluvial landforms. The detailed description includes creeks, streams, rivers, shorelines, etc.
OTH_LAND	Other Landform	This includes any other landform, such as Mountain, Glacial, and Volcanic landforms.
VEG	Vegetation	When the boundary is defined by a vegetative transition (ex: wildlife migration route).
CONST_FEAT	Constructed Feature	When the boundary is defined by a constructed feature. The detailed description could include: fences, roads, pipelines, campgrounds etc, along with any offset/buffer description.
ADMIN_BND	Admin Boundary	When the boundary is specifically defined as following another administrative boundary, even if that administrative boundary is then described as following some other defining feature. For example part of an ACEC boundary may follow a planning boundary, and the planning boundary is defined as following a county boundary, and the county boundary is defined as following the midpoint of a river.
PLSS	PLSS	When the boundary is explicitly defined through PLSS.
OTH	Other	When the boundary is not well defined by any of the other codes, ex: OBLIQUE, PT-TO-POINT etc.
UNK	Unknown	The default entry, no optional codes can be associated with this selection.

**Crosswalk table from the old defining feature domain values to the new Defining Feature Type domain values**

<b>DEF_FEATURE (Old Version)</b>	<b>DEFINING_FEATURE_TYPE</b>	<b>Definition</b>
RIM	ER_SLOPE	Natural topographic barrier to the movement of livestock
FENCE	CONST_FEAT	Constructed fence
LAKE	COAST_FLUV	The shoreline of any manmade or natural standing water
ROUTE	CONST_FEAT	Road centerlines (using the name of the FAMS Feature Class)
STREAM_RBANK	COAST_FLUV	Downstream right bank of stream, manmade or natural moving water (indicates that the stream is within the downstream left pasture)
STREAM_LBANK	COAST_FLUV	Downstream left bank of stream, manmade or natural moving water (indicates that the stream is within the downstream right pasture)
STREAM_CENTER	COAST_FLUV	Centerline of stream, manmade or natural moving water
PARCEL	PLSS	Legal line such as ownership or section line
PT-TO-PT	OTH	Boundary is not a legal or geographic feature
ROUTE_OFFSET	CONST_FEAT	Boundary is offset from a route
UNK	UNK	Defining feature unknown
	ADMIN_BND	
	VEG	
	OTH_LAND	

### Defining Feature Code

The code that identifies a more specific description of the feature from which the arcs are derived to create polygon boundaries. This information further describes the physical or mapping feature that makes up the polygon boundary. Suggested values appear in the table but the user is free to enter any value they choose. This domain is not intended to be all inclusive but may be used as a starting point for state-level lists of domain values. This is an optional attribute.

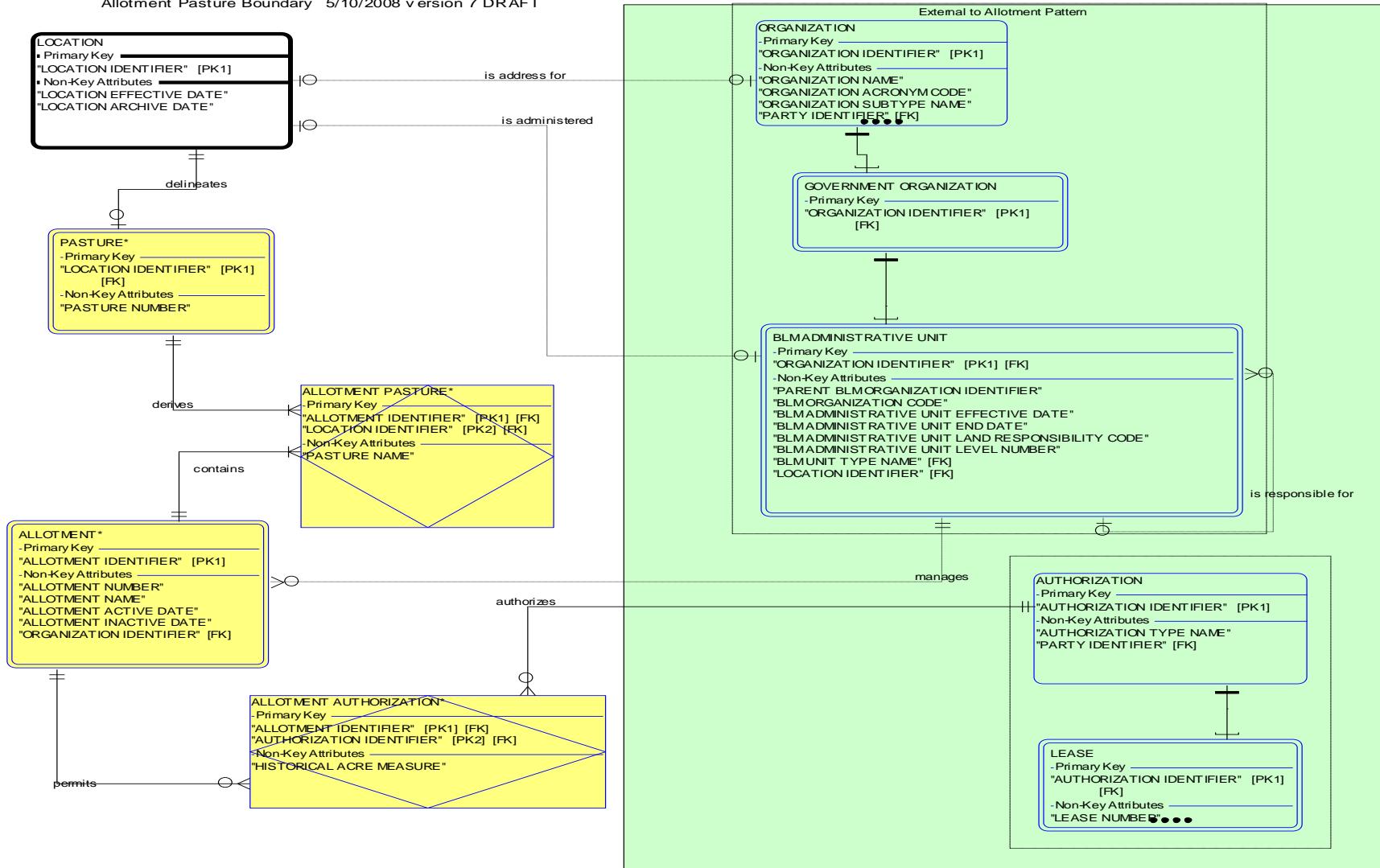
**Note: This is a suggested list only for this optional attribute. Individual states/offices are free to enter other values if they choose.**

Defining Feature Type Code	Defining Feature Code	Description
ADMIN_BND	ownership	ownership
ADMIN_BND	county	county line
ADMIN_BND	forest	forest boundary
ADMIN_BND	land grant	land grant
ADMIN_BND	military	military boundary
ADMIN_BND	national border	national border
ADMIN_BND	national park	national park boundary
ADMIN_BND	special management area	special management area boundary
ADMIN_BND	right of way edge	right of way edge
ADMIN_BND	right of way centerline	right of way centerline
ADMIN_BND	state line	state line
ADMIN_BND	tract	tract
COAST_FLUV	coast	coastline
COAST_FLUV	river edge	river edge
COAST_FLUV	hydrologic divide	hydrologic divide
COAST_FLUV	Indian trust asset	Indian trust asset boundary
COAST_FLUV	river centerline	river centerline
COAST_FLUV	stream centerline	stream centerline
COAST_FLUV	wash centerline	wash centerline
COAST_FLUV	wash edge	wash edge
CONST_FEAT	aqueduct	aqueduct
CONST_FEAT	camp ground	camp ground
CONST_FEAT	levee	levee

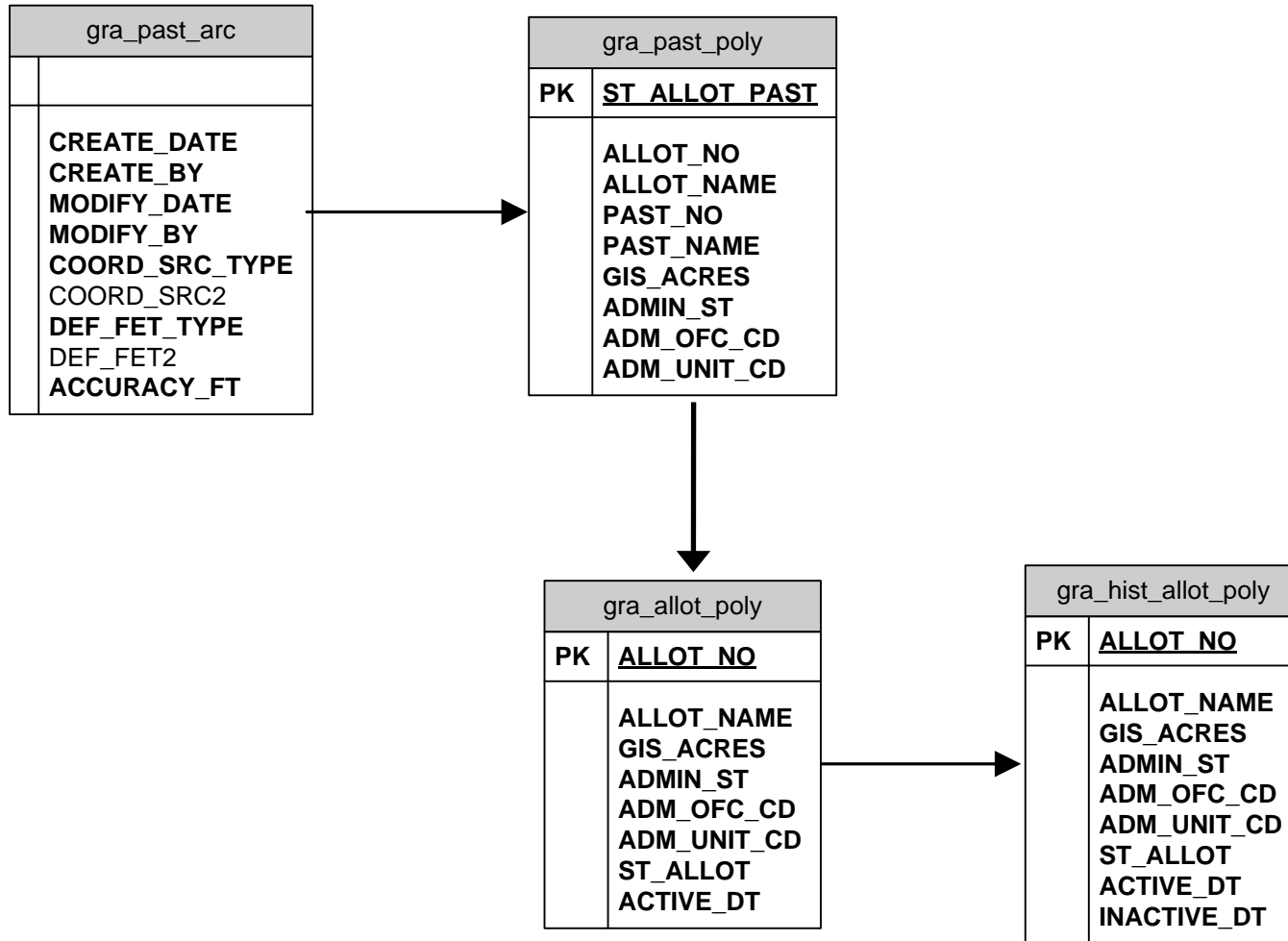
<b>Defining Feature Type Code</b>	<b>Defining Feature Code</b>	<b>Description</b>
CONST_FEAT	offset	offset from a constructed feature
CONST_FEAT	mine	mine
CONST_FEAT	parking area	parking area
CONST_FEAT	railroad centerline	railroad centerline
CONST_FEAT	road centerline	road centerline
CONST_FEAT	trail non-motorized	trail non-motorized
CONST_FEAT	transmission line centerline	transmission line centerline
CONST_FEAT	pipe line centerline	pipe line centerline
CONST_FEAT	water tank	water tank
CONST_FEAT	road edge	road edge
CONST_FEAT	railroad edge	railroad edge
CONST_FEAT	transmission line edge	transmission line edge
CONST_FEAT	pipe line edge	pipe line edge
ER_SLOPE	contour	elevation contour
ER_SLOPE	canyon	canyon
ER_SLOPE	ridge	ridge
ER_SLOPE	rim of canyon	rim of canyon
OTH	line between peak and contour	line between peak and contour
OTH	mineral survey	mineral survey
OTH	oblique	oblique
OTH	line between mountain peaks	line between mountain peaks
OTH_LAND		
PLSS	plss	plss
UNK	unknown	unknown
VEG		
	trail off highway vehicle	trail off highway vehicle
	survey	cadastral survey
	toe of slope	toe of slope

**Appendix B: Logical Data Model**

Allotment Pasture Boundary 5/10/2008 version 7 DRAFT



*Appendix C: Physical Database Design*





## Appendix D: Attribute Field Definitions

<b>Attribute Field</b>	<b>Field Definition</b>	<b>Field Example</b>
<i>Logical Name</i>	The business name of the attribute which includes the entity name, and representation term	Global Positioning System Receiver Type Name
<i>Alias</i>	An alternative name that is more descriptive and user-friendly than the Logical or GIS Field Name	GPS RECEIVER TYPE
<i>GIS Name</i>	The abbreviated name of the field as it appears in the database	RCVR_TYPE
<i>Data Format</i>	Specific type of data allowed/# of characters or numbers/Precision & Scale	Char(15)
<i>Requirement</i> <i>M=Mandatory</i> <i>O=Optional</i> <i>C=Conditional</i>	Whether data is minimum allowed (Mandatory), not mandatory (Optional), or dependent (Conditional) based on an “IF” “THEN” statement	O
<i>Allow Nulls?</i>	Whether or not a value of “Null” is allowed in that column	Yes
<i>Default Value</i>	Value that will apply if no other value is specified	N/A
<i>Domain Name</i>	Name of the table for that attribute, containing the Code, Description, and Definition for each value in the table	DOM_RCVR_TYPE
<i>Feature Level Metadata?</i>	Whether it is metadata that is maintained at the feature level as opposed to metadata pertaining to the whole dataset	No
<i>Derived?</i>	Whether the attribute is system-generated, meaning it requires no input by the user to be populated	No
<i>Source</i>	The source for the data, whether it is system-generated, GPS input, operator input, or an additional BLM system, such as AFMSS or LR2000	GPS