Ground Transportation Linear Features

IMPLEMENTATION GUIDELINES

October 23, 2014
Version 2.0

This document describes the physical design for the national data standard for the 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.

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INTRODUCTION

Data Structures Implemented

The data for inclusion in this data set shall be collected in a known datum and coordinate system. The data stored on the National Operations Center (NOC) 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. While the standard datum is NAD 83, there are multiple realizations of that datum in existence. The metadata for each data set shall contain more specific labeling of the datum as appropriate. Examples of this would include: NAD 83 (2007) or NAD 83 (CORS 96) (1997). Every effort should be made to be as specific as possible in delineating the appropriate datum.

	Data Structures Implemented	
	There is 1 structure in this implementation:	
A.	*gtlf_ln*	Represents the line features that will define ground transportation linear features.

Design Considerations

A linear feature for ground transportation includes roads, primitive roads, primitive routes, trails, temporary routes, and linear disturbances. This standard houses features on BLM lands as well as transportation features that provide access to BLM transportation routes. In order to meet the local or state field office needs, each state may extend its GTLF data standard to collect data to fulfill local data requirements as long as the state or field office data can be cross-walked into the National GTLF data standard format.

Domains

There are domain tables that are common across other data standards and feature classes, and as such they must be implemented differently than those domains that are specific to the data standard (reference "Global Domains" document located on the National Data Standards SharePoint ("Standards Support Information" tab > Document Type: Reference > Subject: Domains). These shared domains are not included in the geodatabase associated with these implementation guidelines.

The common domain names are included in the tables, in italic text. The domain values may be located in the Access Database which can be found on the National Data Standards SharePoint site. For instructions on adding these domains to the geodatabase, and linking them to the feature classes, please refer to the "Domains Management" document. This document is also located on the National Data Standards SharePoint ("Standards Support Information" tab > Document Type: Instruction > Subject: Domains).

- *DOM_YES_NO*
- *DOM_ADMIN_ST*
- *DOM_COORD_SOURCE_TYPE*
- *DOM_DEF_FEATURE_TYPE*

The following domains are unique to the dataset; therefore, they are associated in the geodatabase and are included in the XML schema. The domain names are included in the tables, in normal text.

- GTLF_DOM_FLTP_CODE
- GTLF_DOM_ROUTE_DSGNTN_AUTH
- GTLF_DOM_BLM_ASSET_CLASS
- GTLF_DOM_OHV_ROUTE_DSGNTN
- GTLF_DOM_PRMRY_ROUTE_MNGT_ OBJTV
- GTLF_DOM_PLAN_MODE_TRNSPRT
- GTLF_DOM_ACCESS_RSTRCT
- GTLF_DOM_OBSRVE_MODE_TRNSPRT
- GTLF_DOM_OBSRVE_SRFCE_TYPE
- GTLF_DOM_OBSRVE_FUNC_CLASS

- GTLF_DOM_ROUTE_USE_CLASS
- GTLF_DOM_ROUTE_SPCL_DSGNTN_TYPE

Physical Database Diagram

gtlf

gtlf_ln

		Geometry	*Polyline*
		Contains M values	*No*
		Contains Z values	*No*

Field Name	Data Type	Allow Null Values	Default Value	Domain	Length
OBJECTID	OID	NO			4
SHAPE	Geometry	YES			0
FLTP_CODE	String	NO	No	GTLF_DOM_FLTP_CODE	9
DSTRBTE_EXTRNL_CODE	String	NO	Yes		7
ADMIN_ST	String	NO			2
PLAN_ROUTE_DSGNTN_AUTH	String	NO	Unknown	GTLF_DOM_ROUTE_DSGNTN_AUTH	10
PLAN_ASSET_CLASS	String	YES	Not Assessed	GTLF_DOM_BLM_ASSET_CLASS	50
PLAN_OHV_ROUTE_DSGNTN	String	YES	Closed	GTLF_DOM_OHV_ROUTE_DSGNTN	10
NEPA_DOC_NUM	String	YES			50
ROUTE_PLAN_ID	String	YES			10
PLAN_PRMRY_ROUTE_MNGT_OBJTV	String	YES	Connectivity	GTLF_DOM_PRMRY_ROUTE_MNGT_OBJTV	25
PLAN_MODE_TRNSPRT	String	YES	Motorized	GTLF_DOM_PLAN_MODE_TRNSPRT	25
PLAN_ADD_MODE_TRNSPRT_RSTRT_CD	String	YES	No		7
PLAN_ACCESS_RSTRCT	String	YES	None	GTLF_DOM_ACCESS_RSTRCT	50
PLAN_SEASON_RSTRCT_CODE	String	YES	No		7
OBSRVE_MODE_TRNSPRT	String	YES	Motorized	GTLF_DOM_OBSRVE_MODE_TRNSPRT	25
OBSRVE_SRFCE_TYPE	String	YES	Natural Improved	GTLF_DOM_OBSRVE_SRFCE_TYPE	25
OBSRVE_FUNC_CLASS	String	YES	Local	GTLF_DOM_OBSRVE_FUNC_CLASS	15
OBSRVE_ROUTE_USE_CLASS	String	YES	Unknown	GTLF_DOM_ROUTE_USE_CLASS	50
ROUTE_PRMRY_NM	String	YES			75
ROUTE_SCNDRY_SPCL_DSGNTN_NM	String	YES			75
ROUTE_SPCL_DSGNTN_TYPE	String	YES		GTLF_DOM_ROUTE_SPCL_DSGNTN_TYPE	25
FAMS_ID	String	YES			10
EXSTNG_AUTH_CODE	String	YES	No		7
GIS_MILES	Double	NO	0		8
BLM_MILES	Double	NO	0		8
COORD_SRC_TYPE	String	NO	UNK		5
COORD_SRC2	String	YES			25
DEF_FET_TYPE	String	NO	UNK		15
DEF_FET2	String	YES			30
ACCURACY_FT	Integer	NO	0		4
CREATE_BY	String	NO			30
CREATE_DATE	Date	NO			8
MODIFY_BY	String	NO			30
MODIFY_DATE	Date	NO			8
GlobalID	SmallInteger	NO			38
created_user	String	YES			255
created_date	Date	YES			8
last_edited_user	String	YES			255
last_edited_date	Date	YES			8
SHAPE_Length	Double	YES			8

Topology

Geodatabase (gdb) 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. 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. For additional information, refer to the Map Topology and Geodatabase Topology documents located on the National Data Standards SharePoint (Standards Support Information tab >Document Type: Instruction > Subject: Geospatial). It is recommended that these tools be used and implemented to improve data quality and integrity.

Geodatabase Topology Rules

The following are the minimum that should be implemented. Additional topology rules may be added depending on data requirements for each office. gtlf_ln represents the name of the feature class that participates in the rule.

Topology Rule	Required?
gtlf_ln **Must Not Self-Intersect**	Mandatory
gtlf_ln **Must Be Single Part**	Mandatory

Data Guidelines

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

There are some attributes that are intended to eventually become system generated 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.

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 format for entering the date in the geodatabase (gdb) will be MM/DD/YYYY. The ESRI software displays the date field according to how dates are formatted for display on the computer. The Federal Geographic Data Committee (FGDC)-compliant format for the date field is YYYYMMDD. 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 Bureau of Land Management (BLM).

Dataset Review Cycle

The data for the GTLF should be reviewed for update whenever a travel management plan is updated. The data standard itself will also be reviewed annually or at the time of request by the users through the data steward.

National Dataset Update Cycle

The national level data for the GTLF should be updated as new observations of a feature occur. This update shall occur through replication, with the updated information reflected on the BLM external data server within 30 days. State and local offices shall determine an update cycle that fits their specific needs for local data. Metadata is available on the BLM Internal Geospatial Gateway (within the "Data Navigation" section): https://blmspace.blm.doi.net/oc/intra/drs/Pages/GeoSpatialGateway.aspx. States and local offices shall keep all geospatial metadata current by posting any updated metadata to this website on a regular basis.

Records Retention

The entire geodatabase for GTLF will be archived on an annual basis, by January 31, for the previous fiscal year. **Note: Records issues will be handled according to official policy for Records Management.**

DATA STANDARD IMPLEMENTATION DETAILS

Common Attributes

The following are attributes (data elements) in GTLF that are common in national data standards.

GIS Name	Logical Name	Physical Definition & Design Consideration

GIS Name	Logical Name	Physical Definition & Design Consideration
GlobalID	Not Applicable	**Physical Definition:** Software generated value. A field of type UUID (Universal Unique Identifier) in which values are automatically assigned by the geodatabase when a row is created. This field is not editable and is automatically populated when it is added for existing data. **Design Consideration:** This attribute is included for purposes of replication only. It is not used as a unique identifier for relationships between feature classes/tables.
ADMIN_ST	State Alphabetic Code	**Physical Definition:** 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. **Design Consideration:** 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 FPPS Organization Codes, use the second two characters (after the LL, e.g. LL**AK**030900).
GIS_MILES	Line Form Length Measure	**Physical Definition:** The entire miles of the line regardless of land status and/or jurisdiction. **Design Consideration:** This is a calculated value of length in units of miles based on the length field created by default within the ESRI line 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. The method used for these data are as follows. The data are projected into a standard projection such as the ESRI default Albers equal-area projection for the continental United States, "US Albers NAD 1983." Once the data are projected, then a calculation of "SHAPE_Length (meters) * 0.0006213699 = miles" is applied to the existing 'length' field that is default area created by the ESRI software resulting in the field (Attribute) 'SHAPE_Length'. Please note that the figure used in this calculation is the factor for converting the US Survey Foot value from the length of a meter as opposed to the International Standard for converting meters and feet.
BLM_MILES	Not Applicable	**Physical Definition & Design Consideration:** The miles along the line that is under BLM jurisdiction.

GIS Name	Logical Name	Physical Definition & Design Consideration
CREATE_ DATE	Not applicable	**Physical Definition:** See Design Consideration. **Design Consideration:** 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.
CREATE_ BY	Not applicable	**Physical Definition:** The UserID (BLM login ID) of the person who created or imported the data into the BLM GIS system. **Design Consideration:** This attribute will be deleted before providing the data to the public.
MODIFY_ DATE	Not applicable	**Physical Definition:** See Design Consideration. **Design Consideration:** 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.
MODIFY_BY	Not applicable	**Physical Definition:** The UserID (BLM login ID) of the person who edited or modified data in the BLM GIS system will be collected and maintained. **Design Consideration:** This attribute will be deleted before providing the data to the public.
COORD_ SRC_TYPE	Location Source Type Name	**Physical Definition:** 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. **Design Consideration:** Attribute Domain Assignment: DOM_COORD_SOURCE_TYPE *Default: UNK*
COORD_ SRC2	Location Source Description Specific Name	**Physical Definition:** The name that identifies a more specific description of the coordinate source. **Design Consideration:** Suggested values for codes appear in the domains appendix. The user may leave this value "null", choose one of the suggested codes, or enter another value appropriate to the data. 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'.

GIS Name	Logical Name	Physical Definition & Design Consideration
DEF_FET_ TYPE	Defining Feature Type Name	**Physical Definition:** The name that identifies the high-level category for the actual physical or mapping characteristics of features. (Code values are in Appendix A) **Design Consideration:** Attribute Domain Assignment: DOM_DEF_FEATURE_TYPE *Default: UNK*
DEF_FET2	Defining Feature Description Name	**Physical Definition:** The name that identifies a more specific description of the feature. **Design Consideration:** <u>Suggested</u> code values appear in the domains appendix. The user may leave this value "null", choose one of the suggested codes, or enter another value appropriate to the data. This domain is not intended to be all inclusive but may be used as a starting point for state-level lists of domain values.
ACCURACY_ FT	Line Form Accuracy Measure	**Physical Definition & Design Consideration**: The Accuracy Measurement defines how close in feet, the actual ground location is to the spatial 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 *National Standard for Spatial Data Accuracy (NSSDA)[1]* which is a data usability standard issued by the Federal Geographic Data Committee (FGDC). *Default: -1* **A value of -1 indicates that the accuracy is unknown or that no reliable estimate can be made**. Below is an **example** table of accuracy measurements. (Attempting to list all values in a domain table would produce an infinite list.) <table><tr><td colspan=2>Accuracy Measurement Example Table</td></tr><tr><td>1</td><td>+/- 1 Feet</td></tr></table>

GIS Name	Logical Name	Physical Definition & Design Consideration

10	**+/- 10 Feet**
15	**+/- 15 Feet**
20	**+/- 20 Feet**
100	**+/- 100 Feet**

1 Federal Geographic Data Committee. 1998. <u>Geospatial Positioning Accuracy Standards Part 3: National Standard for Spatial Data Accuracy</u>, FGDC-STD-007.3-1998

A. Ground Transportation Linear Features Lines (gtlf_ln)

The line features used to define the GTLF polylines are described in the following table. **Common Attributes are documented in Bold**. Design Considerations for common attributes can be found in the common attributes section.

GTLF Lines Attributes						
GIS NAME	ALIAS	DATA FORMAT	ALLOW NULLS?	DEFAULT VALUE	DOMAIN NAME	DERIVED?
FLTP_CODE	FLTP Status	Char(9)	NO	No	GTLF_DOM_FLTP_CODE	NO
DSTRBTE_EXTRNL_CODE	External Distribution Status	Char(7)	NO	Yes	*DOM_YES_NO*	NO
ADMIN_ST	Administrative State Code	Char(2)	NO		*DOM_ADMIN_ST*	NO
PLAN_ROUTE_DSGNTN_AUTH	Planned Route Designation Authority	Char(10)	NO	Unknown	GTLF_DOM_ROUTE_DSGNTN_AUTH	NO
PLAN_ASSET_CLASS	Asset Classification	Char(50)	YES	Not Assessed	GTLF_DOM_BLM_ASSET_CLASS	NO
PLAN_OHV_ROUTE_DSGNTN	Planned OHV Route Designation	Char(10)	YES	Closed	GTLF_DOM_OHV_ROUTE_DSGNTN	NO
NEPA_DOC_NUM	NEPA Document Number	Char(50)	YES			NO
ROUTE_PLAN_ID	Route Plan ID	Char(10)	YES			NO
PLAN_PRMRY_ROUTE_MNGT_OBJTV	Planned Primary Route Management Objective	Char(25)	YES	Connectivity	GTLF_DOM_PRMRY_ROUTE_MNGT_OBJTV	NO
PLAN_MODE_TRNSPRT	Planned Mode Of Transport	Char(25)	YES	Motorized	GTLF_DOM_PLAN_MODE_TRNSPRT	NO

PLAN_ADD_MODE_TR NSPRT_RSTRT_CD	Planned Additional Mode of Transport Restriction Status	Char(7)	YES	No	*DOM_YES_NO*	NO
PLAN_ACCESS_RSTRCT	Planned Access Restriction	Char(50)	YES	None	GTLF_DOM_ACCESS_RS TRCT	NO
PLAN_SEASON_RSTRC T_CODE	Planned Seasonal Restriction Status	Char(7)	YES	No	*DOM_YES_NO*	NO
OBSRVE_MODE_TRNSP RT	Observed Mode of Transport	Char(25)	YES	Motorized	GTLF_DOM_OBSRVE_M ODE_ TRNSPRT	NO
OBSRVE_SRFCE_TYPE	Observed Surface Type	Char(25)	YES	Natural Improved	GTLF_DOM_OBSRVE_S RFCE_TYPE	NO
OBSRVE_FUNC_CLASS	Observed Functional Class	Char(15)	YES	Local	GTLF_DOM_OBSRVE_F UNC_CLASS	NO
OBSRVE_ROUTE_USE_ CLASS	Observed Route Use Class	Char(50)	YES	Unknown	GTLF_DOM_ROUTE_US E_CLASS	NO
ROUTE_PRMRY_NM	Route Primary Name	Char(75)	YES			NO
ROUTE_SCNDRY_SPCL _DSGNTN_NM	Route Secondary Special Designation Name	Char(75)	YES			NO
ROUTE_SPCL_DSGNTN _TYPE	Route Special Designation Type	Char(25)	YES		GTLF_DOM_ROUTE_SPC L_DSGNTN_TYPE	NO
FAMS_ID	FAMS ID	Char(10)	YES			NO
EXSTNG_AUTH_CODE	Route Existing Authorization Status	Char(7)	YES	No	*DOM_YES_NO*	NO
GIS_MILES	GIS Miles	Double	NO	0.0		YES
BLM_MILES	BLM Miles	Double	NO	0.0		NO

COORD_SRC_TYPE	Location Source Type Name	Char(5)	NO	UNK	DOM_COORD_ SOURCE_TYPE	NO
COORD_SRC2	Location Source Description Specific Name	Char(25)	YES			NO
DEF_FET_TYPE	Defining Feature Type Name	Char(15)	NO	UNK	DOM_DEF_ FEATURE_TYPE	NO
DEF_FET2	Defining Feature Description Name	Char(30)	YES			NO
ACCURACY_FT	Line Form Accuracy Measure	Long Integer(4)	NO	-1		NO
CREATE_BY	Created By Name	Char(30)	NO			NO
CREATE_DATE	Created Date	Date	NO			NO
MODIFY_BY	Modified By Name	Char(30)	NO			NO
MODIFY_DATE	Modified Date	Date	NO			NO
GlobalID	GlobalID	UUID	NO			NO

GIS Name	Logical Name	Physical Definition & Design Considerations
FLTP_CODE	federal lands transportation program status name	**Physical Definition:** The identification of a route as part of the Federal Lands Transportation Program (FLTP) through a Yes/No/Unknown/Nominated attribute. **Design Consideration:** This particular attribute is tied to domain, GTLF_DOM_FLTP_CODE. The associated codes and descriptions with this particular domain are as follows: *No* - Route is not identified as part of FLTP *Nominated* - Route is nominated to be part of FLTP *Yes* - Route has been identified as part of FLTP *Unknown* - Unknown if route is part of FLTP *Default: No*
DSTRBTE_EXTRNL_ CODE	distribute externally name	**Physical Definition:** A flag indicating if the route should be included in a dataset provided to an external customer or shown on a map provided to an external customer. **Design Consideration:** This particular attribute is tied to global domain, DOM_YES_NO. The associated codes and descriptions with this particular domain are as follows: *Yes* - Route will be provided to external customers *No* - Route should NOT be provided to external customers. *Unknown* – Route will be provided to external customers *Default: Yes* If left blank or marked as unknown, will indicate the route should be distributed externally. The only time a route should not be provided to an external customer is if the flag is set to NO.
PLAN_ROUTE_DSGN	route	**Physical Definition:** Indicates if the ground transportation linear feature is something on

GIS Name	Logical Name	Physical Definition & Design Considerations
TN_AUTH	designation authority name	which the BLM has the authority to make a route designation. Route designation authority refers to jurisdiction of the feature. Route designation authority does not refer to ownership of the land underneath or around the feature. Route designation authority may not be known until the planning process is completed by the BLM **Design Consideration:** Route designation authority may not be known until the planning process is completed by the BLM. This particular attribute is associated with the domain, GTLF_DOM_ROUTE_DSGNTN_AUTH. The domain codes are as follows: *BLM* - BLM has route designation authority. *Non-BLM* - BLM does NOT have route designation authority. *Unknown* - Organization with route designation authority is unknown. ***Default: Unknown***

GIS Name	Logical Name	Physical Definition & Design Considerations
PLAN_ASSET_CLASS	ground transportation asset classification name	**Physical Definition:** The basic characteristics of a route including if it is part of the BLM Transportation System as a Road, Primitive Road or Trail. The route may also be a temporary route, primitive route with wilderness characteristics or in a wilderness study area. Routes which are no longer part of the BLM transportation system can be assigned as a linear disturbance. **Design Consideration:** Planned Asset Classification Name is required if BLM has the authority to make a route designation on the route and a TMP has been completed. Planned Asset Classification Name should be left NULL if planned routed designation authority is either non-BLM or Unknown. This particular attribute is associated with the domain, GTLF_DOM_ BLM_ASSET_CLASS. The domain codes are as follows: *Transportation System – Road* - Route designated for use by low-clearance vehicles having 4+ wheels and maintained for regular continuous use. *Transportation System – Primitive Road* - Route designated for use by 4-wheel drive/high-clearance vehicles. *Transportation System – Trail* - Route designated for use by human-powered, stock or off-road vehicles, or for historical/heritage values. *Temporary Route* - Undesignated route usually associated to a project with a finite lifespan. *Primitive route – WSA/LWC* - Undesignated route located within a WSA or lands with wilderness characteristics. *Linear Disturbance* - Human-made route which is not part of BLM transportation system and will not be retained. *Not Assessed* - No planning decision has been made on this route. *Default: Not Assessed*
PLAN_OHV_ROUTE_ DSGNTN	ohv route designation	**Physical Definition:** OHV designation represents the limitations, which are governed by constraints identified in the Resource Management Plan (RMP) and TMP

GIS Name	Logical Name	Physical Definition & Design Considerations
	name	recommendations that are placed on a feature with regard to use of Off-Highway Vehicles (OHV) only. Specifically meets the 43CFR8342.0-5 requirement. **Design Consideration:** This attribute is associated with domain, GTLF_DOM_OHV_ROUTE_ DSGNTN. The codes are as follows: *Open* - Open *Closed* - Closed *Limited* - Limited *Unknown* - Unknown ***Default: Closed*** Planned OHV route designation name should only be populated if planned route designation authority name is set to BLM. If a route has a planned asset classification name of Non-BLM or Unknown, planned OHV route designation name should be left NULL. In other words, if plan_asset_class_nm = 'BLM' then plan_ohv_route_dsgntn must be set to 'Open', 'Limited' or 'Closed'. Once a TMP has been completed that includes the route, 'Unknown' is no longer an acceptable value. Information is assigned as part of TMP process but may not be available until the TMP process is complete.
NEPA_DOC_NUM	nepa identifier	**Physical Definition:** Unique Identifier for the NEPA document associated with the most recent decision regarding the status and designation of a route. **Design Consideration:** Use BLM standard NEPA document number format e.g., DOI-BLM-AZ-A000-2012-0001-DNA. NEPA number format: Department - Agency - State - Field Office - Year - Document Series Number - Type of NEPA (i.e., DNA, CX, EA or EIS) Example: DOI-BLM-AZ-A000-2012-0001-DNA
ROUTE_PLAN_ID	planning document name	**Physical Definition:** The planning route ID is the unique identifier used to facilitate public comment and plan review. It provides the ability to track the exact route back to

GIS Name	Logical Name	Physical Definition & Design Considerations
		the planning document and public comments.
		Design Consideration: The unique identifier (numeric or alphanumeric) by which the route was referred to during the most recent planning/decision making process.
PLAN_PRMRY_ROUTE_MNGT_OBJTV	route management objective name	**Physical Definition:** The BLM's reason for the route. Summarizes multiple reasons into a single presentable statement. The route objective is presented in the TMP rather than just documented in the Admin Record. Will be used by future implementation and planning actions.
		Design Consideration: Planned Primary Route Management Objective Name should only be populated if route designation authority is set to BLM. Planned Primary Route Management Objective Name applies only to Road, Primitive Road, Trail, Temporary Routes and Primitive Routes-WSA/LWC.
		This attribute is associated with domain, GTLF_DOM_PRMRY_ROUTE_MNGT_OBJTV. The codes are as follows:
		Access - Access to specific location for specific task/project.
		Connectivity - Primary objective is travel between 2+ other routes.
		Experience - Primary objective is to provide for recreational experience.
		Default: Connectivity
PLAN_MODE_TRNSPRT	mode of transportation name	**Physical Definition:** Mode of transport as identified during the planning process. Indicates the general category of transportation allowed on the route.
		Design Consideration: Planned Mode of Transport is assigned as part of the TMP and is not available until the TMP is complete. Therefore, it can NOT be a required field. Planned Mode of Transport should only be populated if Planned Route Designation Authority Name is set to BLM.
		This attribute is associated with domain, GTLF_DOM_PLAN_MODE_ TRNSPRT. The codes are as follows:
		Non-Mechanized - Transport using propulsion by foot and/or stock animal. Nothing mechanized or motorized.

GIS Name	Logical Name	Physical Definition & Design Considerations
		Non-Motorized - Includes all non-mechanized forms plus mechanical forms of propulsion *Motorized* - Includes all motorized, mechanized and non-mechanized forms of transport. **Default: Motorized** Hierarchy is implied. Non-mechanized is the most restrictive mode of transport. Non-motorized is slightly less restrictive and allows for all foot and animal traffic as well as all modes of transport that do not use a motor to move vehicle. Motorized is the least restrictive mode of transport and allows all mode of transportation from foot traffic to vehicles that use motors of any kind to propel the vehicle.
PLAN_ADD_MODE_TRNSPRT_RSTRT_CD	restriction name	**Physical Definition:** Indicates if there any types of restrictions on mode of transport beyond those associated with the planned mode of transport attribute. **Design Consideration:** This attribute is associated with the global domain, DOM_YES_NO. The codes for this domain are as follows: *Yes* – some type of restriction is in place that prohibits use of the GTLF by a mode of transport normally allowed on the route (as indicated by the planned mode of transport). *No* – No restrictions on use of the GTLF beyond those associated with the planned mode of transport attribute. *Unknown* – No determination made or it is not known if there are any additional modes of transport restrictions. **Default: No** Example: A route has a planned mode of transport of Non-Mechanized which would normally allow pedestrians, horses and pack animal. However, the GTLF is limited to pedestrian use only. This flag should be set to Yes. If the route is open to all types of non-mechanized use, then the flag should be set to No.

GIS Name	Logical Name	Physical Definition & Design Considerations
PLAN_ACCESS_RSTRCT	restriction on "who" party identifier	**Physical Definition:** The restrictions on person/organizations that can access/use the route. This is the "who", not the "what" or the "when". There is an implied hierarchy to the values, with Admin Only having the most restrictive access level. "None" is the most permissive access level. The values are based on language contained in 43CFR8342.
		Design Consideration: Required if Planned Route Designation = 'BLM'. If plan_route_dsgntn_auth = 'Non-BLM' or 'Unknown', plan_access_rstrct_flg should be NULL. If plan_route_dsgntn_auth = 'BLM' then plan_addl_mode_trnsprt_rstrct_flg should be 'Yes' or 'No'. Null is not an appropriate value once a TMP has been completed.
		This attribute is associated with domain, GTLF_DOM_ACCESS_RSTRCT. The codes and descriptions for this domain are as follows:
		All - No one allowed to access.
		Admin Only - Government management uses only (BLM, Fire, etc.)
		Authorized/Permitted User Only - Permitted users, land owner, fire personnel and BLM
		Unknown - No determination made on who can use the route.
		None - No restrictions on who can use the route.
		Default: None
		There is an implied hierarchy to the values with Admin Only having the most restrictive access level. None is the most permissive access level. The values are based on language contained in 43CFR8342.
PLAN_SEASON_RSTRCT_CODE	restriction period name	**Physical Definition:** Indicates if the route is unavailable for use at some point during the year.
		Design Consideration: (Consider restriction on access restriction, vehicle type, no restriction).
		This attribute is associated with global domain, DOM_YES_NO. The codes and descriptions are as follows:

GIS Name	Logical Name	Physical Definition & Design Considerations
		Yes – route is closed at some point during the year, every year. *No* – route is available for use all year, every year. *Unknown* – no determination has been made about availability for use throughout the year. ***Default: No***
OBSRVE_MODE_TRNSPRT	mode of transportation name	**Physical Definition:** Indicates the general category of transportation observed on the route. **Design Consideration:** (Consider restriction on access restriction, vehicle type, no restriction). This attribute is associated with domain, GTLF_DOM_OBSRVE_MODE_TRNSPRT . The codes for this domain are as follows: *Non-Mechanized* - Transport using propulsion by foot and/or stock animal. Nothing mechanized or motorized. *Non-Motorized* - Includes all non-mechanized forms plus mechanical forms of propulsion *Motorized* - Includes all motorized, mechanized and non-mechanized forms of transport. *Unknown* - Unknown or unable to determine mode of transport ***Default: Motorized*** Hierarchy is implied. Non-mechanized is the most restrictive mode of transport. Non-motorized is slightly less restrictive and allows for all foot and animal traffic as well as all modes of transport that do not use a motor to move vehicle. Motorized is the least restrictive mode of transport and allows all mode of transportation from foot traffic to vehicles that use motors of any kind to propel the vehicle.
OBSRVE_SRFCE_TYPE	surface type name	**Physical Definition:** The main surface material of the ground transportation linear feature at the time the observation was made.

GIS Name	Logical Name	Physical Definition & Design Considerations
		Design Consideration: This attribute is associated with the domain, GTLF_DOM_OBSRVE_SRFCE_TYPE. The codes for this domain are as follows: *Solid Surface* - Include, not limited to, full depth asphalt, asphalt overlay, bituminous surface treatment (BST) and concrete. *Aggregate* - Any aggregate material regardless of compaction status. *Natural Improved* - Natural on-site surface that has been improved. *Natural* - Naturally occurring soils exclusive of imported roadway surfacing materials. Use if improvement of surface is unknown. *Other* - Surface material identified but does not exist elsewhere in list. *Snow* - Snow is the only surface type. *Unknown* - The surface material is unknown or undetermined. ***Default: Natural Improved***
OBSRVE_FUNC_CLASS	functional class name	**Physical Definition:** This attribute groups routes according to the type of service and amount of traffic they have. **Design Consideration:** Applies to all routes regardless of planned route designation authority name. This attribute is associated with the domain, GLTF_DOM_OBSRVE_FUNC_CLASS. The codes for this domain are as follows: *Arterial* - Provides major access/No BLM *Collector* - Connects to arterials to provide primary access *Local* - Connects to collector access *Resource* - Provides remaining access *Unknown* – Unknown

GIS Name	Logical Name	Physical Definition & Design Considerations
		Default: Local
OBSRVE_ROUTE_USE_CLASS	route suitability of use name	**Physical Definition:** Describes the observed physical suitability of use of a road in order to aid in safe travel by the public across the BLM road network. **Design Consideration:** This attribute field is associated with the domain, GTLF_DOM_ROUTE_USE_CLASS. The codes for this domain are as follows: *2wd Low* - 2wd Low Clearance Passenger Vehicle *4wd Low* - 4wd Low Clearance Vehicle *4wd High Clearance / Specialized* - 4wd High Clearance Vehicle including rock crawlers *UTV* - Any recreational motor vehicle other than an ATV, motorbike or over snow vehicle *ATV* - Any wheeled vehicle other than a over snow vehicle that travels on 3+ low-pressure tires, with a seat designed to be straddled by the operator. *Motorized Single Track* - Off-highway motorcycle that travels on 2 tires. *Non-Motorized* - Includes all non-mechanized forms plus mechanical forms of propulsion *Non-Mechanized* - Transport using propulsion by foot and/or stock animal. Nothing mechanized or motorized. *Impassable* - Roads for full-size vehicle use that are impassable. *Over Snow Vehicle* - Any of various motorized vehicles for travel on snow. *Unknown* - Route use is either unknown or undetermined. *Default: Unknown* Describes the observed **physical** suitability of use of a road in order to aid in safe travel by the public across the BLM road network. This field is **independent of management decisions.** There is an implied hierarchy with "None" being the least restrictive access level, while Impassable is the most restrictive. Values of Over Snow Vehicle and

GIS Name	Logical Name	Physical Definition & Design Considerations
		Unknown are not part of the implied hierarchy.
ROUTE_PRMRY_NM	feature name	**Physical Definition:** The name, including any numeric portion, by which the feature is known according to the person or organization contained in route ownership code attribute. **Design Consideration:** See Physical Definition.
ROUTE_SCNDRY_SP	feature name	**Physical Definition:** The name or phrase, including any numeric portion, which

GIS Name	Logical Name	Physical Definition & Design Considerations
CL_DSGNTN_NM		identifies the special designation.
		Design Consideration: If there is no special designation indicated by the route special designation type attribute, the name held by this attribute is a secondary name for the route.
ROUTE_SPCL_DSGN TN_TYPE	special designation type name	**Physical Definition:** The special designations applicable to each ground transportation linear feature.
		Design Consideration: This attribute is associated with domain, GTLF_DOM_ROUTE_SPCL_DSGNTN_TYPE. The codes for this domain are as follows:
		National Historic Trail - Part of National Trail System and recognize broad facets of history
		National Scenic Trail - Part of National Trail System, protected scenic corridors for recreation
		BLM Back Country Byway - Designated as part of BLM Back Country Byway system through RMP
		National Recreation Trail - Part of National Trail System, vary in length, terrain, difficulty, and accessibility
		Default: Null
		If a route has an administrative state specified special designation type that is not in the domain list, leave this attribute NULL.
FAMS_ID	facility identifier	**Physical Definition:** The primary key in the Facility Asset Management System that will uniquely identify a single occurrence of the entity.
		Design Consideration: Required for every route that is in FAMS. The FAMS ID attribute can be used to link to the FAMS database using the FAMS equipment number (a.k.a. Segment Asset ID number). FAMS ID does not link to the FAMS Asset ID number.
EXSTNG_AUTH_COD	authorization	**Physical Definition:** Indicates the existence of an easement, Right-of-Way (ROW),

GIS Name	Logical Name	Physical Definition & Design Considerations
E	identifier	Reciprocal Right-Of-Way (RROW) or similar authorizations. **Design Consideration:** This attribute is associated with global domain, DOM_YES_NO. The codes for this domain are as follows: *Yes* - At least one authorization exists on the route. *No* - No authorizations exist on the route. *Unknown* – It is unknown if any authorizations exist on the route. ***Default: No***

APPENDIX A: DOMAIN VALUES

For domains specific to this standard, see GTLF Domain Document.

For Feature Level Metadata Domains, please see the [Feature Level Metadata Domains](#) reference document located on the National Data Standards SharePoint under the "Standards Support Information" tab.

APPENDIX B: ATTRIBUTE METADATA TERMINOLOGY

The following matrix describes the metadata for the Data Standards Implementation Details.		
Attribute Metadata Field	**Metadata Definition**	**Example**
GIS Name	The abbreviated name of the field as it appears in the database.	RCVR_TYPE
Alias	An alternative name that is more descriptive and user-friendly than the Logical or GIS Field Name.	GPS RECEIVER TYPE
Data Format	Specific type of data allowed/# of characters or numbers/Precision & Scale.	Char(15)
Allow Nulls?	If an attribute is or is not allowed to have a "Null"value. If "NO", the attribute is required, if "YES", the attribute is optional.	NO
Default Value	Value that will apply if no other value is specified; included in domain value list.	N/A
Domain Name	Name of the table for that attribute, containing the Code, Description, and Definition for each value in the table.	DOM_RCVR_TYPE
Derived?	If the attribute value is derived from the value of one or more other attribute values (YES) otherwise, (NO) the value is not derived. The description of how the attribute is derived will be included in the Definition/Design Consideration.	NO
Logical Attribute Name	The business name of the attribute which includes the entity name, and representation term. Definitions for Logical Attributes can be found in the Data Standard Report.	Global Positioning System Receiver Type Name

REVISION HISTORY

VERSION NO.	VERSION TYPE	DATE	PURPOSE
2.0	Original		
2.0	Revision	7/9/2014	Update to incorporate changes made to LDM at C. Hawkinson's request. Added topology rules.
2.0	Revision	9/16/2014	Updated common attributes. Updated physical data model to address comments received during external review.
2.0	Revision	10/22/2014	Changed standard name and all references from Ground Transportation Features (gtf) to Ground Transportation Linear Features (gtlf).

VERSION 2.0 MODIFICATIONS

SECTION	PG	DESCRIPTION OF EDIT	CHANGE REQUESTED
Ground Transportation Features (gtf_ln)	25	Changed Default Value to Unknown.	OBSRVE_ROUTE_USE_CLASS - Make default Unknown
Ground Transportation Features (gtf_ln)	18	Changed to Non-BLM	PLAN_ASSET_CLASS - Change BLM to Non-BLM.
Ground Transportation Features (gtf_ln)	18	Removed Interim Legislative	PLAN_ASSET_CLASS - Remove Interim Legislative.
Ground Transportation Features (gtf_ln)	17	Updated Physical Definition	Modify PLAN_ROUTE_DSGNTN_AUTH Physical Definition.
Ground Transportation Features (gtf_ln)	13	Changed to "NEPA"	NEPA_DOC_NUM - Change "nepa" to all caps.

Ground Transportation Features (gtf_ln)	14	Changed field name	Shorten attribute field name PLAN_ADD_MODE_TRNSPRT_RSTRT_CD.
Ground Transportation Features (gtf_ln)	22	Added "All" value to attribute domain	PLAN_ACCESS_RSTRCT - An "All" attribute value is needed.
Ground Transportation Features (gtf_ln)	22	Joined Authorized and Permitted User Only values.	PLAN_ACCESS_RSTRCT - Join Authorized and Permitted User Only values.
Ground Transportation Features (gtf_ln)	22	Updated Physical Definition	Update PLAN_ACCESS_RSTRCT Physical Definition.
Ground Transportation Features (gtf_ln)	25	Updated to "Over Snow Vehicle"	Update OBSRVE_ROUTE_USE_CLASS Snowmobile attribute value.
Ground Transportation Features (gtf_ln)	25	Default Value updated to "Unknown"	Update OBSRVE_ROUTE_USE_CLASS Default Value.
Design Considerations	4	Included all descriptions in BLM Asset Classification domain.	Expand description of GTF.
Topology	7	Removed 2nd sentence.	Remove 2nd sentence of 1st paragraph.
Topology	7	Removed 2nd sentence.	Remove 2nd sentence of 2nd paragraph.
Ground Transportation Features (gtf_ln)	16	Modified physical definition.	Modify FLTP_CODE physical definition.
Ground Transportation			

Ground Transportation Features (gtf_ln)	25	Modified design considerations.	Modify OBSRVE_ROUTE_USE_CLASS design consideration.
Ground Transportation Features (gtf_ln)	27	Modified domain values.	Modify domain code values for ROUTE_SPCL_DSGNTN_TYPE
Ground Transportation Features (gtf_ln)	27	Inserted statement for cross-walking to Null.	Insert ROUTE_SPCL_DSGNTN_TYPE guidance statement for cross-walk.
Ground Transportation Features (gtf_ln)	16	Domain values rearranged.	Rearrange domain values for FLTP_CODE domain.
Ground Transportation Features (gtf_ln)	17	Updated physical definition.	Update PLAN_ROUTE_DSGNTN_AUTH physical definition.
Ground Transportation Features (gtf_ln)	20/21	Updated hierarchy.	PLAN_MODE_TRNSPRT - Update domain hierarchy for GTF_DOM_PLAN_MODE_ TRNSPRT
Ground Transportation Features (gtf_ln)	23	Updated hierarchy.	OBSRVE_MODE_TRNSPRT - Update domain hierarchy for GTF_DOM_OBSRVE_MODE_ TRNSPRT
Topology	7	Removed Must Not Self-Overlap topology rule.	Remove Must Not Self-Overlap topology rule.
Topology	7	Added Must Be Single Part topology rule.	Add Must Be Single Part topology rule.
Physical Database Diagram	6	Updated physical data model to reflect the most recent changes to the GDB.	Update physical data model.

Ground Transportation Features (gtf_ln)	14	Increased character allowance to 50.	Update OBSRVE_ROUTE_USE_CLASS character allowance.
Ground Transportation Features (gtf_ln)	14	Updated default value to Unknown.	Update OBSRVE_ROUTE_USE_CLASS default value.
Ground Transportation Features (gtf_ln)	14	Increased character allowance to 75.	Update ROUTE_PRMRY_NM character allowance.
Ground Transportation Features (gtf_ln)	14	Increased character allowance to 75.	Update ROUTE_SCNDRY_SPCL_DSGN TN_NM character allowance.
Ground Transportation Features (gtf_ln)	14	Removed NULL from default value.	Remove NULL from ROUTE_SPCL_DSGNTN_TYPE default value as the field allows null values by default.
Ground Transportation Features (gtf_ln)	28	Updated Default Value, updated domain code descriptions.	EXSTNG_AUTH_CODE – Update Default Value, update domain code descriptions.
Ground Transportation Features (gtf_ln)	11	Restated definitions for feature level metadata attributes.	Remove "arcs" from definition as this standard will incorporate feature level metadata attributes directly into the polyline feature class.
All	All	Removed "linear" from naming convention. Replaced "gtlf" with "gtf".	Remove "linear" from naming convention as it applies to Ground Transportation Features. Replace "gtlf" with "gtf".

All	All	Reinstated "linear" into naming convention. Replaced "gtf" with "gtlf".	Added "linear" into naming convention as it applies to Ground Transportation Linear Features. Replaced "gtf" with "gtlf".