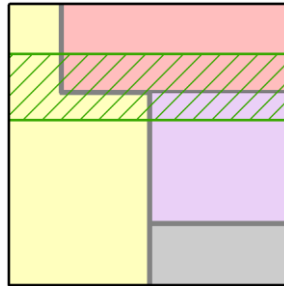


**VT Center for Geographic Information**



# VT Zoning GIS Data Set Standard

**Version 1.2.2**

12/12/2018

## 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)
October 12, 2018	Version 1.1, draft. Schema/naming specifications changed; date is no longer required for currently-effective zoning GIS data.
October 15, 2018	Version 1.2, draft. Schema specification for DRAFT data is removed.
October 16, 2018	Version 1.2.1 draft. Explicitly added options for overlay districts—1 layer for all overlay districts or separate layer for each overlay district.
December 3, 2018	Version 1.2.2 draft.  Corrected typos in overlay-district field-specifications.  Added specification for handling zoning-ordinance amendments that don't necessitate geography or attribute changes in zoning GIS data.  Changed historic static-snapshot naming to use ARCHIVE instead of HIST—to prevent ambiguity between currently-effective data (e.g., currently-effective historic overlay-district) and archived static-snapshot data.
December 12, 2018	Version 1.2.2 adopted by EGC

## Statutory Authority and Standard Review/Approval

The Vermont Center for Geographic Information (VCGI) has the statutory authority<sup>1</sup> 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).

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<sup>1</sup> <http://legislature.vermont.gov/statutes/fullchapter/10/008>

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## Objectives

- 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 (archived) 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.

## Specifications

### Data Format

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. It can be served via any suitable format/protocol—e.g., ArcGIS Online feature layer, REST, etc.




### Spatial Reference

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).

## Bundle Naming

Layers and tables that compose a municipality’s zoning GIS data set are collectively termed **bundle** in this standard. When the bundle is exchanged or archived as a file-based resource, it is contained by either a single file-geodatabase (.gdb) or a single .zip-folder of shapefiles.

Bundle naming depends on the context:

Context	Bundle Naming
<p>Currently-effective zoning GIS data is provided as a file-based resource—e.g., provision to an RPC.</p>	<p><b>VTZONING_&lt;municipality name&gt;</b></p>
<p>To retain access to mapping of a municipality’s zoning ordinance as it was effective at a point in time (e.g., a prior amendment), the master-copy zoning GIS data set is archived as a static snapshot.</p>	<p><b>VTZONING_&lt;municipality name&gt;_&lt;YYYYMMDD&gt;_ARCHIVE</b></p> <p>&lt;YYYYMMDD&gt; represents the date of the zoning ordinance or zoning-ordinance amendment to which the data is current.</p> <p>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.</p> <p>The zoning GIS data set that models the currently-effective zoning ordinance (effective February 7, 2013) is named <b>VTZONING_Town</b>. The archive data-snapshots of the zoning GIS data set from the first zoning-ordinance adoption of 2006 and the 2009 amendment are named <b>VTZONING_Town_20060330_ARCHIVE</b> and <b>VTZONING_Town_20090423_ARCHIVE</b> respectively.</p> <div data-bbox="781 1136 1273 1255" style="border: 1px solid black; padding: 5px;"> <ul style="list-style-type: none"> <li> VTZONING_Town.gdb</li> <li> VTZONING_Town_20060330_ARCHIVE.gdb</li> <li> VTZONING_Town_20090423_ARCHIVE.gdb</li> </ul> </div>

## Metadata

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](#).

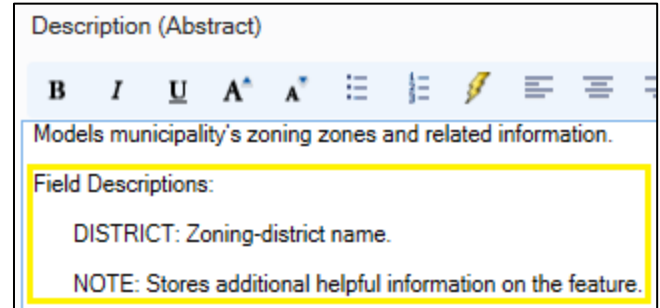
The metadata's **abstract** must have conspicuous content that indicates the date of the zoning ordinance or zoning-ordinance amendment to which the data is current.



When a zoning-ordinance amendment doesn't necessitate changes to the GIS data set's geography or attributes, the metadata's **abstract** is updated to document the amendment date.



Inclusion of field descriptions in the metadata is highly recommended. If producing metadata only for the ISO-Core subset of the ISO 19115 NAP (North American Profile) standard, field descriptions can be written into the **abstract**.



## Schema

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

**ZONING GIS DATA LAYER**

**Description:** Models a municipality's zoning zones and related information.


**Feature Class (or shapefile) Name:**


**VTZONING\_<municipality name>[\_YYYYMMDD]\_poly\_zones[\_ARCHIVE]**

**{\_YYYYMMDD}** is only applicable when the layer doesn't model the currently-effective zoning ordinance. If the layer serves as a historic static-snapshot, **{\_YYYYMMDD}** represents a single space followed by the date of the zoning ordinance or zoning-ordinance amendment to which the layer is current.

**{\_ARCHIVE}** represents a specification for historic static-snapshots. If the layer serves as a historic static-snapshot—not currently-effective zoning, end with a single space followed by **ARCHIVE**.

**Examples:**

Currently-effective zoning layer:  
 VTZONING\_Town\_poly\_zones

Historic static-snapshot of zoning layer—representing zoning ordinance as amended on December 1, 2011:  
 VTZONING\_Town\_20111201\_poly\_zones\_ARCHIVE

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**Outward-Facing Name** (currently-effective zoning, for ArcGIS Online, portals, etc.):

**VT Data - <municipality name> Zoning**

**For example:**

Currently-effective zoning layer:

[VT Data - Town Zoning](#)

An alternative to serving each of the bundle's layers individually to portals is to serve the bundle as 1 portal-item—as a single-.zip download; use this outward-facing naming-pattern:

**VT Data - <municipality name> Zoning {more info}**

**Minimum Outward-Facing Tags** (per [VT Open Geodata Portal Tagging Standard](#), for ArcGIS Online, portals, etc.):

**isothemeBoundary, subthemeTown, node<RPC acronym>**

**For example:**

Tags

[isothemeBoundary](#), [subthemeTown](#),  
[nodeMYrpc](#), [myTown](#), [zoning](#)

**Geometry Type:** polygon

**Field-Length Maximum:** 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.

## OVERLAY-DISTRICT GIS DATA LAYER

**Description:** Models 1 or more overlay districts and related information. A municipality's overlay districts can either be modeled within 1 layer or as individual layers—a separate layer for each district.

### Feature Class (or shapefile) Name:

**VTZONING\_<municipality name>[\_YYYYMMDD]\_poly\_<ODIST>[\_ARCHIVE]**

{\_YYYYMMDD} is only applicable when the layer doesn't model the currently-effective zoning ordinance. If the layer serves as a historic static-snapshot, {\_YYYYMMDD} represents a single space followed by the date of the zoning ordinance or zoning-ordinance amendment to which the layer is current.


If modeling all overlay districts within 1 layer, <ODIST> simply represents the string **ODIST**.

If modeling overlay districts as individual layers—e.g., 1 separate layer for each district, <ODIST> represents the overlay-district name.


{\_ARCHIVE} represents a specification for historic static-snapshots. If the layer serves as a historic static-snapshot—not currently-effective zoning, end with a single space followed by **ARCHIVE**.

### Examples:


All overlay districts (currently-effective overlay districts) modeled within 1 layer:

 VTZONING\_Town\_poly\_ODIST

Currently-effective Reptile Migration Overlay District:

 VTZONING\_Town\_poly\_ReptileMigrationOverlayDist

Historic static-snapshot of Reptile Migration Overlay District—representing zoning ordinance as amended on April 28, 2005:

 VTZONING\_Town\_20050428\_poly\_ReptileMigrationOverlayDist\_ARCHIVE

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**Outward-Facing Name** (currently-effective overlay district, for ArcGIS Online, portals, etc.):  
**VT Data - <municipality name> Zoning - <Overlay Districts or Overlay-District Name>**

**For example:**

Currently-effective Reptile Migration Overlay District:

[VT Data - Town Zoning - Reptile Migration Overlay District](#)

An alternative to serving each of the bundle's layers individually to portals is to serve the bundle as 1 portal-item—as a single-.zip download; use this outward-facing naming-pattern:

**VT Data - <municipality name> Zoning {more info}**

**Minimum Outward-Facing Tags** (per [VT Open Geodata Portal Tagging Standard](#), for ArcGIS Online, portals, etc.):

**isothemeBoundary, subthemeTown, node<RPC acronym>**

**For example:**

Tags  
[isothemeBoundary](#), [subthemeTown](#),  
[nodeMYrpc](#), [myTown](#), [zoning](#), [overlay districts](#),  
[Reptile Migration Overlay District](#)

**Geometry Type:** polygon

**Field-Length Maximum:** 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.

### Topology/Geometry

- Polygons of the **VTZONING\_<municipality name>{YYYYMMDD}\_poly\_zones{ARCHIVE}** layer **Must Not Overlap**. The polygons can share edges or vertices.
- Polygons of the **VTZONING\_<municipality name>{YYYYMMDD}\_poly\_zones{ARCHIVE}** layer must be closed at the municipality's boundary.
- No polygon layers may have sliver polygons.
- No layers may contain Null/empty geometry objects whatsoever.

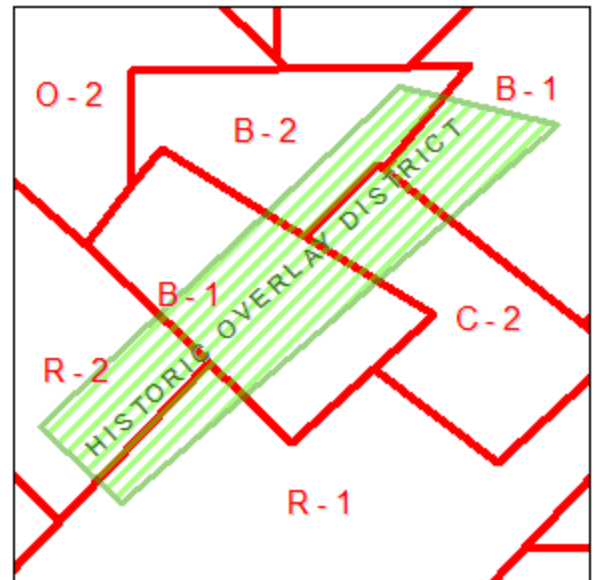
## Data Template

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 the [Standards and Guidelines](https://www.vermont.gov/info/000001) page on [vcgi.vermont.gov](https://www.vermont.gov/info/000001).

## Definitions

- **Zoning** – A municipal-level process that regulates development of land in ways that voters and local officials have approved.<sup>2</sup> The zoning process partitions a municipality into zones (polygonal descriptions) that define where and how various land-use types may occur.<sup>3</sup>
- **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.
- **Bundle** – A container—a file geodatabase (.gdb) or a .zip of shapefiles—that contains a zoning GIS data set.



## 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.

<sup>2</sup> *Zoning Administrators Handbook*, Vermont Land Use Education and Training Collaborative, October 2005, pg. iii.

<sup>3</sup> *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.