Geographic Information Systems Data Standard for the Montana/Dakotas Sign Database

1. Introduction: *General Information about the standard (For more information see WO-IM-2003-125 attachment 2: Guidance for Managing BLM Data Standards: How to Adopt, Implement, and Maintain Data Standards, pages 17-20)*					
Description of Standard The Standard includes all information needed to manage the inventory and maintenance requirements for the Montana/Dakotas Sign Program.					
Brief Description of Theme	The information included will include information such a record of dates inventoried, physical location including state, county, field office, township, range, section, aliquot part, classification, size, shape, color, sign material, sign language, condition, type of post, condition of post, and general notes.				
Status of data collection (e.g. complete, on-going)		on-going	**Source of data**	GPS data collection or hand entered data from field inventory.	
Date of Data	Varies	**Scale of Data** (e.g 7.5', 1:100k)			Varies with input method
Data in Digital Format (yes/no)?	Yes	**If so, what format is data?** (e.g. Arc, GPS, AutoCad)			GPS, maps, ArcGIS, digital photo
Is there data to be digitized?	Yes	**If so, what format is data in?** (e.g paper, Mylar, needs to be developed?)			
Affected Groups (who is effected, who should care)		This standard will affect BLM Engineering and Recreation staffs. This standard will include information that will useful in the planning for maintenance of signs and determining 5 year Sign Plans along with keeping existing signs maintained for a positive bureau image.			
Sponsor (business of sponsor)		Greg Bergum, State Engineer			

2. Data Category*: How does this standard fit into/support the Bureau Enterprise Architecture.*	
That is, what data subject area does this fall into? (i.e. Accounts, Administrative Interests, Assessments, Budgets, Cases, Correspondence, Cultural Interests, Documents, Environmental Interests, Facility Interests, Guidance, Hazards, Human Recourse Information, Legal Entities, Library Information, Local Community Interests, Locations, Managed Records, Obligations, Plans, Projects, Rights Interests, Training Information)	Administrative Interests, Budgets, Cases, Cultural Interests, Environmental Interests, Facility Interests, Guidance, Hazards, Locations, Projects, Rights Interests, Local Community Interests

3. Data Steward/GIS Contact Identification: *Who is/are the data steward(s) and GIS Contact(s)*			
Office	**Role**	**Name**	**Contact Information**
Billings Field Office	Data Steward	Lynn Hardy	406-896-5248
	GIS Contact	Sheila Cain	406-896-5143
Butte Field Office	Data Steward	Jim Karamanos	406-533-7600
	GIS Contact	Brian Mueller	406-533-7671
Dillon Field Office	Data Steward	Rick Waldrup	406-683-8000
	GIS Contact	Laurie Blinn	406-683-8037
Glasgow Field Station	Data Steward	Dean Jensen	406-228-3750
	GIS Contact	Lynell Cellmer	406-228-3754
Great Falls Oil & Gas FS	Data Steward	Loyd Bantz	406-538-1964
	GIS Contact	Lottie Hufford	406-791-7783
Havre Field Station	Data Steward	Ken Koncilya	406-262-2830
	GIS Contact	Mitch Forsyth	406-262-2826
Lewistown Field Office	Data Steward	Loyd Bantz Sandra Padilla (Monument)	406-538-1964 406 538-1916
	GIS Contact	Gary Warfield Dan Frank	406-538-7461 406-538-1959
Malta Field Office	Data Steward	Tom Wilcox	406-654-5100
	GIS Contact	Amanda Keefer	406-654-5119
Miles City Field Office	Data Steward	Harvey Wolff	406-233-2876
	GIS Contact	Scott Kitchman	406-233-2800
Missoula Field Office	Data Steward	Bill Rich	406-329-3734
	GIS Contact	Dennis Leonard	406-329-3914
North Dakota Field Office	Data Steward	Angela Wetz	701-227-7710
	GIS Contact	Corinne Walter	701-227-7721
South Dakota Field Office	Data Steward	Bill Monahan	605-892-7003
	GIS Contact	Corinne Walter	701-227-7721
State Office	State Signs Coordinator	Adam Deutsch	406-896-5211
	State Signs Data Steward	Adam Deutsch	406-896-5211
	GIS Technical Support	Donna Degner; Randy Schardt	406-896-5270
	State Data Administrator	Kevin Brooks	406-896-5270

4. Data Set Characteristics		
Overall Security: Identify security level (e.g. public/ non-public) If non-public state why	This Data shall be available to all BLM staff members that have a need for planning, maintenance, recreation, and construction activities. This information is not anticipated to contain any sensitive information and is deemed to be PUBLIC.	
Who has create, read, update, and/or delete privileges	Create, Read, Update and/or Delete privileges will be granted to appropriate personnel of BLM Montana/Dakotas by the State Data Steward for this data, who will ensure that these privileges are reviewed and updated regularly.	
Data Collection & Maintenance Protocols: data collection and maintenance procedures that would apply	a) Accuracy Requirements: what level is required?	Datum and Projection – Sign information collected will be done allowing for data to be input in the GIS utilizing the Montana/Dakotas Albers projection.
	b) Collection & Input Protocols: what are approved methods?	Collection of information for this standard will be from sources such as Global Positioning System (GPS) units (standard GPS dictionary will be provided) to filling out information required on Form 9130-4 Sign Inventory/Maintenance Form during inventory and inspection. All sources must conform to the standard and include the required information.
	c) Update Procedures: On what basis are updates completed (e.g. township basis, case file basis); how often; by when?	Completed on a case by case basis as additional data is collected.
Data Quality: measures that will be applied to the data	a) Transaction level data quality: how will the review of data quality take place during data entry	The Field Office Data Stewards and the State Data Steward are responsible to ensure that data conforms to this standard. Field Managers and Field Station Managers are to ensure that the standards are being followed.
	b) Monitoring level data quality: what systematic review of data quality will take place and how will it	Periodic evaluation of the data base will have to be performed on a regular basis. The Field Office Data Stewards are responsible for reviewing the data at least once per year to ensure established protocols are being followed in the collection and maintenance of data. The State Data Steward will conduct periodic evaluations to check the quality and completeness of the data and ensure that current BLM guidance on data quality is

	be done?	being followed.
Relationship to Other Standards: Identify any other data standards (or applications) that are related; these can include national, state, local, or other agencies/organizations; identify data element that would tie them together (e.g. RIPS by allotment number)		Information in this standard will follow the requirements of the Sign Guidebook which encompasses the information collected on Form 9130-4 and the general requirements outlined in Section B: The Sign Plan of Chapter II: Sign Planning. FIPS State and County codes are used in generating the Sign Unique Identifier (see Appendix 3) BLM Organization codes based on established Field office structure (see Appendix 4).

5. Data Model Characteristics: *Each data standard is to be supported by a data model which includes entities and relationships between entities*	
	Schema – a graphical depiction of logical data showing entities (tables) and how they relate to each other (may use attachment). See Appendix 1
b) Entity Descriptions: places, persons, things, or concepts described in the data set (aka tables) Notes: Data Element Names (aka fields) - must adhere to WO IM-2004-60 Attachment 3: Data Element Naming Conventions Data Element Definition - avoid using data element name to describe, include whether this makes it non-public or not, if there is a data steward for this particular element give name Data Type/Field Size – e.g. Char(12) or Text(12) or Decimal(5,2) Domain codes and definitions – if has codes, list and define them or refer to authoritative source where they can be found (e.g. Yes, No or list of weed codes)	

Entity Name	ACTION				
Entity Description	The work that is done to install, repair, replace, or remove signs is recorded here.				
Data Elements					
ID	**Logical Name**	**Physical Name**	**Type(Size)**	**Required**	**Definition/Domain**
1	Sign Unique Identifier	Sign_id	Text(15)	Yes	Unique identifier that matches record for sign in the Signs table. System generated based on GPS coordinates in North American Datum 83 format.. (Unique identifier using BLM administrative state and BLM Office Code as the first five digits (e.g. MT100 Missoula FO, MT060 Lewistown FO, MT030 North Dakota FO), followed by the last 3 digits of the FIPS county code (e.g. 017 for Custer County, 009 Carbon, 059 Meagher), followed by two letters for the sign category (e.g. RE for regulatory DI Directional GU Guide etc.) followed by a 5 digit consecutive number.(Example: MT020017RE00001).
2	Inspector Name	Inspector	Text(20)	Yes	First and Last name of the person who collected the data. Valid inspectors will be listed in the domain.
3	Action Date	Actn_date	Date	Yes	Date of the action. mm/dd/yyyy format will be displayed Note: During sign inventory, the data collector shall enter the installation date of the sign. If the date is not known, then during data loading or data entry, the installation date shall be entered as 01/01/2000. This will insure that all signs older than 7 years will be returned during queries for reflectivity.
4	Sign Action Code	Sign_Actn	Text(9)	Yes	Action taken on sign at the time of this visit. Domain: None- no action taken Install- The initial placement and positioning of the sign

					or marker post and/or post. This action will only occur once when sign or marker post and/or post is initially placed at the site. Repeated placements of a similar sign are to be coded as "Replace". Install would be used only at the initial installation. When the original is changed through wording, size, shape, category, subcategory, material etc., the original sign should be "Removed" and a new sign with the new characteristics "Install"(ed). Note: If the initial entry for a sign is other than Install, the inspector must also enter an additional Sign Action of Install. If the Install date is known, use that; otherwise use 01/01/2000 as the install date. Inspect- To view or examine officially or formally, checking for structurally integrity, readability and applicability. Replace- To exchange the sign or its support(s), with one that is identical to the original initially placed signage. Repair - To restore the sign to a good or sound condition after decay or damage. Remove- To physically take down and remove from the site.
5	Sign Condition Code	Sign_Cond	Text(12)	Yes	The shape (condition) the sign was in at the time of inspection. If action is ‘installed’ or ‘replaced’, choose “Good” Domain: Good Deteriorated

					Damaged Missing/Down Obsolete
6	Sign Next Action Code	SgnNxt_Actn	Text(7)	No	Kind of next action to be taken on sign after determining the condition and effectiveness of the sign Domain: <u>None-</u> No Action to be taken. <u>Install</u>- The initial placement and positioning of the sign or marker post and/or post. This action will only occur once when sign or marker post and/or post is initially placed at the site. Repeated placements of a similar sign are to be coded as "Replace". Install would be used only at the initial installation. When the original is changed through wording, size, shape, category, subcategory, material etc., the original sign should be "Removed" and a new sign with the new characteristics "Install"(ed). <u>Inspect</u>- To view or examine officially or formally, checking for structurally integrity, readability and applicability. <u>Replace</u>- To exchange the sign or its support(s), with one that is identical to the original initially placed signage. <u>Repair</u> - To restore the sign to a good or sound condition after decay or damage. <u>Remove</u>- To physically take down and remove from the site.
7	Post Action Code	Post_Actn	Text(9)	Yes	Action taken on post at the time of this visit.

					Domain: None- No Action to be taken Install- The initial placement and positioning of the sign post or marker post. This action will only occur once when sign or marker post and/or post is initially placed at the site. Repeated placements of a similar sign are to be coded as "Replace". Install would be used only at the initial installation. When the original is changed through wording, size, shape, category, subcategory, material etc., the original sign should be "Removed" and a new sign with the new characteristics "Install"(ed). Inspect- To view or examine officially or formally, checking for structurally integrity, readability and applicability. Replace- To exchange the post or its support(s), with one that is identical to the original initially placed signage. Repair - To restore the post to a good or sound condition after decay or damage. Remove- To physically take down and remove from the site.
8	Post Condition Code	Post_Cond	Text(12)	Yes	The shape the post was in at the time of inspection. If action is ‘installed’ or ‘replaced’, choose “Good” Domain: Good Deteriorated Damaged Missing/Down

					Obsolete
9	Post Next Action Code	PstNxt_Actn	Text(7)	No	Kind of next action to be taken on post after determining the condition of the post(s) Domain: <u>None-</u> No Action to be Taken <u>Install</u>- The initial placement and positioning of the sign post or marker post. This action will only occur once when sign or marker post and/or post is initially placed at the site. Repeated placements of a similar sign are to be coded as "Replace". Install would be used only at the initial installation. When the original is changed through wording, size, shape, category, subcategory, material etc., the original sign should be "Removed" and a new sign with the new characteristics "Install"(ed). <u>Inspect</u>- To view or examine officially or formally, checking for structurally integrity, readability and applicability. <u>Replace</u>- To exchange the post or its support(s), with one that is identical to the original initially placed signage. <u>Repair</u> - To restore the post to a good or sound condition after decay or damage. <u>Remove</u>- To physically take down and remove from the site.
10	Digital Photograph	Photo		No	The file name of the digital photograph of the sign. Photo shall be linked to the GPS point either through a technology link (integrated camera/GPS unit) or through the naming convention of the digital photograph file

					name. Enter the full path name of the location of the digital file. If no photo of the sign exists, then enter **complete** text of the sign in Sign Line Text. If a photo does exist, enter the keyword(s) of the first line of text. Note: A digital photo is required for all new installations. Note: The text of the sign must be legible when the sign information is displayed in the MS Word reporting function. Sign Inspectors shall use a digital camera of sufficient quality to produce an image that will be readable on a computer screen or on hard copy when displayed as a Word document. Note: The inspector shall ensure that the photo is taken in such a manner as to limit the viewfinder of the camera to the sign and supporting structure (i.e. posts), eliminating unnecessary background, and ensure photo is of quality that the text of the sign is legible within photo. The inspector shall use focal length adjustments or move physically close enough to sign to produce a legible image. Note: the file name of the photograph must be the Sign Unique Identifier followed by an 'a' for the first photograph and a 'b' for a second if it exists (after the unique ID is generated, the file name of the photograph should be updated when uploaded).
11	Action Cost Amount	Actn_Cost	Number(4)	No	Cost of the maintenance action including materials, vehicle and salary costs.to complete action to the nearest dollar
12	Action Work Hours Amount	Actn_Work	Number(4)	No	Actual hours, including travel time, to perform action. (If more than one sign, prorate among the total number of signs.to the nearest hour)
13	Next Inspection Date	NxtRvw_Date	Date	No	Date of next inspection (Date is based on a

					predetermined interval). Next inspection date must be later than current Action Date.
14	Action Comment Text	Actn_Cmnt	Text(254)	No	The notes made concerning the action, if any.
15	Sign Requisition Number	Sign_Req	Text(15)	No	The unique identifier on the requsition used when ordering the sign for original install or replacement.. **Note:** In order to meet the needs for Americans with Disabilities Act (Section 508), The Requsition Number must be present on the install action of the sign if the complete sign text was not entered into the SIGN TEXT. table when the SIGN was entered into the system.

Entity Name	SIGN				
Entity Description	The information that describes the BLM lettered boards or other displays used to identify a place or display information about an area.				
Data Elements					
ID	**Logical Name**	**Physical Name**	**Type(Size)**	**Required**	**Definition/Domain**
1	Sign Unique Identifier	Sign_id	Text(15)	Yes	Unique identifier that matches record for sign in the Signs table. System generated based on GPS coordinates. Unique identifier is built by using BLM administrative state and BLM Office Code as the first five digits (e.g. MT100 Missoula FO, MT030 North Dakota FO), followed by the last 3 digits of the FIPS county code (e.g. 017 for Custer County, 009 Carbon), followed by two letters for the sign category (e.g. RE for regulatory, DI Directional, GU Guide etc.) followed by a consecutive number. (Example: MT020017RE00001).
2	Sign State Code	State	Text(2)	No	The two letter abbreviation for the state in which the sign resides. State location will be determined by the sign geographic position and is not required for data entry.
3	Sign County Code	County	Text(19)	No	The FIPS county code for the county in which the sign resides County location will be determined by the sign geographic position and is not required for data entry
4	Sign Office Code	Ofc_Code	Text(5)	No	The designator for the district, field office or resource area. Office Code (name) location will be determined by the sign geographic position and is not required for data entry
5	Sign Road Name	Road_Name	Text(100)	No	Name commonly used to identify or refer to the road (ie. Garnet Range Road). Enter municpal road names here.
6	Sign Road Number	Road_Num	Text(7)	No	Road numbers shall be entered with the Type of road letter designation followed by the FAMS number or other unique name or number (ie. County road number; US highway number, street name) For example: B123456 = BLM road # 123456; H212 = US 212 #= number or name of the road County = C# State= S# Federal highway = H#

					Forest Service = F# BLM = B# Private = P# Trails: use FAMS standard as: the 2 digit county code, followed by the 4 digit trail number, followed by a captial letter T. For example: 491234T would be trail #1234 in Park County, MT
7	Sign Site Name	Site_Name	Text(100)	No	For Recreation Sites, name should match the name in the RMiS database. For administrative sites, name should match the name in FAMS.
8	Sign FAMS Identification Number	EQ_Num	Text(10)	No	FAMS unique identification number for the overall road, trail, bridge, dam, building, recreation, administrative or other site. This is the EQ Number of the overall site, not each individual asset within the site. Note: there may be more than 1 sign per FAMS unique Identification number.
9	Sign Quadrangle Identifier	Quad	Text(7)	No	USGS 7.5 minute quadrangle map name
10	Sign Mileage Marker Number	mile_mrk	decimal (7,1)	No	The Mile Marker Number nearest to the sign, measured in miles and tenths of miles. Example: 3.4
11	Sign Meridian Code	Meridian	Text(2)	No	The north-south line from which township and range are determined. Enter as two digits 20 = Montana (PMM) 05 = North Dakota or South Dakota (5th Prime Meridian) 06= South Dakota (6th PM) 07 = South Dakota (Black Hills Meridian)
12	Sign Township Code	Township	Text(5)	No	A tract of land contained within the boundaries of the north-south range lines containing approximately 36 square miles or 23,040 acres "as near as may be" The first 3 digits indicate the township number, the fourth digit indicates whole or half township (0= whole, 2=half), the fifth digit indicates the direction (N=North, S=South) Example: T. 151 N. is entered 1510N, T. 12 ½ S is entered as 0122S)
13	Sign Range Code	Range	Text(5)	No	A row or tier of townships lying east or west of the principal meridian and numbered successively to the east and to the west from that meridian

					The first three digits indicate the range number. The fourth digit indicates whole or half range (0=whole, 2=half). The fifth digit indicates direction (E=East, W=West) Example: R. 71 W is entered 0710W, R. 22 ½ E. is entered 0222E
14	Sign Section Code	Section	Text(3)	No	A tract of land, 1 mile square, within a township containing 640 acres "as near as may be." Approximately 1/36 of a township Example: 009
15	Sign Quarter Quarter Code	QtrQtr	Text(4)	No	A quarter is a one-fourth of a section, containing 160 acres more or less. The quarter quarter is one-fourth of a quarter. It is spoken of as "the southwest quarter of the north-east quarter" and is entered as in this example: SWNE
16	Sign Category Code	Category	Text(2)	Yes	The code for the sign categories that are listed in Bureau Sign Guidebook Domain: RE=Regulatory/Warning/Safety GU=Directional/Guide TR=Traffic Control IN=Informational ID=Identification MI=Miscellaneous ST=Stewardship Messages
17	Sign Subcategory Code	SubCatgory	Text(3)	Yes	The code for the sign sub-category, here listed under each sign category Identification signs ADM=Administrative (i.e. Field Office) FEA=Feature (i.e. trailhead, topographic feature or points of interest) ARE=Area (i.e. recreation sites, facilities, campgrounds) Directional/Guide Signs GU=Guide or Directional (i.e. displays arrows and distance

					indicators) Informational Signs BUL=Bulletin Board (i.e. large signs posting rules, regulations and other information) INS=Instructional (i.e. signs provide instructions for use of facilities) INF=Informative/Interpretive (i.e. sign provides information / interpretation about the resources of an area) ACC=Accessibility (i.e. signs that indicate universally accessible areas) Traffic Control Signs TR=Traffic Control (i.e. signs that indicate vehicular-related traffic control messages which are installed in accordance with MUTCD specifications) Regulatory/Warning/Safety (i.e. signs used for protection of visitors and the environment) BOU=Boundary OHP=OHV Portal OHV=OHV Restriction WRN=Warning SFT=Safety REG=Regulatory (i.e. signs that enforce regulations and policies) Stewardship Messages TRD=Tread Lightly LNT=Leave No Trace Miscellaneous Signs TEM=Temporary (i.e. signs that are temporary, used to highlight seasonal messages or special precautions

					CON=Concessionaire (i.e. signs indicating visitor services) SNO=Snowmobile Use (i.e. signs that are specific to snowmobile use and safety) SPE=Special Event (i.e. signs indicating one-time public event on BLM lands or waters) NPI= National Programmatic Initiatives (i.e. approved logos that identify specific national programs, initiatives or partnerships [Lewis and Clark Trail, Backcountry Byway]) BCY=Backcountry Byways NTR=National Trails WED=Weed (i.e. signs used to control the spread noxious weeds on Public lands)
18	Sign Location Text	LocTxt	Text (254)	Yes	Description of where the sign is located. For example: "mile marker or mileage from"; "west side of parking lot"; "intersection of road x and road y"; "north side of boat ramp"
19	Sign Shape Code	Sgn_Shape	Text(2)	Yes	The code for the sign shape as listed in the Bureau Sign Guidebook. Domain: OC=Octagon ET=Equilateral Triangle VR=Vertical Rectangle CB=Crossbuck TT=Truncated Triangle HR=Horizontal Rectangle DI=Diamond SQ=Square RD=Round MP=Marker Post (ie. Carsonite™ post) PT=Pennant PG=Pentagon
20	Sign Substrate Code	Sgn_Subtrt	Text(10)	Yes	The value for the material used for the substrate or panel of the sign. If material not listed in the domain, contact the Lead Data Steward. Domain:

					Plywood Aluminum Wood Plastic Fiberglass Other (not listed; describe in Sign Comment text)
21	Sign Face Code	Sgn_Face	Text(1)	Yes	The code for the sign face material . If something else is needed, contact the Lead Data Steward. Domain: S = Sheeting (i.e., Silkscreen) P = Painted R = Routed D = Decal O = Other (not listed; describe in Sign Comment text)
22	Sign Reflectorized Type Code	Sgn_Reflect	Text(1)	Yes	Is the sign reflectorized? Domain: Y = Yes, N = No; **Default is N**
23	Sign Predominant Background Color Name	Sgn_Color	Text(6)	Yes	The code for the predominant background color of the sign. If additional colors are needed, contact the Lead Data Steward. Domain: Brown = Recreational & cultural interests White = Regulatory Black = Regulatory Yellow = General warnings Red = Stop or prohibitions Green = Indicated movements, direction guidance Blue = Motorist services Orange = Construction or maintenance warning Other = not listed; describe in Sign Comment text
24	Sign Secondary Background Color Name	Sgn_Color2	Text(7)	No	The code for the secondary background color of the sign. If additional colors are needed, contact the Lead Data Steward.

					Domain: Brown = Recreational & cultural interests White = Regulatory Black = Regulatory Yellow = General warnings Red = Stop or prohibitions Green = Indicated movements, direction guidance Blue = Motorist services Orange = Construction or maintenance warning Other = Not listed; describe in Sign Comment text
25	Sign Height Measure	Sgn_Hite	Integer (999)	Yes	The dimension in whole inches from top to bottom or the diameter of a round sign. Always round up to nearest inch.
26	Sign Width Measure	Sgn_Wdth	Integer (999)	Yes	The dimension in whole inches from side to side – measure the widest dimension in case of a triangle or truncated triangle. Always round up to nearest inch
27	Sign MUTCD Number	MUTCD	Text(10)	No	Manual of Uniform Traffic Control Devices. The number assigned to a device. MUTCD can be referenced for device-specific information.
28	Post Type Name	Post_Type	Text(12)	Yes	The type of material used for the post or base holding the sign. If material is not listed, contact the Lead Data Steward. Domain: Wood Metal Plastic Masonry Fiberglass Other (describe in Sign Comment text)
29	Post Shape Name	Post_Shape	Text(11)	Yes	The shape of the post or base of the sign. If material is not listed contact the Lead Data Steward. Domain: Rectangular Square Round

					Structural – use for structural steel T - use for t-post U - use for U channel post O – Other (use if the sign is located on an item like a building or a fence or other item not usually defined as a post. Describe in Sign Comment Text).
30	Post Size Measure	Post_Size	Text(9)	Yes	The dimension of the cross section of the post diameter or width in whole inches (e.g. 4 if Post Shape is sqaure ; 3 if Post Shape is Round). Use actual diemension for Rectangluar post shape: (2 x 4, 2 x 6, 2 x 8, 2 x 10, 2 x 12) [Example: entered as 2 space x space 4] If Post Shape is T for t-post, use a value of Other. If Post Share is U for u-channel, use a value of Other If Post Shape is Structural for structural steel, use value of Other and describe the dimensions in Sign Comment Text If mounted on a Post Shape Other, use a value of Other for Post Size and describe the post in Sign Comment Text..
31	Post Length Measure	Post_Lgnth	Number (999)	Yes	The dimension of the post length visible above ground in whole inches. Round up to nearest inch. Use a value of 0 (zero) if the sign is mounted on a fence, building, gate or other item not usually defined as a post. The value 0 should only be used if the Post Shape and Post Size are also “O” (capital letter O) for Other. Describe the item in Sign Comment Text. If the Post is longer than 192 inches, enter a value of 999 (to indicate the post is longer than 16 feet) and describe the post, including the length, in Sign Comment Text.
32	Post Number of Posts Number	Post_Num	Number(9)	No	The number of posts being used to mount the sign. (e.g. 1, 2)
33	Sign Comment Text	Sgn_Cmnt	Text (254)	No	Any remarks about the sign are entered here.
If in the event that a sign needs to be entered into the system <u>manually</u>, the following data elements shall be entered: Sign Projection Name, Sign Datum Code then either Sign Latitude Code and Sign Longitude Code or the Sign UTM Zone Code, the UTM					

Northing Measure and the UTM Easting Measure. You must either insert the Latitude, Longitude, Sign Datum Code, Sign Projection Name -or- Sign Datum Code, Sign UTM Zone Code, UTM Northing Measure and UTM Easting Measure. If sign coordinate is entered manually, the values must be in latitude/longitude-NAD83 format.					
34	Sign Projection Name	SgnUTMLat	Text(15)	No	A systematic presentation of intersecting coordinate lines on a flat surface upon which features from the cured surface of the earth may be mapped Examples: UTM, Stateplane, Modified Albers
35	Sign Datum Code	SgnUTMLon	Text(5)	Yes	A set of parameters defining a coordinate sytem and a set of control points whose geometric relationshps are known, either through measurement or calculation. NAD27 or NAD83
36	Sign Latitude Code	SgnLat	Text(13)	Yes	The angular distance in degrees north or south of the equator. Lines of lat and its companion Longitude are used to record locations of points on the surface of the Earth.. Use degrees, minutes and seconds. Example: 45 05 05.60730
37	Sign Longitude Code	SgnLong	Text(15)	Yes	The angular distance in degrees east or west of the Greenwich Prime meridian. Use degrees, minutes and seconds Example: -108 18 41.74050
38	Sign UTM Zone Code	SgnUTMZon	Number(2)	No	UTM is divided into 60 zones. The zone is necessary to determine where you are when using the Universal Transverse Mercator projection. Example: 12
39	UTM Northing Measure	Sign_X	Number(7)	No	The “X” location of the sign
40	UTM Easting Measure	Sign_Y	Number(6)	No	The “Y” location of the sign

Entity Name	SIGN TEXT				
Entity Description	The information that is actually printed on the sign, designed to be visible to the reader. Note: Does not have to be entered if the Sign Requisition Number is entered on the install action for the sign.				
Data Elements					
ID	**Logical Name**	**Physical Name**	**Type(Size)**	**Required**	**Definition/Domain**
1	Sign Unique Identifier	Sign_id	Text(14)	Yes	Number value that matches record for the sign in the Sign table. System generated
2	Sign Line Number	SignLine	Number(2)	Yes	The position by line of the text on the sign.
3	Sign Line Text	Sign_Text	Text(100)	Yes	Text of the line. Enter each line of text for the sign. If no photo exists, enter the full text of the sign during field data collection. If photo exists, then enter first line or keywords during field data collection and complete the data entry in the office after uploading from the field data collection unit.
4	Sign Line Size Measure	SgnTxt_S	Number(5)	No	Letter height in inches. Round to nearest inch except for those letters which are 1.5 inches in height. Use “Other” for height over 12 inches and describe in Sign Comment Text. Domain: 1; 1.5; 2; 3; 4; 5; 6; 7; 8; 9; 10 ;11; 12; Other
5	Sign Line Color Name	SgnTxt_C	Text(10)	No	Color of the text Domain: Brown White Black Yellow Red Green Blue Orange Other = Not listed; describe in Sign Comment text

6. Business Rules: The business rules under which the data is used and modified (See WO IM 2003 247 Attachment 1: Business Rules Collection)	
Name of Rule	The Sign Guidebook Rules
Rule source (e.g. handbook, guidance, directive?)	The National Sign Guidebook
Source Description (brief explanation of where the rule comes from)	National Sign Guidebook establishes standards and guidelines for signs and BLM's national sign program. Signs purchased and installed on the public lands must comply with a number of procurement and accessibility laws and regulations. This National Sign Guidebook presents information for planning, designing, fabricating, procuring, installing, and maintaining signs in a clear, complete and user-friendly format for all BLM employees.
Rule Statement (what is the rule?)	The "BLM Sign Guidebook" must be followed at all times.
Is it Mandatory?	Yes
Name of Rule	The Sign Shape Rule
Rule source (e.g. handbook, guidance, directive?)	The National Sign Guidebook; Lead Data Steward requirement
Source Description (brief explanation of where the rule comes from)	National Sign Guidebook establishes standards and guidelines for signs and BLM's national sign program. Signs purchased and installed on the public lands must comply with a number of procurement and accessibility laws and regulations. This National Sign Guidebook presents information for planning, designing, fabricating, procuring, installing, and maintaining signs in a clear, complete and user-friendly format for all BLM employees. The Sign Data Steward requires that data entry for marker posts be consistent throughout MT / Dakotas BLM.
Rule Statement (what is the rule?)	When Sign Shape Code equals MP (Marker Post), assume that the sign is a composite fiberglass marker post, 4 inches wide by 60 inches tall with flat surfaces for affixing decals, commonly referred to as Carsonite™ posts. When uploading data from a field collection device (TerraSync or ArcPad) use the following assumptions when filling the Signs data base when Sign Shape Code equals MP: Sign Predominant Background Color Name = Other

	Sign Substrate Code = Fiberglass Sign Height Measure = 48 inches Sign Width Measure = 4 inches Post Shape Name = O (other) Sign Face Code = D (decal)
Is it Mandatory?	Yes
Name of Rule	The Sign data Entry Rule
Rule source (e.g. handbook, guidance, directive?)	The National Sign Guidebook; Lead Data Steward requirement
Source Description (brief explanation of where the rule comes from)	National Sign Guidebook establishes standards and guidelines for signs and BLM's national sign program. Signs purchased and installed on the public lands must comply with a number of procurement and accessibility laws and regulations. This National Sign Guidebook presents information for planning, designing, fabricating, procuring, installing, and maintaining signs in a clear, complete and user-friendly format for all BLM employees. The Sign Data Steward requires that data entry for marker posts be consistent throughout MT / Dakotas BLM
Rule Statement (what is the rule?)	All field data entry will be done with a GPS unit and a digital camera. Field Data entry will be with a ArcPad or TerraSync device with a photograph linked to the data record.
Is it Mandatory?	No.
Name of Rule	The Installation Date Rule
Rule source (e.g. handbook, guidance, directive?)	Lead Data Steward, MSO
Source Description (brief explanation of where the rule comes from)	This rule is required to insure that an installation date is entered for each sign.
Rule Statement (what is the rule?)	During sign inventory, the data collector shall enter the installation date of the sign. If the date is not known, then during data loading or data entry, the installation date shall be entered as 01/01/2000. This will insure that all signs older than 7 years will be returned during queries for reflectivity.
Is it Mandatory?	Yes.
Name of Rule	The Sign reflectivity Rule

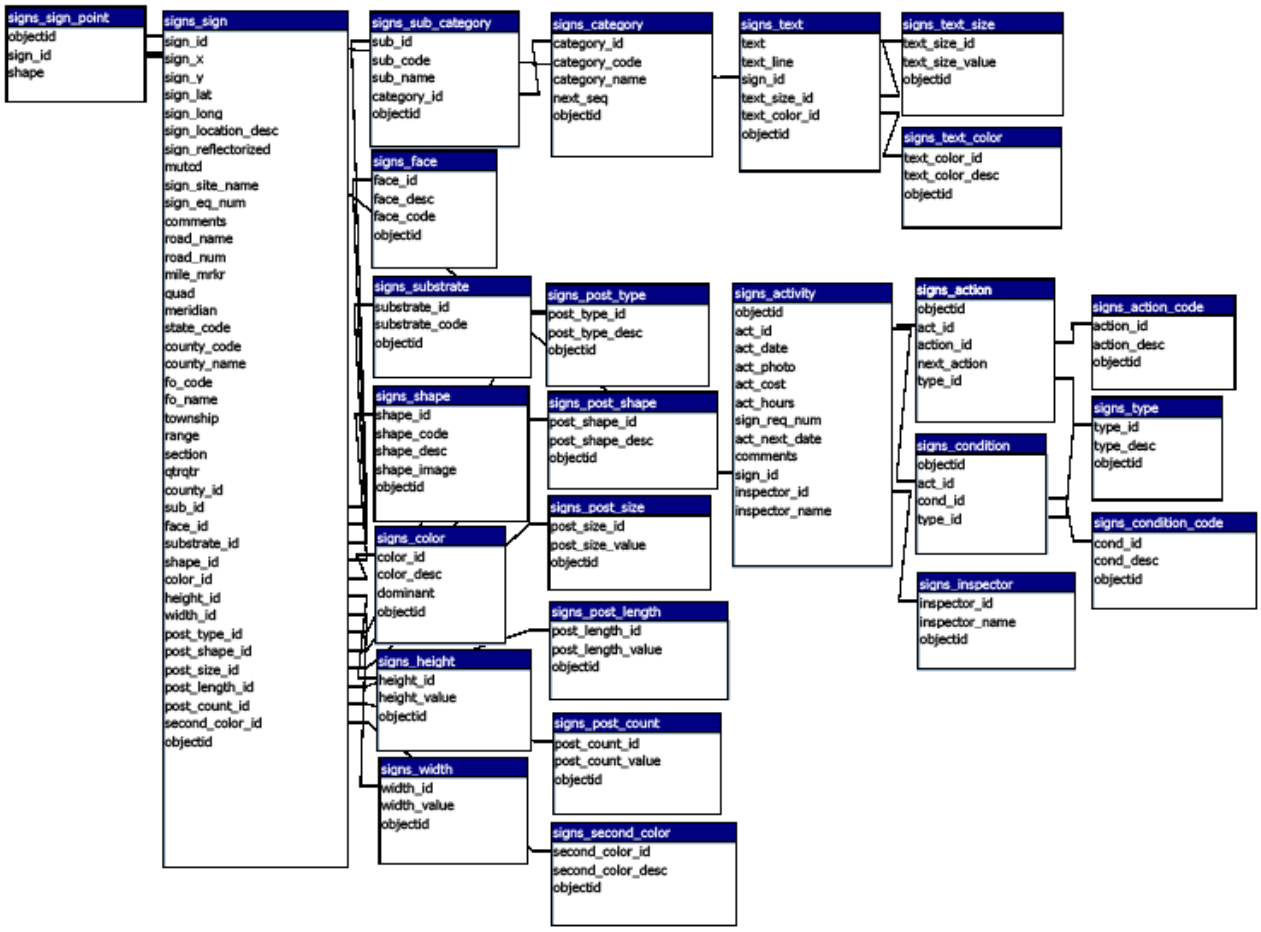
Rule source (e.g. handbook, guidance, directive?)	The National Sign Guidebook; Lead Data Steward requirement
Source Description (brief explanation of where the rule comes from)	National Sign Guidebook establishes standards and guidelines for signs and BLM's national sign program. Signs purchased and installed on the public lands must comply with a number of procurement and accessibility laws and regulations. This National Sign Guidebook presents information for planning, designing, fabricating, procuring, installing, and maintaining signs in a clear, complete and user-friendly format for all BLM employees. The Sign Data Steward requires that data entry for marker posts be consistent throughout MT / Dakotas BLM
Rule Statement (what is the rule?)	Field data collection is required to note the reflectivity condition of the post or the decals affixed to the post.
Is it Mandatory?	Yes
Name of Rule	The Post Size Rule
Rule source (e.g. handbook, guidance, or directive?)	Lead Data Steward, MSO
Source Description (brief explanation of where the rule comes from)	This rule is required to insure that post measurement information is entered correctly.
Rule Statement (what is the rule?)	During sign inventory, the data collector shall enter the size of the post using the following guidelines: For square and rectangular posts, enter the dimension in whole inches (e.g. 2x4, 4x4). For round posts, enter the diameter (e.g. 3, 4). If the post is non-standard, or the sign is not mounted on a post (e.g. attached to gate or a building), use a value of 0 (zero) to imply Other. If zero is used, enter descriptive comments in Sign Comment Text to explain how the sign is mounted.
Is it Mandatory?	Yes.
Name of Rule	The Date Entry Form Rule
Rule source (e.g. handbook, guidance, or directive?)	Lead Data Steward, MSO
Source Description	This rule is required to insure that field data collectors using the "**Sign Inventory/Maintenance Form for**

(brief explanation of where the rule comes from)	**the Montana/Dakotas"** follow procedures to insure a complete record entry in the database.
Rule Statement (what is the rule?)	During sign inventory, the data collector using a hard copy form shall perform the following actions: capture a GPS point for the sign location and a digital picture of the sign; insure that all required fields are completed on the form; enter all the data from the form into the database using the data entry screens.
Is it Mandatory?	Yes.

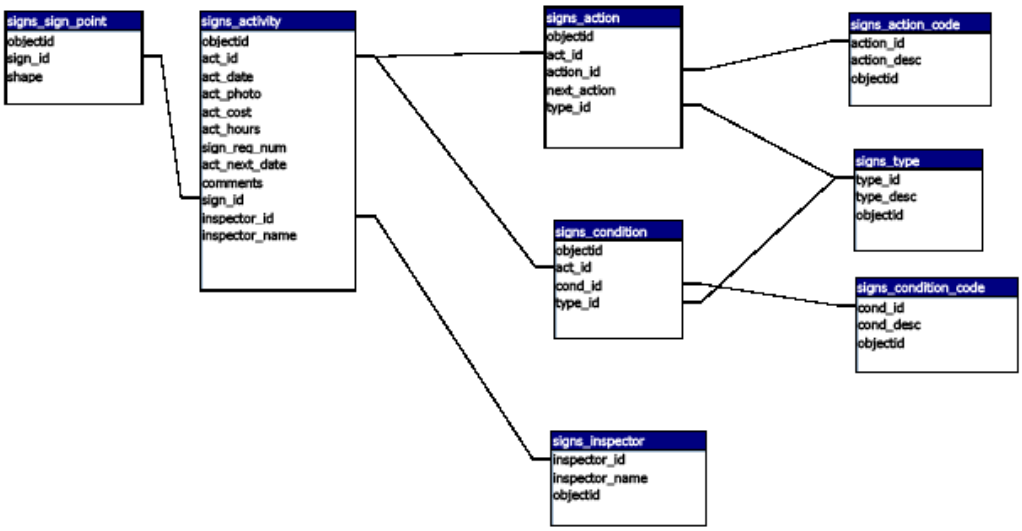
7. Other Material: Any other supporting material that aids in the understanding or use of the data standard; include specific geographic, organizational, or applicability constraints for non-national standards
None

Appendix 1: Schema

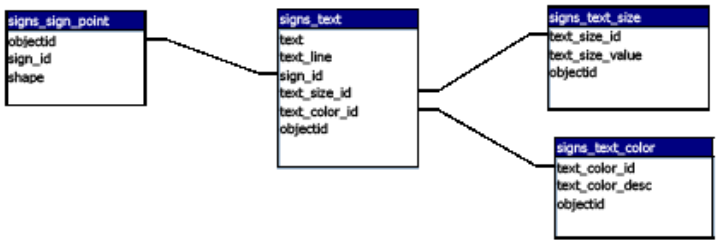
Full Schema



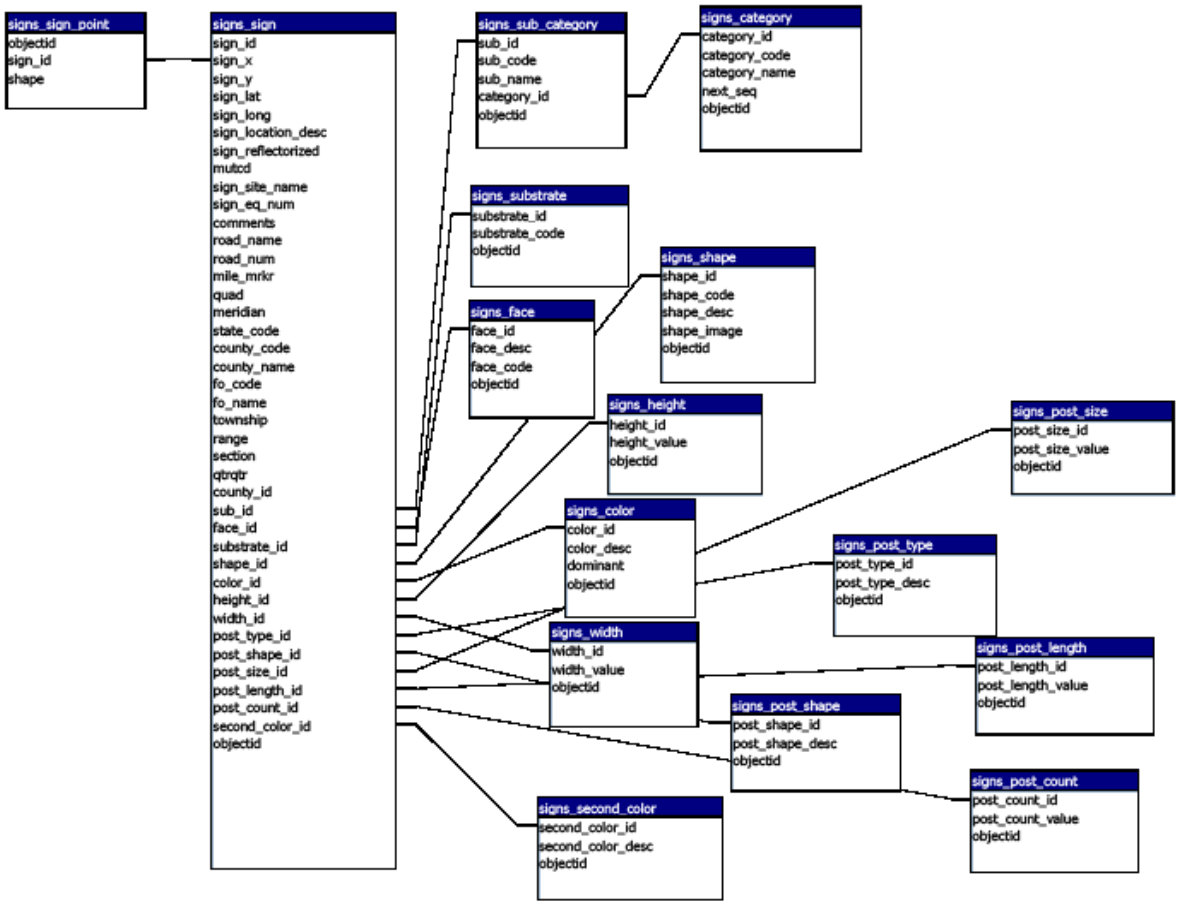
Relationships for signsActivitySchema
Thursday, December 18, 2008



Relationships for signsTextSchema
Thursday, December 18, 2008



Relationships for signsSignSchema
Thursday, December 18, 2008



Appendix 2: ACTION entity Example

Sign Unique Identifier	Inspector Name	Action Date	Sign Action Code	Sign Condition Code	Sign Next Action Code	Post Action Code	Post Condition Code	Post Next Action Code	Digital Photo graph	Action Cost Amount	Action Work Hours Amount	Next Inspection Date	Action Comment Text	Action Requisition Number
MT02014RE0001	Bailey	1/15/2003	Installed	Good	Inspect	Installed	Good	Inspect	*	345	5	7/15/2000		R-0413058
MT02014RE0001	Bailey	6/15/2003	Inspected	Missing	Replace	Inspected	Good	None		15	1		Will Order	
MT02014RE0001	Bailey	7/16/2003	Replace	Good	Inspect	Inspected	Good	Inspect	*	345	5	1/15/2001		R-0413162
MT02014RE0001	Gurber	1/30/2004	Inspected	Good	Inspect	Inspected	Good	Inspect		15	1	6/30/2001		

Appendix 3: County FIPS Codes

MONTANA:

COUNTY CODE	COUNTY	COUNTY CODE	COUNTY
001	BEAVERHEAD	059	MEAGHER
003	BIGHORN	061	MINERAL
005	BLAINE	063	MISSOULA
007	BROADWATER	065	MUSSELSHELL
009	CARBON	067	PARK
011	CARTER	069	PETROLEUM
013	CASCADE	071	PHILLIPS
015	CHOTEAU	073	PONDERA
017	CUSTER	075	POWDER RIVER
019	DANIELS	077	POWELL
021	DAWSON	079	PRAIRIE
023	DEER LODGE	081	RAVALLI
025	FALLON	083	RICHLAND
027	FERGUS	085	ROOSEVELT
029	FLATHEAD	087	ROSEBUD
031	GALLATIN	089	SANDERS
033	GARFIELD	091	SHERIDAN
035	GLACIER	093	SILVER BOW
037	GOLDEN VALLEY	095	STILLWATER
039	GRANITE	097	SWEET GRASS
041	HILL	099	TETON
043	JEFFERSON	101	TOOLE
045	JUDITH BASIN	103	TREASURE
047	LAKE	105	VALLEY
049	LEWIS & CLARK	107	WHEATLAND
051	LIBERTY	109	WIBAUX
053	LINCOLN	111	YELLOWSTONE
055	McCONE	113	YELLOWSTONE PARK

SOUTH DAKOTA:

COUNTY CODE	COUNTY	COUNTY CODE	COUNTY
003	Aurora	053	Gregory
005	Beadle	055	Haakon
007	Bennett	057	Hamlin
009	Bon Homme	059	Hand
011	Brookings	061	Hanson
013	Brown	063	Harding
015	Brule	065	Hughes
017	Buffalo	067	Hutchinson
019	Butte	069	Hyde
021	Campbell	071	Jackson
023	Charles Mix	073	Jerauld
025	Clark	075	Jones
027	Clay	077	Kingsbury
029	Codington	079	Lake
031	Corson	081	Lawrence
033	Custer	083	Lincoln
035	Davison	085	Lyman
087	McCook	039	Deuel
041	Dewey	091	Marshall
093	Meade	045	Edmunds
047	Fall River	097	Miner
099	Minnehaha	051	Grant
103	Pennington	037	Day
105	Perkins	089	McPherson
107	Potter	043	Douglas
109	Roberts	095	Mellette
111	Sanborn	049	Faulk
113	Shannon	101	Moody
115	Spink	125	Turner
117	Stanley	127	Union
119	Sully	129	Walworth
121	Todd	135	Yankton
123	Tripp	137	Ziebach

NORTH DAKOTA:

COUNTY CODE	COUNTY	COUNTY CODE	COUNTY
001	Adams	041	Hettinger
081	Sargent	003	Barnes
043	Kidder	083	Sheridan
005	Benson	045	LaMoure
085	Sioux	007	Billings
047	Logan	087	Slope
009	Bottineau	049	McHenry
089	Stark	011	Bowman
051	McIntosh	091	Steele
013	Burke	053	McKenzie
093	Stutsman	015	Burleigh
055	McLean	095	Towner
017	Cass	057	Mercer
097	Traill	019	Cavalier
059	Morton	099	Walsh
021	Dickey	061	Mountrail
101	Ward	023	Divide
063	Nelson	103	Wells
025	Dunn	065	Oliver
105	Williams	027	Eddy
067	Pembina	029	Emmons
069	Pierce	031	Foster
071	Ramsey	033	Golden Valley
073	Ransom	035	Grand Forks
075	Renville	037	Grant
077	Richland	039	Griggs
079	Rolette		

Appendix 4: Montana / Dakotas BLM Office Organization Codes

Affective as of: January 12, 2009

Field Office Name	Office Code	Geographic State
Billings	LLMTC01000	MT
Butte	LLMTB07000	MT
Dillon	LLMTB05000	MT
Glasgow	LLMTM01200	MT
Havre	LLMTM01300	MT
Lewistown	LLMTL06000	MT
Malta	LLMTM01000	MT
Miles City	LLMTC02000	MT
Missoula	LLMTB01000	MT
North Dakota	LLMTC03000	ND
South Dakota	LLMTC04000	SD