

Minnesota Geospatial Advisory Council

Trails and Bikeways Data Standard

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Approved for public review by the MN GAC Standards Committee on 9/2/2020

This draft of the standard is made available for public review from Wednesday, September 23, 2020 **through Wednesday, December 23, 2020**

Please send comments and suggestions on changes to this standard to the Standards Committee via email **by December 23, 2020**. Send comments to: gisinfo.mngeo@state.mn.us

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About the GAC

The mission of the Minnesota Geospatial Advisory Council (GAC) is to act as a coordinating body for the Minnesota geospatial community. The GAC is authorized by legislation passed in 2009 and reauthorized in 2014 Minnesota Statutes (16E.30, subd. 8). It represents a cross-section of organizations that include city, county, regional, state, federal and tribal governments as well as education, business and nonprofit sectors.

As part of this mission, the GAC works with the Minnesota geospatial community to define and adopt standards needed by the community. GAC standards are developed and proposed by geospatial community subject matter experts. The GAC's Standards Committee administers a process to ensure community-wide public review and input for any proposed standards.

The GAC does not mandate or enforce standards. It offers the standards as a resource to the community. Organizations may choose to adopt the standards and require their use internally.

Introduction

Trails and bikeways data are a key component of mapping, planning, measuring and engineering for multimodal transportation and recreation infrastructure. Having standardized specifications for sharing, converting and organizing trails and bikeways information makes these processes more efficient while providing decision-makers with the information they need to do their jobs effectively.

This standard establishes a common set of attributes and field definitions for local, regional and state governments and other partner organizations to utilize for trails and bikeways data sharing in Minnesota.

Purpose of this Standard

The purpose of this standard is to provide a single, commonly accepted set of attribute specifications (field name, type, and length) for transferring and aggregating trails and bikeways data in Minnesota for a wide variety of purposes. It is intended to be used when data are being transferred between organizations. Its use will improve the ability to share data resources by reducing incompatibilities when acquiring, processing, and disseminating trails and bikeways data.

A secondary goal of this standard is to support the establishment of a repeatable process for improving inventory and knowledge of what trail and bicycle facilities exist in Minnesota. This inventory will be useful to local, regional and state governments for identifying network gaps within and between jurisdictions, easing data transfer between all levels of government and across partnering stakeholder organizations, and providing data critical for level of service, level of traffic stress and other network evaluations.

Applicability

Data producers may have unique methods, definitions, and criteria for capture and storage of trail and bikeway data that satisfy their own business requirements. This standard seeks to establish attribute specifications for data exchange purposes. It does not attempt to define internal data capture or storage specifications for data producers, though some may find benefit in storing data in this format. Organizations within Minnesota are encouraged to adopt this standard for purposes of data exchange.

Sources of this Standard

The proposed standard draws heavily from the [Metro Collaborative Trails and Bikeways data](#) specifications that were developed by the seven Metropolitan Counties and Metropolitan Council, working through MetroGIS beginning in fall 2016. The [National Recreation and Park Association](#) standard was slightly modified and forms the basis of the Metro Collaborative Trails and Bikeways specifications which support the collective business needs of the MetroGIS collaborative parties.

Compliance Notes

Organizations in Minnesota are encouraged to adopt and comply with this standard for purposes of data exchange. Some data producing organizations choosing to comply with the standard collect all data included in the standard. Other organizations collect only some of the data and may choose to work toward full compliance over time. A dataset that fully complies with this standard will consist of geospatial lines with all attribute fields specified in this standard. It will also comply with the inclusion, mixed case, abbreviation and domain specifications of this standard.

Inclusion

Inclusion is a term used to explain the requirement for a field to be populated in a dataset to comply with the standard. Four types of inclusion are possible: Mandatory, Conditional, If Available, and Optional.

Mandatory

Field must be populated for each record to be compliant with Standard. Null values are not allowed.

Example: General Route Type is a Mandatory field in this standard. If General Route Type values are missing, the database does not comply with the Trails and Bikeways Data Standard.

Conditional

Each field must be populated with a non-null value for each record that is applicable to the feature or for which a specified condition exists.

Example: Not all trails or bikeways will have a National Designation. However, when one does the field must be populated to comply with this standard.

Optional

Field is not required to be populated.

Mixed Case

Like other GAC standards, all field values in this standard will use a mixed case format. Some end users may want an all-caps format for a specific purpose. Data may be converted to all caps by end users if desired. It is more difficult to automatically convert all caps back to mixed case.

Abbreviations

All field values in this standard must be spelled out unless specifically defined otherwise in the field description. This is done to remove ambiguity and better align with other existing standards.

Domains

Several domain tables accompany this standard in a [spreadsheet available at this link](#). To comply with this standard, a trails and bikeways dataset must use the codes from specified domains, but it does not need to include the domain tables with the data. If a local value exists that is not included in a domain (e.g. a facility type), it may be submitted to the MN Geospatial Advisory Council, [Standards Committee](#) to be included in the domain. Domains will be updated on a periodic basis, as needed. The date of the most recent change to each domain table is included in the spreadsheet.

Data Element Details

Appendix A: MN GAC Trails and Bikeways Data Standard Schema Spreadsheet

Appendix A is a [spreadsheet available at this link](#) showing the schema for this standard. It includes all data elements in the standard, with field name, type, width and other important information about each data element.

1. Identification Elements

1.1 Feature Unique ID

Database Name	UNIQUE_ID		
Data Type	String	Inclusion	Mandatory
Width	36	Domain	
Examples	28A7BCD3-2AD1-46BF-B34F-DE1ABBE1ABD8		
Description	A 36-character unique identifier for each record generated using a standardized process to ensure a minimum probability of duplication.		

2. Primary Feature Elements

2.1 Trail Name

Database Name	TRAILNAME		
Data Type	String	Inclusion	Conditional
Width	150	Domain	
Examples	Luce Line State Trail, Luce Line Regional Trail		
Description	Proper name of the trail or trail segment.		

2.2 Trail System Name

Database Name	TRLSYSNAME		
Data Type	String	Inclusion	Conditional
Width	150	Domain	
Examples	Grand Rounds Scenic Byway System		
Description	Name of the overall trail system that may be comprised of multiple trails.		

2.3 Shared Name

Database Name	SHAREDNAME		
Data Type	String	Inclusion	Conditional
Width	150	Domain	
Examples	Luce Line Trail, Winter Recreation Trail		
Description	Alternate trail name that is used when the trail is part of more than one route or has more than one use.		

2.4 On or Off Street

Database Name	ONOFF_STREET		
Data Type	String	Inclusion	Mandatory
Width	15	Domain	OnOffStreet
Examples	On-Street, Off-Street		
Description	Whether the facility route is located on-street or off-street.		

2.5 General Facility Type

Database Name	GEN_FACTYPE		
Data Type	String	Inclusion	Mandatory
Width	75	Domain	GenFacilityType
Examples	Bike Lane, Mountain Bike		
Description	This field indicates the facility's main function.		

2.6 Facility Type

Database Name	FACTYPE		
Data Type	String	Inclusion	Conditional
Width	75	Domain	FacilityType
Examples	Bike Boulevard, Cycle Track		
Description	This field indicates the facility's secondary, more specific function.		

3. Ownership and Administration Elements

3.1 Federal System

Database Name	FED_SYS		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether the facility is part of the federal system. Trails can be managed by a federal agency without being given a national designation.		

3.2 National Designation

Database Name	NATION_SYS		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether the facility has a national trail designation (i.e. historic, scenic, recreation, millennium, or legacy).		

3.3 State System

Database Name	STATE_SYS		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether the facility is part of a state system.		

3.4 Regional System

Database Name	REGION_SYS		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether the facility is part of a regional system.		

3.5 County System

Database Name	COUNTY_SYS		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether the facility is part of a county system.		

3.6 Local System

Database Name	LOCAL_SYS		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether the facility is part of a local/municipal system.		

3.7 Tribal System

Database Name	TRIBAL_SYS		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether the facility is part of a tribal organization system.		

3.8 Private System

Database Name	PRIV_SYS		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether the facility is part of a private system.		

3.9 Landowner

Database Name	LANDOWNER		
Data Type	String	Inclusion	Optional
Width	150	Domain	
Examples	City of St. Paul, White Bear Township		
Description	Owner of the land beneath the facility.		

3.10 Landowner Type

Database Name	OWNERTYPE		
Data Type	String	Inclusion	Conditional
Width	20	Domain	LandownerType
Examples	County, School District		
Description	Type of entity which owns the land beneath the facility.		

3.11 Managing Agency

Database Name	AGENCYNAME		
Data Type	String	Inclusion	Optional
Width	150	Domain	
Examples	Three Rivers Park District, Jonathan Association		
Description	Name of the facility's managing or administrative agency. This may be different from the landowner.		

3.12 Agency Type

Database Name	AGCY_TYPE		
Data Type	String	Inclusion	Conditional
Width	20	Domain	LandownerType
Examples	Regional Government, Unknown		
Description	Type of the facility's managing or administrative agency.		

4. Location Elements

4.1 CTU Name

Database Name	CTU_NAME		
Data Type	String	Inclusion	Mandatory
Width	100	Domain	CTUName
Examples	Stillwater, Camden Township		
Description	City, township or unorganized territory where the facility is physically located.		

4.2 County Code

Database Name	CO_CODE		
Data Type	String	Inclusion	Mandatory
Width	5	Domain	CountyCode
Examples	27003 (Anoka), 27163 (Washington)		
Description	County where the facility is physically located.		

4.3 State Code

Database Name	STATE_CODE		
Data Type	String	Inclusion	Mandatory
Width	2	Domain	StateCode
Examples	MN		
Description	State where the facility is physically located.		

5. Access and Descriptive Elements

5.1 Trail Status

Database Name	TRLSTATUS		
Data Type	String	Inclusion	Optional
Width	50	Domain	TrailStatus
Examples	Open, Planned, Closed, Construction		
Description	Current status of the facility. That is, if and how the facility is available to users.		

5.2 Trail Surface Type

Database Name	TRAIL_SURF		
Data Type	String	Inclusion	Optional
Width	50	Domain	TrailSurface
Examples	Concrete, Asphalt/Bituminous, Wood Chips		
Description	The predominant surface type users would expect to encounter on the facility.		

5.3 Year Programmed

Database Name	YEAR_PRGRM		
Data Type	Short Integer	Inclusion	Optional
Width	4	Domain	
Examples	2020, 2025		
Description	Year that the facility is programmed for construction or funding.		

5.4 Year Open

Database Name	YEAR_OPEN		
Data Type	Short Integer	Inclusion	Optional
Width	4	Domain	
Examples	1994, 2008		
Description	Year that the facility opened for use.		

5.5 Width in Feet

Database Name	WIDTH_FT		
Data Type	Double	Inclusion	Optional
Width	default	Domain	
Examples	6.5, 8		
Description	Width of the facility segment in feet. May be approximated if there are frequent changes in width.		

5.6 Seasonal Accessibility

Database Name	SEASNL_ACC		
Data Type	String	Inclusion	Optional
Width	20	Domain	SeasonalAccess
Examples	All Year Round, Summer Only, Winter Only		
Description	Whether the facility is open for seasonal or year-round use.		

6. Trail Amenity Elements

6.1 Pavement Markings Present

Database Name	PVMNTMARKS		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether pavement marking exists along the facility. Pavement markings exist on roads or trails to: reinforce bikeway or trail routes, separate modes of transport (e.g. vehicles vs. bicycles vs. pedestrians), separate traffic direction, or help users navigate the route.		

6.2 Lighting

Database Name	LIGHTING		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether lighting exists along the facility segment.		

7. Safety Elements

7.1 Protected System

Database Name	PROT_SYS		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether the facility is part of a protected system. A protected facility is typically an on-street bicycle lane that has physical separation from vehicles, such as bollards.		

7.2 Cable Barrier

Database Name	CABLE_BR		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether a cable barrier exists along the facility segment.		

7.3 Guardrail

Database Name	GUARDRAIL		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether a guardrail exists along the facility segment.		

7.4 Rumble Strips

Database Name	RMBL_STRIPS		
Data Type	String	Inclusion	Mandatory
Width	10	Domain	YesNoUnknown
Examples	Yes, No, Unknown		
Description	Whether rumble strips (any type) exist along the facility segment.		

8. Data Maintenance Elements

8.1 – Trail URL

Database Name	TRAIL_URL		
Data Type	String	Inclusion	Optional
Width	255	Domain	
Examples	https://www.threeriversparks.org/location/cedar-lake-farm-regional-park		
Description	Link to a website with information about the facility.		

8.2 – Data Source

Database Name	DATASOURCE		
Data Type	String	Inclusion	Mandatory
Width	50	Domain	TrailDataSource
Examples	Google Maps, Local Imagery, Site Visit		
Description	The source of the data, as input by the Data Author.		

8.3 – Editing Organization

Database Name	EDIT_ORG		
Data Type	String	Inclusion	Mandatory
Width	100	Domain	
Examples			
Description	The organization that made the last substantial change to the data record including geospatial edits. Note: This is not intended to be used to identify an aggregating organization that ran a batch process to populate fields derived from existing data (e.g. populating the State Code).		

8.4 – Edit Date

Database Name	EDIT_DATE		
Data Type	Date	Inclusion	Mandatory
Width	default	Domain	
Examples	4/5/2018 4:34:15 PM		
Description	The date of the last substantial change to the data record including geospatial edits. Note: This is not intended to be used to identify the date a batch process was used to populate fields derived from existing data (e.g. populating the State Code).		

8.5 – Comments

Database Name	COMMENTS		
Data Type	String	Inclusion	Optional
Width	255	Domain	
Examples			
Description	A general comments field for additional notes.		

Appendix A: MN GAC Trails and Bikeways Data Standard Schema

Appendix A is a [spreadsheet available at this link](#) showing the schema for this standard. It includes all the data elements in the standard, with field name, type, width and other important information about each data element.

Appendix B: MN GAC Standards Domains

Appendix B is a [spreadsheet available at this link](#) showing all the domain tables used in Minnesota Geospatial Advisory Council standards. It includes a tab showing when each domain table was last updated.

Appendix C: MN GAC Standard Lookup Tables

Appendix C is a [spreadsheet available at this link](#) showing all the lookup tables used in Minnesota Geospatial Advisory Council standards. It includes a tab showing when each table was last updated.