

# COMMONWEALTH OF VIRGINIA



**Information Technology Resource Management (ITRM)**

**VIRGINIA GEOGRAPHIC INFORMATION NETWORK (VGIN)**

**ADMINISTRATIVE BOUNDARY**

**GEOSPATIAL DATA STANDARD**

**Virginia Information Technologies Agency (VITA)**

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# 1 Publication Version Control

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The following table contains a history of revisions to this publication.

| Version | Date       | Revision Description | Contact    |
|---------|------------|----------------------|------------|
| 1.0     | 01/27/2015 | Initial Document     | Joe Grubbs |
|         |            |                      |            |

## Identifying Changes in This Document

- See the latest entry in the revision table above
- Vertical lines in the left margin indicate the paragraph has changes or additions. Specific changes in wording are noted using italics and underlines; with italics only indicating new/added language and italics that is underlined indicating language that has changed.

The following examples demonstrate how the reader may identify updates and changes:

Example with No Change – The text is the same. The text is the same.

Example with Revision – The text is the same. *A wording change, update or clarification is made in this text.*

Example of New Text – *This text is new.*

Example of deleted text – ~~*This text was deleted*~~

## 2 Reviews

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- VITA’s Commonwealth Data Governance (CDG) staff prepared the first draft of this publication based on information provided by the Virginia Geographic Information Network (VGIN) and its stakeholder community.

## 3 Definitions

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The terms used in this Business Narrative comply with the adopted definitions maintained in the Commonwealth of Virginia's Information Technology Resource Management (ITRM) Glossary. The ITRM Glossary can be accessed at [http://www.vita.virginia.gov/uploadedFiles/VITA\\_Main\\_Public/Library/PSGs/PSG\\_Sections/C OV ITRM Glossary.pdf](http://www.vita.virginia.gov/uploadedFiles/VITA_Main_Public/Library/PSGs/PSG_Sections/C OV ITRM Glossary.pdf)

## 4 Background

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The Virginia Geographic Information Network (VGIN) is a division under VITA's Integrated Services Program (ISP). Pursuant to § 2.2-2026, *Code of Virginia*, the VGIN Coordinator has been tasked to "Oversee the development of and recommend to VITA the promulgation of those policies and guidelines required to support state and local government exchange, acquisition, storage, use, sharing and distribution of geographic or base map data and related technologies." Additional duties and responsibilities for VGIN are codified under § 2.2-2026, and the VGIN Advisory Board under § 2.2-2423, *Code of Virginia*. Details relating to VGIN can be accessed at

<http://www.vita.virginia.gov/ISP>

The purpose of VGIN Administrative Boundary Geospatial Data Standard is to define the data file naming conventions, geometry, map projection system, common set of attributes, dataset type and specifications, and level of precision for the Virginia Administrative Boundaries Dataset, which will be the data source of record at the state level for administrative boundary spatial features within the Commonwealth of Virginia.

Administrative Boundaries shall be defined as boundaries that delineate geographic areas for uses such as governance and the general provision of services (e.g. counties, cities, towns), administration and/or for a specific purpose (e.g., Congressional Districts, school districts, fire districts, voting districts, etc.), and/or provision of statistical data (census tracts, census blocks, metropolitan statistical areas, etc.). Boundaries for these various types of geographic areas are defined through documented criteria and guidelines.

VGIN produced an initial version of the Virginia Administrative Boundaries Dataset, and a corresponding map product for Virginia's administrative boundary features, covering the base period (time point zero, or  $T_0$ ) using a combination of geospatial data from the U.S. Census Bureau's Boundary and Annexation Survey (BAS) and locality boundary submissions. The BAS data were structured on the Census Bureau's Topologically Integrated Geographic Encoding and Referencing (TIGER) model.

The Census Bureau conducts the BAS annually to collect geospatial data on selected geographic areas. BAS data are used to update information about the boundaries and names of all governmental units within the United States. For the base period dataset and map product, VGIN reprocessed the BAS data to align with the Virginia Administrative Boundaries Dataset schema.

Localities have been invited to submit boundary data information for incorporation into Virginia Administrative Boundaries Dataset, and can do so by email submission to [vbmp@vgin.virginia.gov](mailto:vbmp@vgin.virginia.gov).

As administrative boundaries change, VGIN will update the Virginia Administrative Boundaries Dataset based on the VGIN Administrative Boundary Geospatial Data Standard to reflect the new boundaries. Before being accepted by VGIN, boundary changes, as opposed to boundary corrections, must be submitted by localities, approved by the Circuit Court, and confirmed by notification from the Secretary of the Commonwealth. VGIN has set an annual release schedule for updates to the dataset, with the version denoted by year in the title (i.e., "Virginia Administrative Boundaries Dataset 2015").

## 5 Scope

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The VGIN Administrative Boundary Geospatial Data Standard implements, as a Commonwealth ITRM Standard, the data file naming conventions, coordinate systems, geometry, attributes, dataset type and specifications for the Virginia Administrative Boundaries Dataset. The standard shall be applicable to Commonwealth agencies and serve as the data source of record at the state level for administrative boundary spatial features within the Commonwealth of Virginia. The VGIN Administrative Boundary Geospatial Data Standard does not specify a legal boundary and the product shall not be used as one.

## 6 Governance

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The VGIN Administrative Boundary Geospatial Data Standard has been developed by VITA Commonwealth Data Governance (CDG) staff in conjunction with VGIN. VITA/CDG staff developed the Business Narrative for the standard, with direction and technical information provided by VGIN.

VGIN, acting under guidance from the VGIN Advisory Board, shall be the designated owner of the VGIN Administrative Boundary Geospatial Data Standard. As such, VGIN shall have authority to interpret and apply the standard. VITA/CDG, acting in its governance capacity for Commonwealth data standardization, will continue to support VGIN in the development, refinement and maintenance of the standard. VITA/CDG will work with VGIN to ensure compliance with the standard by Commonwealth agencies.

The VGIN Administrative Boundary Geospatial Data Standard documentation and review package may be accessed in the Enterprise Data Standards Repository at <http://www.vita.virginia.gov/oversight/dm/default.aspx?id=10344>.

## 7 Components

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The VGIN Administrative Boundary Geospatial Data Standard consists of the following components:

1. Business Narrative describing the standard (this document)
2. Metadata on the feature classes represented in the Virginia Administrative Boundaries Dataset (**Appendix 1** of this document)

## 8 Authority

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The following section references the statutory authority established in the *Code of Virginia* for the Secretary of Technology to adopt the VGIN Administrative Boundary Geospatial Data Standard. The section also cites provisions in statute relating to the role of the Secretary of Technology, the Chief Information Officer of the Commonwealth (CIO), VITA, VGIN and the VGIN Advisory Board in the development, review, adoption and implementation of Commonwealth geospatial data standards.

### **The Secretary of Technology**

§ 2.2-225. Position established; Agencies for which responsible; additional powers (As Amended)

<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+2.2-225>

### **The Chief Information Officer of the Commonwealth (CIO)**

§ 2.2-2007. Powers of the CIO (As Amended)

<http://lis.virginia.gov/cgi-bin/legp604.exe?000+cod+2.2-2007>

### **The Virginia Information Technologies Agency**

§ 2.2-2010. Additional powers of VITA (As Amended)

<http://lis.virginia.gov/cgi-bin/legp604.exe?000+cod+2.2-2010>

### **The Virginia Geographic Information Network**

§ 2.2-2027. Powers and duties of the Division (VGIN); Division coordinator. (As Amended)

<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+2.2-2027>

### **The Virginia Geographic Information Network Advisory Board**

§ 2.2-2423. Virginia Geographic Information Network Advisory Board; membership; terms; quorum; compensation and expenses (As Amended)

<http://leg1.state.va.us/cgi-bin/legp504.exe?000+cod+2.2-2423>

## 9 Overview

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The VGIN Administrative Boundary Geospatial Data Standard implements, as a Commonwealth ITRM Standard, the data file naming conventions, coordinate systems, geometry, attributes, dataset type and specifications for the Virginia Administrative Boundaries Dataset. The standard shall be applicable to Commonwealth agencies and serve as the data source of record at the state level for administrative boundary spatial features within the Commonwealth of Virginia.

Administrative Boundaries shall be defined as boundaries that delineate geographic areas for uses such as governance and the general provision of services (e.g. counties, cities, towns), administration and/or for a specific purpose (e.g., Congressional Districts, school districts, fire districts, voting districts, etc.), and/or provision of statistical data (census tracts, census blocks, metropolitan statistical areas, etc.). Boundaries for these various types of geographic areas are defined through documented criteria and guidelines.

The VGIN Administrative Boundary Geospatial Data Standard shall consist of the following elements. VGIN’s metadata for the feature classes have been provided in **Appendix 1**.

### File and Feature Naming Conventions

|   |   |
|---|---|
| <b>Dataset Published Title (Release in YYYY Format)</b> | “Virginia Administrative Boundary Dataset YYYY”   |
| <b>Dataset Type</b>                                     | ESRI-compatible Layer Package   |
| <b>Feature Geodatabase File Name</b>                    | “VA_Admin_Boundaries”   |
| <b>Geodatabase Feature Classes and Contents</b>         | <p>“ADOPTION_LINES” – Contains locality boundary lines that took precedence during updates to the VA_COUNTY feature class</p> <p>“VA_TOWN” – Contains geometry and attribute information for town boundaries in Virginia</p> <p>“VA_COUNTY” – Contains geometry and attribute information for counties and cities in Virginia</p> |

### Coordinate Systems and Geometry

|                                     |                                  |
|-------------------------------------|----------------------------------|
| <b>Projected Coordinate System</b>  | Lambert Conformal Conic Virginia |
| <b>Geographic Coordinate System</b> | GCS North American 1983          |
| <b>Geometry Type</b>                | ESRI True Curves                 |

**Feature Classes and Attributes**

| <b>Feature Class: "ADOPTION_LINES"</b> |                  |  |
|--|------------------|--|
| <b>Field Name</b>                      | <b>Data Type</b> | <b>Description</b>   |
| OJECTID                                | GUI              | Global unique identifier (GUI) for the feature. Internal feature number. Sequential unique whole numbers that are automatically generated. |
| Shape                                  | Geometry         | Feature geometry. Coordinates defining the features.   |
| Shape_Length                           | Double           | Length of feature in internal units. Positive real numbers that are automatically generated  |
| ADOPTION_FIPS                          | Text             | Administrative boundary adopted for the feature. Coded based on "FIPS_COUNTY"  |
| LASTUPDATE                             | Date             | Date stamp denoting the most recent update to the feature.   |
| COMMENT                                | Text             | General comment field.   |
| <b>Feature Class: "VA_TOWN"</b>        |                  |  |
| <b>Field Name</b>                      | <b>Data Type</b> | <b>Description</b>   |
| OJECTID                                | GUI              | Global unique identifier (GUI) for the feature. Internal feature number. Sequential unique whole numbers that are automatically generated. |
| Shape                                  | Geometry         | Feature geometry. Coordinates defining the features.   |
| Shape_Length                           | Double           | Length of feature in internal units. Positive real numbers that are automatically generated  |
| Shape_Area                             | Double           | Area of feature in internal units squared. Positive real numbers that are automatically generated.   |
| STPLFIPS                               | Text             | State-Town FIPS Code.  |
| GNIS                                   | Text             | Geographic Names Information System (GNIS) identifier for the feature.   |
| NAME                                   | Text             | Jurisdiction name for the feature.   |
| NAMELSAD                               | Text             | Full jurisdiction name for the feature.  |
| GSOURCE                                | Text             | Source code for the feature geometry. Coded based on "GEOMETRY_SOURCE"   |
| LADOPT                                 | Text             | Local data adoption.   |
| AREASQMI                               | Double           | Calculated square mileage of the feature.  |
| LASTUPDATE                             | Date             | Date stamp denoting the most recent update to the feature.   |



| <b>Feature Class: "VA_COUNTY"</b> |                  |  |
|-----------------------------------|------------------|--|
| <b>Field Name</b>                 | <b>Data Type</b> | <b>Description</b>   |
| OJECTID                           | GUI              | Global unique identifier (GUI) for the feature. Internal feature number. Sequential unique whole numbers that are automatically generated. |
| Shape                             | Geometry         | Feature geometry. Coordinates defining the features.   |
| Shape_Length                      | Double           | Length of feature in internal units. Positive real numbers that are automatically generated  |
| Shape_Area                        | Double           | Area of feature in internal units squared. Positive real numbers that are automatically generated.   |
| STCOFIPS                          | Text             | State-County FIPS Code.  |
| GNIS                              | Text             | Geographic Names Information System (GNIS) identifier for the feature.   |
| NAME                              | Text             | Jurisdiction name for the feature.   |
| NAMELSAD                          | Text             | Full jurisdiction name for the feature.  |
| GSOURCE                           | Text             | Source code for the feature geometry. Coded based on "GEOMETRY_SOURCE"   |
| LADOPT                            | Text             | Local data adoption.   |
| AREASQMI                          | Double           | Calculated square mileage of the feature.  |
| LASTUPDATE                        | Date             | Date stamp denoting the most recent update to the feature.   |
| JURISTYPE                         | Text             | Type of jurisdiction for the feature.  |

**List of Values / Domains**

| <b>LOV:<br/>"GEOMETRY_SOURCE"</b> |                                   |
|-----------------------------------|-----------------------------------|
| <b>Code</b>                       | <b>Description</b>                |
| L                                 | Local Government source           |
| V                                 | VGIN & Local Government source    |
| T                                 | U.S. Census Bureau (TIGER) source |

## 10 Compliance

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The VGIN Administrative Boundary Geospatial Data Standard implements, as a Commonwealth ITRM Standard, the data file naming conventions, coordinate systems, geometry, attributes, dataset type and specifications for the Virginia Administrative Boundaries Dataset.

The VGIN Administrative Boundary Geospatial Data Standard shall be applicable to Commonwealth agencies and serve as the data source of record at the state level for administrative boundary spatial features within the Commonwealth of Virginia.

Agencies not able to comply with the VGIN Administrative Boundary Geospatial Data Standard and seeking to implement an alternate compliance strategy may request an exception using the VITA Exception Form available on the Web at

[http://www.vita.virginia.gov/uploadedFiles/Oversight/EA/Data\\_Management\\_Group/EA%20Change-Exception%20Request%20Form.doc](http://www.vita.virginia.gov/uploadedFiles/Oversight/EA/Data_Management_Group/EA%20Change-Exception%20Request%20Form.doc)

Email the completed form to [ea@vita.virginia.gov](mailto:ea@vita.virginia.gov).

As part of the exception request, the requesting agency must state a valid business case for the alternate compliance strategy and demonstrate an efficient cost-benefit ratio warranting the compliance method.

All exception requests and alternate compliance strategies shall be considered by VITA Enterprise Architecture and VGIN staff. However, granting of exceptions and certification of compliant data-exchange or transformation schemas shall be at the discretion of VGIN.

**APPENDIX 1: VGIN ADMINISTRATIVE BOUNDARIES DATASET METADATA**

**ADOPTION\_LINES**

**File Geodatabase Feature Class**



**Tags**

boundaries, Nation, Polygon

**Summary**

The ADOPTION\_LINE feature class is a representation of the VGIN-adopted boundaries that compose the Virginia Administrative Boundaries Dataset. This data set accompanies the VA\_COUNTY and VA\_TOWN feature classes and its recommended use is within an ArcGIS environment.

**Description**

The ADOPTION\_LINE feature class is meant to show which locality boundary line took precedence when updating the VBMP Administrative Boundary VA\_COUNTY feature class. A single line represents the locality that was used in incorporation. Generally interior cities were used wholesale. Some county boundaries that included ridge lines and hydrography were used where available.

**Credits**

Virginia Geographic Information Network (VGIN)

**Use limitations**

The ADOPTION\_LINES feature class is not a legal boundary and shall not be used as one. Best efforts were undertaken to ensure the correctness of Administrative Boundary data by using the best source available throughout the Commonwealth of Virginia, however, all warranties regarding the accuracy of the map data and any representation or inferences derived there from are hereby expressly disclaimed.

**Extent**

**West** -83.837899    **East** -75.722738  
**North** 39.471582    **South** 36.524413

**Scale Range**

**Maximum (zoomed in)** 1:5,000  
**Minimum (zoomed out)** 1:150,000,000

## VA\_TOWN

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### File Geodatabase Feature Class



### Tags

Virginia, administrative, boundary, boundaries, Nation, Polygon

### Summary

VA\_TOWN is a feature class representing town boundaries in the Commonwealth of Virginia. This dataset was derived from Census TIGER data supplemented with locality data made available from the towns involved or the counties containing the towns.

### Description

The VA\_TOWN dataset is a feature class component of the Virginia Administrative Boundaries dataset from the Virginia Geographic Information Network (VGIN). VA\_TOWN represents the best available town boundary information to VGIN.

VGIN initially sought to develop an improved locality and town boundary dataset in late 2013, spurred by response of the Virginia Administrative Boundaries Workgroup community. The feature class initially started from an extraction of town features from the Census TIGER dataset for Virginia. VGIN solicited input from localities in Virginia through the Road Centerlines data submission process as well as through public forums such as the Virginia Administrative Boundaries Workgroup and VGIN listservs. Data received were analyzed and incorporated into the VA\_TOWN feature class where locality data were a superior representation of town boundaries. In cases of unresolved contention between data sources, the VGIN Coordinator will be arbiter for the selected representation.

## Credits

Virginia Geographic Information Network (VGIN), the U.S. Census Bureau, and the Localities and Towns submitting data to the project

## Use limitations

The VA\_TOWN feature class is not a legal boundary and shall not be used as one. Best efforts were undertaken to ensure the correctness of Administrative Boundary data by using the best source available throughout the Commonwealth of Virginia, however, all warranties regarding the accuracy of the map data and any representation or inferences derived there from are hereby expressly disclaimed.

## Extent

|              |            |              |            |
|--------------|------------|--------------|------------|
| <b>West</b>  | -83.260079 | <b>East</b>  | -75.181949 |
| <b>North</b> | 39.300237  | <b>South</b> | 36.468479  |

## Scale Range

|                             |               |
|-----------------------------|---------------|
| <b>Maximum (zoomed in)</b>  | 1:5,000       |
| <b>Minimum (zoomed out)</b> | 1:150,000,000 |

## VA\_COUNTY

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### File Geodatabase Feature Class



### Tags

Virginia, administrative, boundary, boundaries, Nation, Polygon

### Summary

VA\_COUNTY is a feature class representing locality (county and city) boundaries in the Commonwealth of Virginia. This dataset was derived from Census TIGER data supplemented with data made available from the cities and counties themselves.

### Description

The VA\_COUNTY dataset is a feature class component of the Virginia Administrative Boundaries dataset from the Virginia Geographic Information Network (VGIN). VA\_COUNTY represents the best available city and county boundary information to VGIN.

VGIN initially sought to develop an improved locality and town boundary dataset in late 2013, spurred by response of the Virginia Administrative Boundaries Workgroup community. The feature class initially started from the locality boundaries from the Census TIGER dataset for Virginia. VGIN solicited input from localities in Virginia through the Road Centerlines data submission process as well as through public forums such as the Virginia Administrative Boundaries Workgroup and VGIN listservs. Data received were analyzed and incorporated into the VA\_COUNTY feature class where locality data were a superior representation of the city or county boundary. In cases of unresolved contention between data sources, the VGIN Coordinator will be arbiter for the selected representation.

## Credits

Virginia Geographic Information Network (VGIN), the U.S. Census Bureau, and the Localities and Towns submitting data to the project

## Use limitations

The VA\_COUNTY feature class is not a legal boundary and shall not be used as one. Best efforts were undertaken to ensure the correctness of Administrative Boundary data by using the best source available throughout the Commonwealth of Virginia, however, all warranties regarding the accuracy of the map data and any representation or inferences derived there from are hereby expressly disclaimed.

## Extent

|              |            |              |            |
|--------------|------------|--------------|------------|
| <b>West</b>  | -83.837899 | <b>East</b>  | -75.084197 |
| <b>North</b> | 39.471582  | <b>South</b> | 36.462210  |

## Scale Range

|                             |               |
|-----------------------------|---------------|
| <b>Maximum (zoomed in)</b>  | 1:5,000       |
| <b>Minimum (zoomed out)</b> | 1:150,000,000 |