



# School District Demographics System

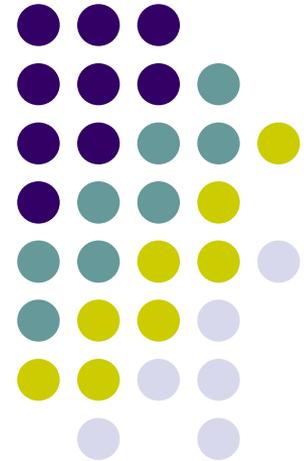
**National Center for Education Statistics**

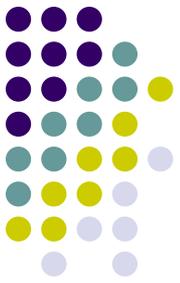
**Blue Raster**

Presented by **Michael Lippmann**

**Stephen Ansari**

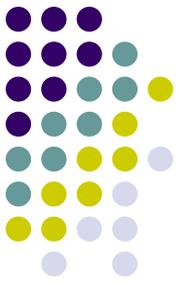
**Brendan Collins**





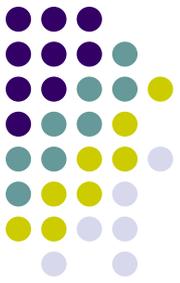
# Presentation Outline

- Introduction/Data Overview
- Live Demonstration
- Technical Deep Dive
- Summary/Q & A



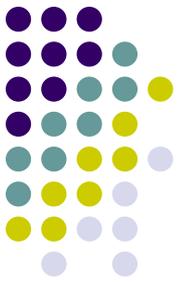
# What is SDDS?

*The School District Demographics System (SDDS) is a U.S. Department of Education sponsored application that provides access to U.S. Census Bureau data **mapped to school district boundaries.***



# SDDS Overview

- Extremely large repository of demographic information
- Extensive collection of demographic estimate
- More than 115,000 demographic characteristics for each school district
- More than 100 GB of data



# Organizations involved in SDDS



U.S. Census Bureau  
United States Department of  
Commerce

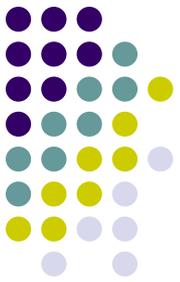
**SYNERGY ENTERPRISES, INC.**

*An 8(a)-certified, woman-owned professional and technical services company*

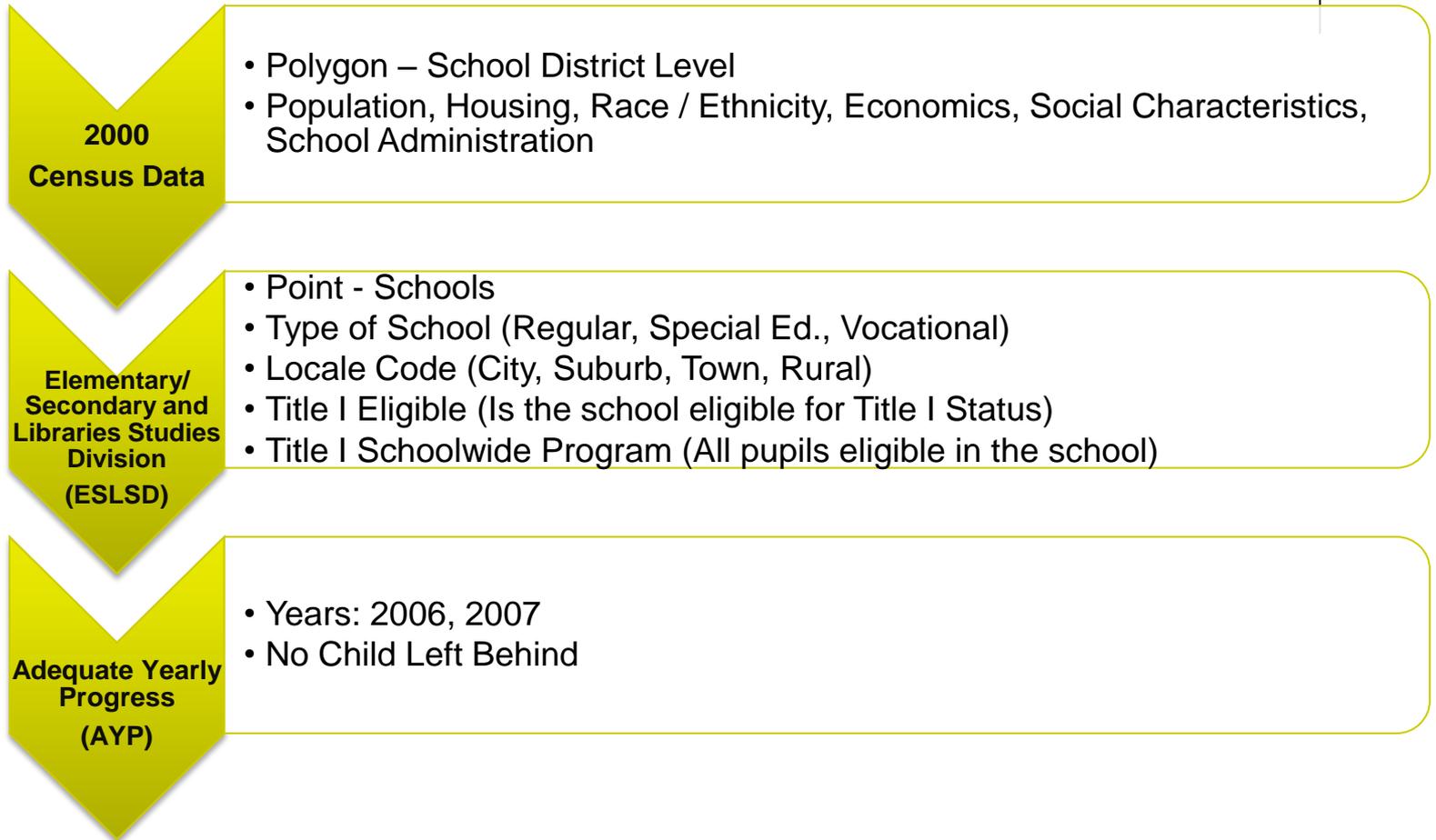


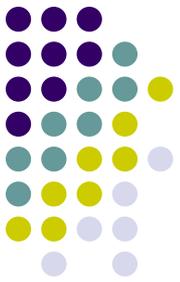


# The Data



# Previously Existing Data





# Recent Additions

## NAEP

- Years: 2005, 2007
- Assessment of student progress- “Nation’s Report Card”
- SDDS currently includes Math & Reading by District

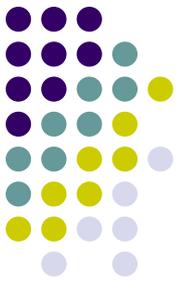
## Places to Protect

- Subset of Nationwide Dataset distributed by TeleAtlas
- Hospitals, Police & Fire Stations, Urgent Care Centers

## ACS

- Years: 2005, 2006
- Ongoing survey for districts with population > 65,000
- Helps communities allocate resources and locate services
- Includes 1-year and 3-year data products

# American Community Survey (ACS)



Data Product	Population Threshold	Year of Data Release							
		2006	2007	2008	2009	2010	2011	2012	2013
1-year Estimates	65,000+	2005	2006	2007	2008	2009	2010	2011	2012
3-year Estimates	20,000+			2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012
5-year Estimates	All Areas					2005-2009	2006-2010	2007-2011	2008-2012



# Live Demo

Fullscreen Basemap Map Tools Transparency

Vertical navigation bar with zoom controls and a search icon.

Vertical navigation bar with checkboxes for Districts, Schools, and States.

### SDDS Map Viewer Wizard

Show data for:

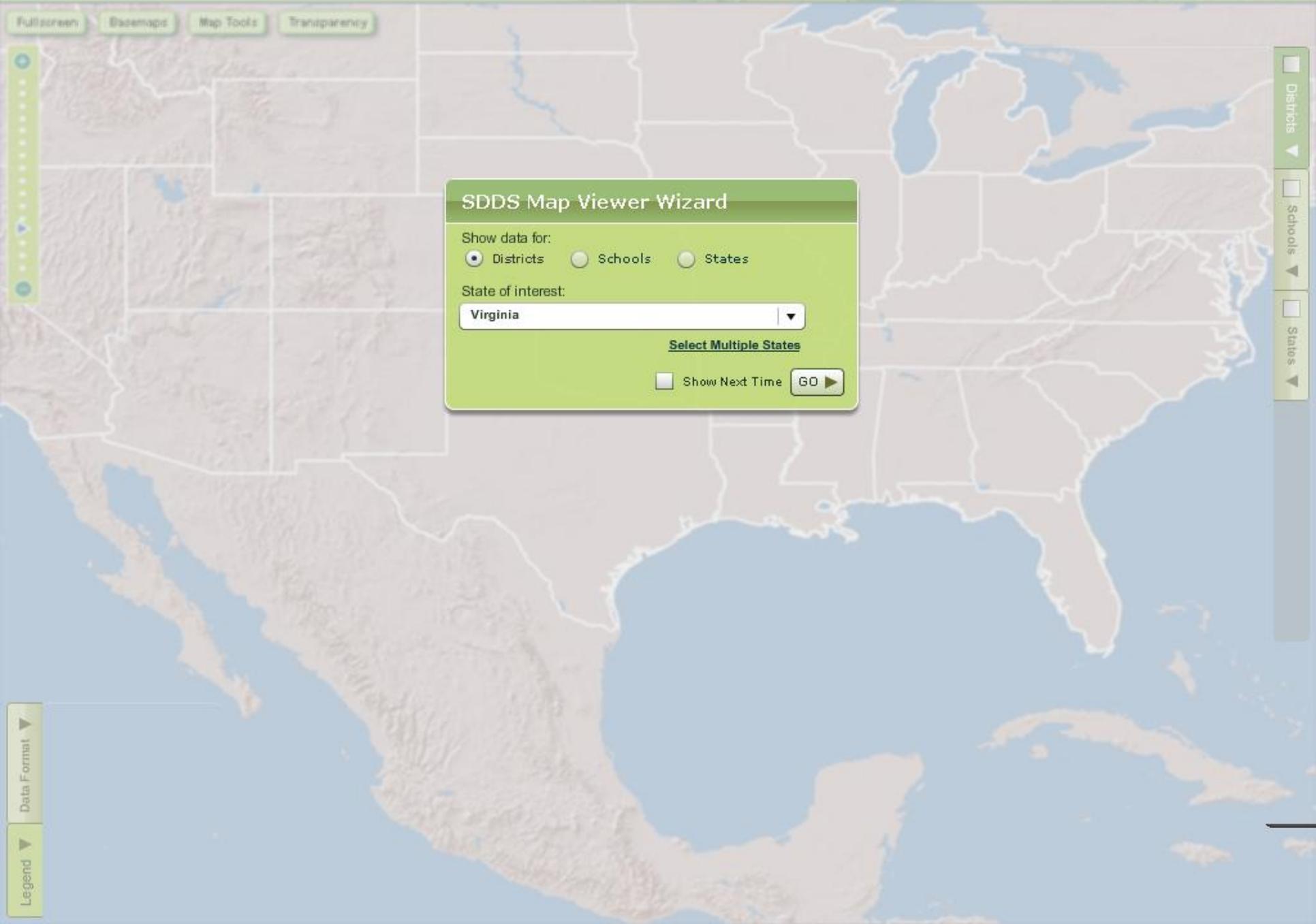
Districts    Schools    States

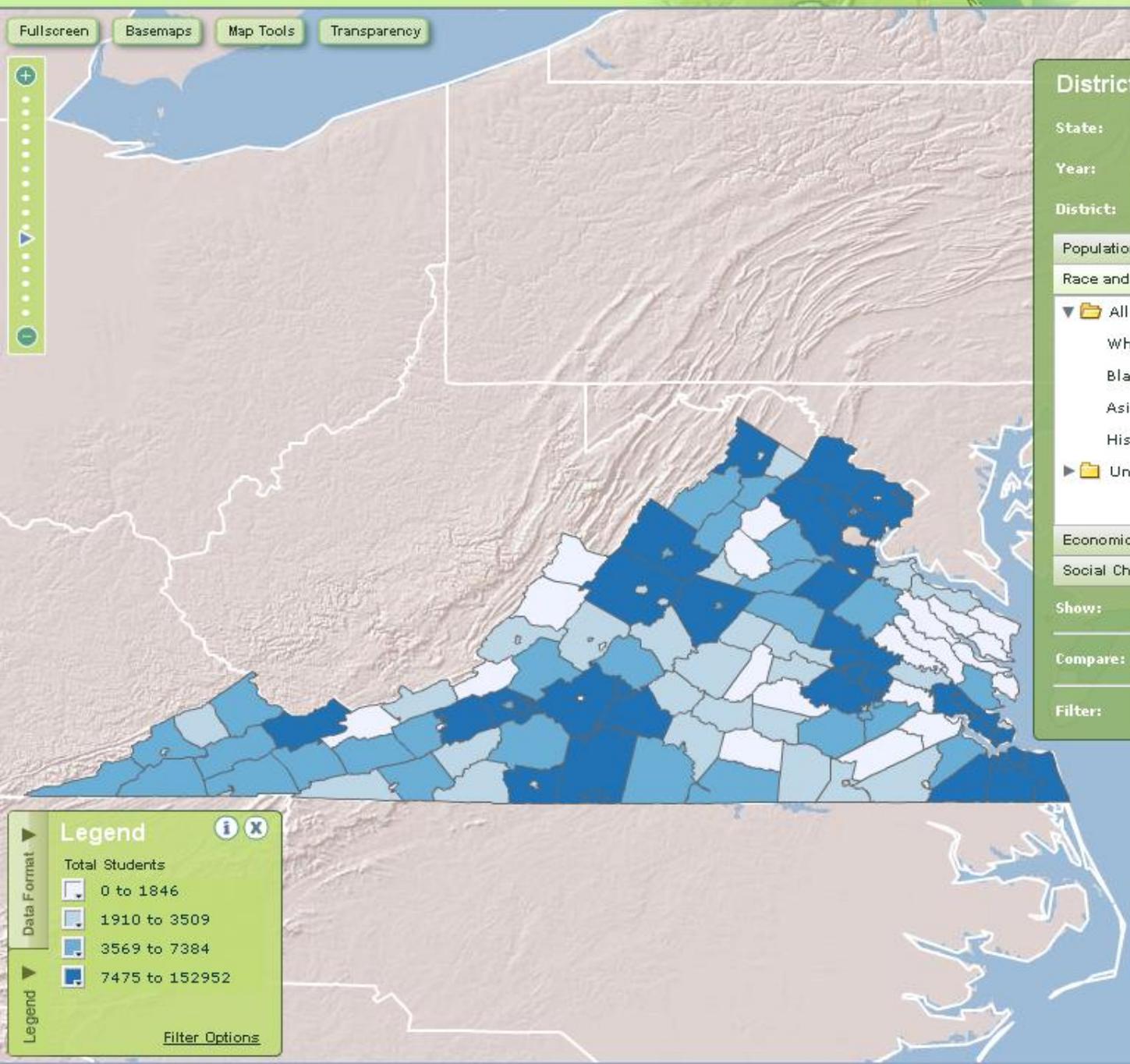
State of interest:

[Select Multiple States](#)

Show Next Time

Legend Data Format





### Districts

State:

Year:

District:

Population and Housing

Race and Ethnic

- ▼ All Ages
  - White Alone
  - Black or African American alone
  - Asian Alone
  - Hispanic or Latino
- ▶ Under 18

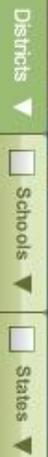
Economics

Social Characteristics

Show:  Theme  Labels

Compare:

Filter:



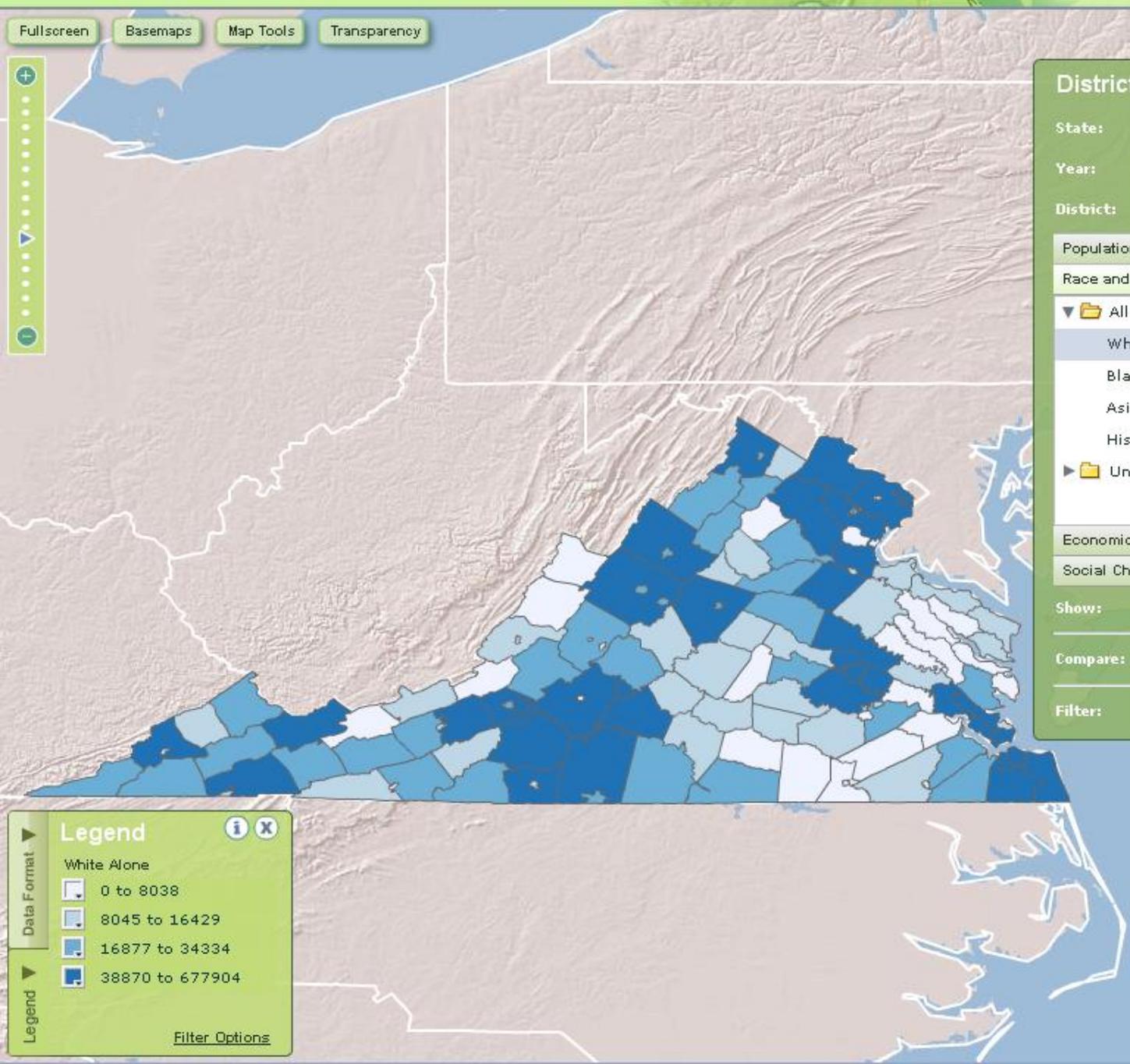
### Legend

Data Format ▼

Total Students

- 0 to 1846
- 1910 to 3509
- 3569 to 7384
- 7475 to 152952

Filter Options



### Districts

State:

Year:

District:

Population and Housing

Race and Ethnic

- ▼ All Ages
  - White Alone
  - Black or African American alone
  - Asian Alone
  - Hispanic or Latino
- ▶ Under 18

Economics

Social Characteristics

Show:  Theme  Labels

Compare:

Filter:

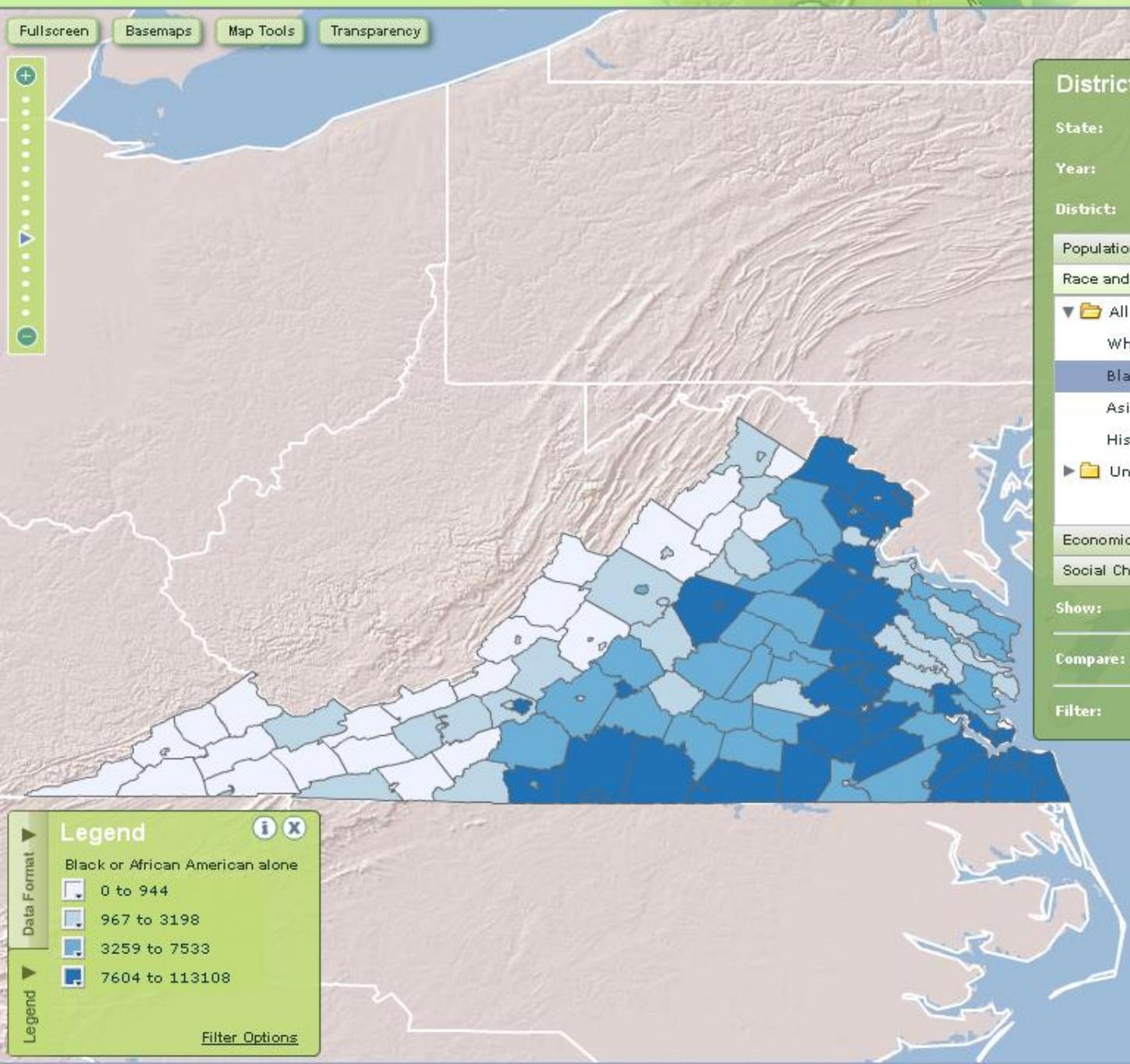
Districts  
Schools  
States

### Legend

Data Format

- White Alone
  - 0 to 8038
  - 8045 to 16429
  - 16877 to 34334
  - 38870 to 677904

Filter Options



### Districts

State:

Year:

District:

Population and Housing

Race and Ethnic

- All Ages
  - White Alone
  - Black or African American alone**
  - Asian Alone
  - Hispanic or Latino
- Under 18

Economics

Social Characteristics

Show:  Theme  Labels

Compare:

Filter:

Districts  
Schools  
States

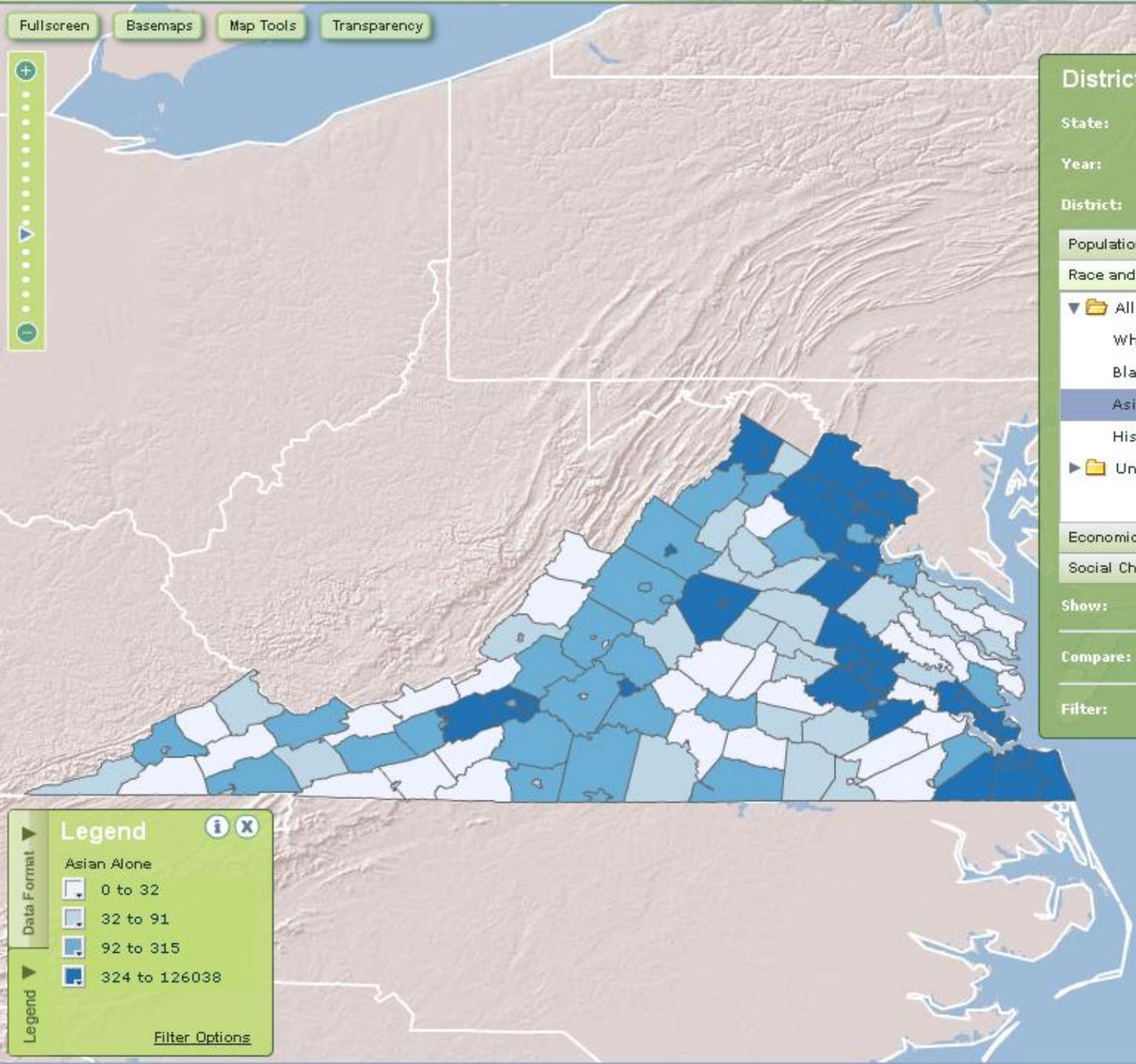
### Legend

Data Format

Black or African American alone

- 0 to 944
- 967 to 3198
- 3259 to 7533
- 7604 to 113108

Filter Options



### Districts

State:

Year:

District:

Population and Housing

Race and Ethnic

- ▼ All Ages
  - White Alone
  - Black or African American alone
  - Asian Alone
  - Hispanic or Latino
- ▶ Under 18

Economics

Social Characteristics

Show:  Theme  Labels

Compare:

Filter:

Districts  
Schools  
States

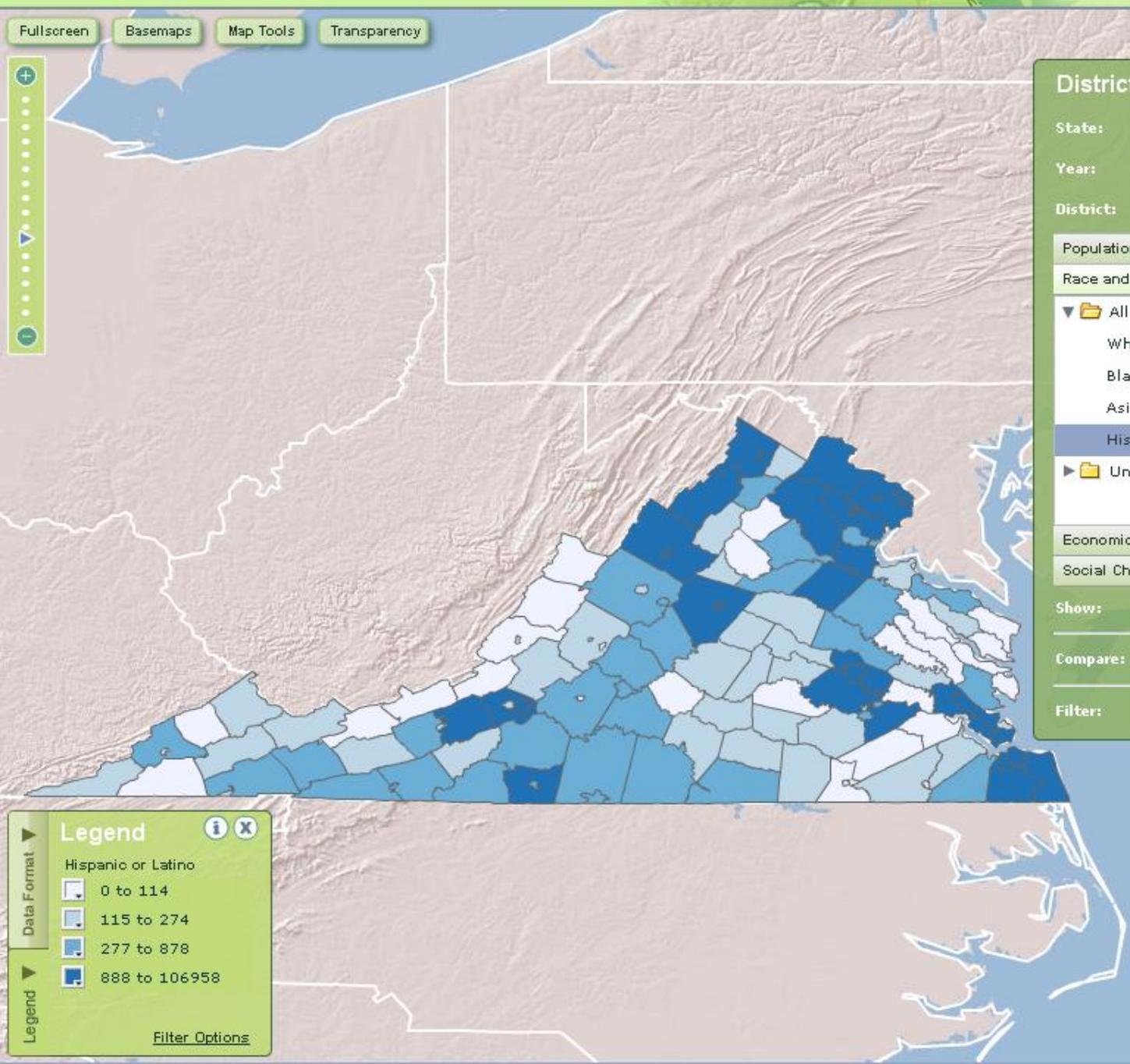
### Legend

Data Format

Asian Alone

- 0 to 32
- 32 to 91
- 92 to 315
- 324 to 126038

Filter Options



### Districts

State:

Year:

District:

Population and Housing

Race and Ethnic

- All Ages
  - White Alone
  - Black or African American alone
  - Asian Alone
  - Hispanic or Latino**
- Under 18

Economics

Social Characteristics

Show:  Theme  Labels

Compare:

Filter:

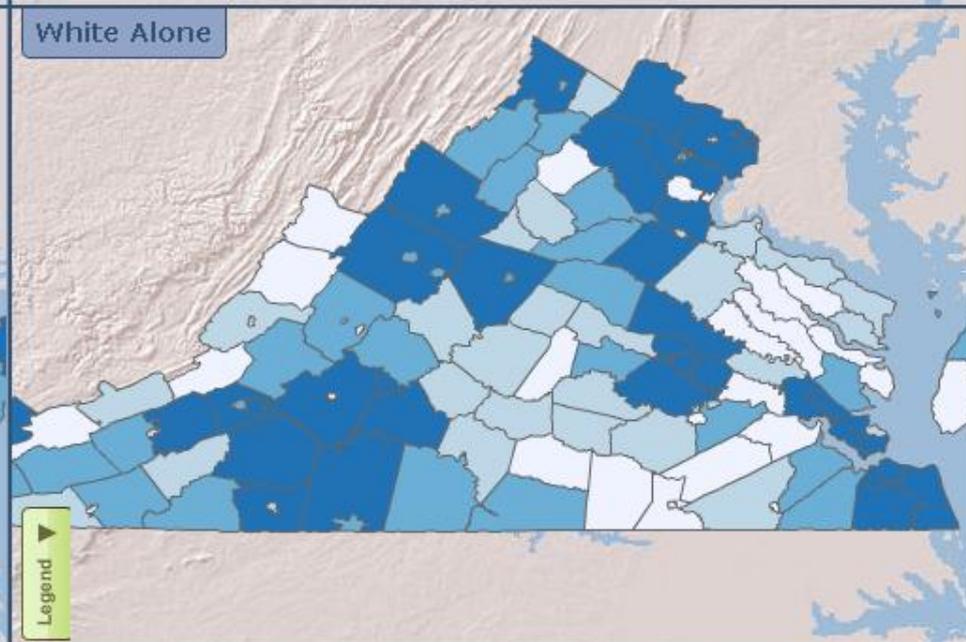
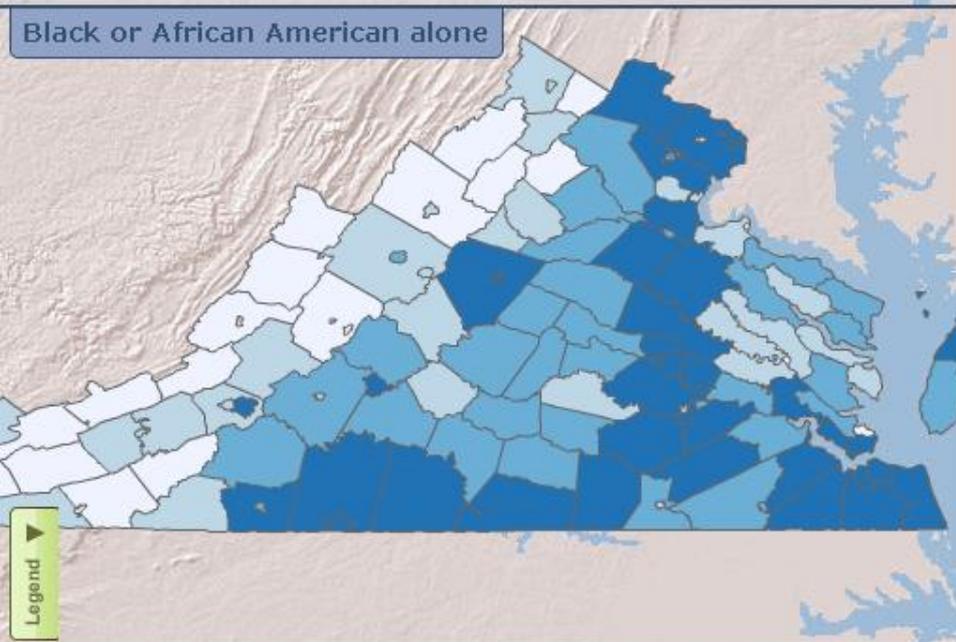
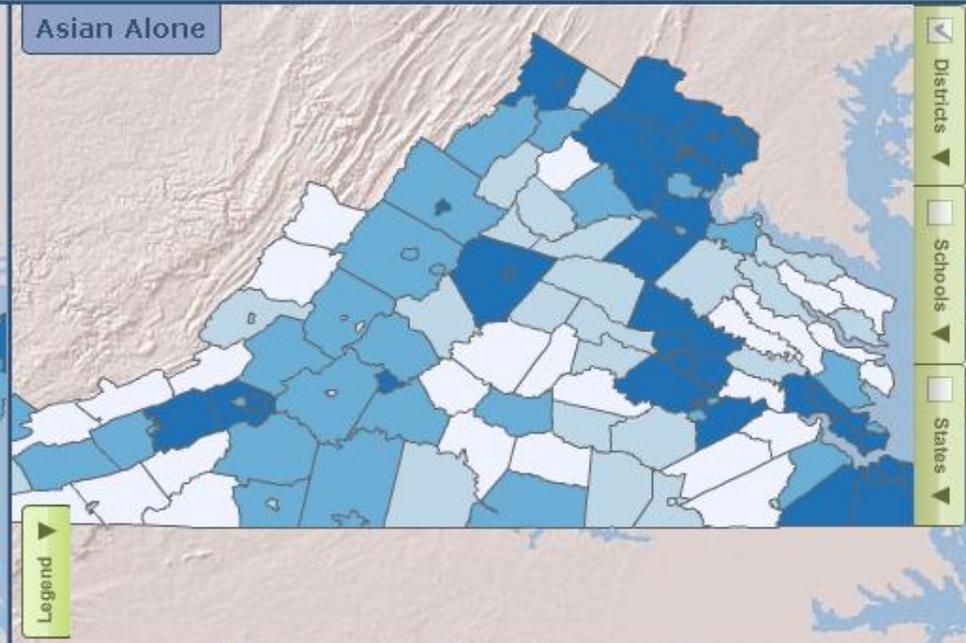
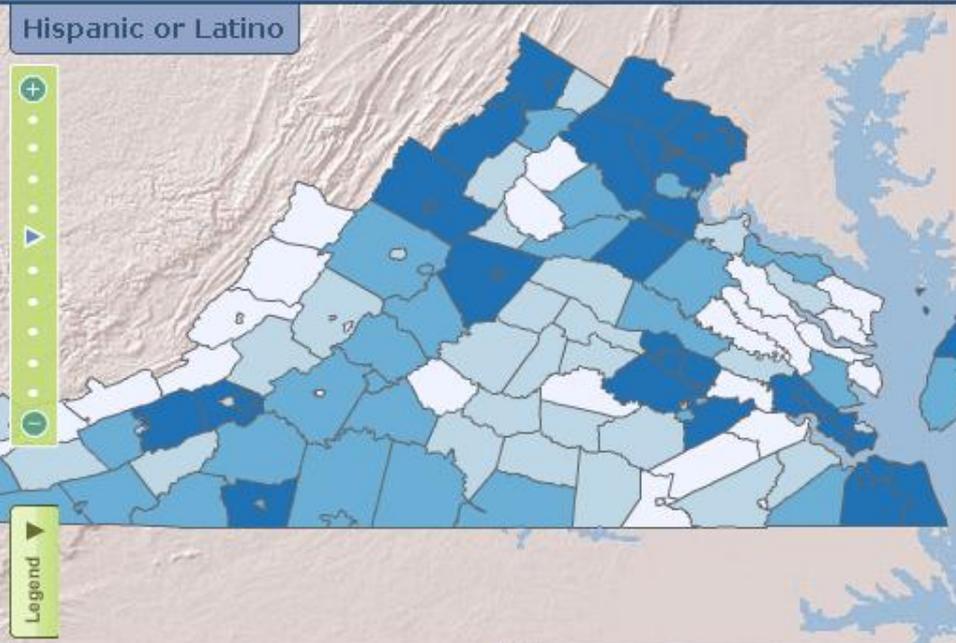
### Legend

Data Format

Hispanic or Latino

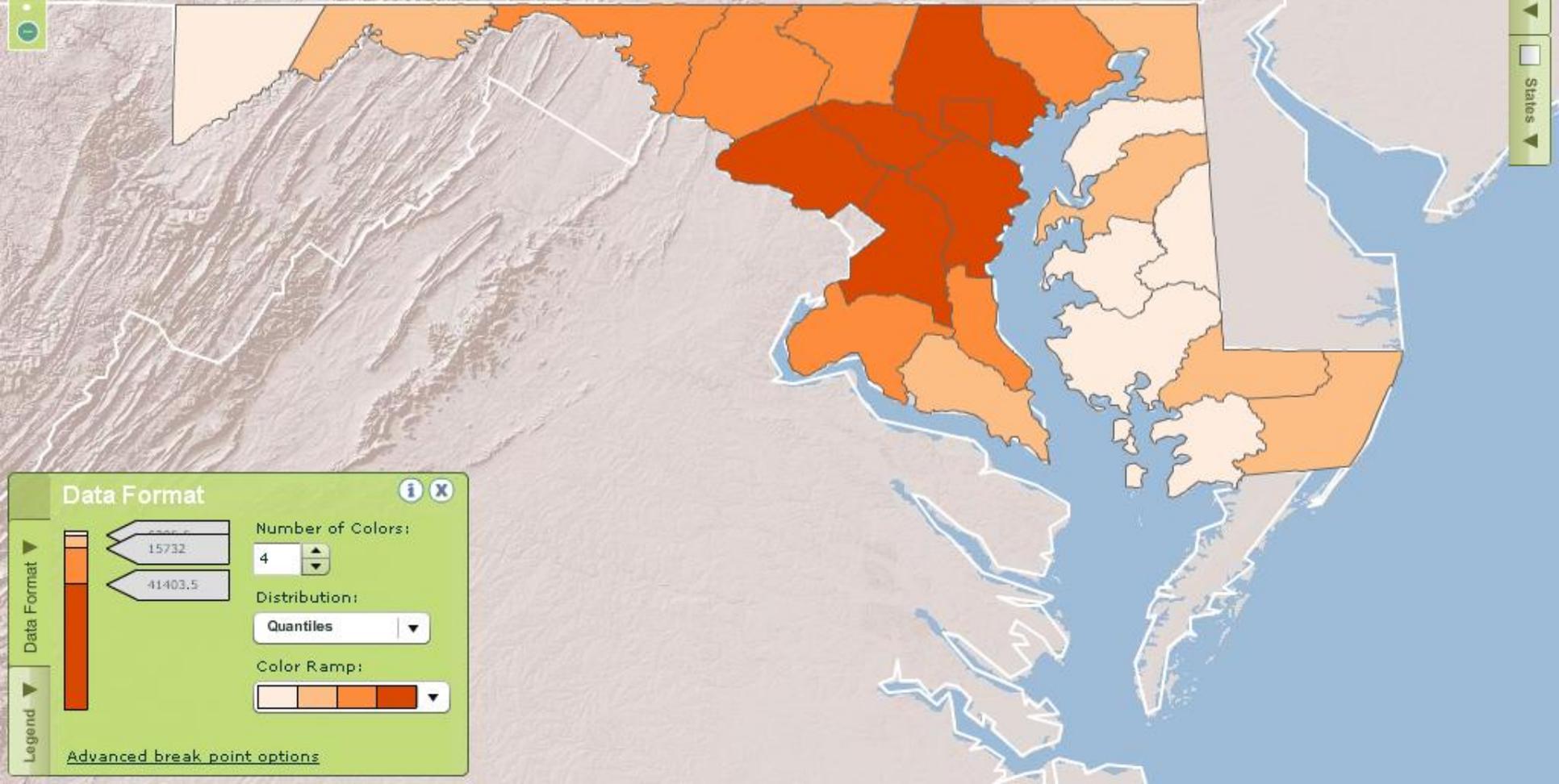
- 0 to 114
- 115 to 274
- 277 to 878
- 888 to 106958

Filter Options



Map navigation controls: a vertical zoom slider with a '+' sign at the top and a '-' sign at the bottom, and a central directional pad.

Map layer controls: a vertical panel with three items: 'Districts' with a checked checkbox and a dropdown arrow, 'Schools' with an unchecked checkbox and a dropdown arrow, and 'States' with an unchecked checkbox and a dropdown arrow.



**Data Format** ⓘ ✕

**Data Format** ▼

**Legend** ▼

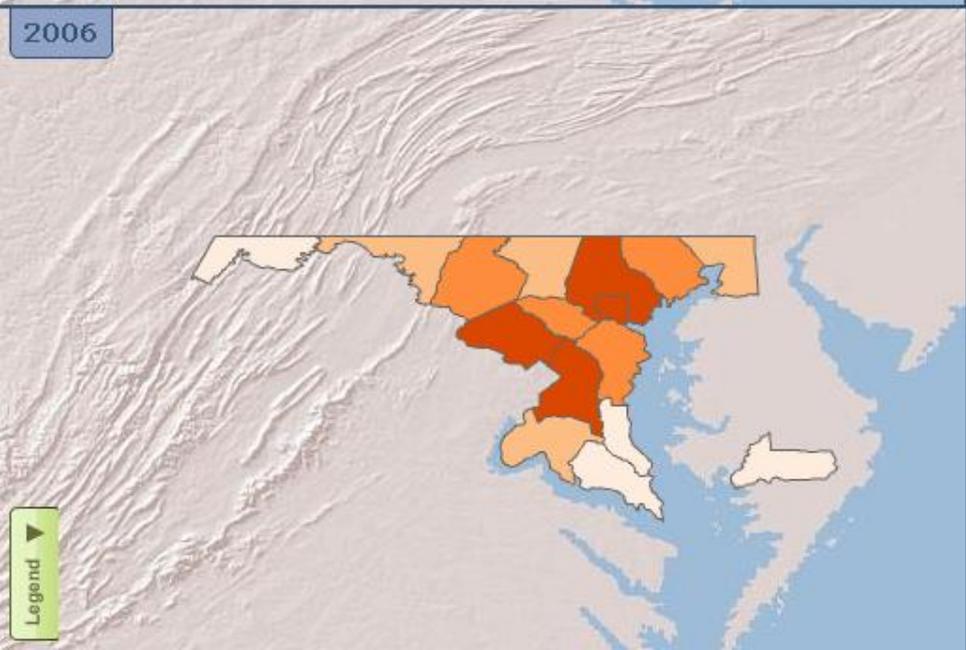
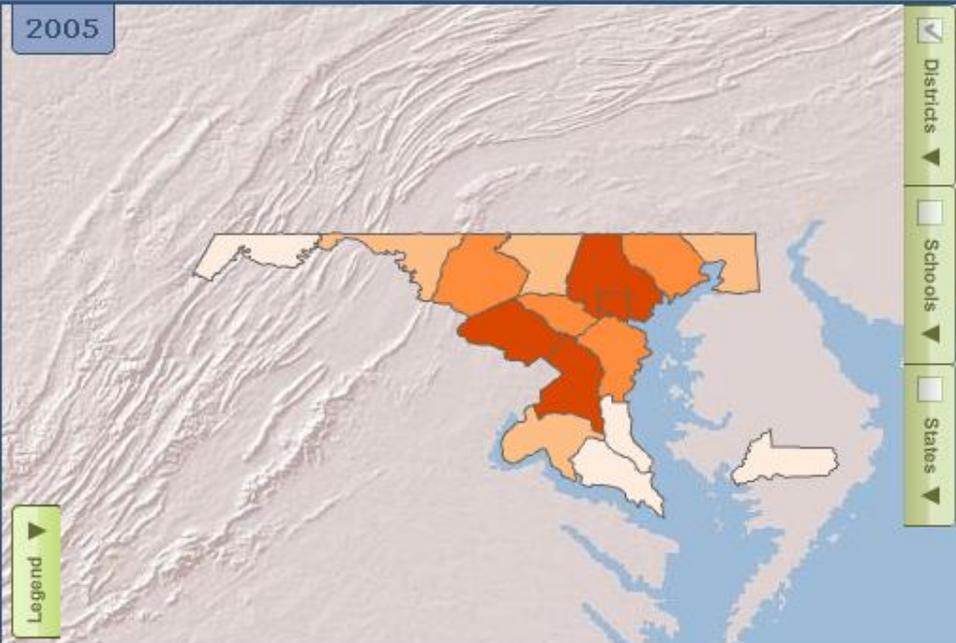
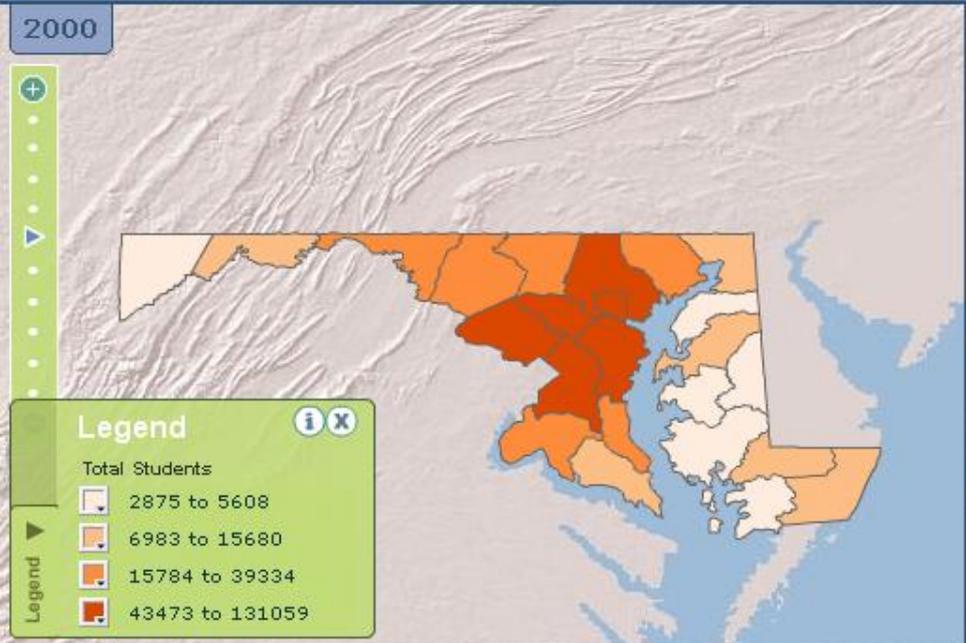
Number of Colors:

Distribution:

Color Ramp:

Advanced break point options

15732
41403.5

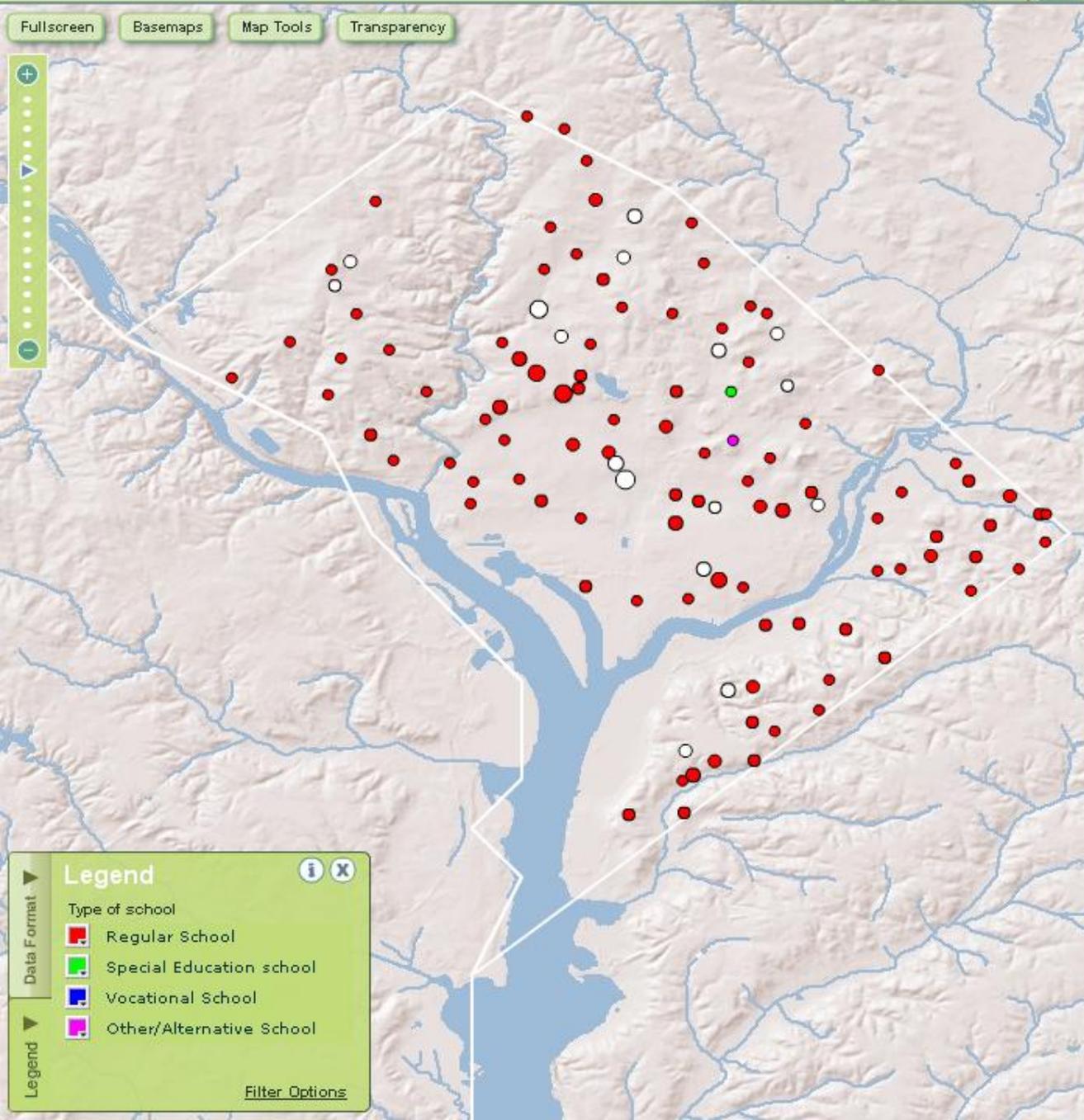


Districts ▼

Schools ▼

States ▼

Fullscreen Basemaps Map Tools Transparency



**Schools** [i] [x]

State:  + Add State

Year:

Type, Locale and Title I

- Type of school
- Locale Code
- Title I Eligible School
- Schoolwide Title

Adequate Yearly Progress

Show:  Theme  Labels

Filter:

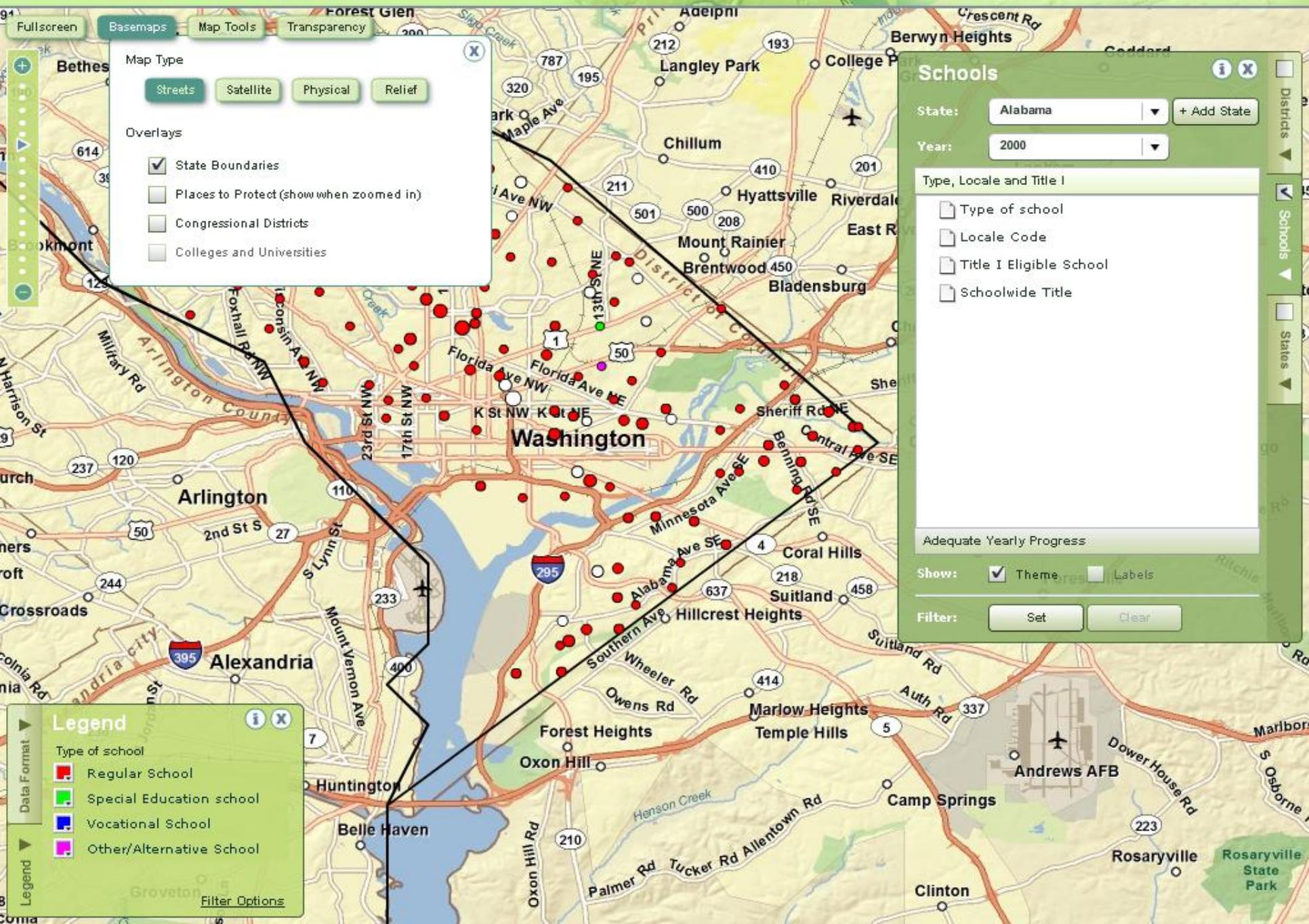
Districts Schools States

**Legend** [i] [x]

Data Format

- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

Filter Options



Fullscreen Basemaps Map Tools Transparency

Map Type

Streets Satellite Physical Relief

Overlays

State Boundaries

Places to Protect (show when zoomed in)

Congressional Districts

Colleges and Universities

### Schools

State:  + Add State

Year:

Type, Locale and Title I

- Type of school
- Locale Code
- Title I Eligible School
- Schoolwide Title

Adequate Yearly Progress

Show:  Theme  Labels

Filter:

### Legend

Type of school

- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

Filter Options

Map navigation controls including zoom in (+), zoom out (-), and a vertical scroll bar.

**Map Type** (X)

Streets Satellite Physical Relief

**Overlays**

- State Boundaries
- Places to Protect (show when zoomed in)
- Congressional Districts
- Colleges and Universities

**Schools** (i) (X)

State: Alabama + Add State

Year: 2000

Type, Locale and Title I

- Type of school
- Locale Code
- Title I Eligible School
- Schoolwide Title

Adequate Yearly Progress

Show:  Theme  Labels

Filter: Set Clear

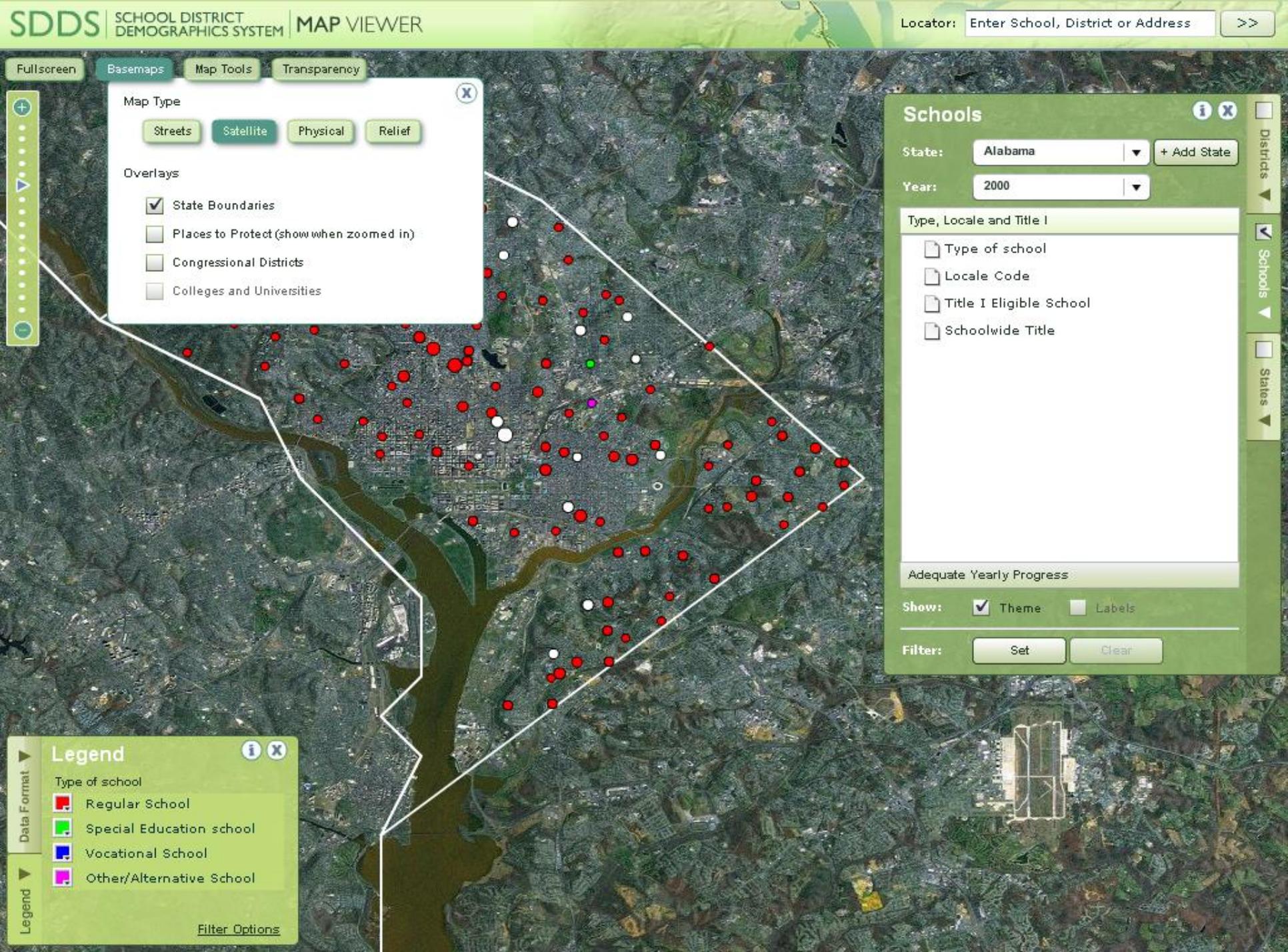
Navigation sidebar with expandable sections: Districts, Schools, States.

**Legend** (i) (X)

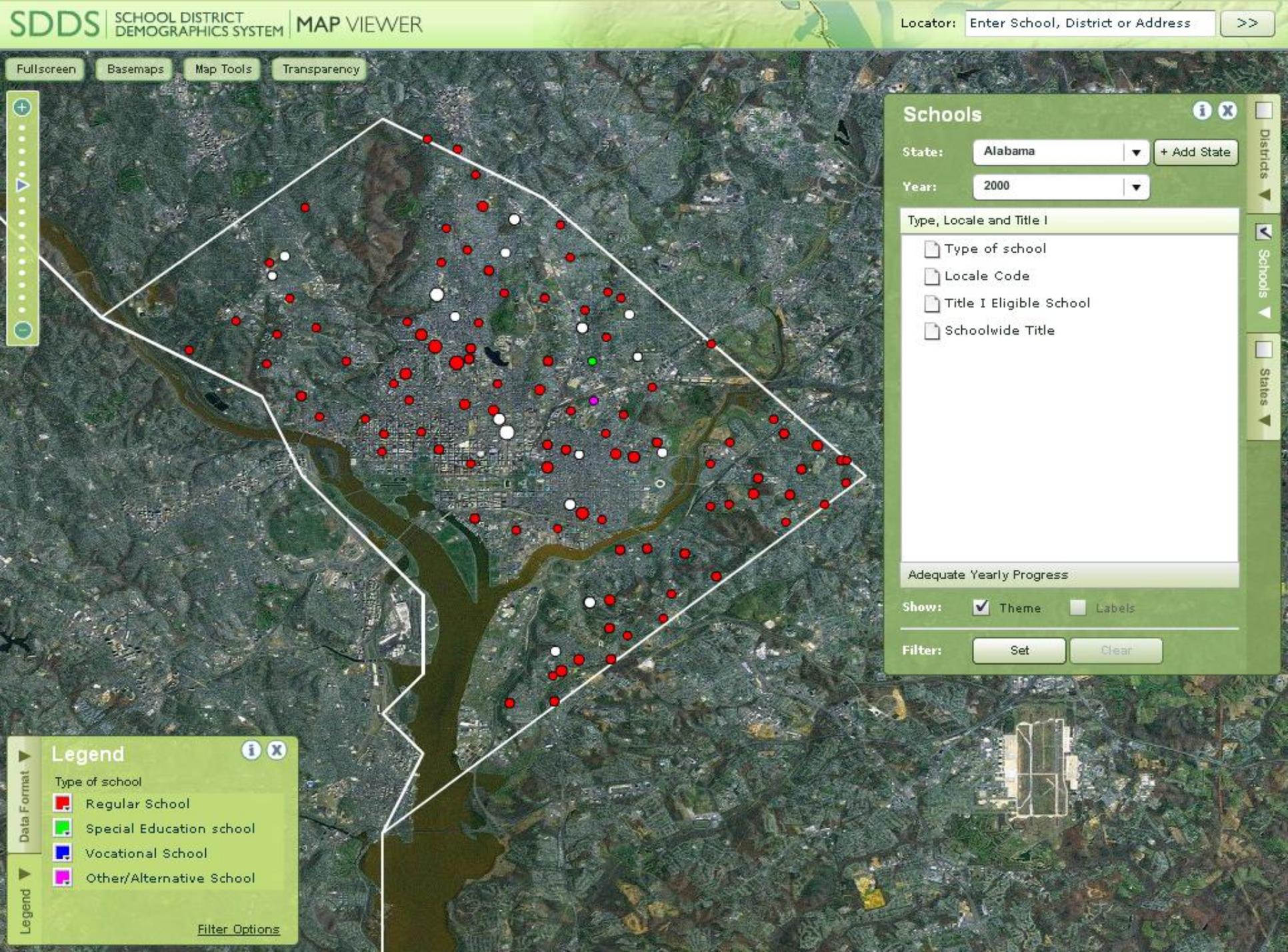
Data Format

- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

Filter Options



Map navigation controls: zoom in (+), zoom out (-), home (house icon), and a vertical scroll bar.



### Schools

State:  + Add State

Year:

Type, Locale and Title I

- Type of school
- Locale Code
- Title I Eligible School
- Schoolwide Title

Adequate Yearly Progress

Show:  Theme  Labels

Filter:

### Legend

Data Format

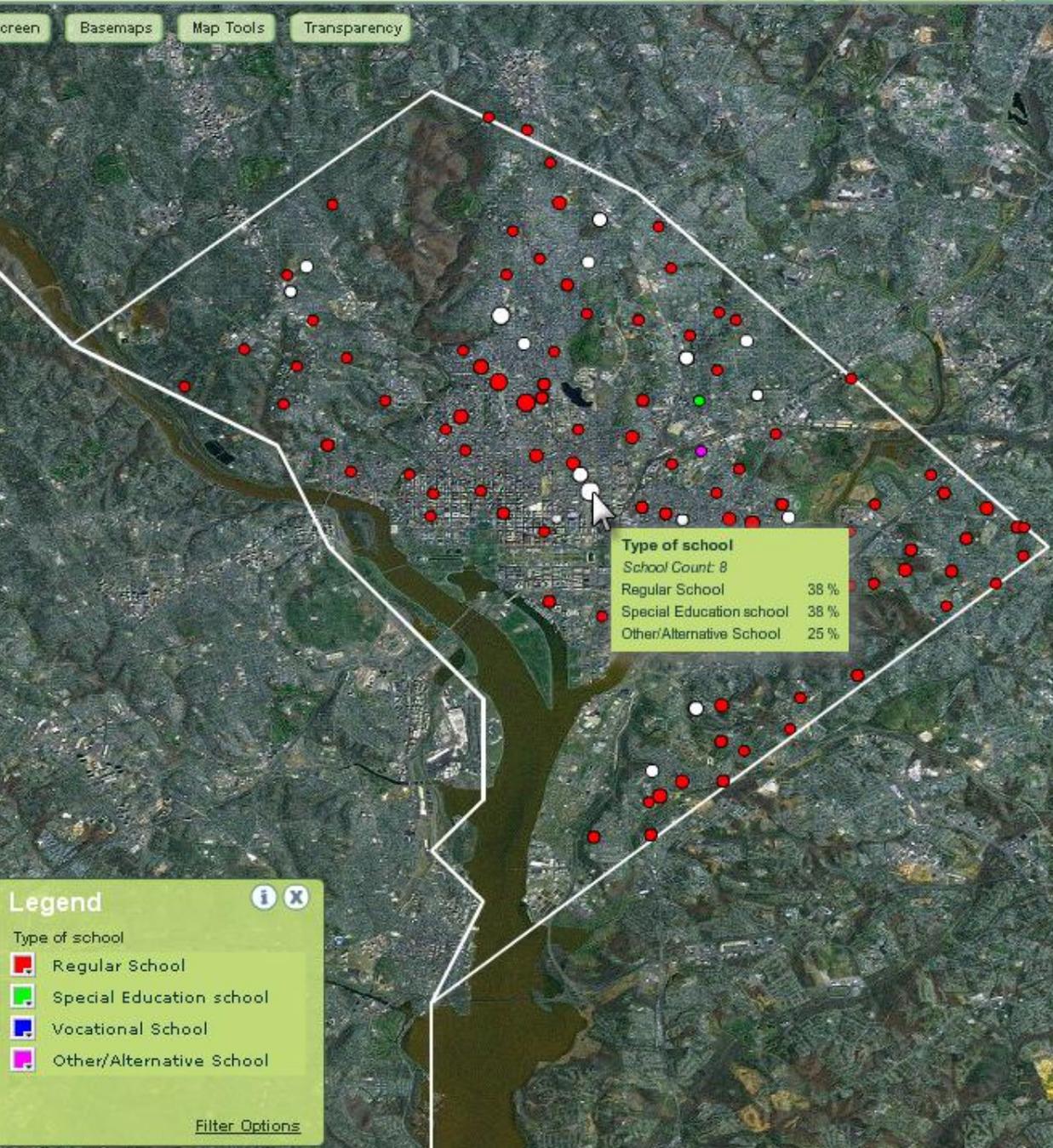
- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

Filter Options

Map layers sidebar:

- Districts
- Schools
- States

Map navigation controls including zoom in (+), zoom out (-), and a vertical scroll bar.



**Type of school**

School Count: 8

Regular School	38 %
Special Education school	38 %
Other/Alternative School	25 %

**Schools**

State:

Year:

Type, Locale and Title I

- Type of school
- Locale Code
- Title I Eligible School
- Schoolwide Title

Adequate Yearly Progress

Show:  Theme  Labels

Filter:

Vertical navigation menu with checkboxes and arrows for Districts, Schools, and States.

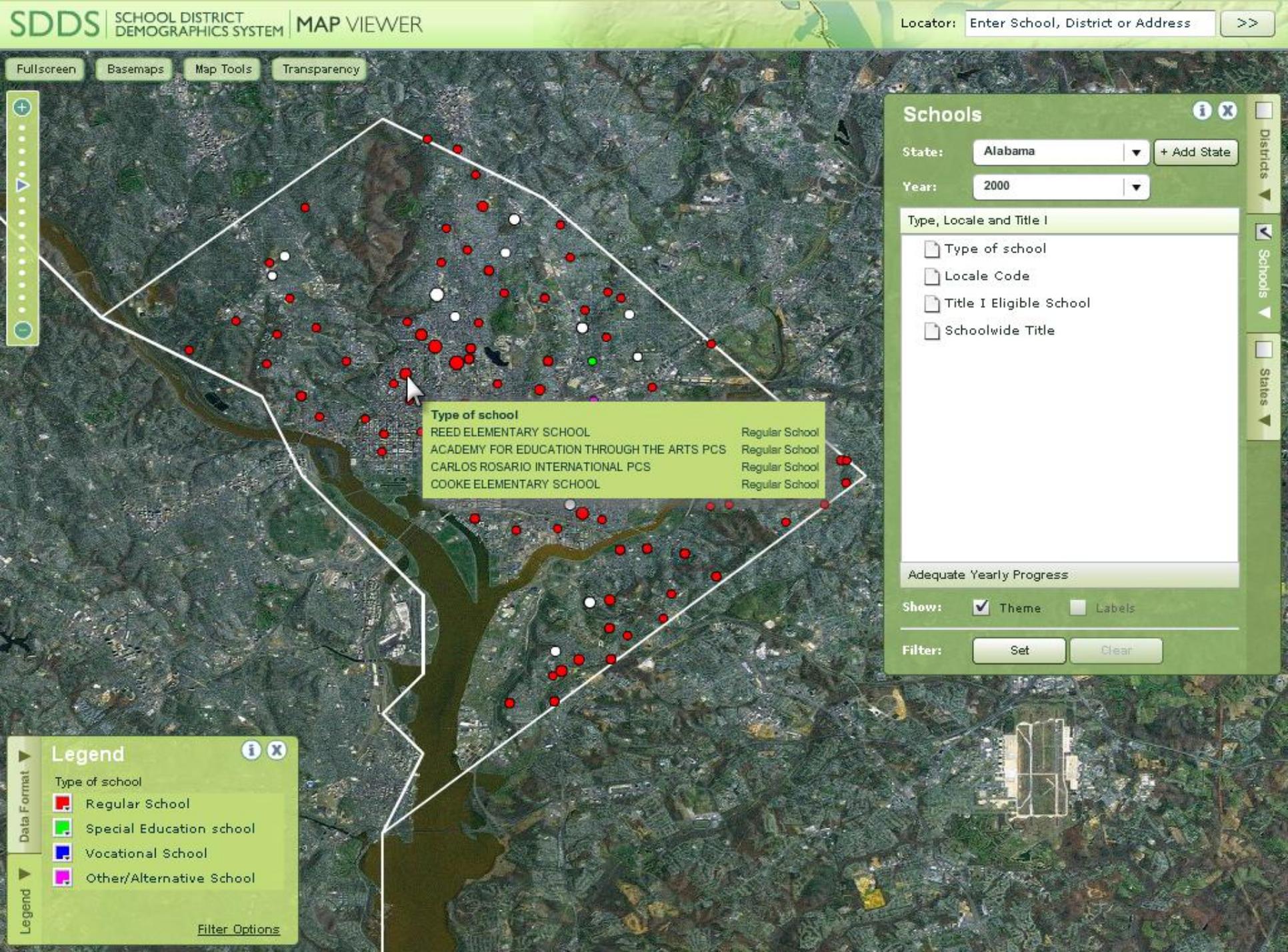
**Legend**

Data Format

- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

Filter Options

Map navigation controls: zoom in (+), zoom out (-), home (house icon), and a vertical scroll bar.



**Type of school**

REED ELEMENTARY SCHOOL	Regular School
ACADEMY FOR EDUCATION THROUGH THE ARTS PCS	Regular School
CARLOS ROSARIO INTERNATIONAL PCS	Regular School
COOKE ELEMENTARY SCHOOL	Regular School

### Schools

State:

Year:

Type, Locale and Title I

- Type of school
- Locale Code
- Title I Eligible School
- Schoolwide Title

Adequate Yearly Progress

Show:  Theme  Labels

Filter:

### Legend

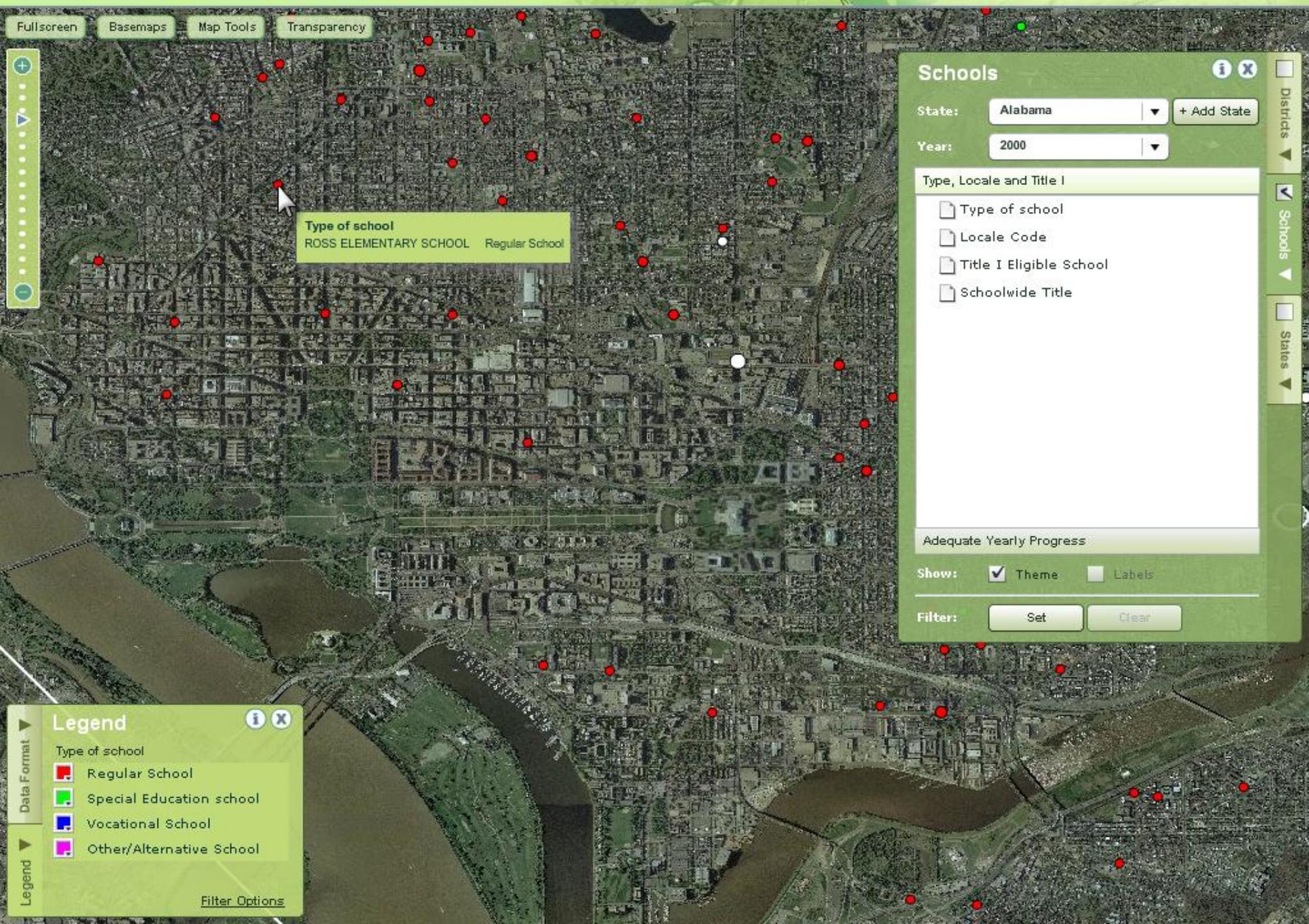
Data Format

- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

Filter Options

Navigation sidebar:  Districts,  Schools,  States

Map navigation controls including zoom in (+), zoom out (-), and a vertical zoom slider.



**Type of school**  
ROSS ELEMENTARY SCHOOL Regular School

### Schools

State:

Year:

Type, Locale and Title I

- Type of school
- Locale Code
- Title I Eligible School
- Schoolwide Title

Adequate Yearly Progress

Show:  Theme  Labels

Filter:

### Legend

Data Format

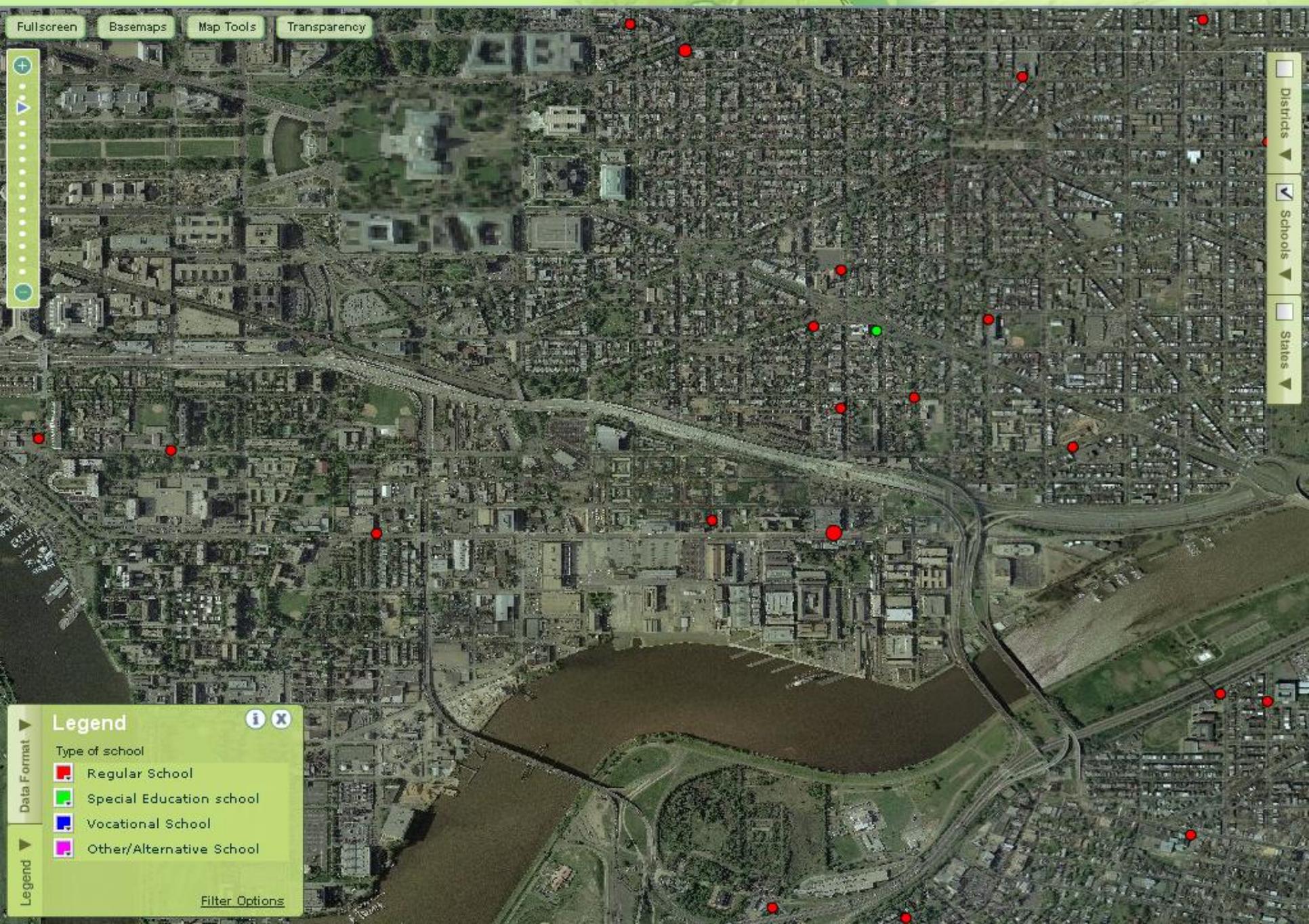
- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

Filter Options

Navigation sidebar with expandable sections: Districts, Schools, and States.

Map navigation controls including a zoom in (+) button, a zoom out (-) button, a home button, and a vertical scroll bar.

Map layer controls:  Districts,  Schools,  States



**Legend**

Data Format ▼

- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

Legend ▼

[Filter Options](#)

- 
- 
- 
- 
- 
- 

Map navigation controls: zoom in (+), zoom out (-), home, and a vertical scroll bar.

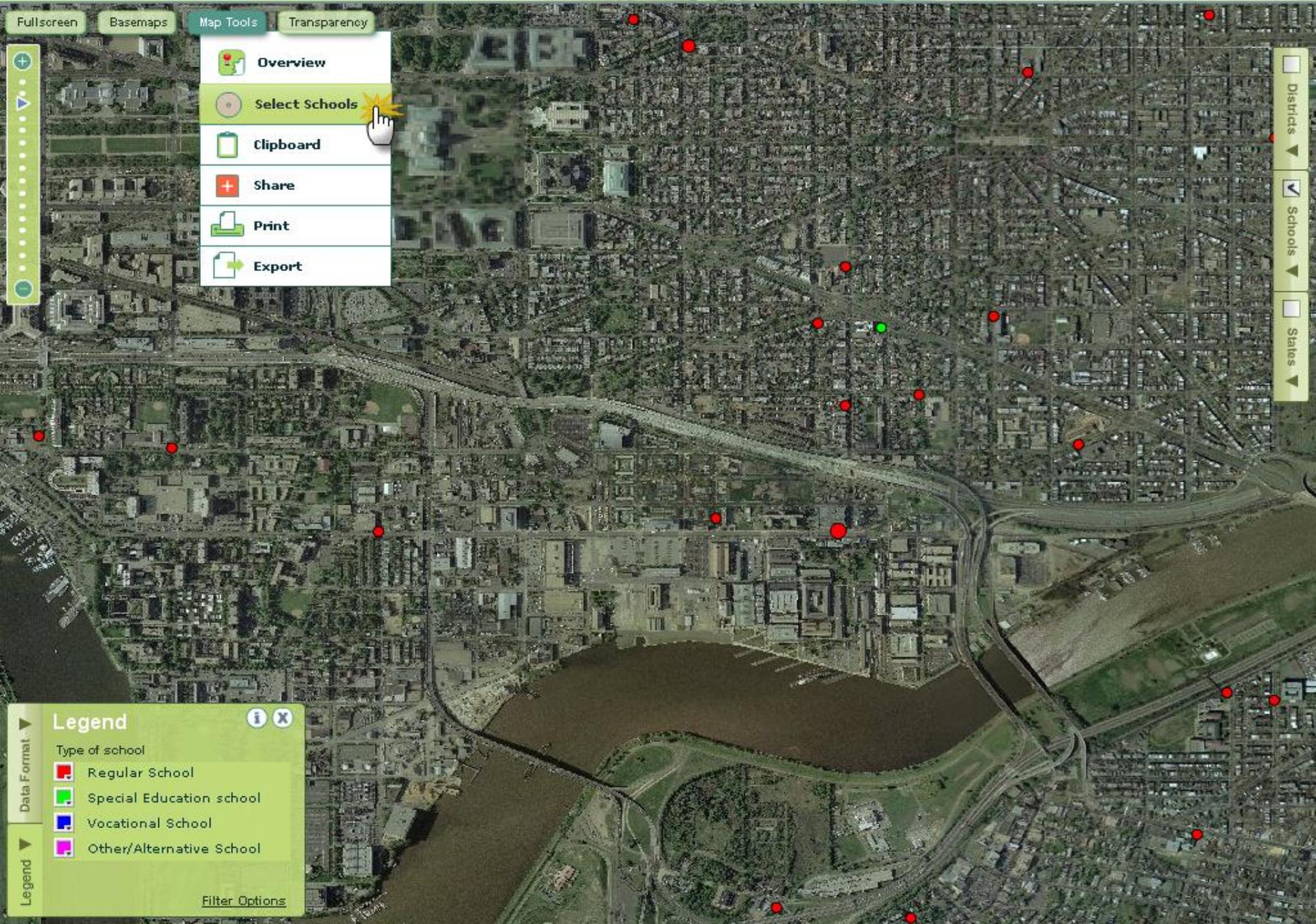
Map layers and filters:  Districts,  Schools,  States

**Legend**

Data Format

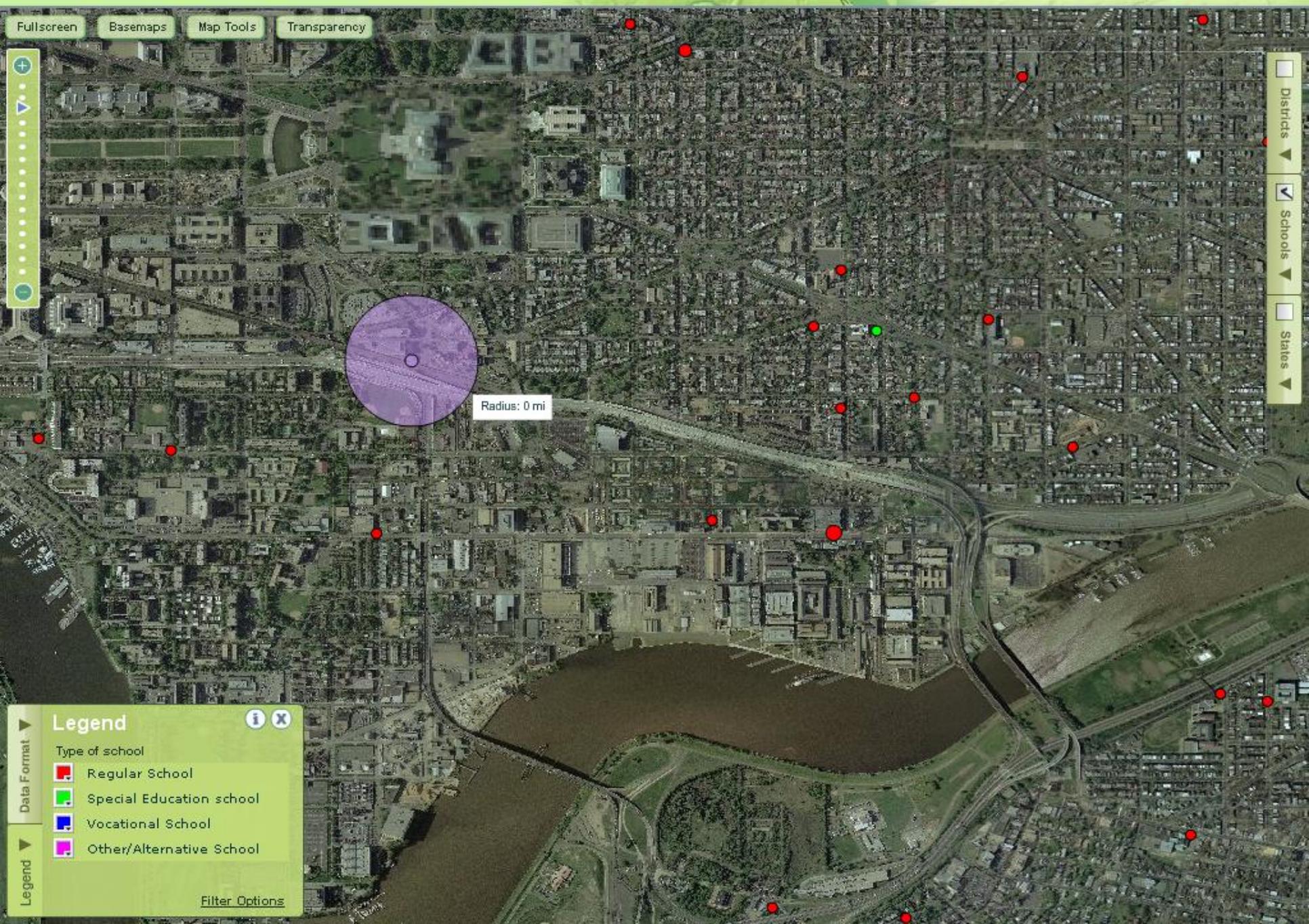
- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

[Filter Options](#)



Map navigation controls including zoom in (+), zoom out (-), and a vertical zoom slider.

Map layer controls:  Districts,  Schools,  States



**Legend**

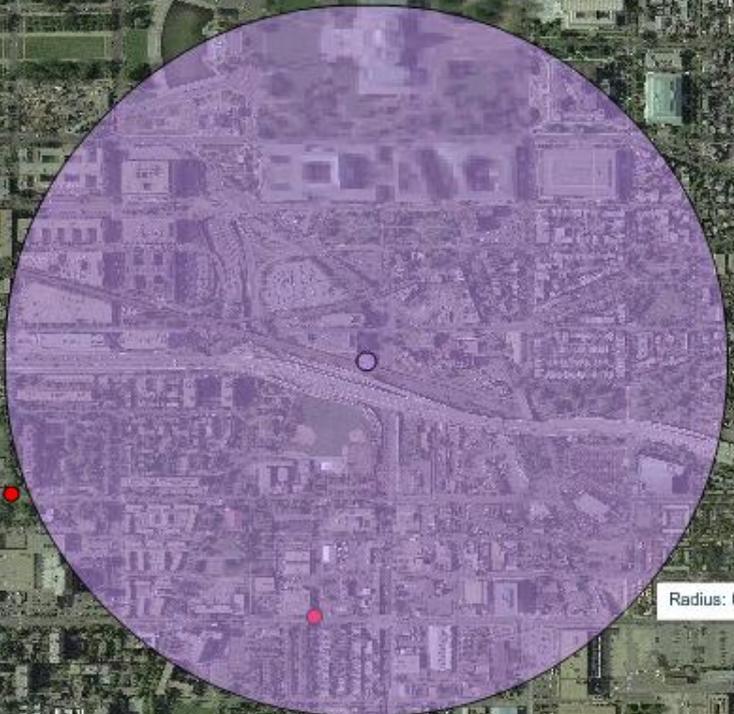
Data Format

- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

Filter Options

Map navigation controls including zoom in (+), zoom out (-), home, and a vertical zoom slider.

Map layers control panel with checkboxes for  Districts,  Schools, and  States.

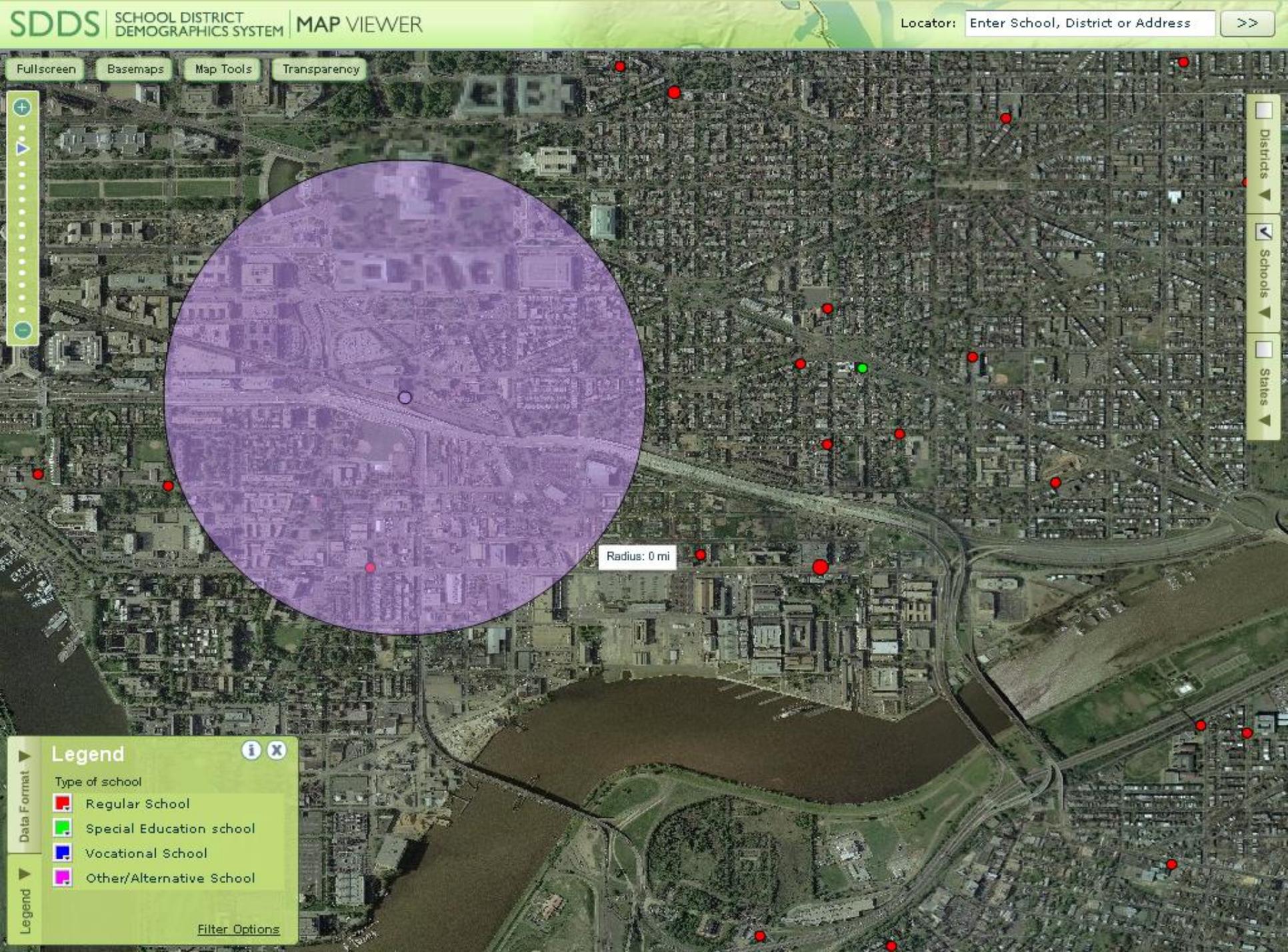


**Legend**

Data Format

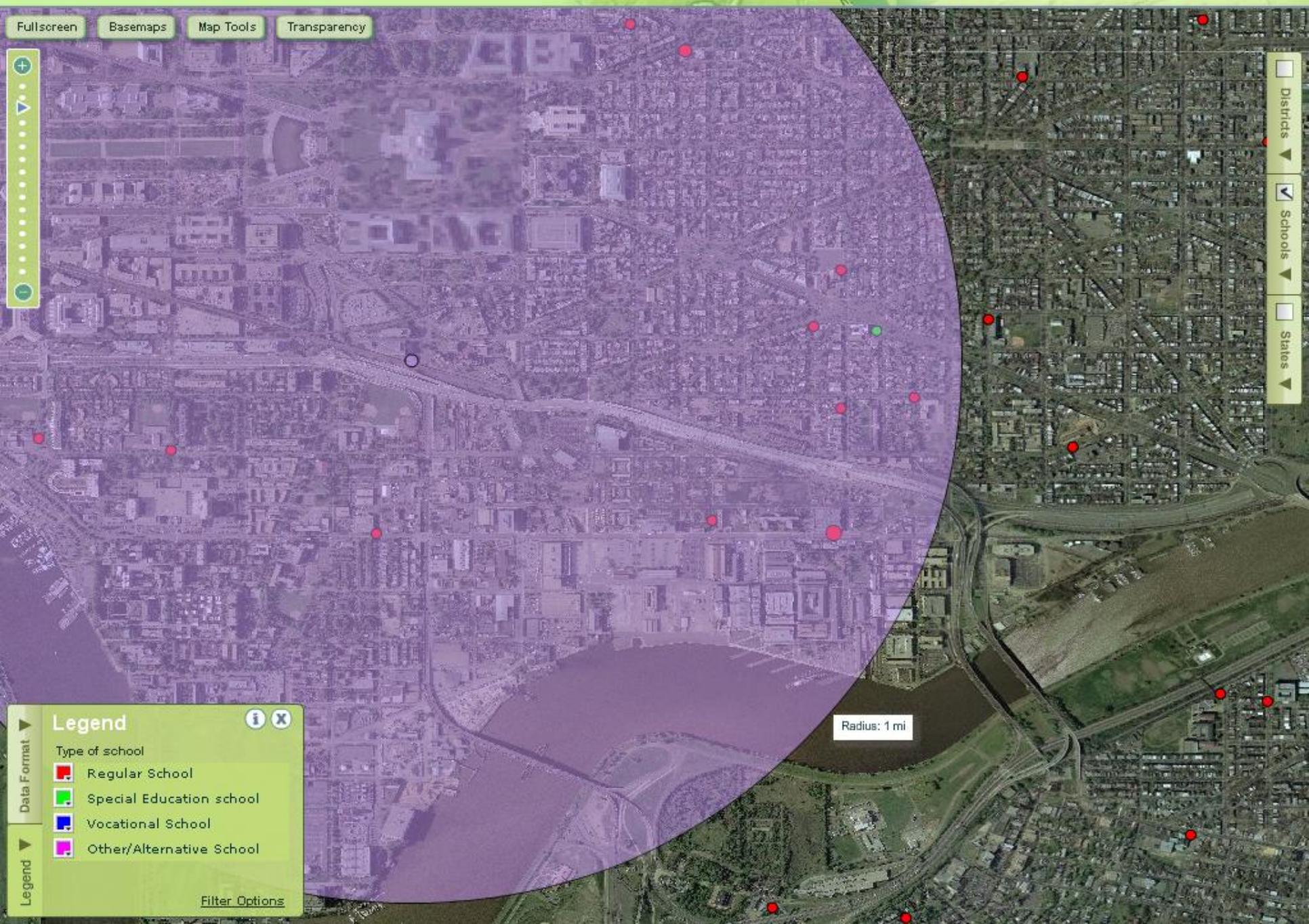
- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

Filter Options



Map navigation controls including zoom in (+), zoom out (-), and a vertical zoom slider.

Map layers control panel with checkboxes for  Districts,  Schools, and  States.



**Legend**

Data Format ▼

- Regular School
- Special Education school
- Vocational School
- Other/Alternative School

Legend ▼

[Filter Options](#)

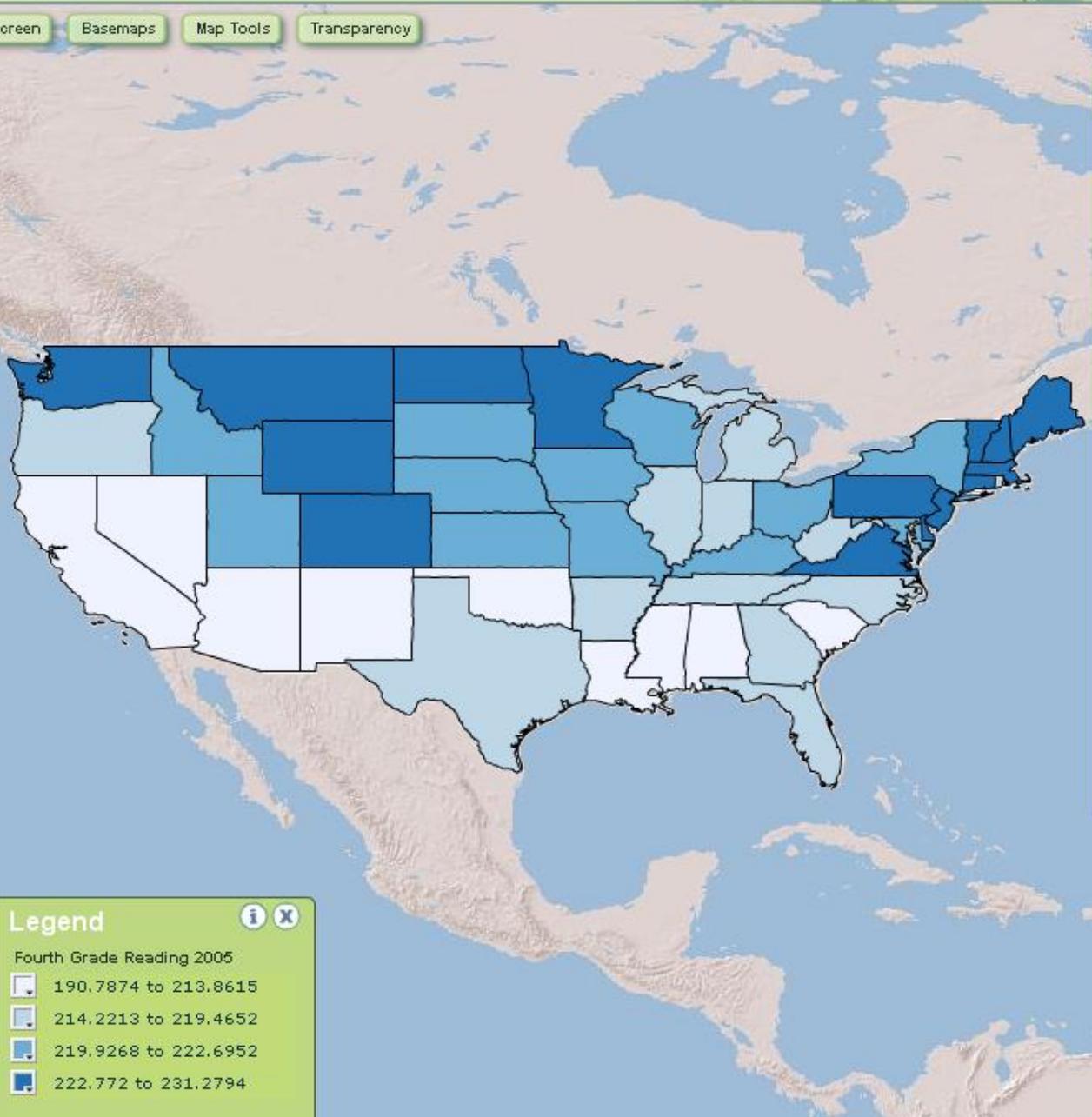
## Buffer Results for Selected Public Schools

Description	Value
Total Students	7,618
Total Males	4,146
Total Females	3,472
Total American Indian / Alaskan Native Male	0
Total Asian Male	49
Total Hispanics Male	131
Total African American Male	3,710
FTE Teachers	296.0
Pupil/Teacher Ratio	26

NCESID School ID	School Name	Global Locator
110001000224	MARRIOTT HOSPITALITY PUBLIC CHARTER SCHOOL	<a href="#">(more info)</a>
110002600240	WASHINGTON MATH/SCIENCE/TECHNOLOGY PCS	<a href="#">(more info)</a>
110003000071	VAN NESS ELEMENTARY SCHOOL	<a href="#">(more info)</a>
110003000072	TYLER ELEMENTARY SCHOOL	<a href="#">(more info)</a>
110003000113	BRENT ELEMENTARY SCHOOL	<a href="#">(more info)</a>
110003000114	BOWEN ELEMENTARY SCHOOL	<a href="#">(more info)</a>
110003000121	AMIDON ELEMENTARY SCHOOL	<a href="#">(more info)</a>
110003000145	JEFFERSON JUNIOR HIGH SCHOOL	<a href="#">(more info)</a>
110003000146	HINE JUNIOR HIGH SCHOOL	<a href="#">(more info)</a>
110003000156	PEABODY ELEMENTARY SCHOOL	<a href="#">(more info)</a>
110003000191	STUART-HOBSON MIDDLE SCHOOL	<a href="#">(more info)</a>
110003000203	TUITION GRANT	<a href="#">(more info)</a>
110003000265	RESIDENTIAL SCHOOLS	<a href="#">(more info)</a>
110003000266	CHILD & FAMILY SERVICES	<a href="#">(more info)</a>
110003000268	DC ALTERNATIVE LEARNING ACADEMY/SOUTHEAST	<a href="#">(more info)</a>
110003000269	CORRECTIONAL DETENTION FACILITY	<a href="#">(more info)</a>
110003000270	CORRECTIONAL TREATMENT FACILITY	<a href="#">(more info)</a>
110003000271	CHILD & FAMILY SERVICES (REGULAR EDUCATION)	<a href="#">(more info)</a>
110003000777	EMILIA, REGGIO	<a href="#">(more info)</a>
110003100246	KIPP DC/KEY ACADEMY	<a href="#">(more info)</a>
110003300248	SASHA BRUCE PUBLIC CHARTER SCHOOL	<a href="#">(more info)</a>
110004900278	EAGLE ACADEMY PUBLIC CHARTER SCHOOL PCS	<a href="#">(more info)</a>

[\[Back to Top\]](#) [\[Close Window\]](#)

Fullscreen Basemaps Map Tools Transparency



### States

Year: 2005, 2007

NAEP 2005

- Fourth Grade Reading 2005
- Fourth Grade Math 2005
- Eighth Grade Reading 2005
- Eighth Grade Math 2005

NAEP 2007

Show:  Theme  Labels

Filter:

Districts  
Schools  
States

### Legend

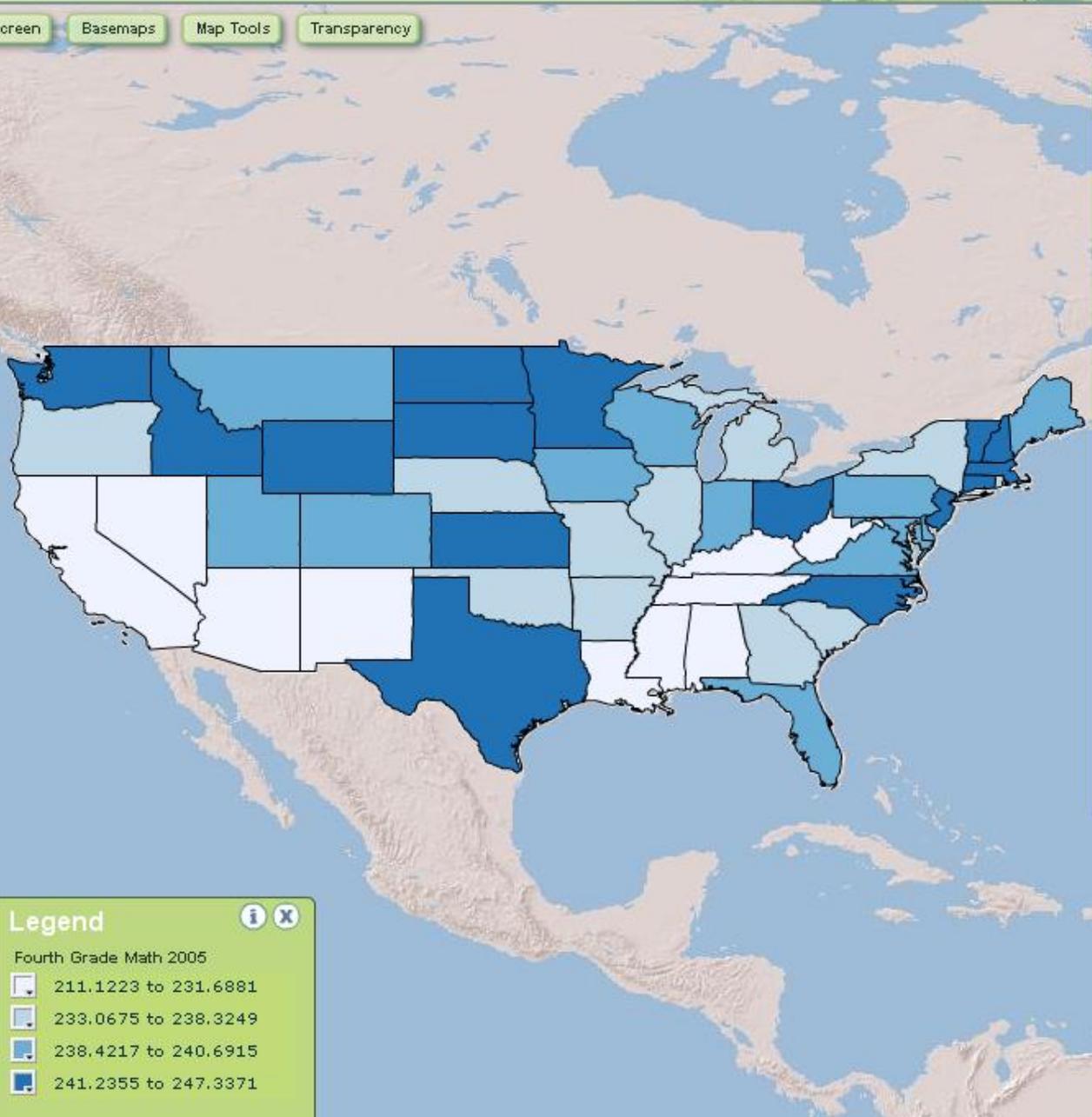
Data Format

Fourth Grade Reading 2005

- 190,7874 to 213,8615
- 214,2213 to 219,4652
- 219,9268 to 222,6952
- 222,772 to 231,2794

Filter Options

Map navigation controls: zoom in (+), zoom out (-), and a vertical scroll bar.



### States

Year: **2005, 2007** ▼

NAEP 2005

- Fourth Grade Reading 2005
- Fourth Grade Math 2005
- Eighth Grade Reading 2005
- Eighth Grade Math 2005

NAEP 2007

Show:  Theme  Labels

Filter:

Map navigation controls:  Districts,  Schools,  States

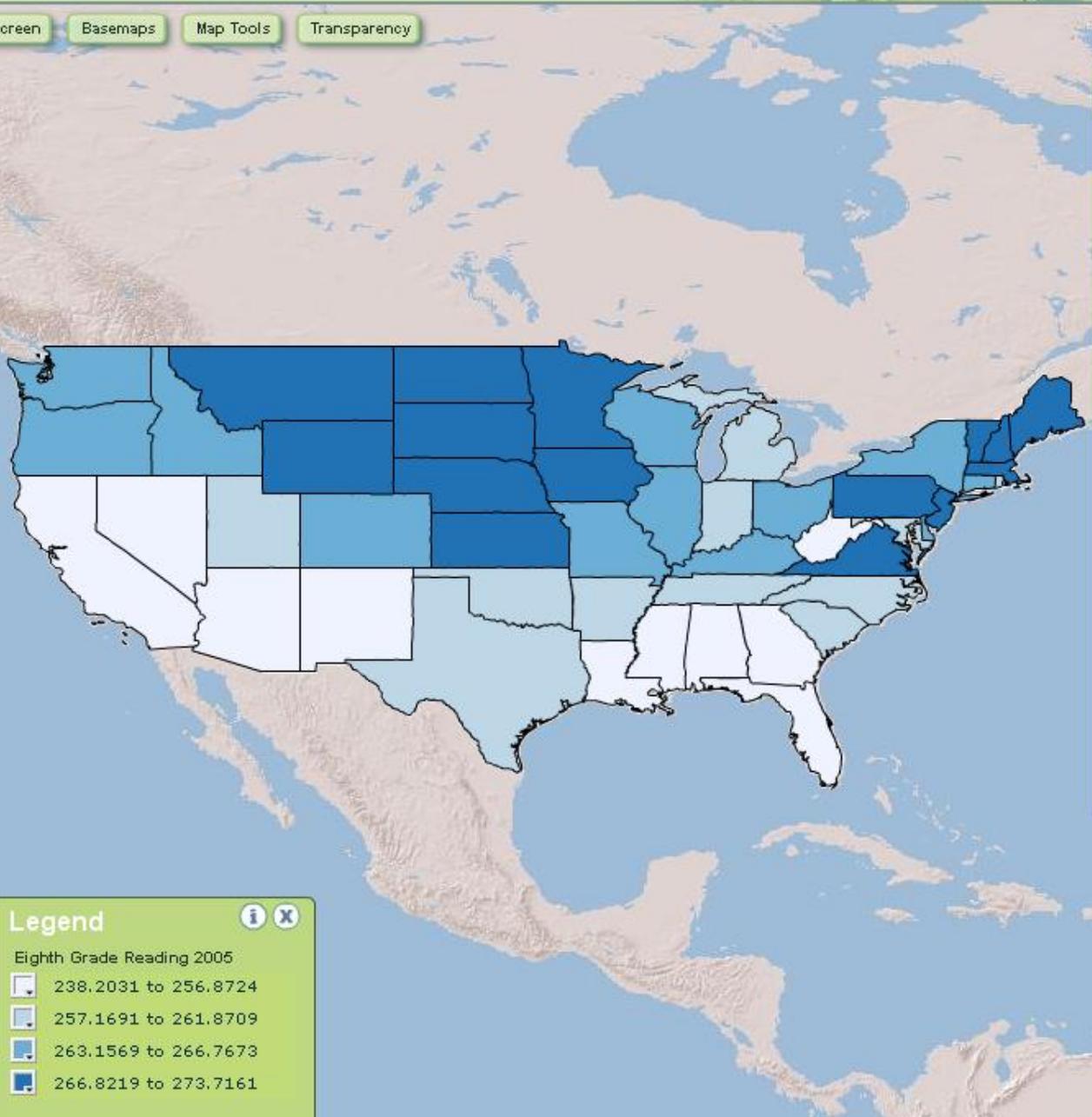
### Legend

Data Format ▼

- 211,122.3 to 231,688.1
- 233,067.5 to 238,324.9
- 238,421.7 to 240,691.5
- 241,235.5 to 247,337.1

Filter Options

Fullscreen Basemaps Map Tools Transparency



**States** Info Close

Year: 2005, 2007

NAEP 2005

- Fourth Grade Reading 2005
- Fourth Grade Math 2005
- Eighth Grade Reading 2005**
- Eighth Grade Math 2005

NAEP 2007

Show:  Theme  Labels

Filter:

Districts Schools States

**Legend** Info Close

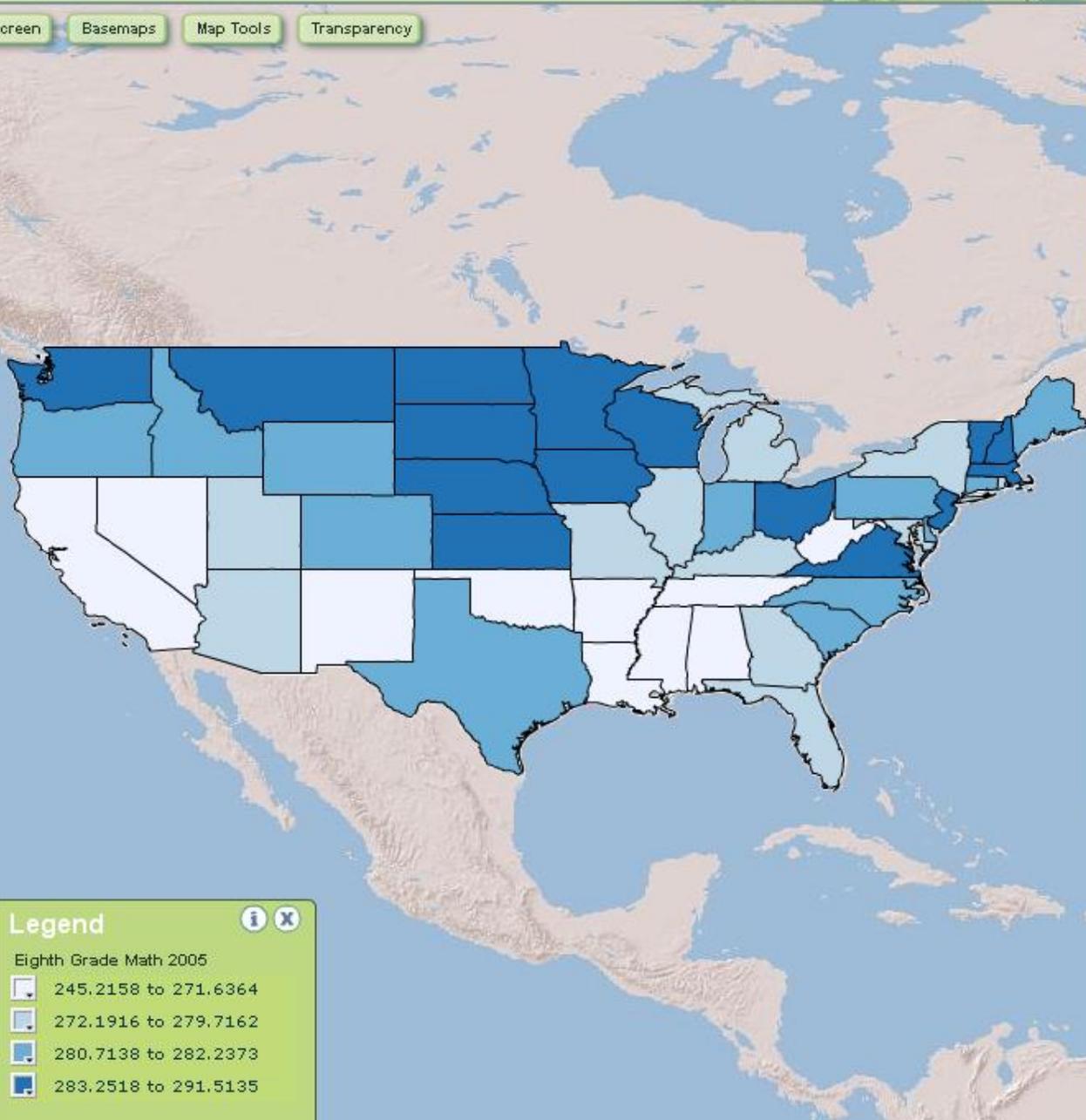
Data Format

Legend

- 238.2031 to 256.8724
- 257.1691 to 261.8709
- 263.1569 to 266.7673
- 266.8219 to 273.7161

Filter Options

Fullscreen Basemaps Map Tools Transparency



**States** Info Close

Year: 2005, 2007 ▼

NAEP 2005

- Fourth Grade Reading 2005
- Fourth Grade Math 2005
- Eighth Grade Reading 2005
- Eighth Grade Math 2005

NAEP 2007

Show:  Theme  Labels

Filter:

Districts Schools States

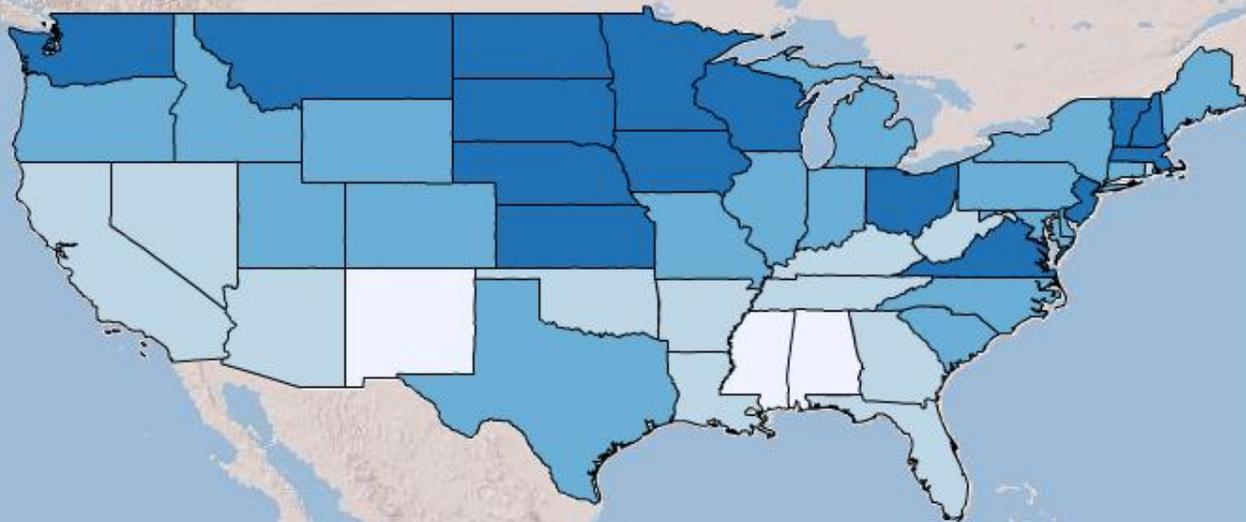
**Legend** Info Close

Data Format ▼

Legend ▼

- Eighth Grade Math 2005
- 245.2158 to 271.6364
- 272.1916 to 279.7162
- 280.7138 to 282.2373
- 283.2518 to 291.5135

[Filter Options](#)



### States

Year: **2005, 2007** ▼

NAEP 2005

- Fourth Grade Reading 2005
- Fourth Grade Math 2005
- Eighth Grade Reading 2005
- Eighth Grade Math 2005

NAEP 2007

Show:  Theme  Labels

Filter:

Districts  
 Schools  
 States

### Data Format

Number of Colors:

Distribution:

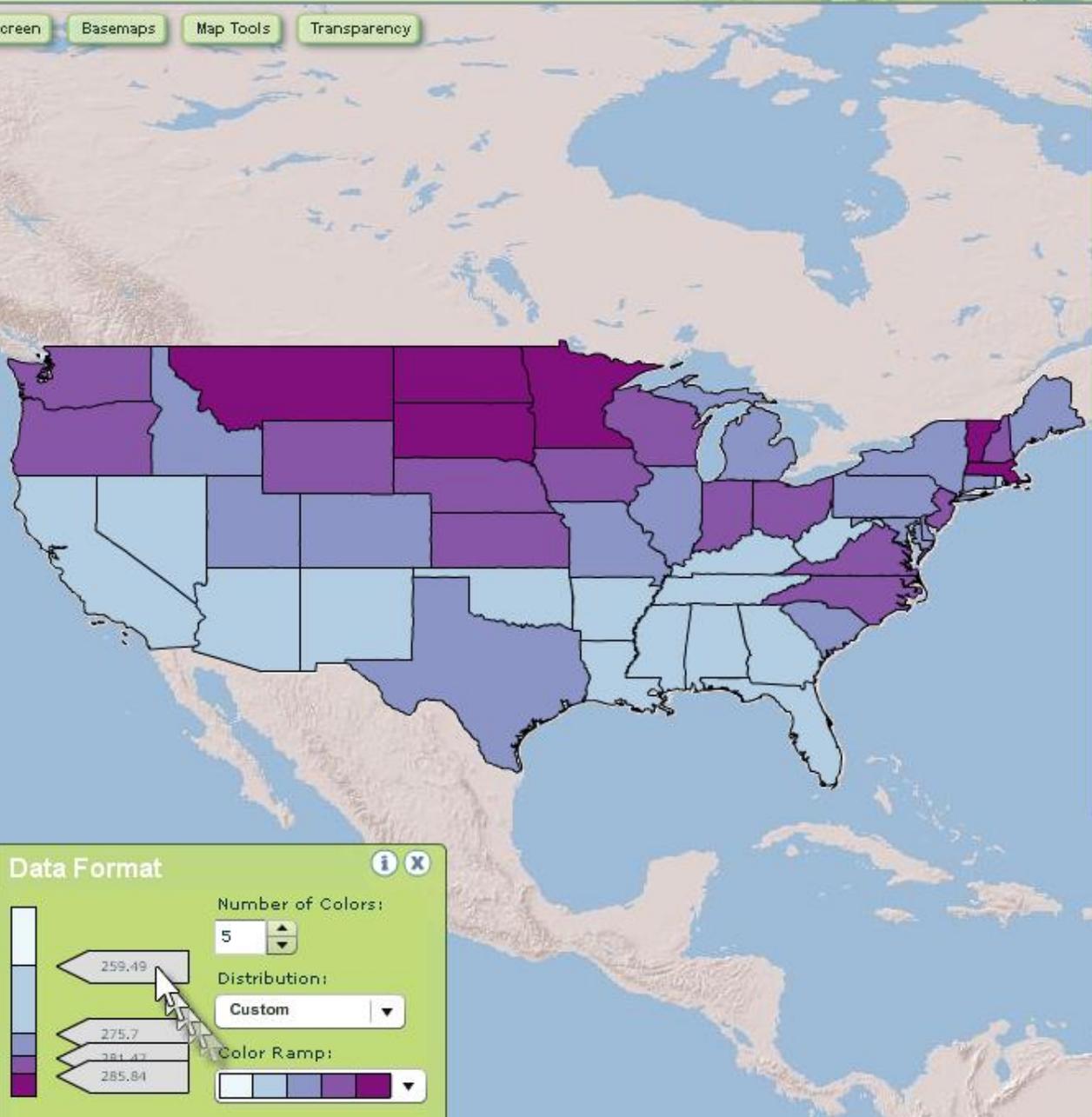
- ▼
- 
- ▼
- 

Advanced break point options

Legend

- 264.45
- 275.38
- 282.74

Fullscreen Basemaps Map Tools Transparency



**States** Info Close

Year: 2005, 2007

NAEP 2005

- Fourth Grade Reading 2005
- Fourth Grade Math 2005
- Eighth Grade Reading 2005
- Eighth Grade Math 2005**

NAEP 2007

Show:  Theme  Labels

Filter:

Districts Schools States

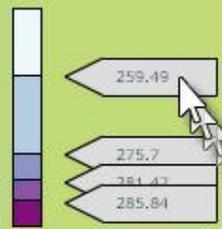
**Data Format** Info Close

Number of Colors: 5

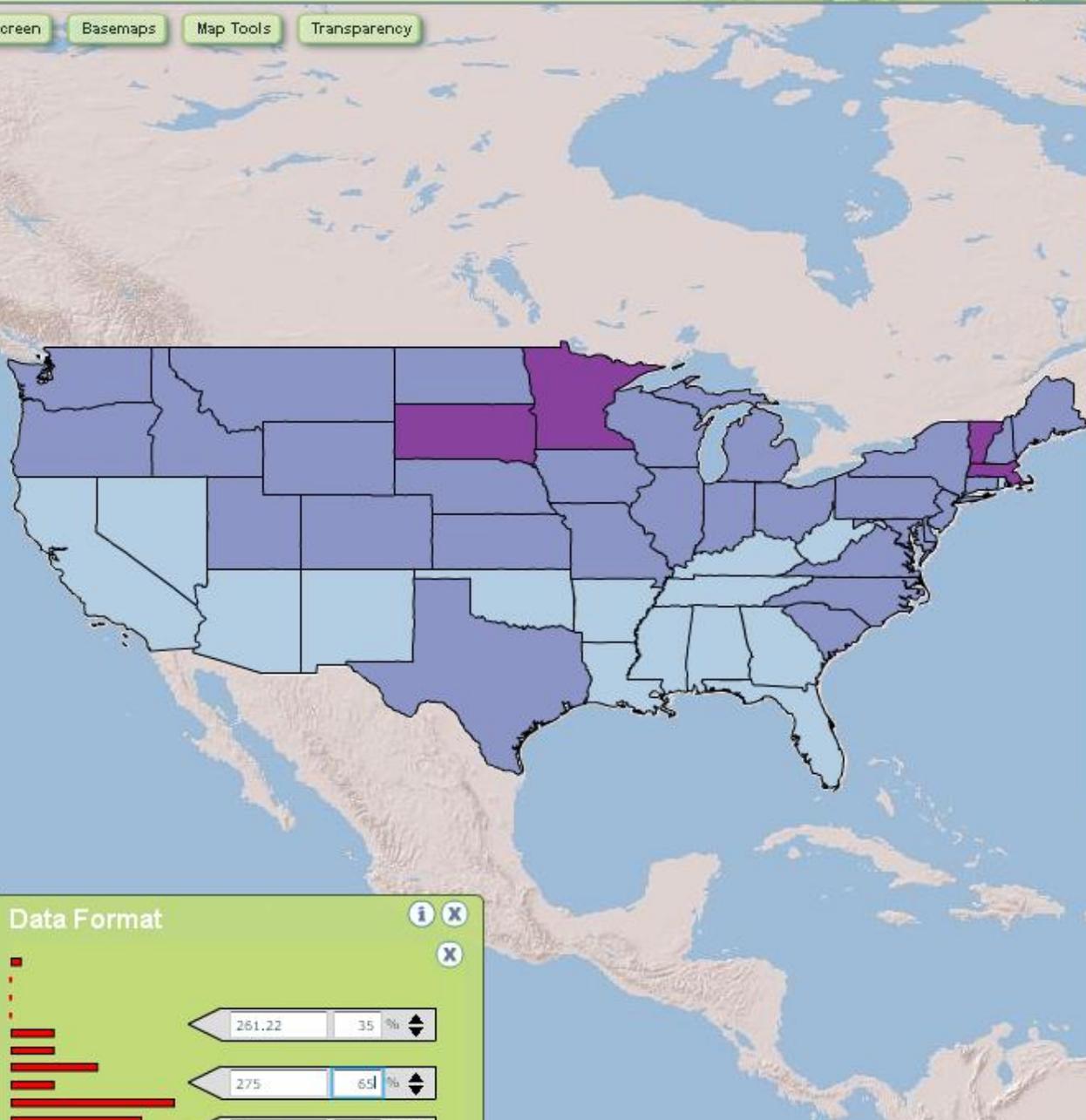
Distribution: Custom

Color Ramp: [Color Ramp]

Advanced break point options



Fullscreen Basemaps Map Tools Transparency



### States

Year: 2005, 2007

NAEP 2005

- Fourth Grade Reading 2005
- Fourth Grade Math 2005
- Eighth Grade Reading 2005
- Eighth Grade Math 2005**

NAEP 2007

Show:  Theme  Labels

Filter:

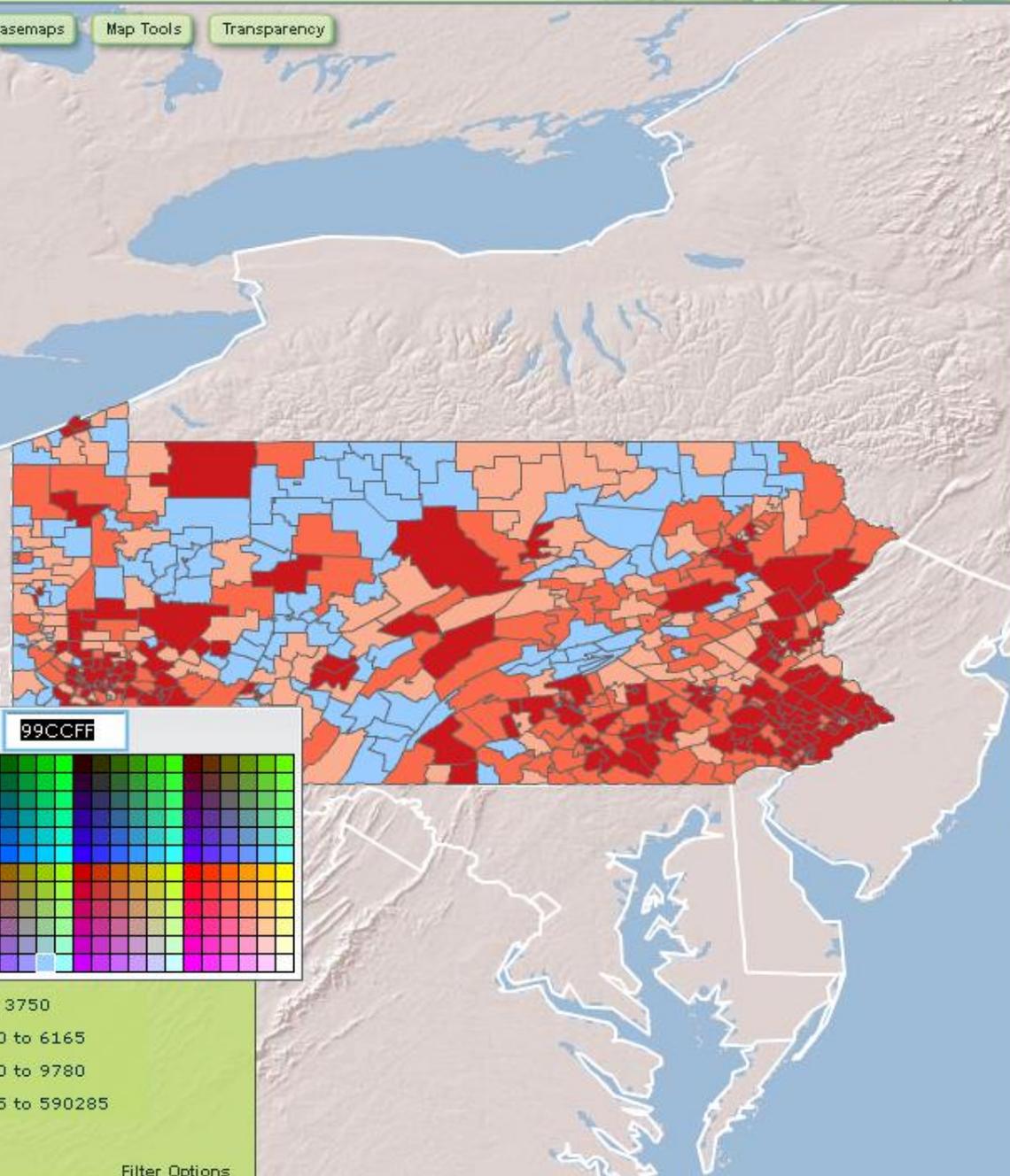
Districts  
Schools  
States

### Data Format

Legend

261.22	35 %
275	65 %
287	90 %

Fullscreen Basemaps Map Tools Transparency



### Districts

State: **Pennsylvania** + Add State

Year: **2000**

District: **Unified**

Population and Housing

Race and Ethnic

Economics

- Per Capita Income
- Employment
- Poverty Status
  - Poverty Status in 1999 of Families
  - Poverty Status in 1999 Of Households**

Social Characteristics

Show:  Theme  Labels

Compare: Themes Years

Filter: Set Clear

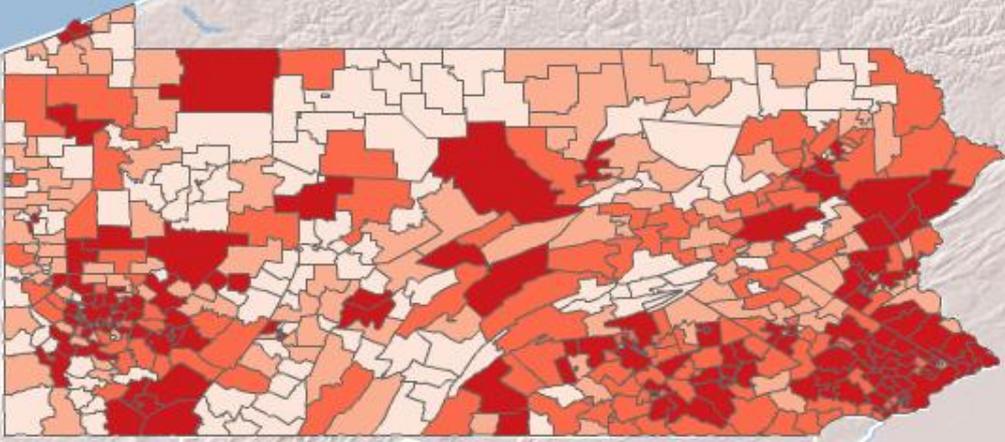
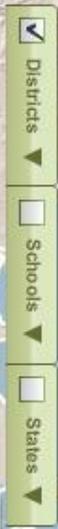
Districts Schools States



- Data Format
- 0 to 3750
  - 3750 to 6165
  - 6210 to 9780
  - 9875 to 590285

Legend Filter Options

Fullscreen Basemaps Map Tools Transparency



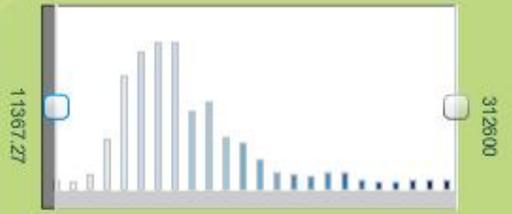
### Filter Options

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:  
Median Value (Housing Unit)

[Clear](#)



**Legend** ⓘ ✕

Data Format

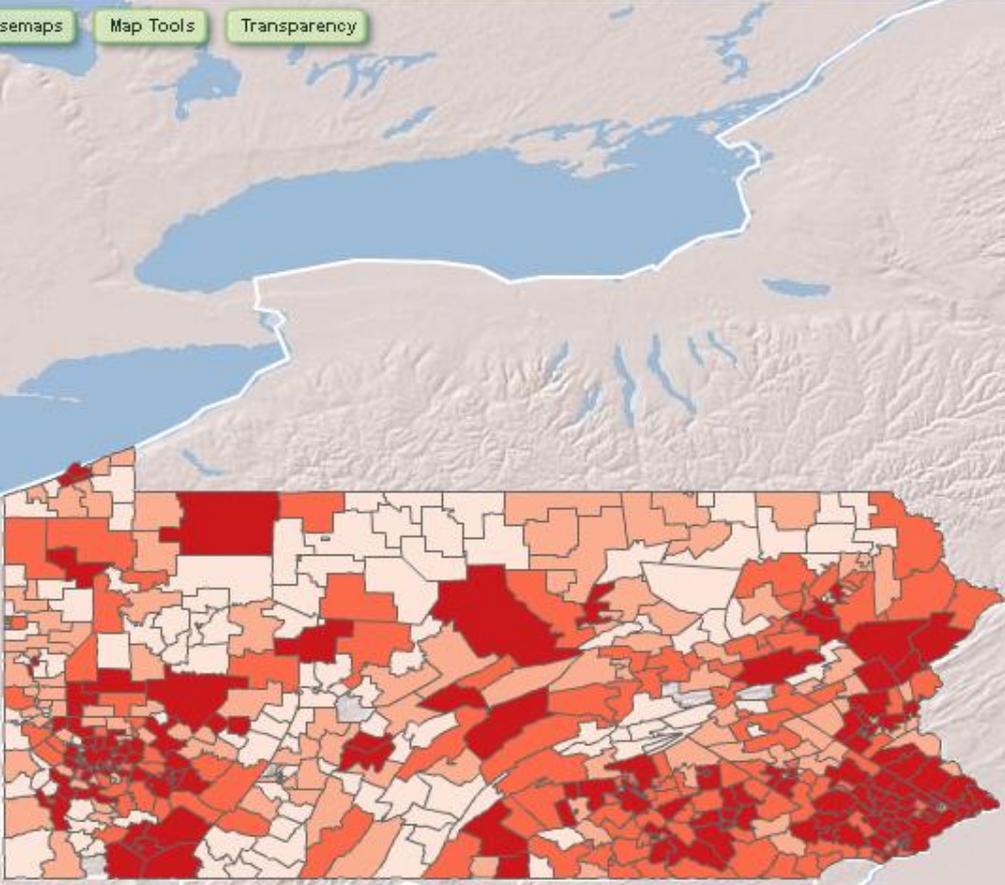
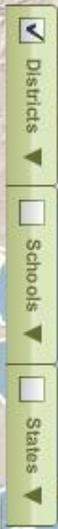
Poverty Status in 1999 Of Households

- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

Legend

[Filter Options](#)

Fullscreen Basemaps Map Tools Transparency



### Filter Options

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:  
**Median Value (Housing Unit)**

[Clear](#)



**Legend** ⓘ ✕

Data Format

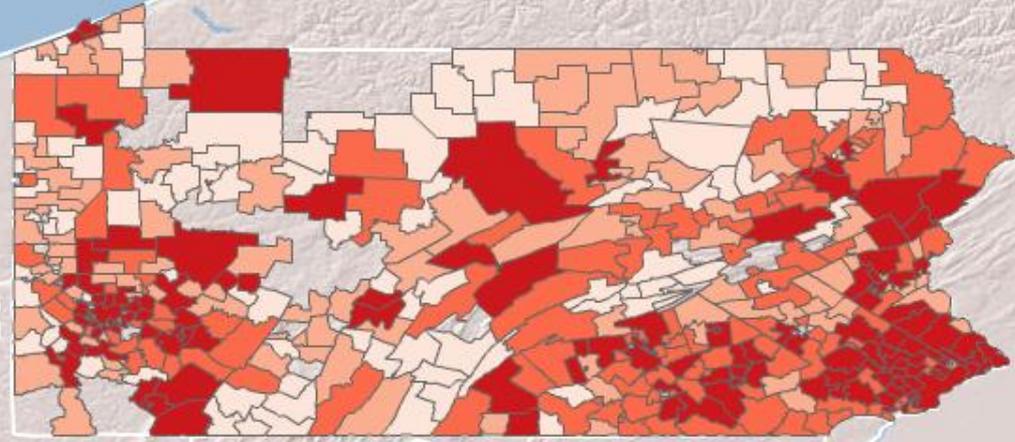
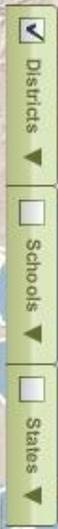
Poverty Status in 1999 Of Households

- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

Legend

[Filter Options](#)

Fullscreen Basemaps Map Tools Transparency



### Filter Options

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:  
Median Value (Housing Unit)

[Clear](#)



**Legend** ⓘ ✕

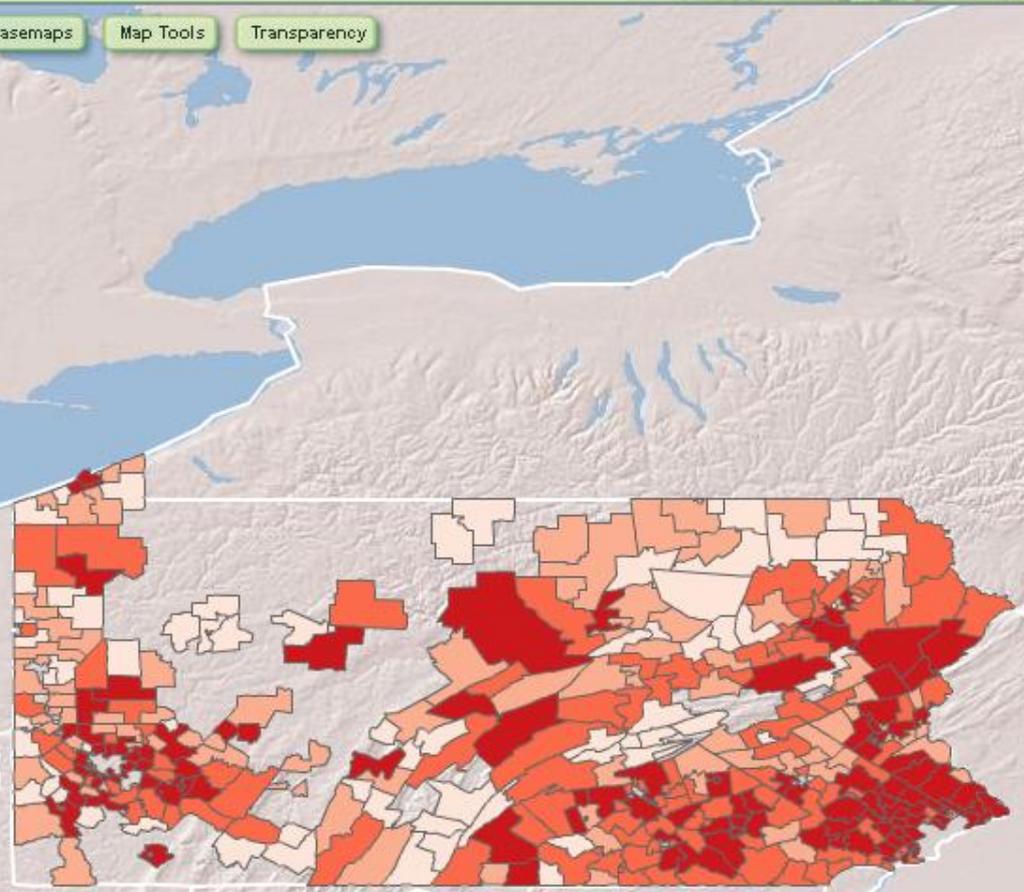
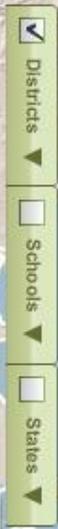
Data Format

Poverty Status in 1999 Of Households

- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

Legend

[Filter Options](#)



### Filter Options

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:

[Clear](#)

63940.91 312600

### Legend

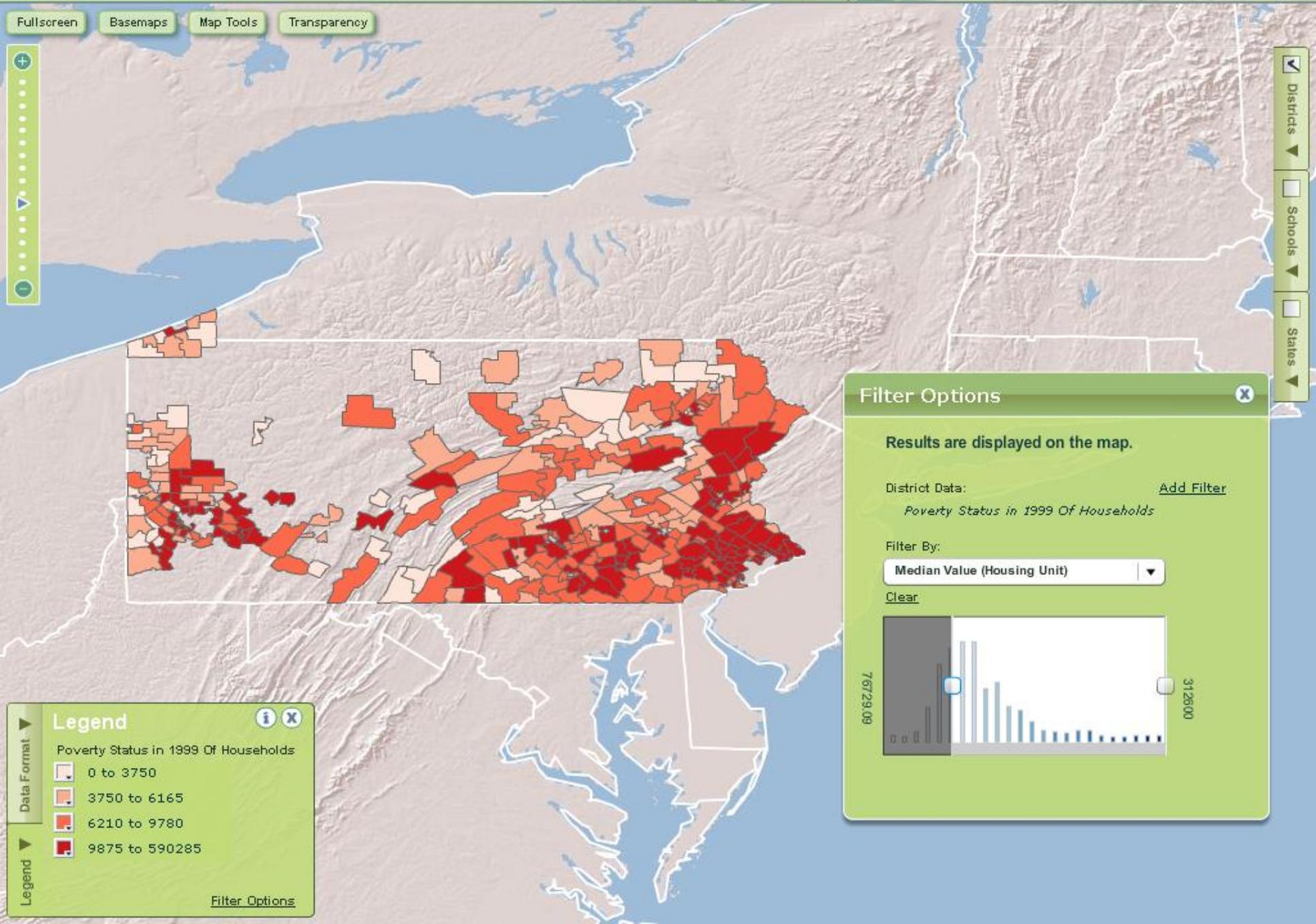
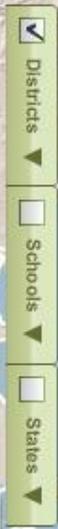
Data Format

Poverty Status in 1999 Of Households

- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

Filter Options

Fullscreen Basemaps Map Tools Transparency



### Filter Options

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:  
Median Value (Housing Unit)

[Clear](#)



**Legend** ⓘ ✕

Data Format

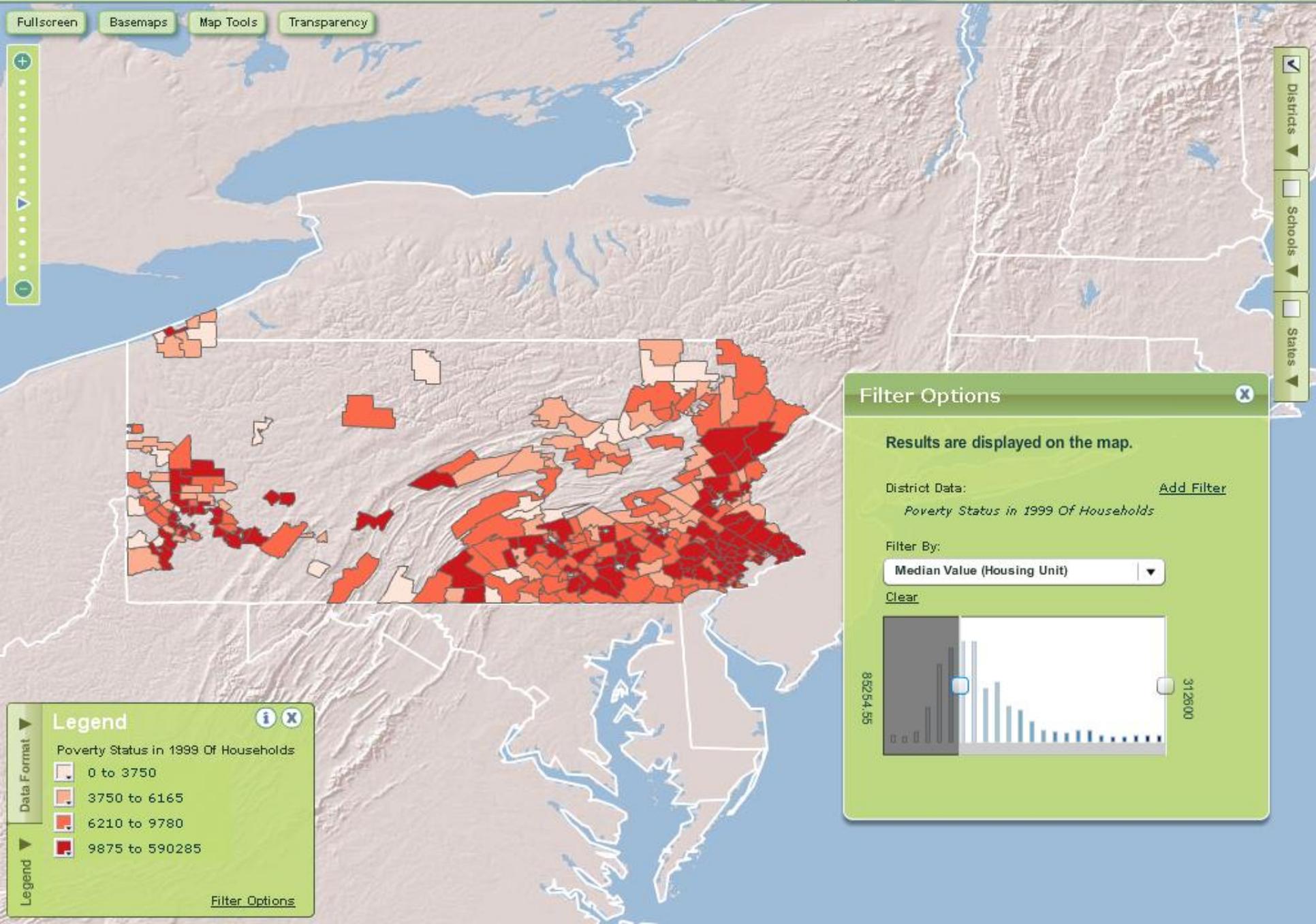
Poverty Status in 1999 Of Households

- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

Filter Options

Map navigation controls: zoom in (+), zoom out (-), and a vertical zoom slider.

Map layers control:  Districts,  Schools,  States



### Filter Options

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:

[Clear](#)

A histogram showing the distribution of median values for housing units. The x-axis represents the median value, with labels at 85254.55 and 312600. The y-axis represents the frequency of units. The distribution is right-skewed, with a peak at the lower end of the scale and a long tail extending towards the higher end.

### Legend

Data Format

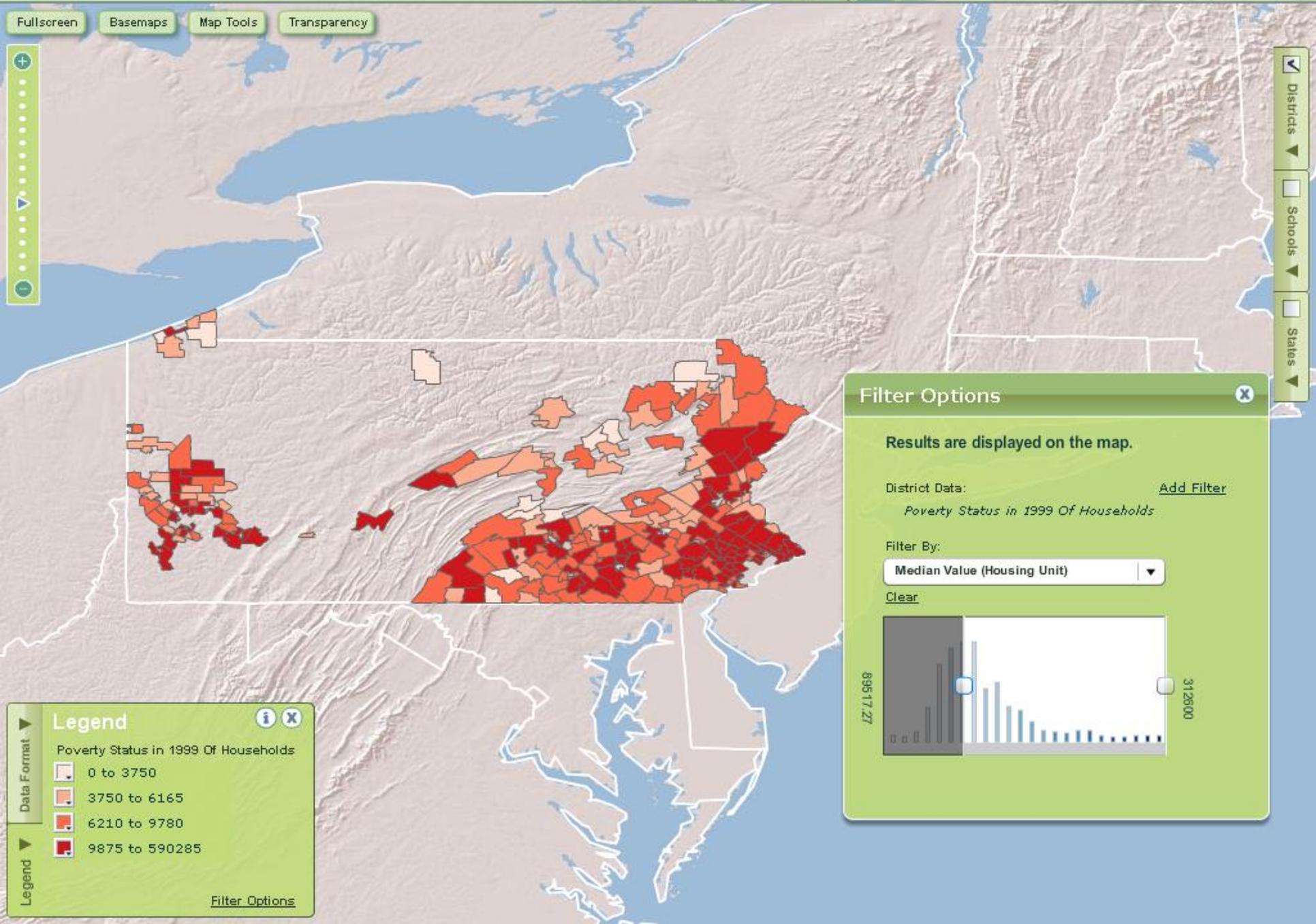
Poverty Status in 1999 Of Households

- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

Filter Options

Map navigation controls: zoom in (+), zoom out (-), and a vertical zoom slider.

Map layer controls:  Districts,  Schools,  States



### Filter Options

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:

[Clear](#)

A histogram showing the distribution of median housing unit values. The x-axis represents the median value, with a range from 89517.27 to 312500. The y-axis represents the frequency of units. The distribution is right-skewed, with a peak at the lower end of the scale and a long tail extending towards the higher values.

### Legend

Data Format

Poverty Status in 1999 Of Households

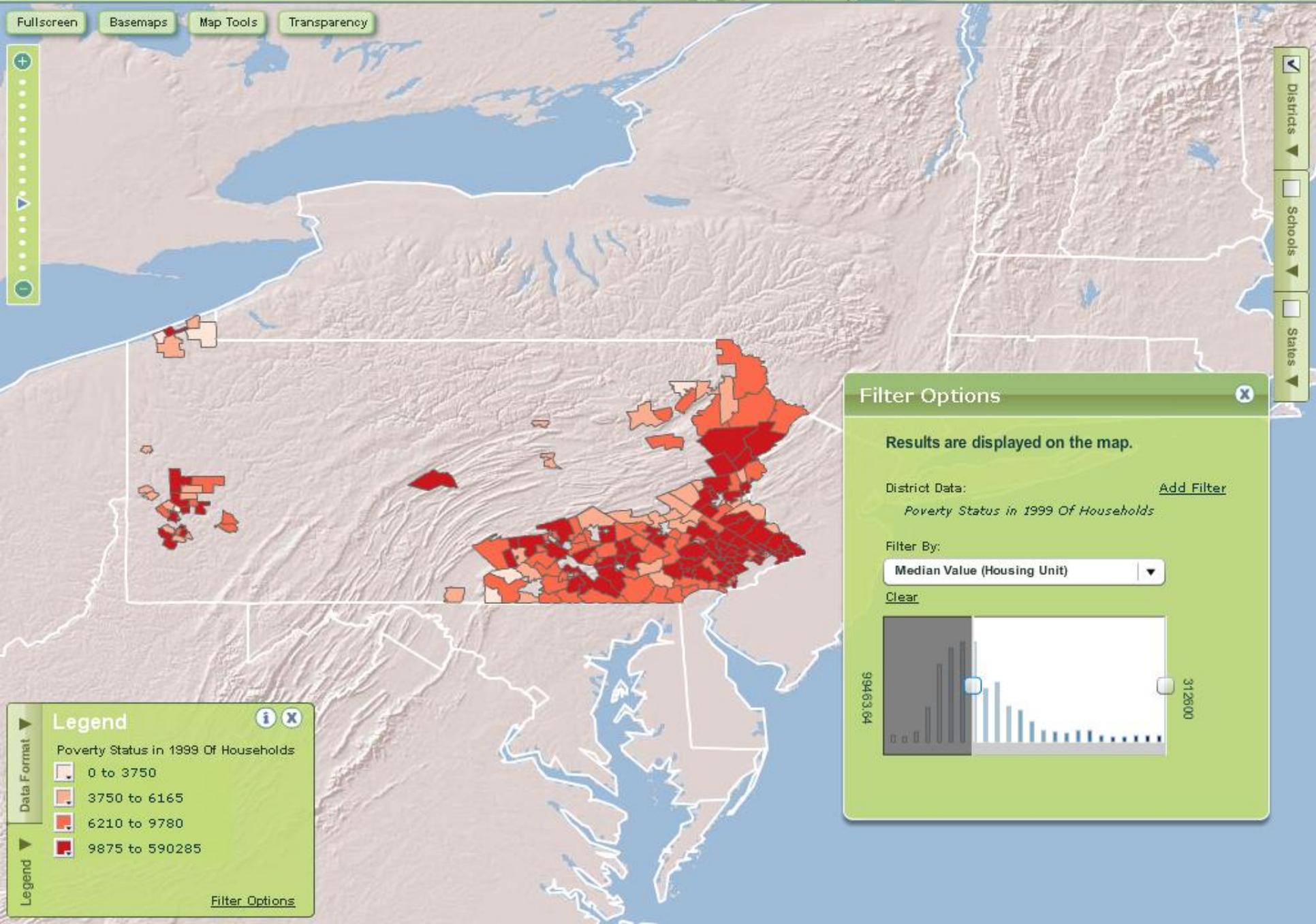
- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

Filter Options

[Fullscreen](#) [Basemaps](#) [Map Tools](#) [Transparency](#)

Map navigation controls: zoom in (+), zoom out (-), and a vertical scale bar.

Map layers control:  Districts,  Schools,  States



### Filter Options

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:

[Clear](#)

A histogram showing the distribution of Median Value (Housing Unit). The x-axis ranges from 99463.64 to 312600. The y-axis represents frequency. The distribution is right-skewed, with a peak around 150,000 and a long tail extending to the right.

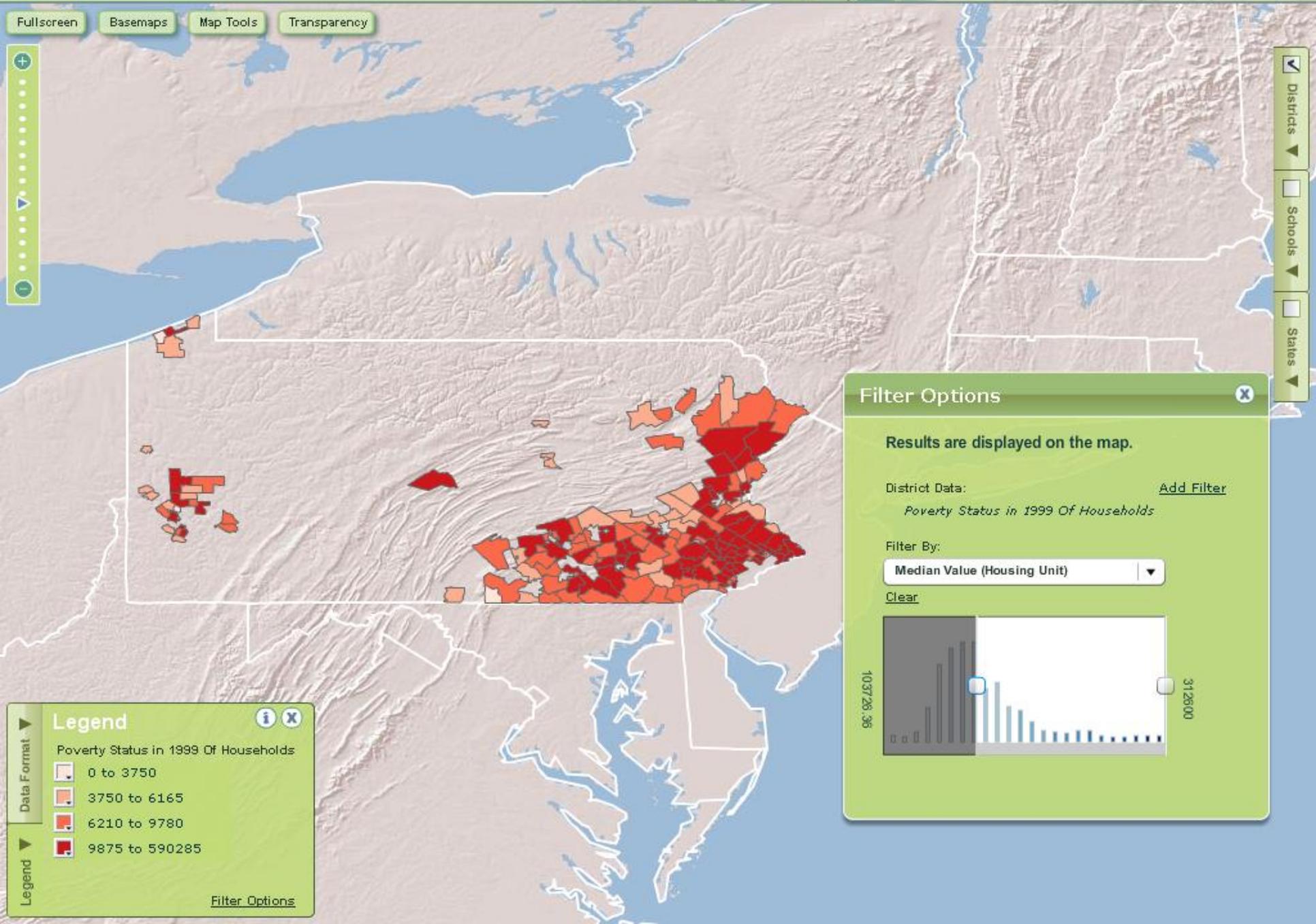
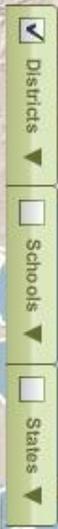
### Legend

Data Format

Poverty Status in 1999 Of Households

- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

Filter Options



### Filter Options

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:

[Clear](#)



**Legend**

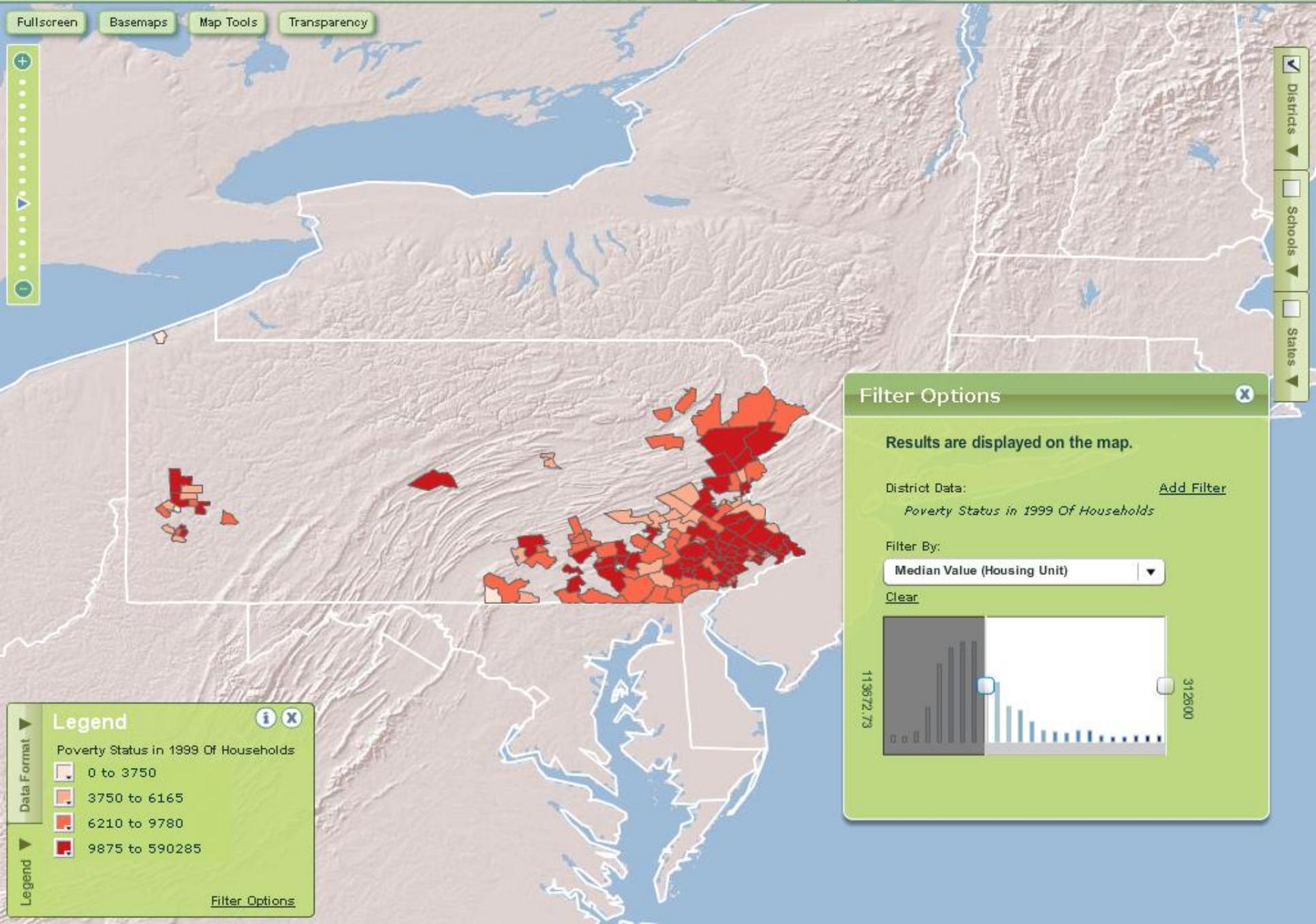
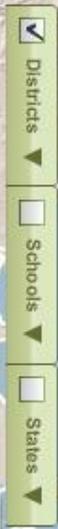
Data Format

Poverty Status in 1999 Of Households

- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

Legend

[Filter Options](#)



### Filter Options

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:

[Clear](#)

113672.73 31250.00

### Legend

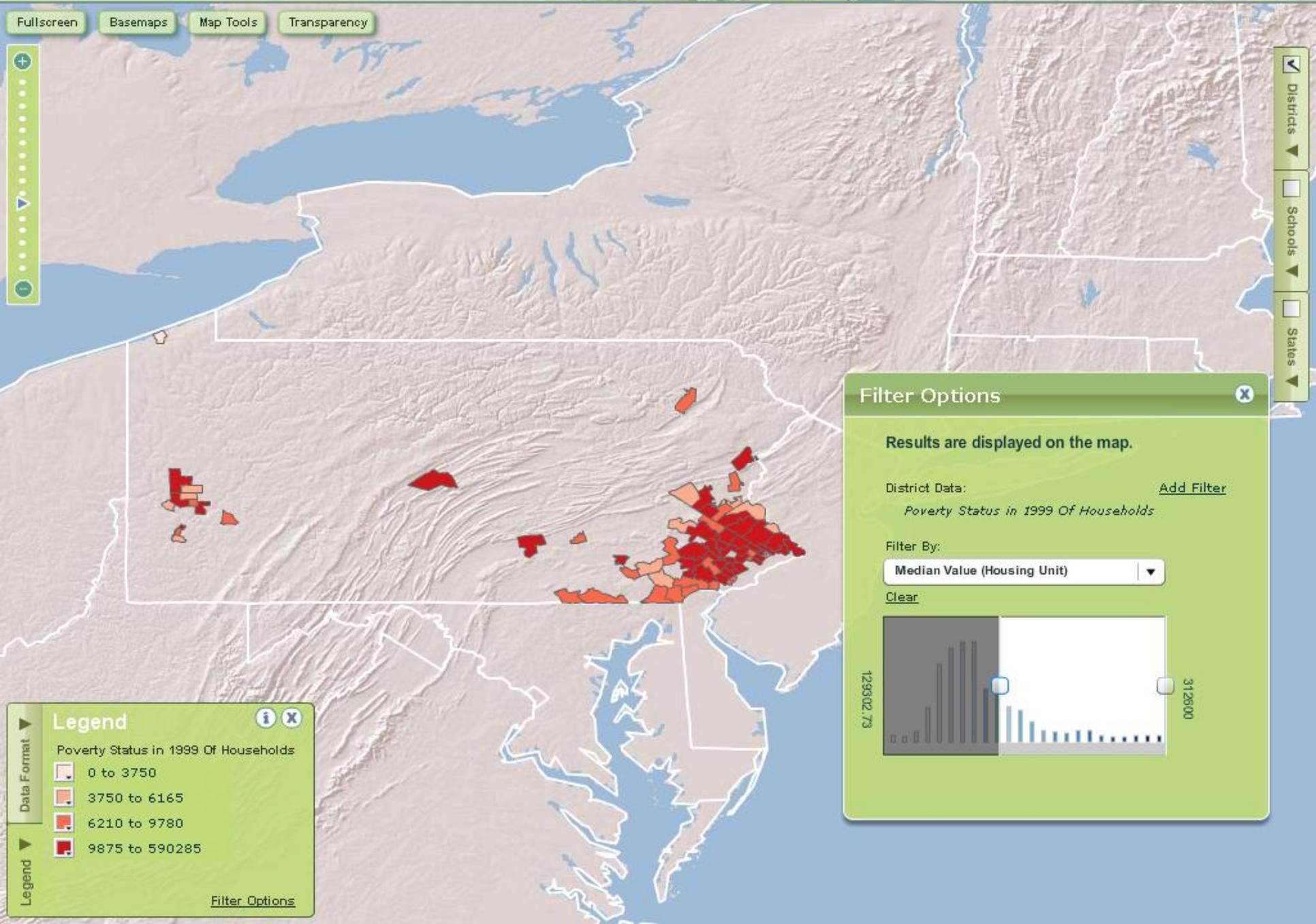
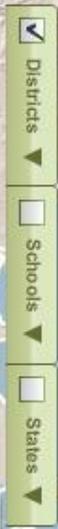
Data Format

Poverty Status in 1999 Of Households

- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

Filter Options

[Fullscreen](#) [Basemaps](#) [Map Tools](#) [Transparency](#)



### Filter Options ✕

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:

[Clear](#)



**Legend** ⓘ ✕

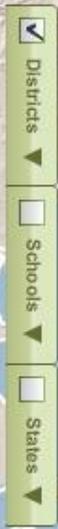
Data Format ▼

Poverty Status in 1999 Of Households

- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

Legend ▼

[Filter Options](#)



### Filter Options

Results are displayed on the map.

District Data: [Add Filter](#)  
*Poverty Status in 1999 Of Households*

Filter By:

Filter By:

134986.36 312800

246.91 3880

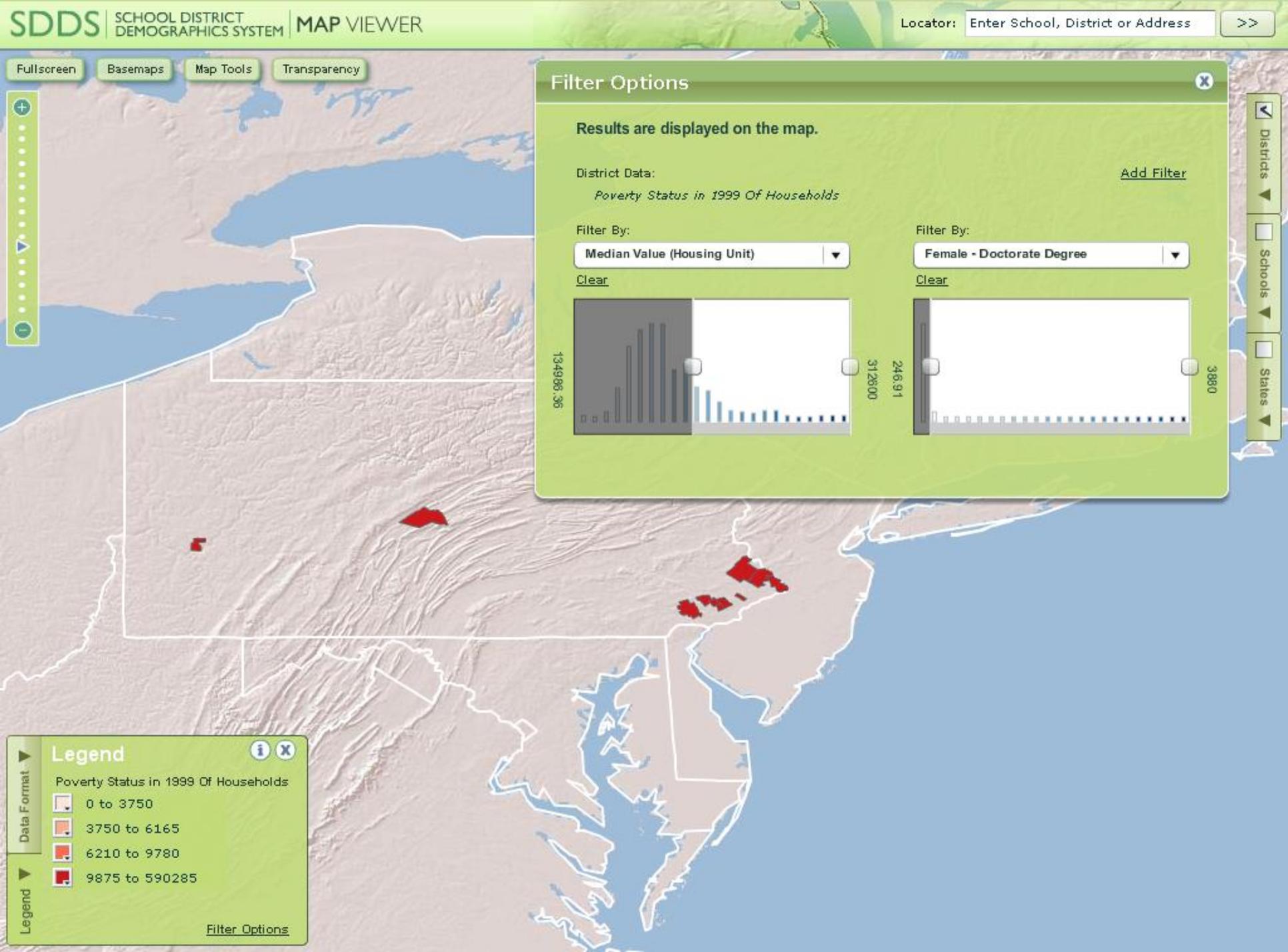
### Legend

Data Format

Poverty Status in 1999 Of Households

- 0 to 3750
- 3750 to 6165
- 6210 to 9780
- 9875 to 590285

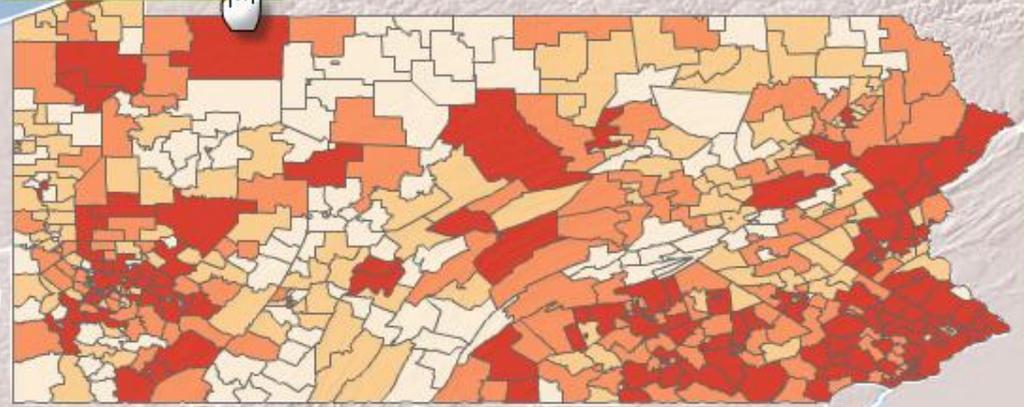
Filter Options



Fullscreen Basemaps Map Tools Transparency



- Overview
- Select Schools
- Clipboard
- Share
- Print
- Export



### Districts

State: **Pennsylvania** + Add State

Year: **2000**

District: **Unified**

Population and Housing

- Population
- Housing

Race and Ethnic

Economics

Social Characteristics

Show:  Theme  Labels

Compare: Themes Years

Filter: Set Clear

### Legend

Total Students

- 0 to 1463
- 1475 to 2426
- 2431 to 3728
- 3750 to 205199

Filter Options



# The Nuts & Bolts

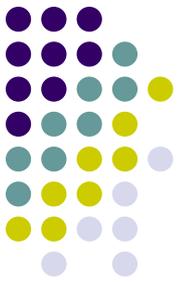
Technical Dive into SDDS

# Technical Topics

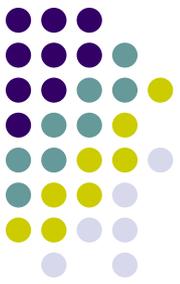


- Architecture
- Optimizing Map Services
- Use of XML
- ArcGIS Server & Thematic Mapping
- Benefits of Flex API

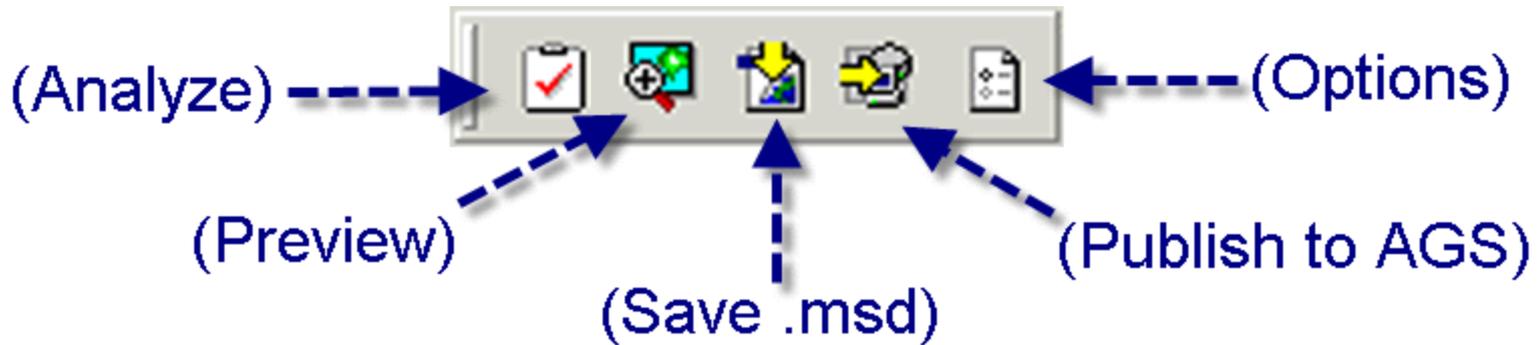
# Architecture



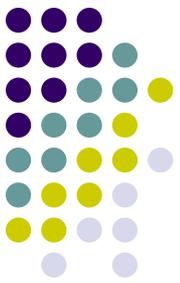
- ArcGIS Server 9.3.1
  - Flex API
  - .MSD map services
  - Custom JSON caching for thematics
- ArcGIS Online Tile Caches
- SQL Server 2005



# Map Service Publishing Toolbar (ArcGIS 9.3.1)



- Identify Problems and Enhance Performance
- Preview Map Service
- Create a Map Service Definition (.msd)
- Publish Service



# Turn off unused fields....

Layer Properties

General | Source | Selection | Display | Symbology | **Fields** | Definition Query | Labels | Joins & Relates | HTML Popup

Primary Display Field: NAME

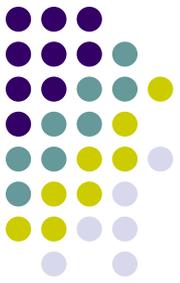
Choose which fields will be visible. Click in the alias column to edit the alias for any field.

Name	Alias	Type	Length	Precision	Scale	Number Format	
<input type="checkbox"/> SL970P_ID	SL970P_ID	Double	8	0	0	Numeric	...
<input checked="" type="checkbox"/> GEO_ID	GEO_ID	Text	60	0	0		
<input checked="" type="checkbox"/> STATE	STATE	Text	2	0	0		
<input checked="" type="checkbox"/> SD_U	SD_U	Text	5	0	0		
<input checked="" type="checkbox"/> NAME	NAME	Text	90	0	0		
<input type="checkbox"/> LSAD	LSAD	Text	7	0	0		
<input checked="" type="checkbox"/> SDType	SDType	Text	4	0	0		
<input type="checkbox"/> SL960P_	SL960P_	Double	8	0	0	Numeric	...
<input type="checkbox"/> SL960P_ID	SL960P_ID	Double	8	0	0	Numeric	...
<input type="checkbox"/> SD_S	SD_S	Text	5	0	0		

Select All | Clear All

OK | Cancel | Apply

**Fields Tab**



# Caching JSON for Statistical Data

- Reduce server roundtrips for static data
- ArcGIS Server REST already caches data
  - Learning from this model- SDDS caches data also
- Classification of District data does not change
  - Data is pre-compiled into JSON/REST
  - Permits rapid delivery of data to client

File Edit View Proxy Tools Window Help

Structure Sequence

General Request Response Summary Chart Notes

Structure

- resq
  - services/
    - ED/
      - queryStateData/
        - MapServer/
          - 0/
            - query?geometry=
            - query?returnGeo
          - optionalLayers/
            - MapServer/
              - export?layers=showf
              - export?layers=showf
              - export?f=image&dpi=
              - export?f=image&dpi=
              - MapServer?f=json
              - MapServer?f=json
            - queryDistrictData/
  - crossdomain.xml
  - crossdomain.xml
  - http://server.arcgisonline.com
    - ArcGIS/
      - rest/
        - services/
          - ESRI\_ShadedRelief\_World\_2D/
            - MapServer/
              - tile/
                - 3/
                  - 1/
                  - 2/
                  - 3/
                - 6/

Sequence

General

| Name  | Type    | Value   |
|-------|---------|---------|
| field | String  | H004001 |
| class | Object  |         |
| 7     | Object  |         |
| QT    | Object  |         |
| c     | Array   |         |
| [0]   | Object  |         |
| CNT   | Integer | 19      |
| MIN   | Number  | 0       |
| MAX   | Number  | 2835    |
| [1]   | Object  |         |
| CNT   | Integer | 19      |
| MIN   | Number  | 2937    |
| MAX   | Number  | 4998    |
| [2]   | Object  |         |
| CNT   | Integer | 19      |
| MIN   | Number  | 5004    |
| MAX   | Number  | 6990    |
| [3]   | Object  |         |
| CNT   | Integer | 19      |
| MIN   | Number  | 6994    |
| MAX   | Number  | 9945    |
| [4]   | Object  |         |
| CNT   | Integer | 19      |
| MIN   | Number  | 9954    |
| MAX   | Number  | 13799   |
| [5]   | Object  |         |
| [6]   | Object  |         |
| s     | Object  |         |
| NB    | Object  |         |
| c     | Array   |         |

Charles 3.3.1 - Session 1 \*

File Edit View Proxy Tools Window Help



Structure Sequence

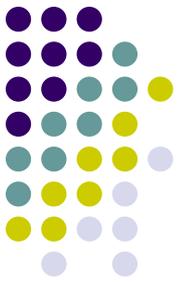
| RC  | Mthd | .. Path   | Duration | Size      | Status   | Info     |
|-----|------|---|----------|-----------|----------|----------|
| 304 | GET  | ... /staging/ed10/                                    | 109 ms   | 696 bytes | Complete |          |
| 404 | GET  | ... /staging/ed10/history/history.css                 | 63 ms    | 2.14 KB   | Complete |          |
| 404 | GET  | ... /staging/ed10/history/history.js                  | 109 ms   | 2.14 KB   | Complete |          |
| 304 | GET  | ... /staging/ed10/AC_OETags.js                        | 109 ms   | 765 bytes | Complete |          |
| 200 | GET  | ... /ArcGIS/rest/services/ED/queryStateData/MapSe...  | 2547 ms  | 96.61 KB  | Complete |          |
| 200 | GET  | ... /ArcGIS/rest/services/ED/optionalLayers/MapSer... | 531 ms   | 2.17 KB   | Complete | 1676x795 |
| 200 | GET  | ... /ArcGIS/rest/services/ED/queryDistrictData/Map... | 6860 ms  | 152.80 KB | Complete |          |

Filter:

Settings

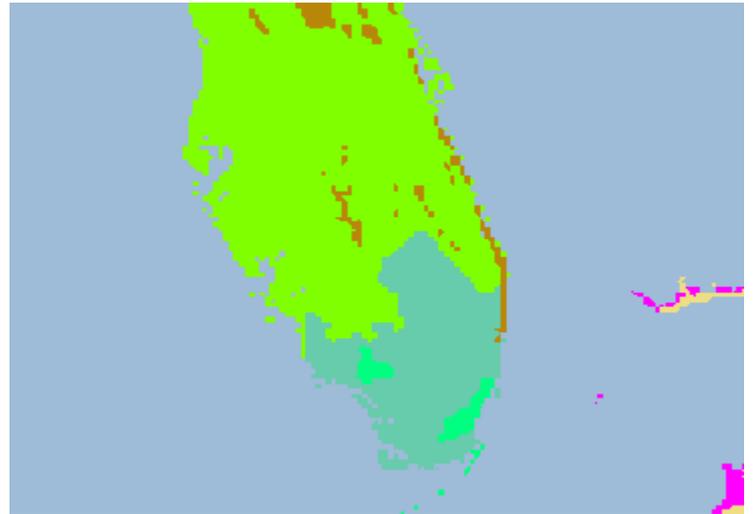
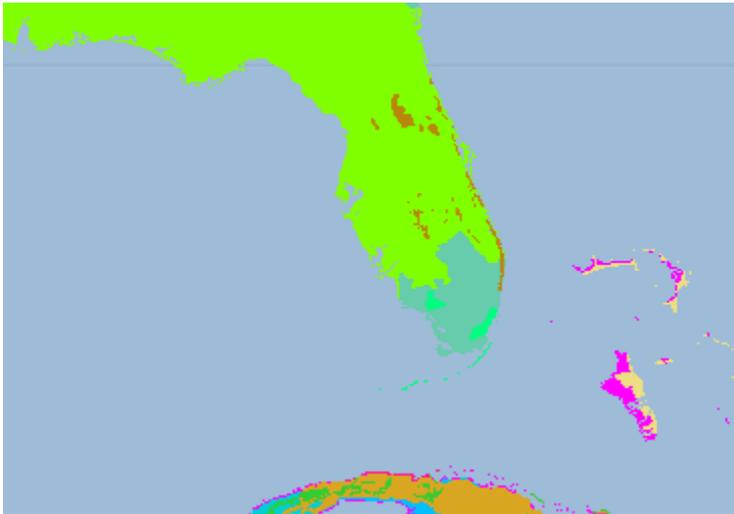
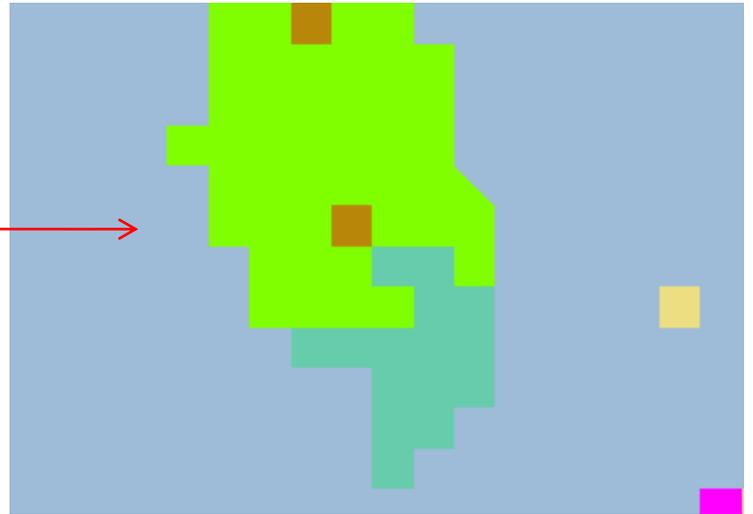
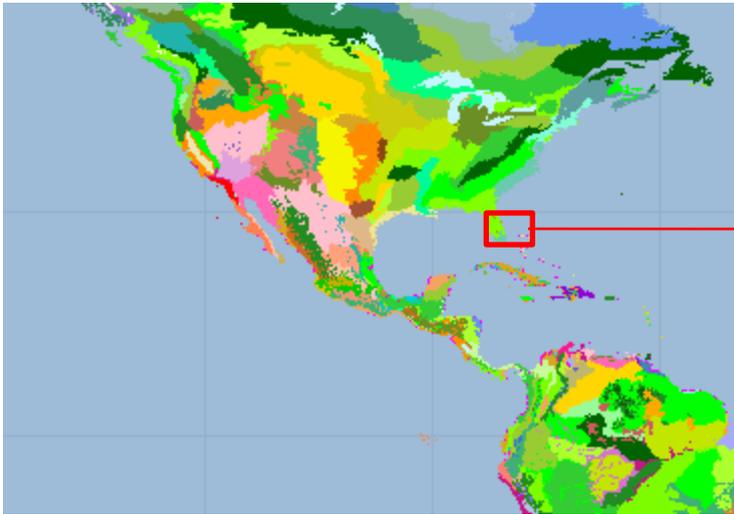
General Summary Chart

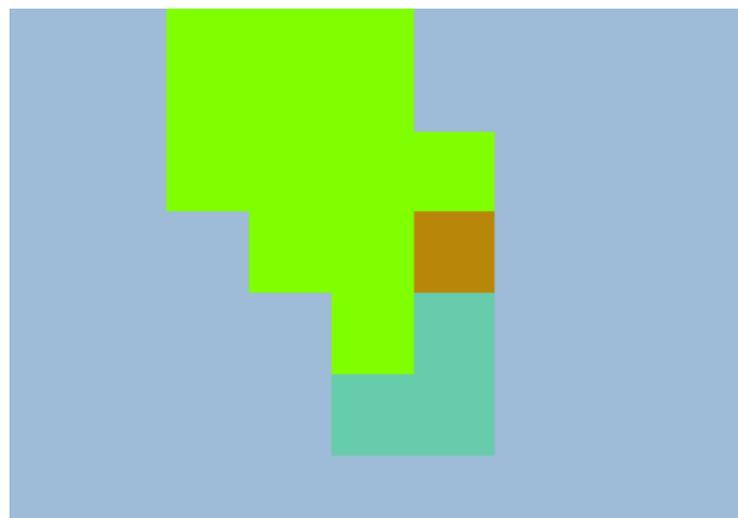
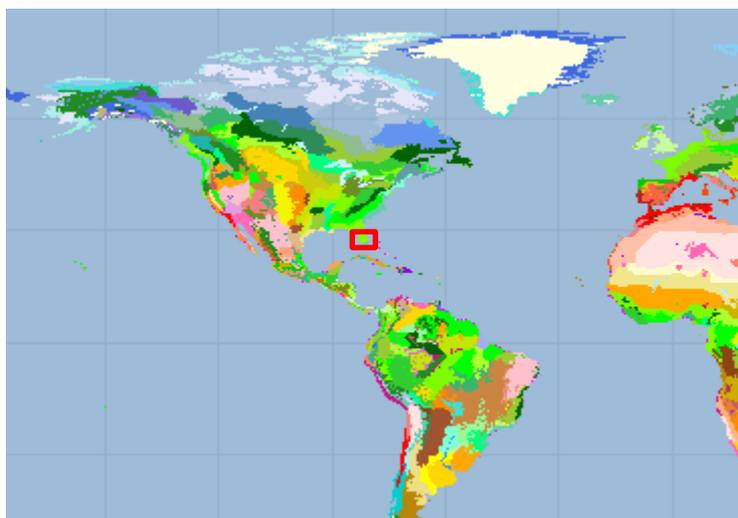
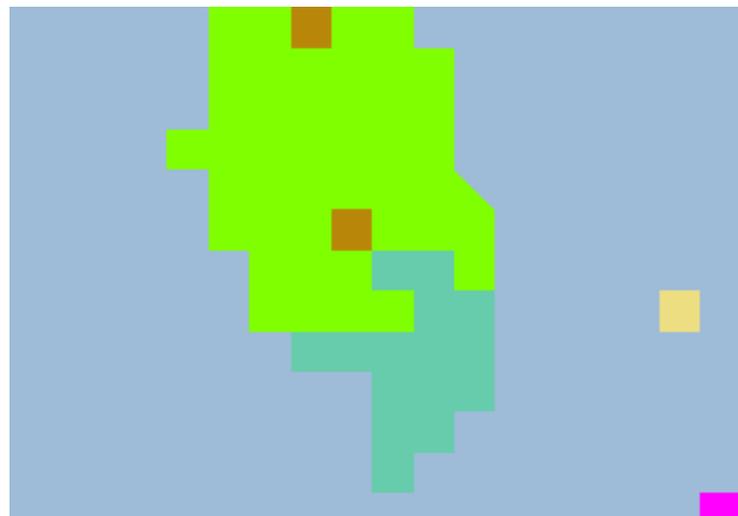
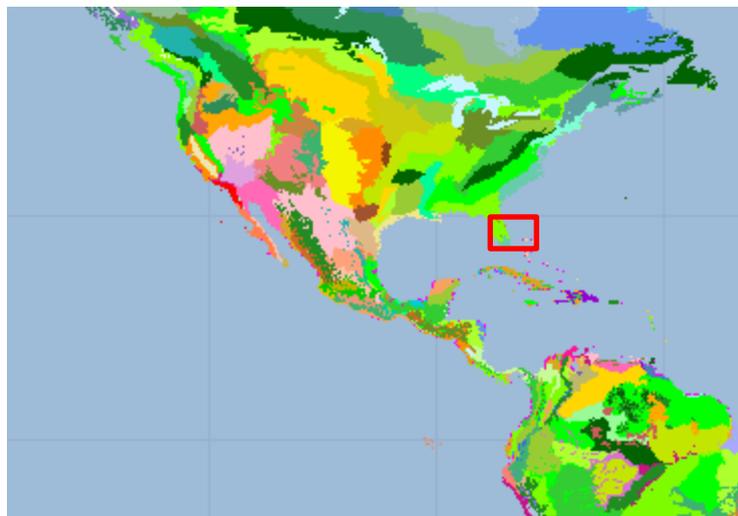
| #              | Resource                   | Timeline |
|----------------|----------------------------|----------|
| 1              | <default>                  | 109ms    |
| 2              | history.css                | 63ms     |
| 3              | history.js                 | 109ms    |
| 4              | AC_OETags.js               | 109ms    |
| 5              | query?geometry=%7B%2...    | 2.5s     |
| 6              | export?layers=show%3A&...  | 531ms    |
| 7              | query?f=json&returnGeom... | 6.9s     |
| 8              | export?layers=show%3A&...  | 406ms    |
| 9              | VA.txt                     | 656ms    |
| 10             | VA.txt                     | 546ms    |
| 11             | VA.txt                     | 234ms    |
| 12             | VA.txt                     | 219ms    |
| 13             | VA.txt                     | 187ms    |
| 14             | VA.txt                     | 313ms    |
| 15             | VA.txt                     | 344ms    |
| 16             | VA.txt                     | 437ms    |
| Total Duration |                            | 48.0s    |

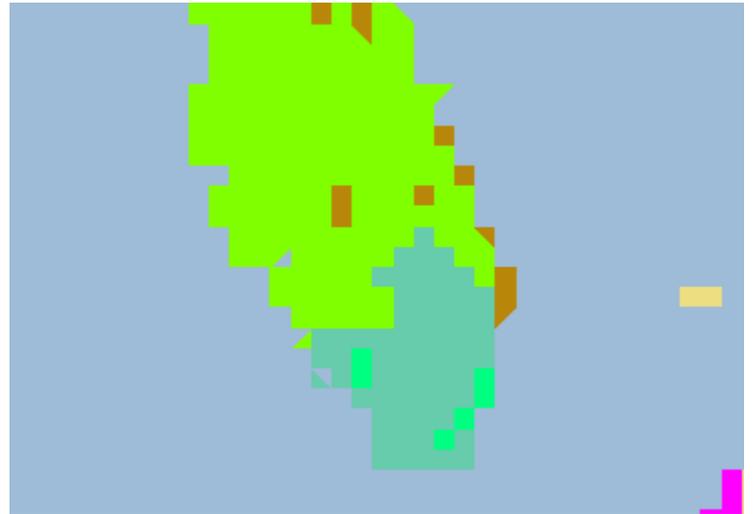
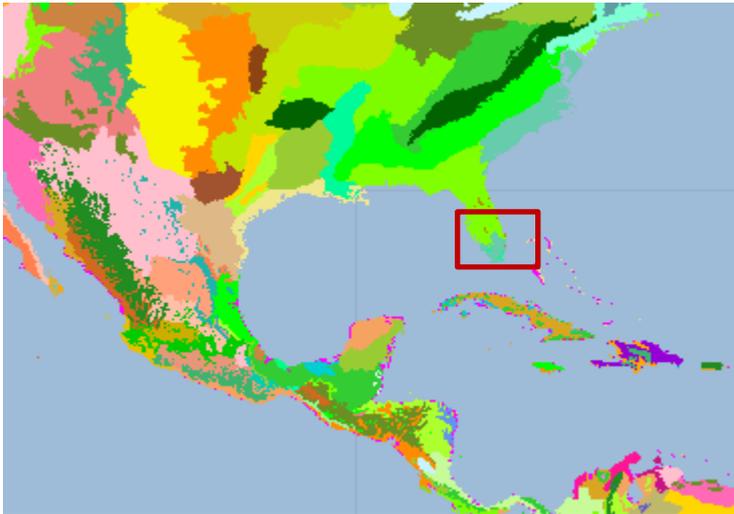
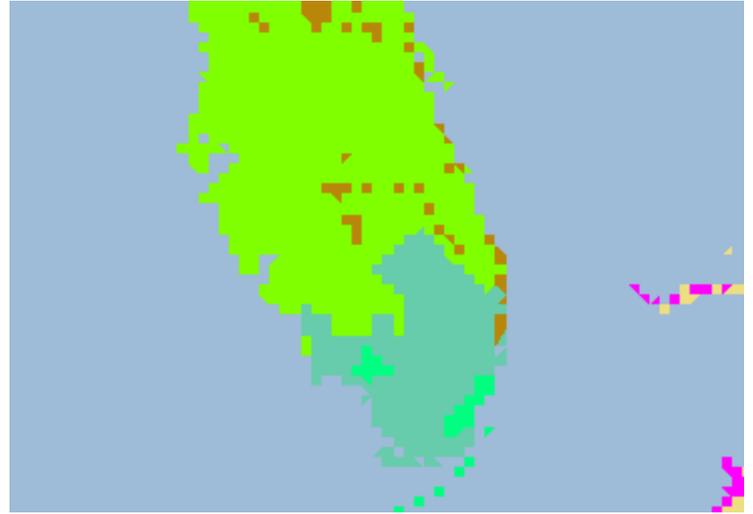
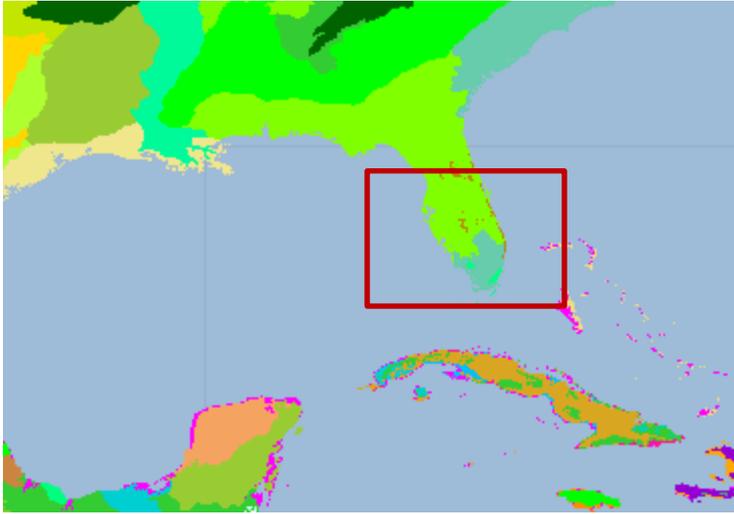


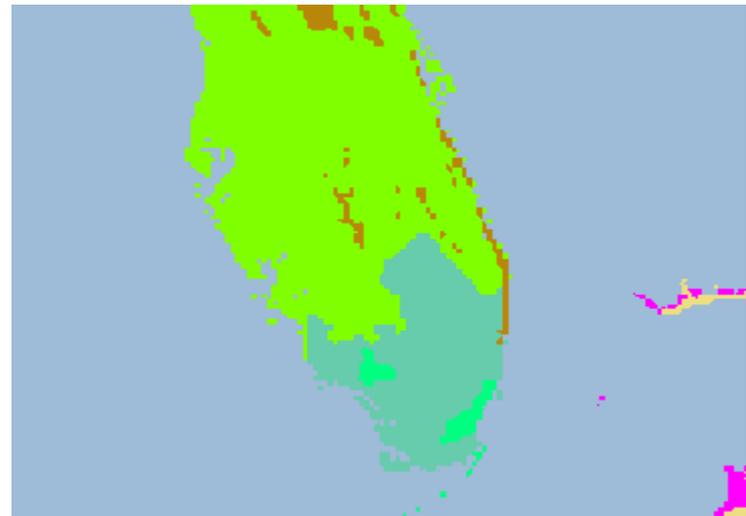
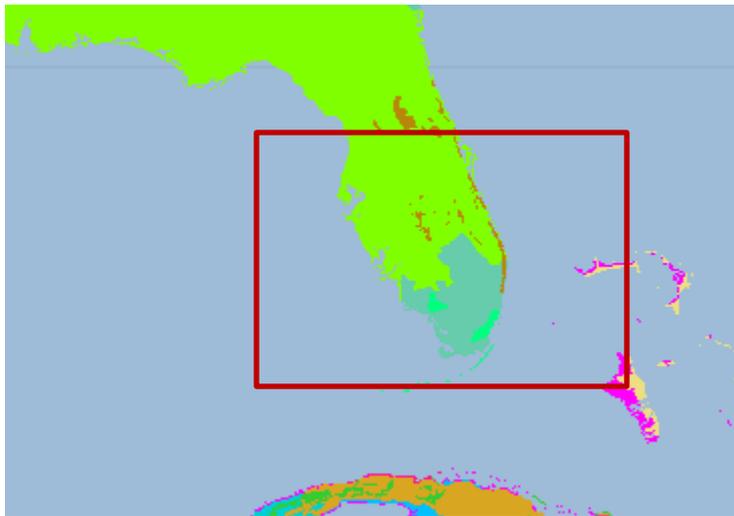
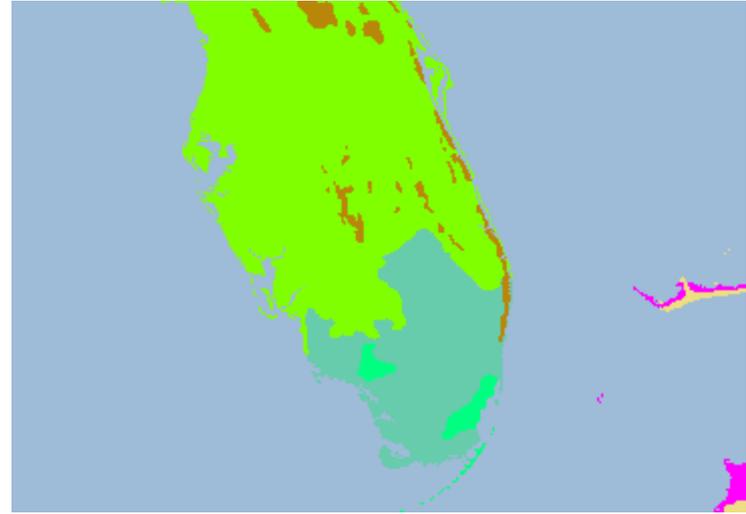
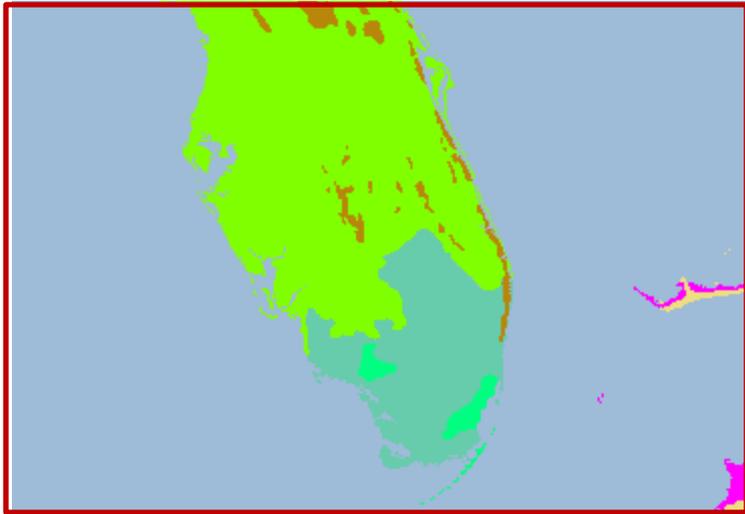
# Quantization- Optimize Data Download

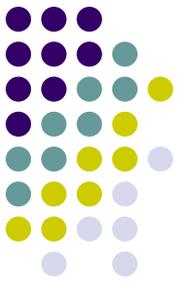
- Computer screen only has so many pixels
  - 1024x768, 1280x1024
- Optimizes polygons to match the level of detail visible to a user
- Python script generalizes geometry for GIS data





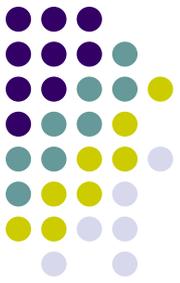






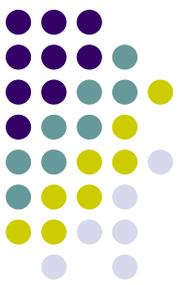
# Gzip Compression

- Compresses HTTP responses to users
- All modern web browsers have ability to “unzip”
- Currently seeing 70% compression
- Test your webserver with [port80.com](http://port80.com) tools



# Confronting Change with XML

- Avoid hard-coding variables
- XML not compiled into SWF
- Easily provide data for UI controls
- Rapid migration from development to production



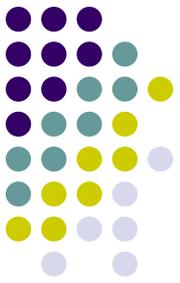
# Confronting Change with XML

```
<config>  
  <mapserver_url>  
    http://.../ArcGIS/rest/services/.../MapServer  
  </mapserver_url>  
</config>
```

```
11 <!-- 2000 Population and Housing -->  
12  
13  
14     <!-- Population -->  
15     <field id="totalStudents" fieldname="CCD_Member99"/>  
16     <field id="totalPopulation" fieldname="TOTPOP"/>  
17  
18     <!-- Housing -->  
19     <field id="totalOccupiedHousingUnits" fieldname="H004001"/>  
20     <field id="ownerOccupiedHousingUnits" fieldname="H004002"/>  
21     <field id="renterOccupiedHousingUnits" fieldname="H004003"/>  
22     <field id="averageHouseholdSize" fieldname="P017001"/>  
23     <field id="averageFamilySize" fieldname="P033001"/>  
24     <field id="householderMale" fieldname="P_P027005"/>  
25     <field id="householderFemale" fieldname="P_P027006"/>  
26     <field id="medianValueHousingUnit" fieldname="CVALUE"/>
```

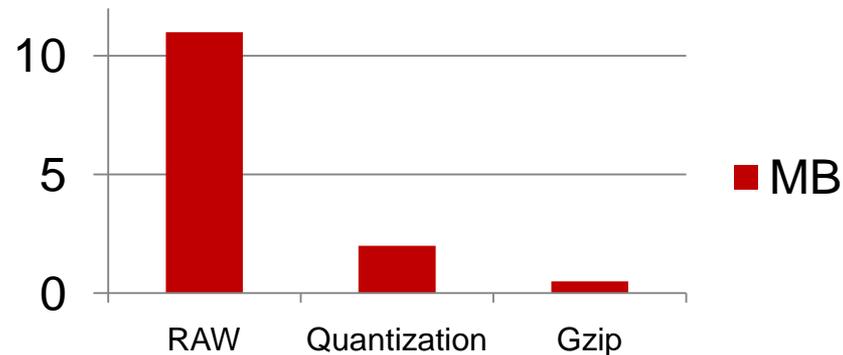


# ArcGIS Server & Thematic Mapping



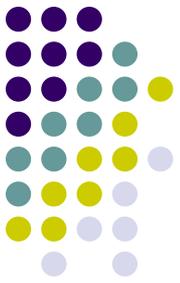
- Thematic mapping is a challenge
  - California has >1000 districts
- Heavy reliance on client-side graphics
- Minimize downloads and data requests

## Geometry

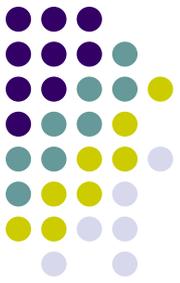


# Leveraging

ArcGIS Online

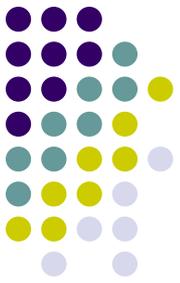


- Focus on operational data- Districts/Schools
- ArcGIS Online is high performance mapping
  - Reduces Bandwidth/CPU usage at NCES
  - Enhances speed of application
- Data updates by ESRI
  - Future changes to Web Mercator (H2 2009)



# Benefits of the Flex API for AGS

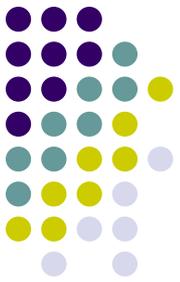
- Powerful toolset to create Rich User Interface
- Thematic Mapping on Client
  - No roundtrip to change cartography
  - No roundtrip to change classifications
- Adobe Flash Player- 97% penetration
  - Cross-browser by design
- Large community with reusable components



# Planned New Data/Features

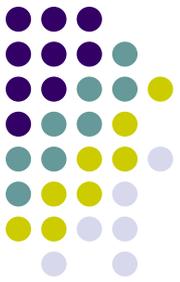
- American Community Survey 2007
- American Indian Reservation Areas Data
- More analysis and comparison tools
- Planning for Decennial Census 2010
  - Creating foundation for rapid dissemination



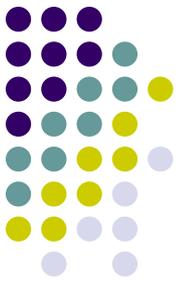


# Next Steps

- New SDDS application to be released late Summer
- Contact Tai Phan, NCES for more details
  - [Email: Tai.Phan@ed.gov](mailto:Tai.Phan@ed.gov)
  - (202) 502-7431
- Visit SDDS at:
  - <http://nces.ed.gov/surveys/sdds/>



# Q & A Time...



**For more information:**



Michael Lippmann

[mlippmann@blueraster.com](mailto:mlippmann@blueraster.com)

703-875-0914

[www.blueraster.com](http://www.blueraster.com)