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For Working Group Review 2/9/99

Kansas Geospatial Data Standards

Jurisdictional and Administrative Boundaries

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KANSAS GEOSPATIAL DATA STANDARD FOR JURISDICTION BOUNDARIES AND ADMINISTRATIVE DISTRICTS

1.0 INTRODUCTION

Kansas ranks 5th in the United States for the number of administrative districts, a total of 3,083 in a 1992 report to the State Legislature. Boundary maps are used for defining service territories, administrative areas, jurisdiction for governments and elections, for taxing authority, and for numerous natural resource areas. These boundaries are used daily as a basis for providing essential services and for effective, orderly governing. Maps of these boundaries have been developed and maintained often in a haphazard manner resulting in incomplete, inaccurate, and often out-of-date representations. As digital maps of these many boundaries are constructed and disseminated, it will be important to assure that ~~there be a~~ a set of standards in place such that these boundaries can be used independently or together, and be useful to~~and~~ all ~~by multiple~~ levels of government, utilities and the general public. Indeed, these are the essential boundaries ~~are~~ that form the foundation for much of what is considered democratic governing~~,~~, such as ~~to~~ a means to assure equal representation and fair dissemination of services.

This document provides a set of guidelines by which the boundary information can be more uniformly maintained and cartographically represented and, thereby, integrated with other geospatial data structures. Digital versions of these boundaries are the focus of much of the standard, but similar concepts of uniformity, currency, and completeness also apply to existing manual mapping efforts.

Where and by whom boundary maps are to be constructed is not necessarily within the scope of the standard so much as the technique of construction and file characteristics. Improving our ability to standardize the end products and facilitate the sharing of these products between custodians and the wider constituency is the primary goal.

1.1 Mission and Goal

The Kansas Jurisdictional and Administrative Boundary Standard adopts the Kansas GIS Vision Statement as follows:

To shape the growth of GIS through open communication, education, and cooperation in order to:

- *Optimize data accuracy, reliability, and accessibility*
- *Meet the needs of the technical and non-technical user community*
- *Support the decision-making process*

In coordination with other Kansas Geospatial Data Standards it echoes the following objectives:

- *Create an attitude of cooperation.*
- *Generate something that will build support at home.*
- *Identify common interests.*
- *Identify areas of need for standardization.*
- *Identify obstacles and barriers to data sharing.*
- *Avoid duplication in creating data.*
- *Establish standardized metadata.*
- *Ensure data security.*
- *Create flexible standards.*
- *Establish guidelines by which standards may be developed.*
- *Catalogue existing data.*
- *Build a larger community of technical and non-technical users.*
- *Develop a geographic data framework for Kansas that is compatible with the concept of the National Geospatial Data Framework.*

1.2 Relationship to Existing Standards

This standard integrates with existing standards as much as possible. Several resources were used to develop these standards, along with the working knowledge of the committee participants. Furthermore, the Jurisdictional and Administrative Boundaries Standard has been written with consideration towards other standards being developed through the Geospatial Data Standards Development Process. Specifically, these include the *Cadastral Standard*, the *Addressing Standard*, and the *Transportation Standard*.

1.3 Description of the Standard

This document is intended to serve as a "good practices manual" that will~~to promote~~ enable improved data consistency between levels of government that produce, maintain and use jurisdictional or administrative boundaries. The standard categorizes and defines boundary types, cartographic structures for mapping boundaries, naming conventions for districts and boundaries themselves, and the typical minimal data associated with databases attached to boundary maps.

The standard anticipates an incremental process of developing digital boundary databases and maps, and recommends a phased approach to implementation. Further, it anticipates the necessity to archive a record of boundary information such that historical boundaries are not lost as changes are made. It is also understood that it is unlikely that all communities can improve their records at the same pace, and as these standards are adopted, the implementation would need to be phased in to accommodate different circumstances. The ~~T~~three phases for which we will~~that~~ define standards and which represent a typical incremental implementation are:

Phase1 Guidelines supporting consistent and thorough collection of source documents that define boundaries and standardized cartographic rules for manual mapping and naming for these boundary maps.

Phase 2 Fundamental standards for constructing digital boundary maps to assure consistency, ease of maintenance, adequate cartographic registration to related digital data, and essential ties to associated data about each area or district.

Phase 3 Advanced, comprehensive standards to support a broader range of applications beyond merely producing a consistent cartographic product. This includes a description of a comprehensive, fully integrated set of geographic features and databases and a rigorous, operational structure supporting and enforcing daily maintenance of these features.

1.4 Applicability and Intended Uses of the Standard

The Kansas Geospatial Jurisdictional and Administrative Boundaries Standard is intended to support the automation, integration, and sharing of publicly available boundary information. It is intended to be usable by all levels of government, as well as the private sector to achieve consistency in the graphic representation of cartographic entities related to boundary maps, such as points, lines and areas. As a GIS standard, the importance of naming schema for areas or districts becomes more than merely consistency in label placement or text font/size. Because these district names are a unique key to database information about a district, there must also be standards to assure the continuing integrity of that linkage. Further, the Standard will discuss conventional practices for developing new boundary areas and assigning appropriate names to those areas.

In preparing this document, care was taken to devise standards that are:

- Simple, easy to understand, and as logical as possible.
- Uniformly applicable, whenever and wherever possible.
- Flexible and able to accommodate future expansions.
- Dynamic in terms of continuous review.

1.5 Standard Development Procedures

1.5.1 Participants

Cheryl Adelhart, Harper County Clerk
Daniel Connolly, City of Derby
Ed Crane, ESRI, Co-chair
Christopher DeYoe, Sedgwick County GIS
Gabe Faimon, KS Division of Emergency Management
Dee Ann George, Linn County

Tim Hensley, Johnson County AIMS~~, Co-chair~~

Vicki Lignitz, KS DOR Property Valuation Division
Scott McBride, Sedgwick County GIS
Kathleen Murphy, Water District No. 1 of Johnson County, Co-chair
Paula Moege, KS DOR Property Valuation Division
Wayne Page, KS Corporation Commission
Kathy Peckman, Miami County Clerk
Tina Rajala, Kansas Water Office
Pat Rector, Sedgwick County Clerk~~í~~s Office
Ed Schwartz, Morton County
Lloyd Stullken, KS Division of Water Resources
Jolene Walker, Mitchell County

1.5.2 Comment Opportunities and Reviews

The Administrative and Jurisdictional Boundaries Standard Committee was initially established at the August 27, 1996 GIS Standard Forum in Wichita, Kansas. Thirty-two attendees from local and regional agencies discussed which jurisdictions, whether represented in attendance that day or not, could be defined as participants or 'stakeholders'. Discussions during the following eight meetings of the committee produced a list of multiple and various considerations. Those issues were introduced by the committee at the August 28, 1997 GIS Standard Forum in Wichita, Kansas.

This is a draft of the Jurisdictional and Administrative Boundaries Standard ~~is~~ for discussion purposes at the Kansas GIS Standards Forum in Topeka, Kansas, February 9, 1999. To ~~participate and r~~receive notices of future Working Group meetings, please contact Ed Crane (913) 385-0292 or Kathleen Murphy (913) 895-5731.

1.6 Maintenance of the Standard

The Working Group recognizes that without adequate, consistent maintenance (even in the manual, hard-copy format) that jurisdictional and administrative boundaries cannot serve their intended purpose. The need for a continuing maintenance process with custodial responsibilities assigned, implemented and enforced is clear. The Working Group ~~will make recommendations~~ will make recommends that a permanent advisory committee be formed with official representation for each boundary group that would meet at least annually and promulgate policies that would lead to~~towards~~ institutionalization of a regualr maintenance ~~that~~ process.

It is expected that maintenance responsibilities would~~ill~~ be shared between local and statewide agencies. Description of these responsibilities would become part of the official duties of the custodians of the record either by statute or administrative policy developed through the advisory committee.~~-~~

1.7 Need for the Standard

Jurisdiction and administrative boundary maps are one of the most common and widely used set of geographic features by government, citizens and commerce. With over 3,800 distinct "jurisdictional authorities" across Kansas, assuring that all maps, boundary descriptions, district names and digital representations are complete, current and correct is an important task. The Working Group has discovered that these boundary maps and databases will require significant effort to automate and standardize.

Boundary maps are often…
- …hard to find or not available,
- …not kept up to date,
- …at varying scales, with different naming and linework conventions,
- …incomplete and inaccurate,
- …without source documentation to verify or validate boundary locations.

Boundary maps can be categorized in many ways, and range from election and voting districts to taxing and judicial districts to service districts for road maintenance to utility service areas and numerous statistical, technical districts and physical, natural resource boundaries.

These maps are indeed very important because they provide a common, systematic means by which people can organize and distribute responsibilities and authority within a community. Without a doubt, they are one of the cornerstones of modern society. They describe the basics of who, where and what for distributing the various functions of government.

As digital boundary maps become commonplace, they will be more readily used and shared by an even wider variety of people and organizations. It will no longer be adequate to keep an annually updated version of a particular map, indeed it will become critical with everyday usage to keep these maps current and consistent with one another.

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2.0 TECHNICAL AND OPERATIONAL CONTEXT

Actual development of a standard requires defining the content and process characteristics of database development and use. These characteristics have been divided into a series of technical and operational considerations that will form a common basis for communicating details of all the various geodata standards developed as part of the activities of the Kansas Standards Task Force. It should also be noted that the Geodata Compatibilitly Guidelines for Kansas are adapted from the processes and reports of the Federal Geographic Data Committee (FGDC) and thus should comprise a comprehensive and consistent method for presentation of technical and operational issues.

2.1 Data Environment

Data will typically be created, stored and maintained locally (at the custodial site), with metadata archived at Data Access and Support Center (DASC), and updated by the data custodian according to an established schedule. The Federal Geographic Data Committee (FGDC) *Content Standards for Geospatial Metadata*, as endorsed by the State of Kansas, will apply. Boundary data will be accessible to potential users by electronic means or digital media through standard exchange formats envisioned by that document.

The nature of boundary databases is such that multiple versions of the same data may be necessary. This makes the data environment considerations more complex. For instance, city limit boundaries will likely be maintained daily by cities and reported to the County Clerk for inclusion in the tax boundaries. Another copy of city boundaries could exist at the Department of Revenue to comply with annual reporting, and still another as part of a smaller-scale state-wide database of all cities at DASC. Further, the Census and other organizations will likely maintain a dated version of one of these files.

Determining the custodial location for the primary data will dictate much of the structure for maintenance and dissemination, consequently the data environment will vary by boundary type. The standards effort is intended to eventually result in a directory of expected locations for each of the types of boundary data once the custodial responsibilities are established.

2.2 Reference System

The reference system used for administrative boundaries will vary, depending on the geographic extent of the data:

> Statewide boundary data, such as representative districts, shall be stored in latitude—longitude coordinates (also called geographic coordinates).

Regional data, data that has a geographic extent that covers more than a single county, may be stored in either latitude/longitude, Kansas State Plane Coordinates, or Universal Transverse Mercator (UTM). The decision depends on the specific nature of the data and its anticipated applications and users.

Local data, that which has a geographic extent that entails one county or less, shall be stored in Kansas State Plane Coordinates.

All geospatial data must be stored such that it is easily converted from one reference system to another. Metadata shall be complete enough to allow for such transformations. The standard for statewide data will be established to follow the policies and rules developed for DASC databases.

2.3 Global Positioning Systems

GPS represents a capability to apply higher levels of geographic precision to the locations of boundaries. It is expected that especially for local boundary databases, GPS level precision will eventually be used. However, the standards anticipate that the most important consideration is not the precise location of a boundary, but rather the consistency between logically congruent boundaries. For statewide or regional boundary databases, GPS will have a significant role in controlling the overall statwide basemap fabric onto which, for instance, county boundaries are defined. However, it should be noted that the use of consumer grade Field GPS Locators may not be precise enough to be an appropriate device to either locate one's position relative to a district boundary, and certainly not to establish such boundaries.

2.4 Integration of Themes

With jurisdiction and administrative boundary themes, there are ~~multiple~~ many cases where the actual boundaries are shared different kinds~~by many types~~ of districts. Moreso than for any other type of geodata, integration of themes becomes~~is~~ a crucial consideration. For instance, boundaries defining taxing districts can be~~are~~ comprised of section lines, property ownership lines, water courses, railroads, and ~~often~~ street centerlines. Careful attention must be given to the cartographic construction and maintenance of boundaries so as to avoid unintentional duplication of linework or gaps/slivers not only within a district type, but also between themes.

Consequently, specific boundary rules developed in conjunction with this standard shall not be intentionally devised in a manner that will conflict with other geospatial standards. Often boundaries are the same logical position, but are shown in a different cartographic location because of how the feature was developed or from what source it was derived. For instance, a water boundary that serves as a city limit line, may be at one cartographic location when developed by a surveyor describing the legal boundary of the city, while at a much different location when derived as the water course from smaller scale mapping for different purposes. In this case, a

determination must be made as to whether the water boundary must be represented twice or whether the more precise representation is adequate for all purposes. A service boundary for supplying water also may not necessarily be the same as a City Limit boundary. The standard recognizes that these decisions cannot be made generally throughout the full suite of situations, and relegates these determinations to the respective boundary custodians. It is deemed sufficient to instruct custodians to be aware of such cases and to annotate databases as to their decisions.

2.5 Encoding

Jurisdiction and administrative boundaries are made up of multiple lines that form polygons or areas. These digital map features must be handled carefully in order to properly locate and identify the area they are intended to represent. Encoding in this context deals with how digital points, lines and polygons are stored in a computer readable database. Topology is a commonly used mathematical encoding whereby ~~a~~ computer software~~co~~ is~~mputer is~~ able to determine whether lines are connected properly, and also to make determinations of the completeness and adequacy of logical relationships between polygons, and between line features.

2.5.1 Points

Points are used to define the location of text labels inside districts. Points can also be used to generalize the location of many districts across a large area, such as zip codes across Kansas. The essential encoding standards for points is that they be in the target reference system on which they are to be displayed, and that integrity is assured between the point and the attribute encoding which describes the district it represents.

2.5.2 Polygons

Polygons are the result of closed boundary lines around a district. Vector based polygon topological structuring and connectivity are required. Each polygon shall have a standard name which uniquely identifies and names that district, which also is the linkage to database information about that district, for instance a tax unit code. Text labels may be desirable in addition to the unique identifier to produce a more uniform or readable map product.

2.5.3 Lines

Lines are used to represent individual boundaries around a district. Feature coding of lines to indicate the type of boundary (school district, city limit, etc.) is recommended. Vector based linear topological connectivity and correct directionality are required.

Lines may also be encoded as to their relative reliability. For example, utility service boundaries are not always well defined and may be "fuzzy". Where those cases exist, it is important to devise an encoding scheme that alerts unfamiliar users that the actual, logical location of the line is difficult to determine. The working group recommends that two categories of lines be established for encoding the difference between lines that are firmly established legal limits, and those lines that are less rigidly defined or used.

In the common case of postal zip codes as an example, the boundary for a zip code doesn't follow the center of the street as is often shown. Addresses on each side of a street are usually in the same zip code, so the boundary follows some meandering, subjectively defined path behind the addressed structures. Defining a polygon boundary for zip codes is awkward proposition and might best be represented as a linear feature that shows delivery routes. These are just some of the difficulties in establishing a standard for representing districts, but is all the more reason for assuring that there is a standard in place so the phenomenon can be accurately communicated.

2.6 Resolution

Boundary databases exist at many levels of resolution, for example:

- national (state, county, zip code, census boundaries, etc)
- statewide (utility service areas, counties, legislative, etc)
- local (cities, school districts, public safety response zones, etc)

A worthwhile objective is to avoid duplication of the same data at different resolutions if possible. Where technically practical and ~~where~~ if suitable higher resolution data exist, the lower resolution data should ~~may~~ be generalized from the higher resolution data rather than duplicate the construction and maintenance of a separate resolution data set.

Often though, ~~Each~~ boundary themes may be represented at different resolutions. It is recommended that a metadata table of all boundary themes be available at DASC that facilitates comparison of available boundary data at different resolutions. Certainly, if more that one resolution exists, disclosure of which source is used should accompany any maps or reports that use the theme.

2.7 Accuracy

Accuracy is a reference to the completeness, internal consistency, and currency of the data. These characteristics should be well documented in metadata and any

cartographic or data problems should be annotated. Much the same as the use of dashed lines to show uncertainty or dispute on the location of a land parcel boundary or a running list of the latest updates in a legend, levels of accuracy should be easily recognized by eventual users of the data. Illustration of recommended techniques can be used to illustrate deficiency or adequacy of the data are:

Completeness: Journals are kept of the day to day events or documents that are the source for changes in the manual mapping world. Keeping a similar journal of transactions (not necessarily specific operations on the file) as part of an extended metadata if requested would suffice to show whether or not a given transaction had been completed against the database.

Internal testing for polygon closure, completeness of polygon labeling, and required data fields having valid codes are essential for data to be considered accurate.

Currency: For boundary features, such as city limits or service districts for utilities, that can change frequently, it is imperative that the files are 'date-stamped' or versioned. As these boundaries become more widely available in digital form, the expectations on currency will increase dramatically. Keeping version and date information in a highly visible format with the data will be essential.

Correctness: Authorization and verification of changes by independent sources or reviewers is part of any process for assuring correctness. For highly volatile data this is more difficult, but setting up a redundant update process whereby changes are examined by more than one person or agency, followed by external review by a user agency may be applied to annual reports or certifications for legal reporting. One example of this process is the legal requirement on the part of Cities to report annually a year-end complete legal description of their boundary to the County Clerk. Even though through the year, multiple annexations are made and applied, at years end Cities must accumulate all these changes and supply a composite description—at least in theory that is what is supposed to happen.

~~is applicable to the information to be provided and the level of detail required for an application. For example, if referencing to a legal description given in section, township, and range, or the centerline of a roadway, then the level of accuracy would match the local level. However, in the case of a thematic map, such as a zip code map, that level of accuracy would not apply. Relatively, the level of accuracy would be less defined or inferred.~~

2.8 Edge Matching

The data from adjacent map sheets ~~shoul~~shall~~d~~ precisely meet at the map edges. Care ~~should~~ must be taken to match up superimposed boundaries as they are described along map edges. An example is the case of county level databases. It is imperative that a statewide initiative be established to define county boundaries to a very precise

degree such that all local databases will conform with adjacent counties. It is much the same as having a PLSS or section corner grid upon which to map properties. If there isn't agreement and standardization of these county boundaries at the outset, then at some point edgematching will need to be done by each county with each of its neighboring counties. Not the most effective or efficient means to the end of a cartographically seamless database across the state.

In essence, cartographically seamless boundary databases are recommended, rather than storing data by some sort of arbitrary map sheet schema where the map sheets do not fit together. In order to accomplish this objective, a base framework of points, or polygons must be used as control to which other data must match. It is recommended that this framework or tiling be established for all boundary features, and further that these criteria be followed for specific kinds of boundary data:

2.8.1 Points/Polygons

Within the positional accuracy of the dataset, all polygonal or linear features will edgematch. Points and polygons must not be duplicated across tile boundaries.

2.8.2 Lines

Road c~~C~~enterline representations~~s~~ will match across tile boundaries. Centerline breaks only~~shall~~ occur at natural breaks (i.e., intersections) and the use of dynamic segmentation to represent conditions along a centerline be employed rather than physical segmentation of lines either for condition changes or a tile edges~~at a tile edge~~.

2.9 Feature Identification Code

Feature identification coding schema is necessary to link points, lines or areas to databases of information about each point, line or area. For boundary themes, the identifier may be as simple as a school district number, or represent a complex theme such as a tax unit code. Tax Unit Codes are complex theme for two reasons: (1) that they must include a 3-digit county code to be unique, and (2) that each tax unit is comprised of a unique set of levy districts, each having their own internal coding scheme.

Points/Polygons: A unique feature identifier is required for all boundary polygons which is required to link attribute data about geospatial features to those features. The feature identification code should conform to standard naming conventions to enable generalization to a regional or statewide resolution. FGDC code naming conventions should be followed wherever possible, or a conversion table to the FDGC identifier be available. Where FGDC conventions are not available or specific enough, statewide feature code naming conventions must be established and followed. Some already exist, such as the codes developed by the Department of Revenue for

school districts that cross county boundaries. More will have to be developed by agencies with oversight or custodial responsibilities.

Lines: Feature identification codes are not as essential for line data, however, should this level of detail be necessary, a standard set of common line feature codes should be developed for statewide consistency. However, this isThis is not a trivial problem for standardization, however, because any single line feature could represent numerous feature types.

2.10 Attributes

Jurisdictional and Administrative District maps are commonly used to show the location of authority or responsibility for some activity. However, in digital form using a unique feature code as a key, these areas can be linked to many different databases. This represents a valuable and powerful extension of capabilities.

TUnfortunately, the attributes for each boundary type will vary widely, and do not lend themselves to standardization. Where appropriate, a minimum set of attributes typically expected to be associated with the specific boundary type will be defined. For most, it amounts to adopting existing standards of data such as census information. For tax unit boundary data, it is more detailed and should include descriptions of standard relational tables that should include Tax Unit with County Number, Levy Type, and Levy Name. Additional tables with levy details by year could also be defined.

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2.11 Transactional Updating

Maintenance of boundary maps in a more timely manner is essential irrespective of whether the mapping remains manual or digital. The standards process has highlighted numerous the deficiencies inof managing all the transactions to update boundary information throughout all levels of government. The process is complex in that often no central authority exists to assure consistency, completeness and currency in the information now available.

It is recommended that a formal update process be defined for each boundary type and for each sub-geography within a boundary type where appropriate. Further, it is recommended that the custodial responsibility for local data be migrated as soon as practical to the County Clerk in each county, in much the same manner as city limit boundaries are reported currently. Local boundaries would be reported locally to the County Clerk on a regular basis, not necessarily for approval or authorization, but rather as a custodial or librarian function. It is expected that there will be separate version rules for update processes at the boundary authority level, at the local level

(County Clerks), and at the state level for both DASC and at any existing oversight authority or agency.

Specific product production rules for standard, periodic printing of maps or reports should be developed. For instance, a tax unit map is an annual, certified product reported to the Department of Revenue, Property Valuation Division. It does not necessarily contain current boundary information at the time of production due to statutory provisions binding on the County Clerk.

2.12 Records Management

As with any official custodial responsibilities, there must be rules for when official versions are published, how long they must be retained, and in what form. Migrating existing practices to the digital environment presents new problems that are largely unresolved. It will be considered sufficient for this standards process to illuminate the issues and recommend consistent practices to all those with custodial responsibilities.

A reference table shall be maintained for all boundary databases that includes the boundary product name, agency(s) in authority, custodian, frequency of update, and reference to similar data at other resolutions, etc. Further, at least an annual version of boundary databases should be saved indefinitely by DASC and the actual boundary authority for historical purposes. Technologies are not yet sophisticated enough to enable automatic forward and reverse versioning of this type of data, so procedural rules must be established to preserve the historical view of these records.

Short of a recommendation for a State Cartographer whose responsibility it would be to develop such a set of good practices and enforce their adoption, the intention of these standards is to encourage more consistent behavior for records management. It is further recommended that official custodians become conversant with industry standards for archival information and retention policies such as the standards of good practice published by the American Records Management Association (ARMA).

The nature of digital records is such that new expectations are likely and at least consistent practices for retention of dynamic files may be needed. Often boundary files can change at any time, giving rise to the question of how often copies must be saved, versions published, etc. At a minimum, a transaction journal of changes made to a specific boundary type should be developed and maintained. Ideally, and eventually when technologies make the process easier, this should extend to include any pending changes that the authority knows are in the works.

Issues involving availability, dissemination policy, subscriptions, ownership and open records access are beyond the scope of these standards, but custodial responsibilities must include some discussion of these topics. Again the emphasis should be on consistency throughout the state.

2.13 Metadata

Metadata is intended to provide easy access to detailed information about many technical characteristics of the actual data, such as one would find in a typical data dictionary. For boundary type data it is particularly important to know who is responsible for a defining a particular boundary, how it was established and changed, when changes became effective, and any cautions or warnings about the boundary data, etc. In fact, for boundary data, besides effective dates for existing changes, even some notice of pending action may be helpful. Election boundaries and statistical boundaries often have long lead times before changing and may impact how someone may wish to use the data. Specific tables of redommended metadata for each class of boundary type will be detailed in an appendix.

3.0 DATA CHARACTERISTICS

The data characteristics for the attribute and graphic content in defining jurisdiction or administrative boundaries are either:

- points/polygons
- lines, or
- attributes

3.1 Associated Attributes

3.1.1 General

Associated attributes pertain to the formatting and storing of data within attribute tables that are external to and associated with feature attribute tables of geospatial datasets. shall be kept consistent with geospatial datasets.

3.1.2 Components

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3.2 Points/Polygons

3.2.1 General

3.2.2 Components

- Unique identifier

3.3 Lines

3.3.1 General

The *line* in this instance is a linear geospatial feature that represents a limit of a district.

3.3.2 Components

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Appendix A

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