# Idaho Technology Authority (ITA)

# Enterprise standards – s4000 INFORMATION AND DATA

## Category: S4245 – Idaho Trails Data Standard

**contents:**

I. [Definition](#Definition)

II. [Rationale](#Rationale)

III. [Approved Standard(s)](#Approved_Standards)

IV. [Approved Product(s)](#Approved_Products)

V. [Justification](#Justification)

VI. [Technical and Implementation Considerations](#Technical_Considerations)

VII. [Emerging Trends and Architectural Directions](#Emerging_Trends)

VIII. Procedure Reference

IX. [Review Cycle](#Review_Cycle)

X. Contact Information

XI. Additional Information (if any)

[Revision History](#Revision_History)

**I.** **Definition**

See ITA Guideline G105 (ITA Glossary of Terms) for definitions

**ii.** **Rationale**

A statewide Trail data layer is a critical source of information for Recreation, Tourism and more. Many private sector and local, state, and federal government agencies have business needs for a Trails Framework.

A Trail Standard is intended to facilitate integration and sharing of up to date Trail data and enhance the dissemination and use of Trail information.

**iii.** **APPROVED STANDARD(S)**

See attachment, included in this document

**iV.** **APPROVED PRODUCTS(S)**

GIS Software used in Idaho can generate and consume the specified file format.

**V.** **JUSTIFICATION**

GIS Data Standardization is an important component of the Idaho Spatial Data Infrastructure. This Trail Standard will help facilitate integration, consumption and sharing of spatial and tabular trail information in Idaho.

**VI.** **Technical and Implementation Considerations**

This standard requires a minimum of information to share and integrate trail information with existing Geographic Information Systems. Because Trail data is provided in different formats, including as a web service the ability to downloadable this data in different GIS formats, few jurisdictions will have difficulty implementing the standard. Additionally, standardized trail information is also available on ready-to-view web mapping applications hosted by the Idaho Department of Parks and Recreation.

**VII.** **emerging trends and architectural directions**

The data is, among other formats, also provided as a REST service which is consistent with the latest trends in GIS technology.

**VIIi.** **Procedure reference**

The format, content and development of this standard adhere to Policy P5030 for Framework Standards.

**ix. review cycle**

Review will occur as needed

**X. CONTACT INFORMATION**

For more information, contact the ITA Staff at (208) 605-4064.

**Revision History**

Effective Date: March 18, 2021



STATE OF IDAHO

**Idaho Trails Data Exchange Standard**

Part of the Trails to the Transportation Framework Theme

Version 1

Effective Month Day, 2021

Revision History

First draft generated by Idaho Parks and Recreation and Chair IGC-EC

CONTENT

[1. Introduction to the Trail Data Exchange Standard 3](#_Toc66351961)

[1.1. Mission and Goals of the Standard 3](#_Toc66351962)

[1.2. Relationship to Existing Standards 3](#_Toc66351963)

[1.3. Description of the Standard 3](#_Toc66351964)

[1.4. Applicability and Intended Uses 4](#_Toc66351965)

[1.5. Standard Development Process 4](#_Toc66351966)

[1.6. Maintenance of the Standard 4](#_Toc66351967)

[2. Body of the Standard 5](#_Toc66351968)

[2.1. Scope and Content 5](#_Toc66351969)

[2.2. Need 5](#_Toc66351970)

[2.3. Participation in the Standard Development 5](#_Toc66351971)

[2.4. Integration with Other Standards 5](#_Toc66351972)

[2.5. Technical and Operation Context 5](#_Toc66351973)

[2.5.1. Data Environment 5](#_Toc66351974)

[2.5.2. Reference Systems 6](#_Toc66351975)

[2.5.3. Global Positioning Systems (GPS) 6](#_Toc66351976)

[2.5.4. Interdependence of Themes 6](#_Toc66351977)

[2.5.5. Encoding 6](#_Toc66351978)

[2.5.6. Resolution 6](#_Toc66351979)

[2.5.7. Accuracy 6](#_Toc66351980)

[2.5.8. Edge Matching 7](#_Toc66351981)

[2.5.9. Unique Identifier 7](#_Toc66351982)

[2.5.10. Attributes 7](#_Toc66351983)

[2.5.11. Stewardship 7](#_Toc66351984)

[2.5.12. Records Management and Archiving 7](#_Toc66351985)

[2.5.13. Metadata 7](#_Toc66351986)

[3. Data Characteristics 8](#_Toc66351987)

[3.1. Minimum Graphic Data Elements 8](#_Toc66351988)

[3.2. Optional Graphic Data Elements 8](#_Toc66351989)

[3.3. Standard Attribute Schema 8](#_Toc66351990)

[3.4. Data Quality 9](#_Toc66351991)

[Appendix A: References 10](#_Toc66351992)

[Appendix B: Glossary 10](#_Toc66351993)

1. **Introduction to the Trail Data Exchange Standard**

A statewide Trail data layer is a critical source of information for Recreation, Tourism and more. Many private sector and local, state, and federal government agencies have business needs for a Trails Framework.

A Trail Standard is intended to facilitate integration and sharing of up to date Trail data and enhance the dissemination and use of Trail information. This standard does not instruct on how Trail databases are designed for internal use.

This standard was developed by the Idaho Department of Parks and Creation in collaboration with the Chair of the IGC-EC. This standard will be reviewed on a regular basis and updated as needed.

* 1. **Mission and Goals of the Standard**

The Trail Standard supports a statewide dataset that is consistent with applicable state and national standards. It establishes the minimum attributes and geospatial database schema for the Trail Framework. The Standard will communicate with and may have similar attributes to other Idaho Framework data standards. It encourages all Idaho-based agencies with geospatial Trail data to contribute to Trail Framework.

The Trail Framework will be appropriately shared for the benefit of all. The fields in the Trail Data Exchange Standard will be general enough to incorporate basic information without requiring major changes in internal data models. This standard allows for expansion to a more complex data structure and schema.

* 1. **Relationship to Existing Standards**

1. This Trail Exchange Standard relates to existing standards as follows: The Idaho Trails Standard relates to the standard following FGDC Guidelines.
   1. **Description of the Standard**

This standard describes the vision and geospatial data structure of a Trail Framework in the state of Idaho. This standard is devised to be:

* Simple, easy to understand, and logical
* Uniformly applicable, whenever possible
* Flexible and capable of accommodating future expansions
* Dynamic in terms of continuous review
  1. **Applicability and Intended Uses**

This standard applies to the Trail element of the Transportation Framework theme of The Idaho Map (TIM).

When implemented, it will enable access to geometry and attribute information about Idaho Trails. It will increase interoperability between automated geographic information systems and enable sharing and efficient transfer of information for aggregation. Further, it will encourage partnerships between government, the private sector, and the public in order to avoid duplication of effort and ensure effective management of information resources. It will help improve Trail data quality as errors are identified and resolved.

This standard does not consider data sharing agreements, contracts, transactions, privacy concerns, or any other issues relating to the acquisition and dissemination of Trail data.

* 1. **Standard Development Process**

The Trail Workgroup, a subgroup of the Transportation Framework TWG, is a voluntary group of private, city, county, tribal, state, and federal representatives. In 2020 the Trail Lead at the Idaho Department of Parks and Recreation used the Survey123 developed by the IGC-EC to develop the first draft of this standard. This standard was then reviewed and edited by the Authoritative Source of the Trails data in Idaho, i.e. the GIS Analyst at the Idaho Department of Parks and Recreation.

After initial the development the draft standard document was shared with the IGC-EC and IGC in accordance with the review and approval process described in ITA’s Framework Standards Development Policy (P5030).

The standard was presented to the IGC-EC in January 2021 and approved by the IGC-EC in March 2021.

* 1. **Maintenance of the Standard**

This standard will be revised as needed and in accordance with the ITA Framework Standards Development Policy (P5030).

1. **Body of the Standard**
   1. **Scope and Content**

The scope of the Trail Data Exchange Standard is to describe a statewide layer which identifies the physical locations and attributes of Trails in Idaho.

* 1. **Need**

Trails are a key dataset needed for Recreation, Tourism. This standard provides the foundation to aggregate Trail data for centralized access and stewardship information.

* 1. **Participation in the Standard Development**

The development of the Trail Data Exchange Standard adheres to the IGC-EC Framework Standards Development Policy (P5030). The Trail Standard Team tasked with developing this standard represents a State Organization. As the standard is reviewed in accordance with Policy P5030 requirements, there will be opportunity for broad participation and input by stakeholders in the development of this standard. The process will be equally broad for input on updates and enhancements to the standard. As with all Idaho Framework standards, public review and comments on the Trail Data Exchange Standard is encouraged.

* 1. **Integration with Other Standards**

The Trail Data Exchange Standard follows the same format as other Idaho geospatial framework data standards. The Trail standard may contain some of the same attributes as other framework standards and may adopt the field name, definition, and domain from the other standards to promote consistency.

* 1. **Technical and Operation Context**
     1. **Data Environment**

The data environment is a digital Map/App with a specific, standardized set of attributes pertinent to the Trail Framework. Trail data shared under this standard must be in a format supporting digital Map/App.

* + 1. **Reference Systems**

The Trail Framework will be published in the Idaho Transverse Mercator (IDTM) NAD83 coordinate system, which is the State of Idaho’s single-zone coordinate system. Data is not required to be submitted in the ITDM coordinate system but must have a defined coordinate system clearly described in the metadata.

* + 1. **Global Positioning Systems (GPS)**

Some data provided might contain geometry from GPS methods, and the provided metadata should describe this, if applicable. However, geometry from a GPS is not required to meet this standard.

* + 1. **Interdependence of Themes**

Trail geometry may be coincident with other framework data, such as roads. Currently there is no enforcement of coincidence or topology relationships between Trail Framework and other Idaho Framework elements.

* + 1. **Encoding**

When data is imported into and exported from the Trail Framework, encoding will take place to convert data formats and attributes.

* + 1. **Resolution**

No specific requirements for resolution are specified in this standard. Resolution will be documented in the metadata.

* + 1. **Accuracy**

It is essential that all aspects of the data be completely documented. Spatial products which conform to the National Standard for Spatial Data Accuracy should be used for source material in digital data capture if available and appropriate.

* + 1. **Edge Matching**

No edge matching is required between jurisdictions, or between this and other framework layers

* + 1. **Unique Identifier**

The unique identifier is the OBJECTID in combination of the name of the layer.

* + 1. **Attributes**

Attributes for public and intergovernmental distribution are described in Section 3 of this standard.

* + 1. **Stewardship**

Perpetual maintenance and other aspects of lifecycle management are essential to Trail Framework. Details of stewards, their roles and responsibilities, and processes are set forth in a Trail Framework Stewardship Plan and related documents.

* + 1. **Records Management and Archiving**

The dataset is published to the State of Idaho GIS Server at <https://gis2.idaho.gov/arcgis/rest/services/DPR/Idaho_Trails_Map/MapServer>. There is also a frequently maintain a map package of the app on ArcGIS Online at <https://idaho.maps.arcgis.com/home/item.html?id=27b6c7f418ff4881abb9854d3fb9412d>. The application designed to display the Trail data is located at <https://idaho.maps.arcgis.com/home/item.html?id=ec451196747346558c999bc7cdf1a728>

* + 1. **Metadata**

The Trail Framework metadata will describe the methods used to update and aggregate the individual Trail data contributions, processes or crosswalks performed, definition of attributes, and other required information. This metadata will conform to the metadata standards as set out in S4220 – GEOSPATIAL METADATA.

1. **Data Characteristics**
   1. **Minimum Graphic Data Elements**

The geometry of the features in Trail Framework is digital Map/App

* 1. **Optional Graphic Data Elements**

Not applicable.

* 1. **Standard Attribute Schema**

The trails data is organized as a collection of the following datasets:

3.3.1: Trailheads (Point Layer)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Length** | **Description** | **Examples** |
| OBJECTID | OID |  | System Generated ID | 25 |
| SITE\_NAME | Text | 254 | Name of the trail connected to the trailhead | Bear Basin, Hard Creek |
| SITE\_TYPE | Text | 254 | Type of marker | Trailhead |

3.3.2: Emergency Closures (Line)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Length** | **Description** | **Examples** |
| OBJECTID | OID |  | System Generated ID | 25 |
| ID | Text | 30 | Identification number for…. | 7868 |
| NAME | Text | 254 | Name assigned to the emergency closure | Buttars Springs |
| SYMBOL | Double |  | Number associated with symbol type | 7.00 |
| JURISDICTION |  | 40 | Management Agency | FS – Forest Service |
| OFFICE |  | 35 | Office within Agency responsible | Minidoka Ranger Distr. |
| OFFICE\_PHONE |  | 15 | Phone number of agency office responsible | (208) 678-0430 |
| OFFICE\_URL |  | 100 | Website of the office responsible | https://www.fs.usda.gov/sawtooth |
| Alerts |  | 200 | URL to a more information about the alert | https://www.fs.usda.gov/alerts/sawtooth/alerts-notices |
| SHERIFF\_PHONE |  | 15 | Phone number of the local Sheriff | (208) 878-9327 |
| MILES | Double |  | Length of trail closure in Miles | 0.30 |

3.3.3: Highway Legal, Highway Legal Seasonal, Automobile Seasonal, Jeep, Jeep Seasonal, Special Vehicle Designations, ATV, ATV Seasonal, Non-Motorized and Other Roads (Line)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Field Name** | **Data Type** | **Length** | **Description** | **Examples** |
| OBJECTID | OID |  | System Generated ID | 25 |
| ID | Text | 30 | Identification associated with the trail | 568 |
| NAME | Text | 254 | Name of the Trail | Snake Ridge |
| SYMBOL | Double |  | Number associated with symbol type | 7.00 |
| JURISDICTION | Text | 40 | Management Agency | FS – Forest Service |
| SEASONAL | Text | 30 | Seasonal Closure of the Trail | Yearlong, Dates Open |
| AUTOMOBILE | Text | 254 | Dates between which the Trail is Open for Automobiles | 01/01 – 09/30 |
| JEEP | Text | 254 | Dates between which the Trail is Open for Jeeps | 01/01 – 09/30 |
| UTV | Text | 254 | Dates between which the Trail is Open for UTVs | 01/01 – 09/30 |
| ATV | Text | 254 | Dates between which the Trail is Open for ATVs | 01/01 – 09/30 |
| MOTORCYCLE | Text | 254 | Dates between which the Trail is Open for Motorcycles | 01/01 – 09/30 |
| OFFICE | Text | 50 | Office within Agency responsible | Minidoka Ranger Distr. |
| OFFICE\_PHONE | Text | 15 | Phone number of agency office responsible | (208) 678-0430 |
| OFFICE\_URL | Text | 100 | Website of the office responsible | https://www.fs.usda.gov/sawtooth |
| Alerts | Text | 200 | URL to a more information about the alert | https://www.fs.usda.gov/alerts/sawtooth/alerts-notices |
| SHERIFF\_PHONE | Text | 15 | Phone number of the local Sheriff | (208) 878-9327 |
| SHERIFF\_URL | Text | 100 | Website of the local Sherriff |  |
| MILES | Double |  | Length of the Trail in Miles | 21.54 |
| HUNTING UNIT | Text | 3 | Idaho Fish and Game Designated Hunting Unit (see https://idfg.idaho.gov/ifwis/huntplanner/mapcenter/) | 36A |

* 1. **Data Quality**

Data quality considerations for Trails include:

1. Inclusion of a trail name, if such a name exists
2. the trail should identify which uses the trail is open to (i.e. ATV, motorcycle, jeep, UTV/RTV, and non-motorized.
3. All trails also need Jurisdiction which identifies the management agency in charge of trail management.

# Appendix A: References

Idaho Technology Authority (ITA). *Information and Data Policy P5000, Category: P5030 Framework Standards Development Policy.* <https://ita.idaho.gov/psg/p5030.pdf>

Idaho Technology Authority (ITA). *Enterprise Standards S4000 Geographic Information Systems (GIS) Data, Category: S4220 Geospatial Metadata.* <https://ita.idaho.gov/psg/s4220.pdf>

**Appendix B: Glossary**

See ITA Guideline [G105](https://nam01.safelinks.protection.outlook.com/?url=https%3A%2F%2Fita.idaho.gov%2Fpsg%2Fg105.pdf&data=01%7C01%7Cpbond%40cityofboise.org%7C2ca8b62d08b14c86824608d6d25b20ad%7Cda3e15835c884f8ea832bd79cbd319cb%7C0&sdata=Nsvlb1tLNvY1YuorWK8VNvl5P4gRou8Pk0AkKq6iNp8%3D&reserved=0) (ITA Glossary of Terms) for definitions.