

North Carolina Department of Transportation
Information Technology Spatial Data Policy
Geographic Information Systems

1.0 PURPOSE

The following guidelines recognize spatial data as a Departmental resource and are based on the philosophy that the value of data as an institutional resource is increased through its widespread and appropriate use. Conversely, its value is diminished through misuse, misinterpretation, alteration, poor data maintenance or unnecessary restrictions to its access.

These guidelines will serve to:

- establish, maintain and deliver secure, trustworthy, stable, reliable, and accessible collections of spatial data in electronic form for shared access by the Department and its partners;
- maximize the value received from the data asset by increasing the understanding and use of the data;
- improve data management techniques by promoting data consistency, security and standardization throughout the Department;
- minimize duplication in capturing, storing, and maintaining data;
- increase data sharing by providing a reliable and secure technical environment for managing data and improving direct access to data by end-users; and
- support faster changes to common applications and databases.

While all spatial information captured by the Department are resources of the NCDOT, they vary in their relevance to the operational processes of the organization. This set of guidelines along with other State of North Carolina computing guidance are intended to apply to those data which are critical to the operational, administrative, educational and research functions of the Department, regardless of whether the data are used or maintained by administrative or operational units.

2.0 GUIDELINES

2.1 Institutional Data

The North Carolina Department of Transportation is the owner of all of the Department's institutional data. Institutional data is considered "institutional data" if it meets one or more of the following criteria:

- It is relevant to planning, managing, operating, or controlling operational functions of the Department;
- It is created, received, maintained or transmitted as a result of administrative, operational activities or legislation;
- It is generally referenced or required for use by one or more organizational units; and/or
- It is used to derive an element that meets the criteria above.

The GIS Technical Advisory Committee (GTAC) is the Department's technical oversight body that includes data owners, stewards, custodians, and stakeholders which represent all parts of the business. The members of this committee are charged with ensuring the Department's institutional data meets the needs of the Department and delivers optimal business value.

The GTAC proactively participates in the recommendation and implementation of GIS policy and direction, provides a forum for GIS cooperative effort and information exchange, promotes the effective and efficient use of GIS resources, acts as a primary advisory body to the GIS Steering Committee, and takes the lead in conducting periodic GIS Strategic Plan reviews.

2.2 Roles

Below are the responsibilities, by role, of the Department as it pertains to spatial information:

The *Data Owner* is an individual or group within the business with functional area authority who is responsible for making decisions concerning the use of the datasets. The Data owner may provide analog or digital raw data from the output of a business process as input for other processes. The Data owner is tasked with the management of spatial datasets. This role is ultimately accountable for the quality of the dataset, including such items as accuracy, timeliness, and completeness. Data owners understand the business use, issues, and concerns of the datasets they manage. This includes activities such as data conversion, data updating, metadata creation, QA/QC and data distribution. In any given situation, the Data owner may delegate any of the responsibilities described above to the *Data Steward*.

Data Stewards understand the business use, issues, and concerns of the datasets they manage on behalf of the Data Owner. This includes activities such as data conversion, data updating, metadata creation, QA/QC and data distribution. The Data Steward's roles and responsibilities are defined per agreement between the Data Owner and Data Steward and may include any or all of the Data Owner's responsibilities. However, the Data Owner maintains accountability and authority for the decisions and actions relevant to their dataset.

The *Data Custodian* manages the Enterprise storage and delivery of data provided by Data Owner/Steward. Their responsibilities include ensuring the security, integrity, and availability of the data.

A *Data Stakeholder* is any individual or organization, inside or outside of NCDOT, with an interest or share in the use or creation of NCDOT spatial data.

2.3 Data Validation and Correction

The *data owner* is responsible for data integrity, for responding to questions about the accuracy of the data and for correcting inconsistencies, if necessary.

Any *data stakeholder* can question the validity of any data element. The *data stakeholder* has the responsibility to help correct the problem by supplying as much detailed information as available, sufficient to permit understanding and diagnosis of the problem.

Upon written identification and notification of erroneous data, corrective measures should be taken as soon as possible to:

- Correct the cause of the erroneous data.
- Correct the data in the official storage location.

- Notify users who have received or have accessed erroneous data (depending upon the type of data or the extent of error).

2.4 Data Storage

Data element names, formats, and codes should be consistent across all applications which use the data and consistent with the Geospatial Data Standards.

Archiving requirements and strategies for storing and preserving historical data should be determined for each data element by the *Data Owner* in accordance with State requirements and each Data Owner's documented retention schedule.

2.5 Spatial Data Access

The following philosophies should guide decisions about access to and protection of institutional data:

- the value of data as an institutional resource is increased through its widespread and appropriate use to enhance administrative and operational effectiveness; its value is diminished through misuse, misinterpretation, alteration, poor data maintenance or unnecessary restrictions to its access.
- the level of protection, including access control, applied to institutional data should correspond to their sensitivity and their criticality to the mission of the Department; this will ensure that selected security strategies are adequate to the level of risk without being overly restrictive or burdensome.

The *Data owner* is responsible for identifying those to have access to institutional data under their purview. Requests to access data that are denied may be appealed through the organizational chain of command.

The *Data Stakeholders will* be responsible for their use and interpretation of the data which they access.

2.6 Spatial Data Documentation

Documentation of metadata is the ultimate responsibility of the *Data Owner* and shall adhere to the NCDOT Metadata Standard.

Spatial data elements should follow the Department's Naming Standards. The standards consist of rules for defining, documenting, and naming data, which may include, but are not limited to:

- Guidelines for defining data elements
- Major classifications of data
- Standard syntax for naming data
- Suggested formats for data
- Approved abbreviations
- Guidelines for using standards and enforcing their use

Overview documentation for the logical model should be provided for the accurate interpretation of the data.

2.7 User Support

The Data Owner will ensure user support is provided, as needed, in the form of training, consultation, and maintenance to assist *Data Stakeholders* in the interpretation and use of data elements within the GIS.

Some or all of these responsibilities may be delegated.

2.8 Data Integration

The *Data Owner* is responsible for providing accessible, meaningful, and timely institutional data in the appropriate format for access by *Data Stakeholders*.

The *Data Owner* and the *Data Custodian* share the responsibility for data compatibility, accessibility, and interfaces among institutional data elements residing in various segments of the enterprise GIS.

The *Data Owner* and the *Data Custodian* will work together toward unification of the various data element coding structures and data storage formats which exist in various segments of the enterprise GIS.

The *Data Stakeholders* will be responsible for their use and interpretation of the data resulting from their integration with other institutional and departmental data. The data stakeholder is responsible for providing feedback to the *Data Owner* on identified errors.