VT Center for Geographic Information

VT Zoning GIS Data Set Standard

Version 1.0, November 15, 2017

Updates

Date	Notes
July 5, 2017	Version 0.1, first draft
July 13, 2017	Version 0.2, second draft
July 19, 2017	Version 1.0, third draft
November 15, 2017	Version 1.0, approved by EGC (Enterprise GIS Consortium)

Statutory Authority and Standard Review/Approval

The Vermont Center for Geographic Information (VCGI) has the statutory authority[1] to craft and adopt VT GIS standards and guidelines. Over the past 2 decades, VCGI has worked with the VT GIS community to carefully craft these standards and guidelines, helping to make sure that Vermont GIS data "is compatible with, useful to" others in the VT GIS community.

The State's Enterprise GIS Consortium (EGC) has been established as the organization responsible for reviewing and approving Vermont GIS standards crafted by VCGI (in collaboration with the Vermont GIS Community).

---

[1] http://legislature.vermont.gov/statutes/fullchapter/10/008

Table of Contents

Objectives of this Data Standard

- Define a data framework for using GIS to digitally map municipal zoning district information.

- Provide a solution that can be used to keep a geographical representation of zoning districts up to date as amendments occur.

- Provide a time-aware solution that can be used to retrieve historical zoning information.

- Provide a data framework that supports data integrity, spatial reliability, and appropriate data use.

- Provide the data framework as a resource that can be extended to meet local municipal business needs.

Data Format Requirement

The zoning GIS data set must be stored and maintained within a version 10.x or higher geodatabase or a set of 1 or more shapefiles/tables.

Coordinate System and Datum Requirement

The zoning GIS data set, in its master-copy form, must be in a version of Vermont State Plane Meters, NAD 83. When the data set is exported or copied for provision to external entities, its spatial reference properties must be set (e.g., shapefiles have .prj files).

Top-Level File/Folder Naming Requirement

A zoning GIS data set, when provided to external entities in file form (e.g., a .zip that contains files), has a top-level file/folder naming requirement.

If a municipality's zoning GIS data set is provided in file geodatabase (.gdb) format, then all geospatial and tabular data must be within a single version 10.x or higher geodatabase that is named VTZONING_<municipality name>_<YYYYMMDD>gdb. <YYYYMMDD> represents the date of the zoning ordinance or zoning ordinance amendment to which the data is current.

If a municipality's zoning GIS data set is in shapefile/.dbf format, then all geospatial and tabular data must be within a single folder or .zip file that is named VTZONING_<municipality name>_<YYYYMMDD>. Again, <YYYYMMDD> represents the date of the zoning ordinance or zoning ordinance amendment to which the data is current.

For example, if the zoning GIS data set is current to the latest amendment of a town's zoning ordinance and that amendment is dated June 21, 2013, then the geodatabase or folder of that town's current zoning GIS data set would end with _20130621.
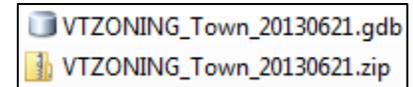
Metadata Content Requirement

When the zoning GIS data set is exported or copied for provision to external entities in file form (e.g., a .zip that contains files), each file or file set must be accompanied by metadata that conforms to the Vermont GIS Metadata Standard[2].

▶ Inclusion of field descriptions in the metadata is highly recommended.

Archive Requirements

To retain access to mapping of a municipality's zoning ordinance as it was effective at particular points in time, master-copy zoning GIS data sets must be archived as static data snapshots before updating those data sets. The string "_HIST" must be appended to the names of archived data snapshots.

For example, a town's zoning ordinance was adopted on March 30, 2006, amended on April 23, 2009, and amended again (the most recent amendment) on February 7, 2013. The zoning GIS data set that models the currently effective zoning ordinance is named VTZONING_Town_20130207. The archive data snapshots of the zoning GIS data set from the first zoning ordinance adoption of 2006 and the 2009 amendment are named VTZONING_Town_20060330_HIST and VTZONING_Town_20090423_HIST respectively.
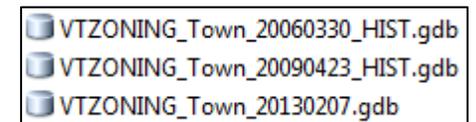
Draft Requirements

This standard provides a workflow and a data set naming specification for modeling proposed amendments to a municipality's zoning ordinance. The following steps define the workflow and naming specification.

---

[2] http://vcgi.vermont.gov/sites/vcgi/files/VT_GIS_Metadata_Standard_final4.0a.pdf

1. Save the master-copy zoning GIS data set as a copy with the name VTZONING_<municipality name>_<YYYYMMDD>_DRAFT. <YYYYMMDD> represents the date on which the copy is made.

2. Conduct edits within VTZONING_<municipality name>_<YYYYMMDD>_DRAFT per the proposed amendment(s).

For example, on February 2, 2018, town staff needs to model a proposed amendment to the zoning ordinance. The ordinance was last amended on January 31, 2014. The following sequence occurs.

1. Staff saves the master copy of the zoning GIS data set, VTZONING_Town_20140131.gdb as a copy with the name VTZONING_Town_20180202_DRAFT.gdb.

VTZONING_Town_20140131.gdb
VTZONING_Town_20180202_DRAFT.gdb
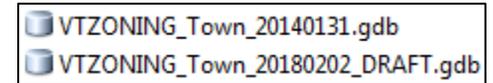
2. Staff completes the necessary edits in VTZONING_Town_20180202_DRAFT.gdb to reflect the proposed amendment.

3. The municipality adopts the draft on August 5, 2018. VTZONING_Town_20180202_DRAFT.gdb is updated to VTZONING_Town_20180805.gdb to correspond with the newly adopted ordinance.

VTZONING_Town_20140131_HIST.gdb
VTZONING_Town_20180805.gdb
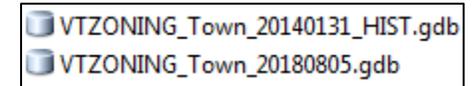
Schema Requirements

The zoning GIS data set must contain 1 zoning GIS data layer and 0 or more layers for overlay district GIS data layers. The following tables specify the schema requirements of those data layers.

Feature Class Name = VTZONING_<municipality name>_<YYYYMMDD>_poly_zones			
• Description = Zoning GIS data layer. Models a municipality's zoning zones and related information.			
• <YYYYMMDD> represents the date of the zoning ordinance or zoning ordinance amendment to which the data is current.			
• Geometry Type = polygon			
• Field names must have lengths of 10 characters or less (for synergy with open data portals).			
Field Name	Description	Field Type	Allowed Values
DISTRICT	Zoning district name.	Text, length of 50	No Null values or empty strings.
NOTE	Stores additional helpful information on the feature.	Text, length of 254	Entry is optional. Null values and empty strings are allowed.

Feature Class Name = VTZONING_<municipality name>_<YYYYMMDD>_poly_<ODIST>
- Description = Overlay district GIS data layer. Models a municipality's overlay district and related information.
- <YYYYMMDD> represents the date of the zoning ordinance or zoning ordinance amendment to which the data is current.
- <ODIST> represents the name of the overlay district and should not include spaces. For example, if the overlay district is officially named "Historic Overlay District", then the ODIST portion might be "HistoricOverlayDist".
- Geometry Type = polygon
- Field names must have lengths of 10 characters or less (for synergy with open data portals).

Field Name	Description	Field Type	Allowed Values
OVERLAY	Official name of overlay district.	Text, length of 50	No Null values or empty strings.
NOTE	Stores additional helpful information on the feature.	Text, length of 254	Entry is optional. Null values and empty strings are allowed.

▶ A data template is available!

VCGI provides geodatabase, shapefile, and metadata templates that can be used as starting points for utilizing this standard. Go to vcgi.vermont.gov or call 802-882-3005 for more information.

Topology/Geometry Requirements

- Polygons of the VTZONING_<municipality name>_<YYYYMMDD>_poly_zones feature class Must Not Overlap. The polygons can share edges or vertices.

- Polygons of the VTZONING_<municipality name>_<YYYYMMDD>_poly_zones feature class must be closed at the municipality's boundary.

- No polygon feature classes may have sliver polygons.

- No feature classes may contain Null/empty geometry objects whatsoever.

Definitions

- **Zoning –** A municipal-level process that regulates development of land in ways that voters and local officials have approved.[3] The zoning process partitions a municipality into zones (polygonal descriptions) that define where and how various land-use types may occur.[4]

- **Zoning ordinance –** Municipal legislation that pertains to zoning.

- **Zoning GIS data layer** – A GIS data layer that models a municipality's zoning zones and related information.

- **Overlay district** – A geographic delineation, superimposed to zoning zones, in which certain land uses are restricted or permitted according to a zoning ordinance.

- **Overlay district GIS data layer** – A GIS data layer that models 1 or more overlay districts and related information.

- **Zoning GIS data set** – A term that means all GIS data layers and GIS data tables that model a municipality's zoning zones and overlay districts.

Example Use Cases

- A town produces a digital map that depicts its zoning zones in accordance with its zoning ordinance.

- A town tracks zoning ordinance amendments within a spatially-enabled information solution.

- A planner wants to access a zoning GIS data layer that is current with a town's most recent zoning ordinance amendment.

- A citizen wants to identify the zoning classification(s) of a particular area.

---
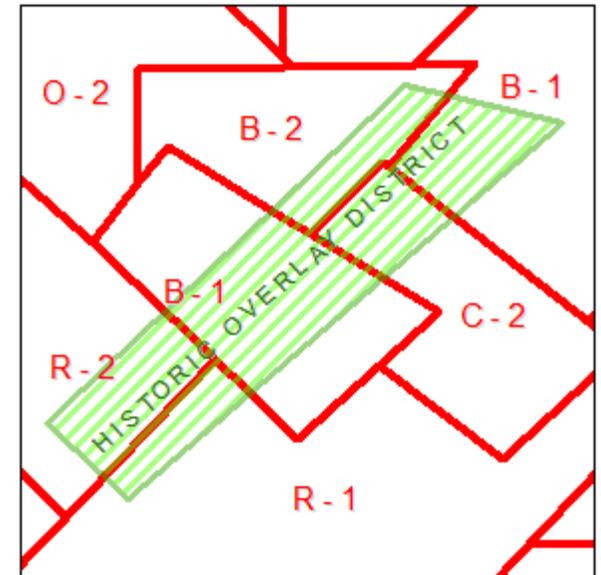
[3] *Zoning Administrators Handbook*, Vermont Land Use Education and Training Collaborative, October 2005, pg. iii.
[4] *Zoning*, City of Burlington, Vermont, https://www.burlingtonvt.gov/PZ/Zoning, Accessed on July 2, 2017.

- A student wants to query zoning zones by minimum lot size. Because the given zoning GIS data layer's schema is extended to include a field that stores minimum-lot-size values, the query is possible.

- A city official wants to view the geography of the city's effective zoning ordinance from a historical point in time.

- A developer wants to identify the overlay district(s) of a particular area or determine if the area is within an overlay district.

- A citizen wants to identify the date of a zoning ordinance amendment.

- A GIS Analyst needs to identify the spatial reference of a town's zoning GIS data layer to properly overlay that layer to other layers in a web mapping application.

- A planning commission needs to geographically view a town's currently effective zoning ordinance as an overlay to other geographic information.

- A zoning administrator wants to produce a map that depicts a proposed zoning ordinance amendment.