



TxDOT GIS Metadata Standards

GIS Advisory Board

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Introduction

Metadata is critical to finding and understanding data. It enhances search and discovery across platforms, makes Open Data discovery possible, and provides context and understanding for users who must interpret and use the data. While often seen as a chore, metadata is the most critical element for any data that is shared or published.

This document describes The Texas Department of Transportation's (TxDOT's) metadata standard, including how to write metadata, which data and information it applies to, how it will be communicated to the TxDOT Geographic Information Systems (GIS) community, and how it is to be implemented and carried out. This is a living document, and will be updated as the standard and overall GIS governance at the agency matures.

Scope

This section discusses the sharing levels and storage locations this standard applies to. While TxDOT produces and uses a lot of GIS data, not all GIS

data must comply with this standard. The standard is intended for datasets published in locations that are shared with a wide audience.

Data Storage Locations:

- ArcGIS Online
- ArcGIS Portal

Sharing Levels:

- Shared with the **Public**
 - Metadata required. Security classification category must be included.
- Shared with the **Organization** (i.e. inside TxDOT)
 - Metadata required. Security classification category must be included.
- Shared with a **Group**
 - Metadata suggested but not required, with the exception of a Security classification to meet new compliance requirements.
- **Not Shared**
 - Metadata not required, with the exception of a Security classification to meet new compliance requirements.

GIS Metadata Content Standards

The metadata included below provides essential information about the item while maintaining a practical balance between detail and effort. It aims to offer users sufficient context to understand the data without overwhelming the data creator. This format follows the ArcGIS “Item Description” Metadata Style and matches the ArcGIS Online (AGO) feature service’s item description page.

Title

The title should be clear and concise, minus acronyms, abbreviations, underscores, etc. (to the extent feasible or reasonable).

- Datasets produced and owned by TxDOT must start with "TxDOT."
- Datasets produced and owned by TxDOT for a specific district should begin with the district abbreviation, such as "AUS" for Austin.
- Datasets that TxDOT does not produce or own but publish as a courtesy or in support of our applications must start with "Texas."

Examples:

TxDOT Control Sections Texas State Boundary

Summary

A single sentence that succinctly describes the data in laymen's terms (i.e. in plain English), minus acronyms, abbreviations, underscores, etc.

Example:

Polyline layer of TxDOT Control Sections for on-system and off-system roads.

Description

The description contains detailed information about the dataset. The description contains the "who, what, where, when, and why," about the dataset, including:

- Why it was created and/or what it is used for
- The time period it spans and is good until
- The geographic area it covers
- The source of the data (e.g. the database or application) and date produced/last edited (if different than the "updated" date automatically generated in ArcGIS Online)

- Update frequency/cycle Example:

A control section is a unique identifier for individual segments of a roadway. Control sections were created as a highway referencing system for locating planning and maintenance projects, etc.

Historically control sections were only assigned to on- system, or state-maintained, highways; however, this dataset also includes off-system, or non-state-maintained, roadways. Control Section numbers are assigned for the life of the roadway and generally do not change or move, regardless of improvements to the roadway. Currently, control sections are located geographically along roadways using linear referencing. This statewide dataset was created by the Transportation Planning and Programming Division of TxDOT in the Data Analysis, Mapping and Reporting Branch.

Update Frequency: Monthly

Source: Geospatial Roadway Inventory Database (GRID)

Tags

Tags are keywords used to search for data. Tags should be descriptive of what the data provides so that search queries can be more accurate. It is best to include the abbreviation and the full spelling of the department and division or district.

Examples:

Traffic Safety Division, TRF, Safety, Crashes, Conditions, Basemap

Tags for Open Data Portal

For ArcGIS Online services that are published to the Open Data Portal (ODP), add keywords that correspond to the keyword icons on the Open Data

Portal's main page so that the service is returned in the results when that icon is selected.

Tags: Assets, Boundaries, Highway Performance and Reports, Infrastructure, Planning, Projects, Roadways, Safety, Traffic.

Data that is shared publicly through the Open Data Portal should include the following tags:

Must contain Texas (Datasets that TxDOT does not produce or own but publish as a courtesy or in support of our applications), TxDOT (Texas Department of Transportation authoritative data), and Division/District name

Must contain keywords from the title

Examples:

Transportation Planning and Programming, TPP, Control Section, Highway Referencing Systems, Planning, Projects, Transportation, TxDOT Infrastructure, GRID Export, Assets, Roadways, Texas, TxDOT

An ArcGIS Public Sharing Checklist is available for your reference as data stewards of Open Data Portal or Publicly shared geospatial dataset. Please reference this document for best practices.

ArcGIS Online Public Sharing Checklist 2024

Categories

Content categories are used to organize enterprise content by making it easier to discover and sort content such as maps, scenes, apps, and to classify data correctly by security classification. Security classifications are determined by security regulations and describe how readily an item can be shared outside of TxDOT when requested.

All content hosted in ArcGIS Online or Enterprise Portal must include security classification (Public, Sensitive, Regulated, Confidential) under the Categories section.

- **Public:** Openly available and can be freely distributed by any TxDOT employee to anyone.
- **Sensitive:** Can be released after undergoing an Open Records Request Process (employee records, financial information, contracts, internal communications).
- **Confidential:** Protected data that requires coordination with the General Counsel Division for release (health, sensitive personal information).
- **Regulated:** Data that has its use and protection dictated by a federal agency or by third-party agreement and must meet the appropriate statutory definitions or industry agreement conditions (health information, payment card, full track data and personal information).

Refer to TxDOT's Data Classification Policy for latest documentation:

[TxDOT Data Classification Policy August 2023](#)

Credits

The credits section details who owns and produced the dataset. TxDOT datasets must start with "TxDOT." Include the Division or District, and Section and/or Branch.

Cite any other agency or organization whose data was provided to TxDOT but is not owned by TxDOT.

Include an email or phone number. Do not use individual staff names or contact information. Instead use general contact information for your Division or District.

Example:

TxDOT – Transportation Planning & Programming – Data Management

Use Limitations/ Terms of Use

Insert the following stock TxDOT Use Limitation statement.

Example:

Copyright Texas Department of Transportation. This data was produced for internal use and is provided for informational purposes only, and is subject to change. TxDOT makes no warranty of any kind as to the accuracy or validity of the data provided. GIS content and data provided is the property of TxDOT and may not be used for commercial purposes or resold. Distribution of this content to third parties without TxDOT's written consent is strictly prohibited.

Additional Items

Some datasets may be shared with the public, but are not meant to be the official, authoritative datasets (e.g. services used in support of applications, such as search layers). They should be noted as such in the description field.

Official datasets (i.e. data which the department owns and produces) should be marked as "Authoritative." In ArcGIS Online, services can be marked as "Authoritative" in the settings tab on the service's item details page.

Only services marked as Authoritative will be made available on the department's Open Data Portal. See ArcGIS Online Public Sharing Checklist 2024

Communication Plan

The Geographic Information Management (GIM) in partnership with the GIS Advisory Board (GAB) will be responsible for implementing the communication efforts to share this standard requirement with those affected, in coordination with the Information Technology Department (ITD).

Some avenues for initial communication include:

- Publication on the TxDOT Community of Practice SharePoint site
- Included in all Statewide GIS quarterly newsletters as an agency resource
- GAB members will share regular staff meetings with colleagues
- GIM trainings, meetings, and events
- GIS Coordination meetings
- Published Training Guides in AGO/Portal/ODP
- TxDOT COGS (Committee on Geomatics and Survey)/GIS Conference

Implementation and Enforcement

Metadata and security classification can be evaluated through reporting mechanisms. Users who are in non-compliance with the metadata and security requirements will be notified, and if action is not taken by the data owner the following actions will be taken by ITD/GIM:

Implementation and Enforcement Actions:

- ITD and GIM will review all GIS services shared with the organization or public to ensure they comply with standard.
- For datasets that do not comply with this standard, ITD or GIM will reach out to individual users to inform them of the metadata standard.
- Users will have the option to stop sharing their data, or complete the metadata.
- Users will be given one month to complete or update their metadata.

- Datasets not brought into compliance within the timeframe given will be set to 'private' by ITD/GIM until brought to standard.
- A copy of this document will be made available on the GIS Community of Practice SharePoint site.
- The GAB will share and distribute the new standards and updates at TPP's quarterly GIS Coordinators meetings.
- The GAB will host at least one workshop annually for GIS users to attend.
- ITD/GIM will conduct periodic reviews of datasets shared with the organization and/or public and repeat the steps above until a governance policy is formally adopted.

Following the implementation of a governance strategy:

- The governance policy will address when and how GIS services are published, including the process for reviewing metadata for compliance with the standard.

Appendix A: Versioning

Table 1 – Versioning History Table

Version	Date	Name	Description
1.0	9/14/2018	Chris Bardash	Approved by Executive Steering Committee
1.1	12/11/2018	Chris Bardash	Update to Description section to include security information, approved by the GIS Work Group
1.2	11/10/2020	Chris Bardash	Update to the Use Limitations/Terms of Use language and update to require the security level in the Tags section, approved by the GIS Work Group
1.3	6/22/2022	Stephanie Marquez	Update to Add GIM to governance overview and update security level through Categories.
1.4	7/6/2022	Jennifer Lash & Stephanie Marquez	Updated language, context, and requirements for security classification and failure to comply with metadata requirements between ArcGIS Online and Enterprise Portal. Updated enforcement actions section.
1.4	7/14/2022	Jennifer Lash & Stephanie Marquez	Update Sharing Levels and Tags to included GIS Work Group feedback
2.0	8/1/2022	Jenn Lash	Incorporated final comments, feedback, and revisions to security classification and copyright information. Committed all edits.
2.1	8/1/2024	Stephanie Marquez	Updated Data Classification Policy, ArcGIS Online Public Sharing Checklist
2.1	11/5/2024	Stephanie Marquez	Revisions to document per committee feedback via comments
2.2	05/13/2026	Autumn Carter	Updated to reflect committee to board name change. Formatted to accessibility standards.