

# **Assessing Future Needs of Students with Disabilities Utilizing State Department of Education Data**

## **Power of Mapping Techniques**

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# Presentation Objectives

- Review the advantages of mapping
- Examine types of maps
- Explore Virginia's application of mapping:
  - Location of offices for optimal service delivery as it relates to lease renewals.
  - Comprehensive statewide needs assessment
  - Use in planning for students with disabilities
- Examples of software and freeware available for mapping
- Demonstration of Epi Info mapping-freeware

# Why Are Maps Helpful?

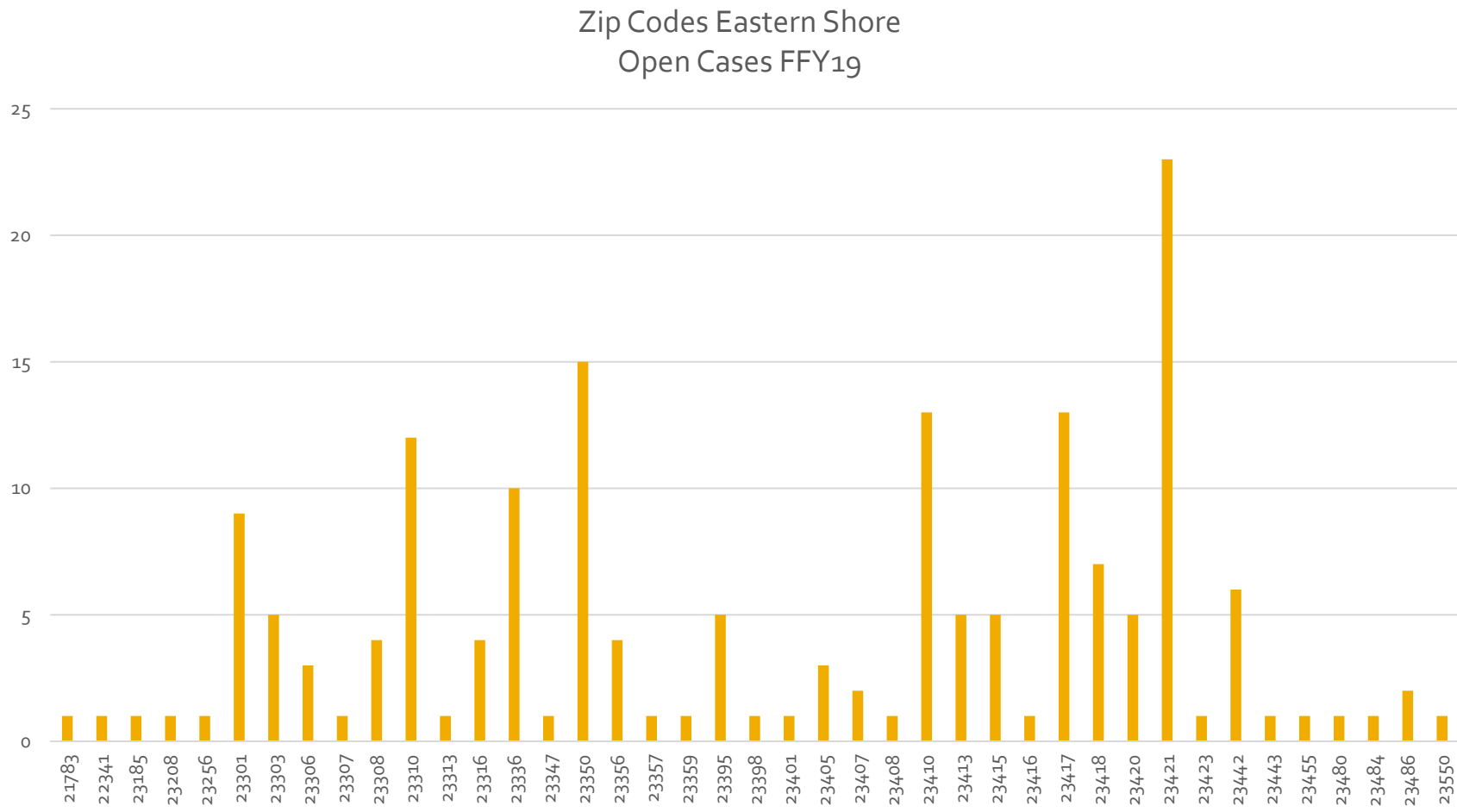
- Add space and time dimensions that can not be as easily be displayed in charts or graphs.
- Especially useful for large amount of data that need to be displayed and summarized.

## Determining Optimal Location of VA DARS Offices

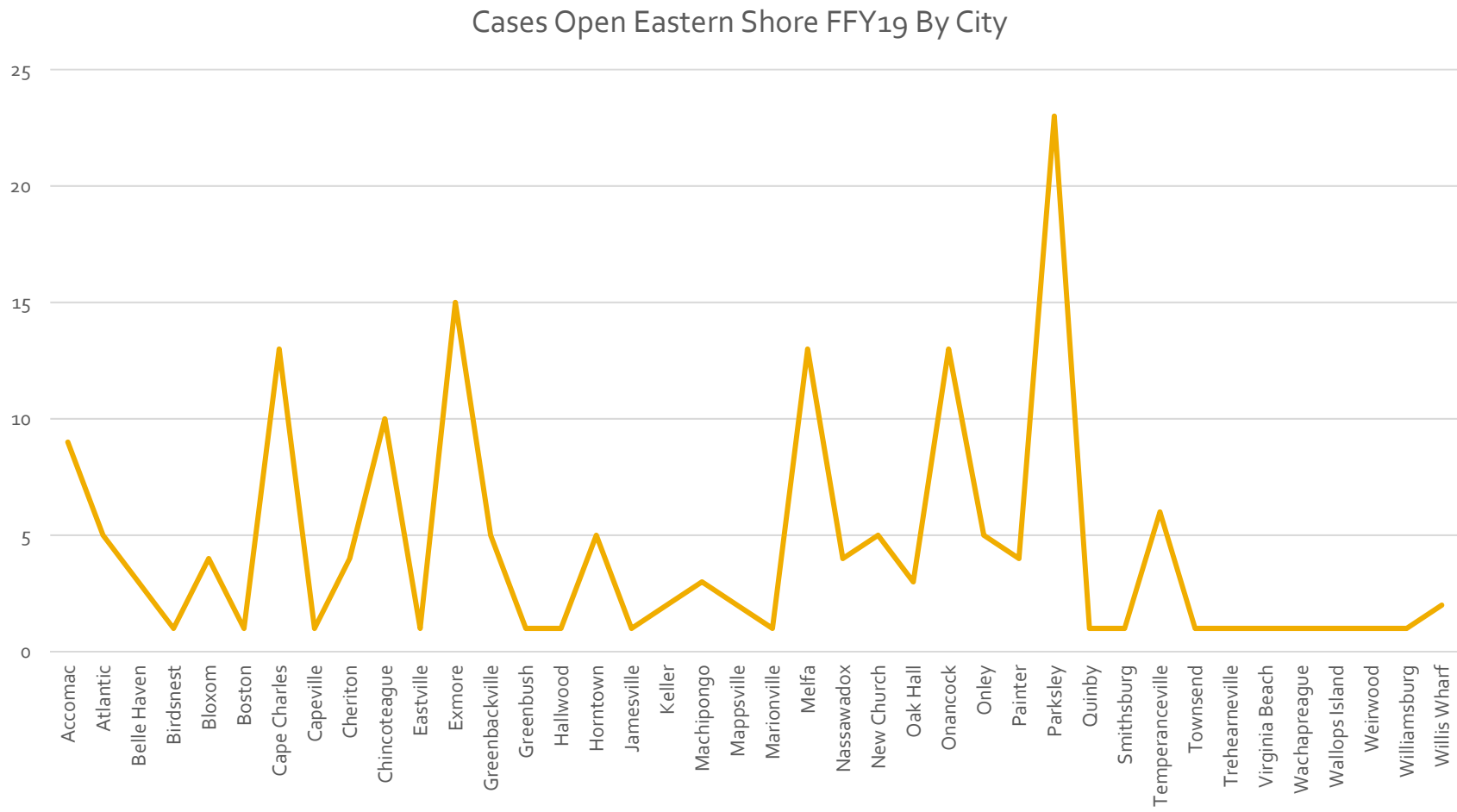
### Example 1 of Time and Space Advantages to Mapping

- Location of offices
  - Eastern Shore of Virginia (2 counties, 70 miles in length)
    - Issue of limited staff
    - Large geographic area to cover

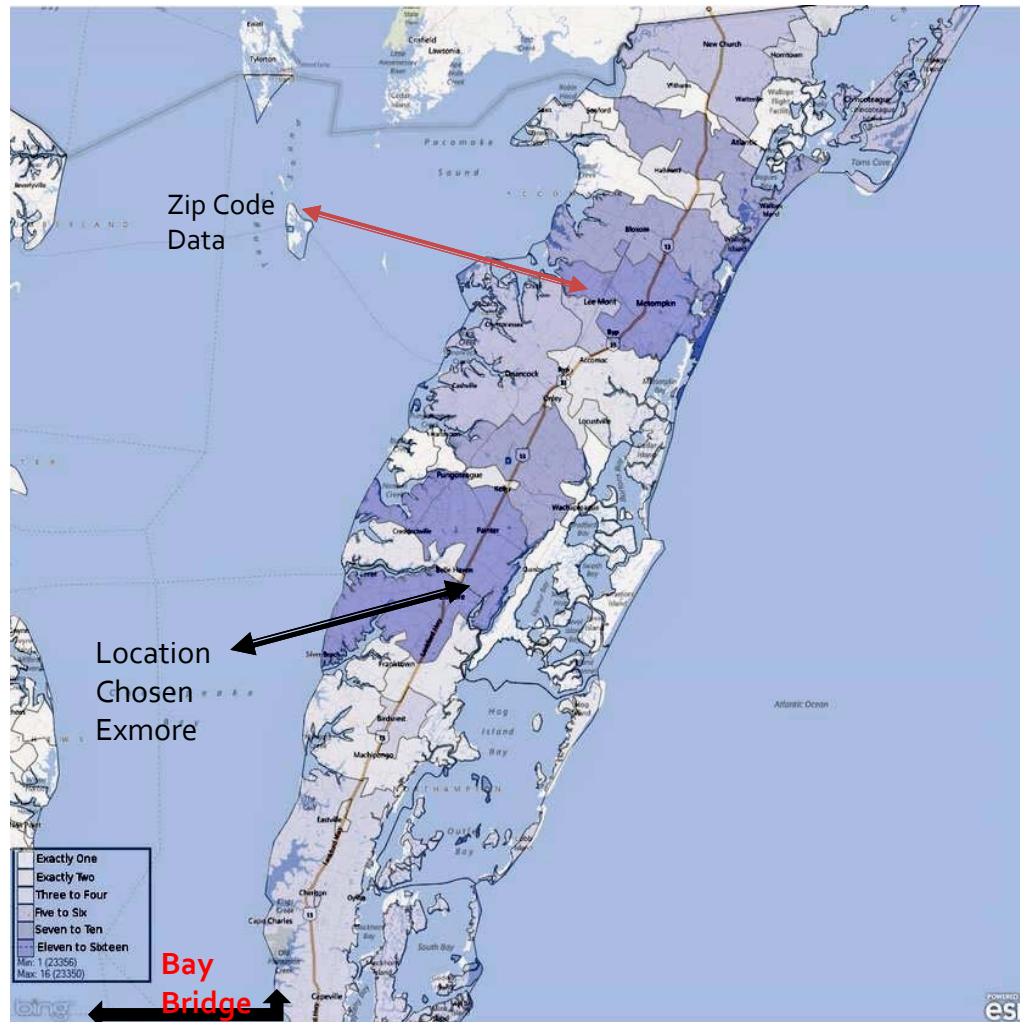
# Open Cases Eastern Shore of Virginia FFY19 by Zip Code-Graphing



# Open Cases Eastern Shore of Virginia FFY19 by City-Graphing



# Location of DARS Office-Eastern Shore of Virginia - Mapping

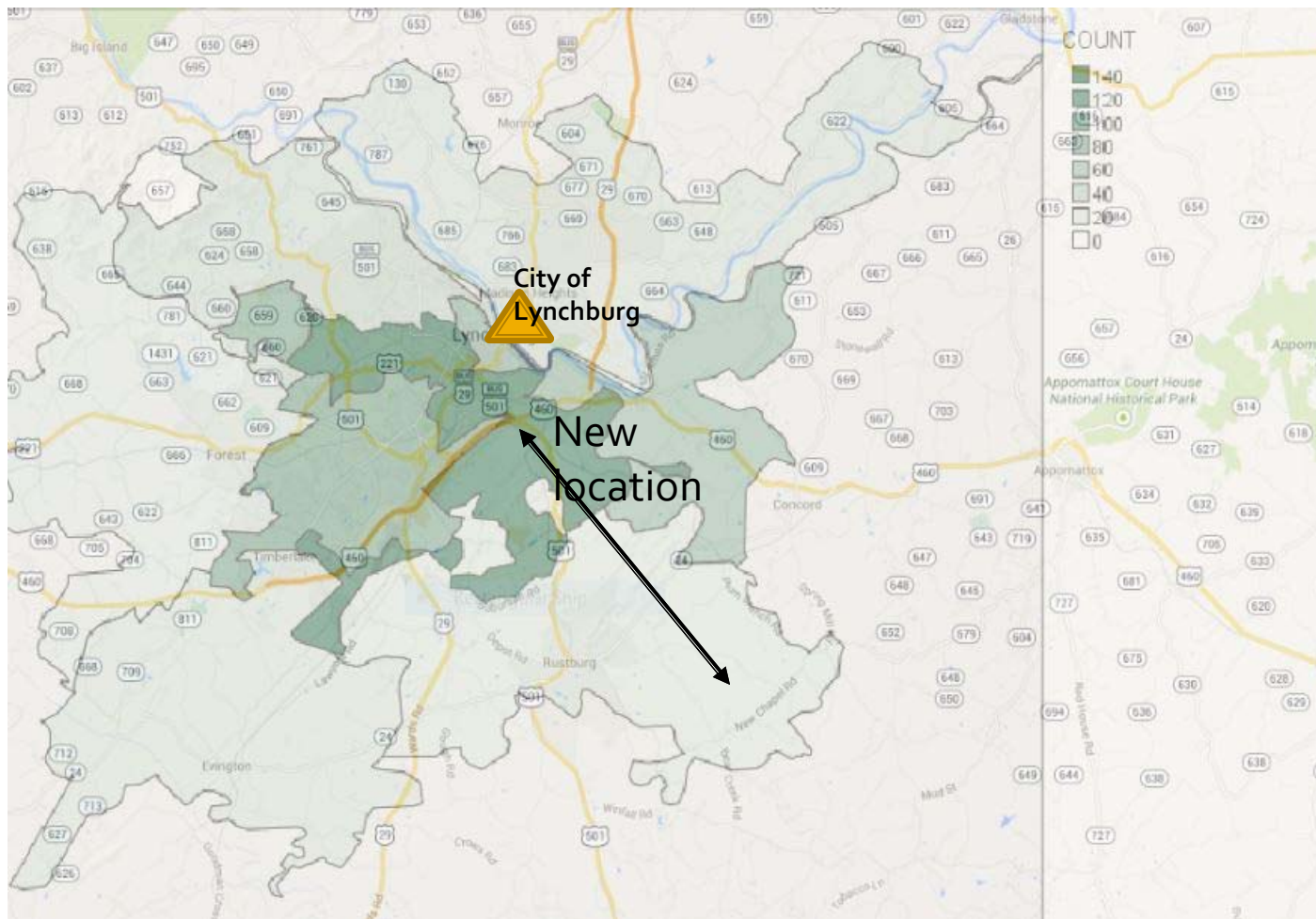


## 2<sup>nd</sup> Demonstration of Space and Time Advantage of Mapping

- Lynchburg
  - Only office in a very rural area

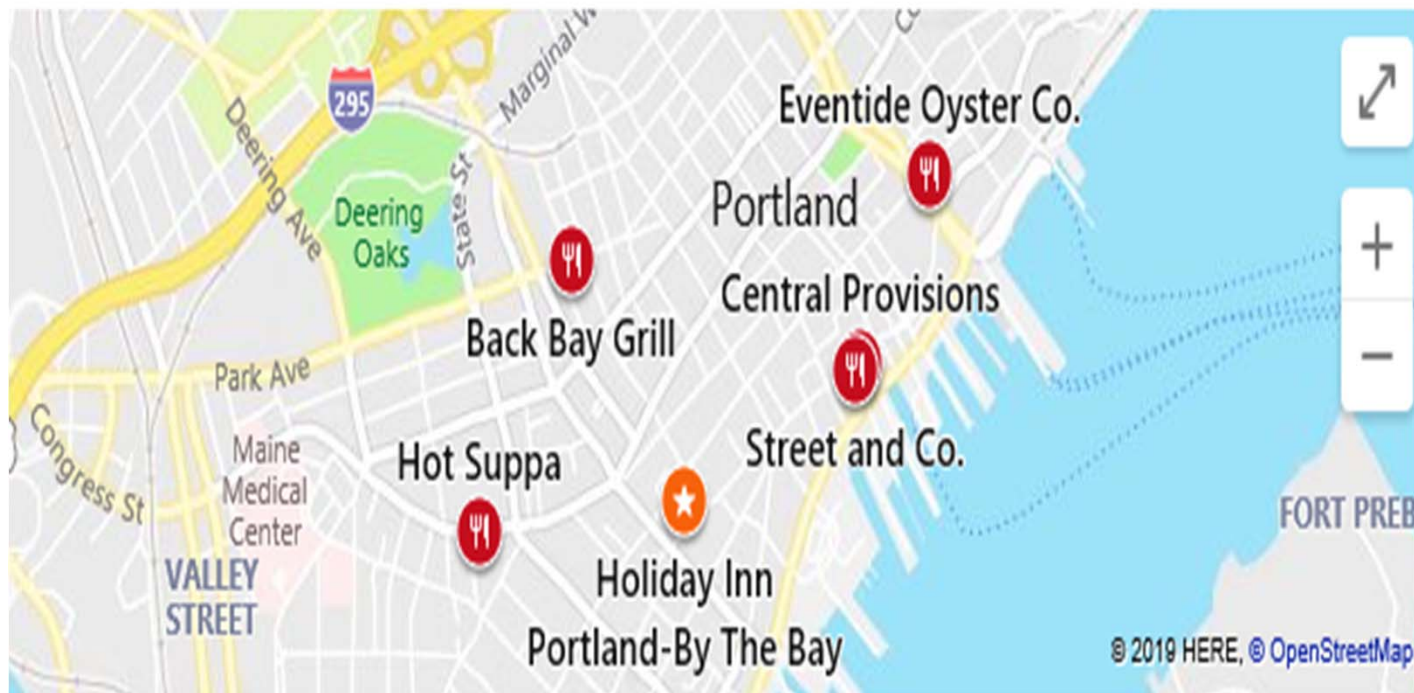


# Lynchburg Virginia Office Location



# Types of Maps-Point of Interest

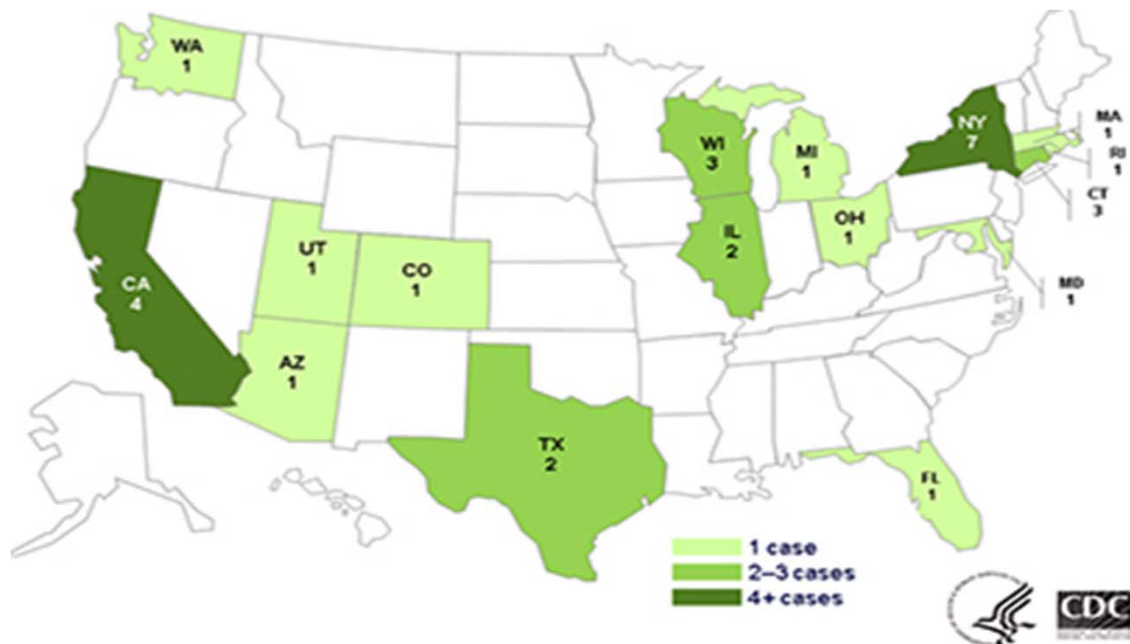
- Point of Interest (Google Maps)
  - Best restaurants near Holiday Inn By The Bay



# Types of Maps – Case Cluster

## ■ Case Cluster Map

Displays quantity of case(s)/variable on a map based on geographic location. Example is Salmonella outbreaks due to chia powder. An example of use with VR would be number of clients in a county, zip, fip earning less than \$10.00/hour.



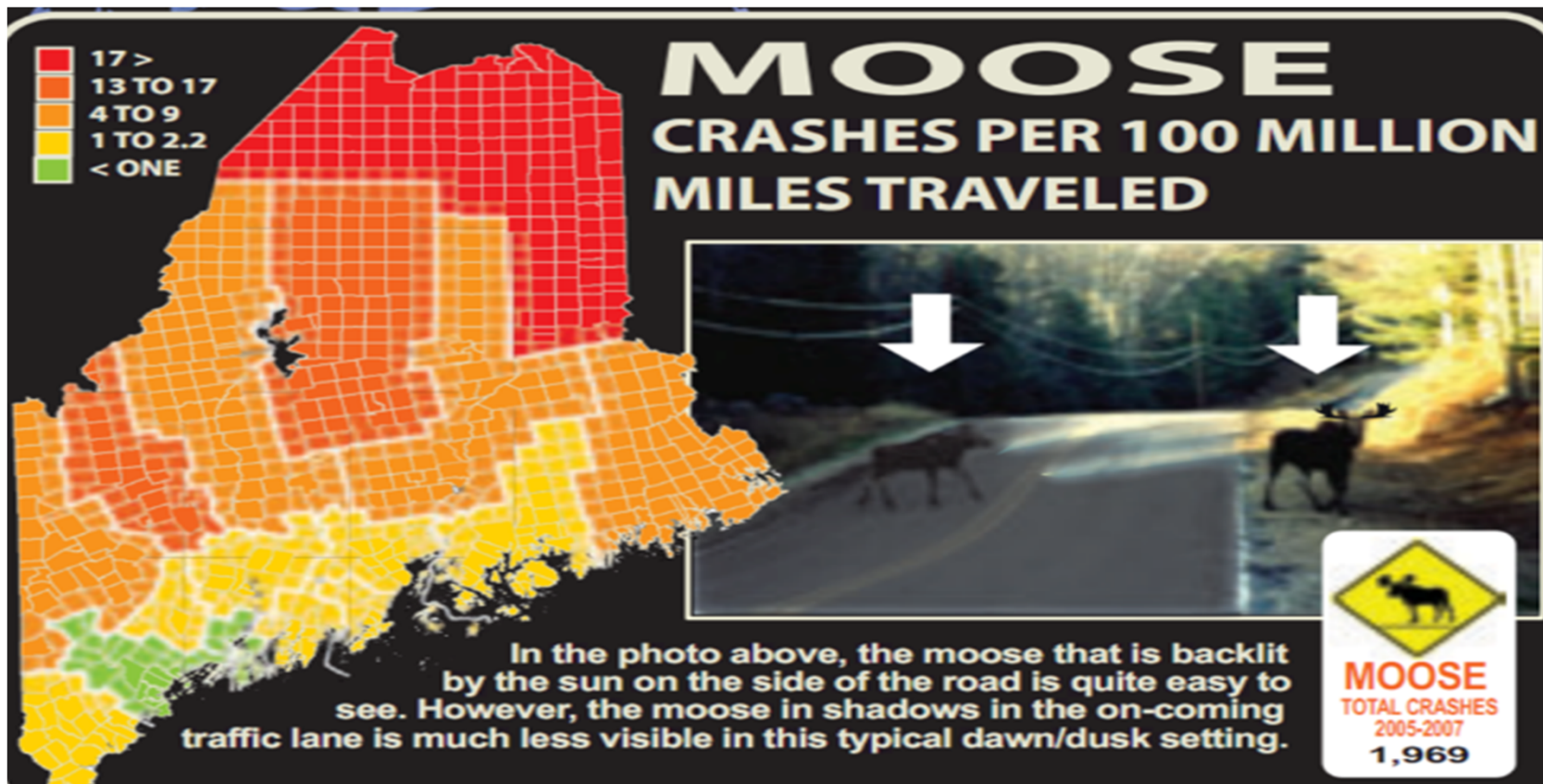


# Types of Maps – Choropleth

(Especially helpful with large amounts of data)

- Choropleth Map

is a thematic map in which areas are shaded or patterned in proportion to the measurement of the statistical variable being displayed on the map, such as population density or per capita income or in this case number of crashes involving moose in Maine



## Planning for Services to Students with Disabilities in Virginia Under WIOA – 2 Challenges

- Under WIOA VA DARS had to plan for serving students with disabilities. While we served a large percentage of students between the ages of 14-22 in the past (*40% of all clients on average per year*) we needed to serve in manner prescribed by WIOA. with the **new service** categories (job exploration, workplace learning, workplace readiness, self advocacy training, counseling on post secondary education).
- Challenge of meeting the **15% expenditure** required.

## Strategy to Address Needs of Students with Disabilities in Virginia Under WIOA

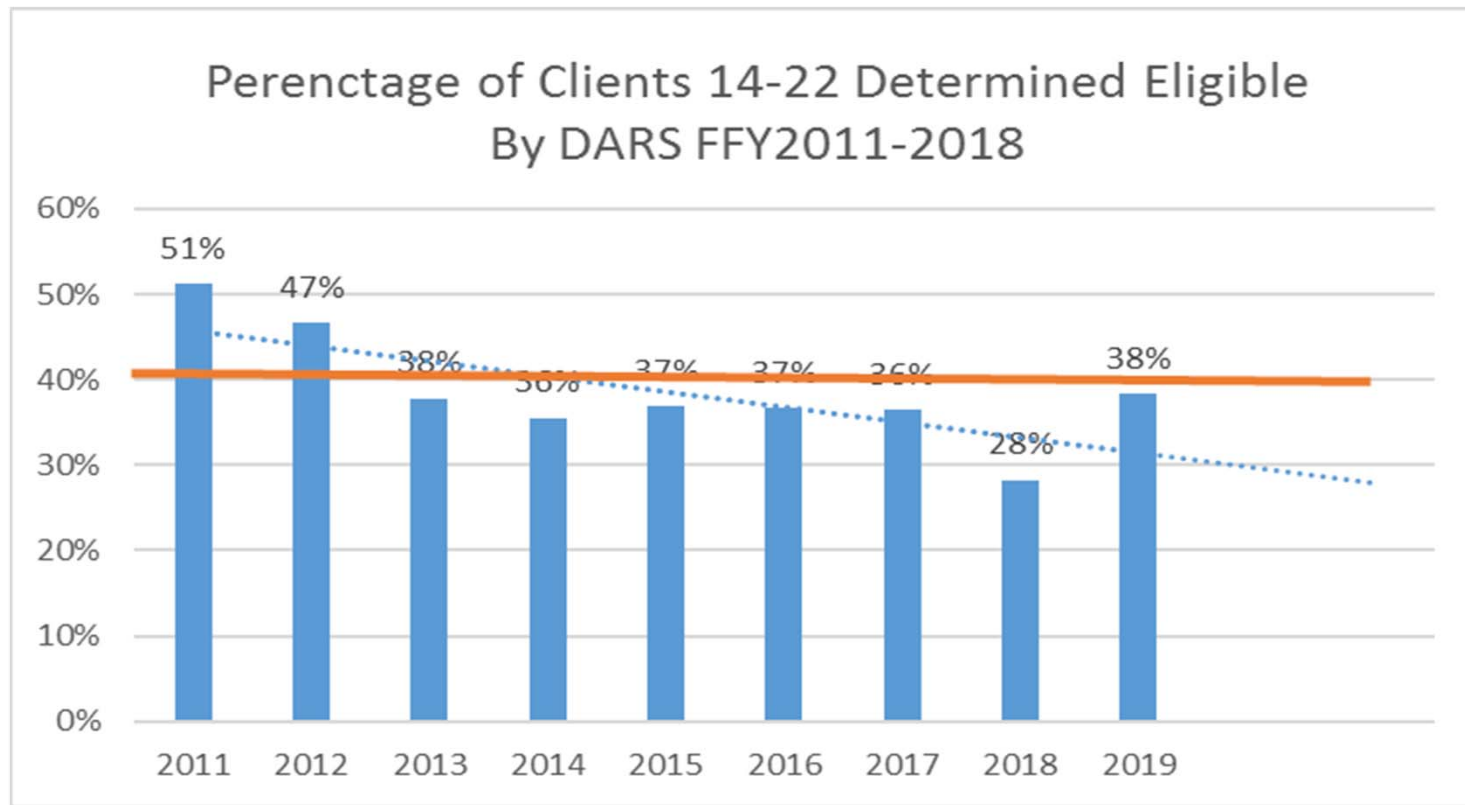
### What Did We Need to Know?

- How many clients have we served in the past/trends in both numbers of clients served and disability types?
- How many clients are we currently serving?
- What are the population estimates of clients to be served in future years?
- Where have we served clients?

# Who Have We Served In Past-Eligibilities/Year?

**40% of all clients determined eligible from FFY11-19 were 14-22 years of age**

(Range of 1,617-3,583 with x = 7,537 eligibilities per year in this age group)

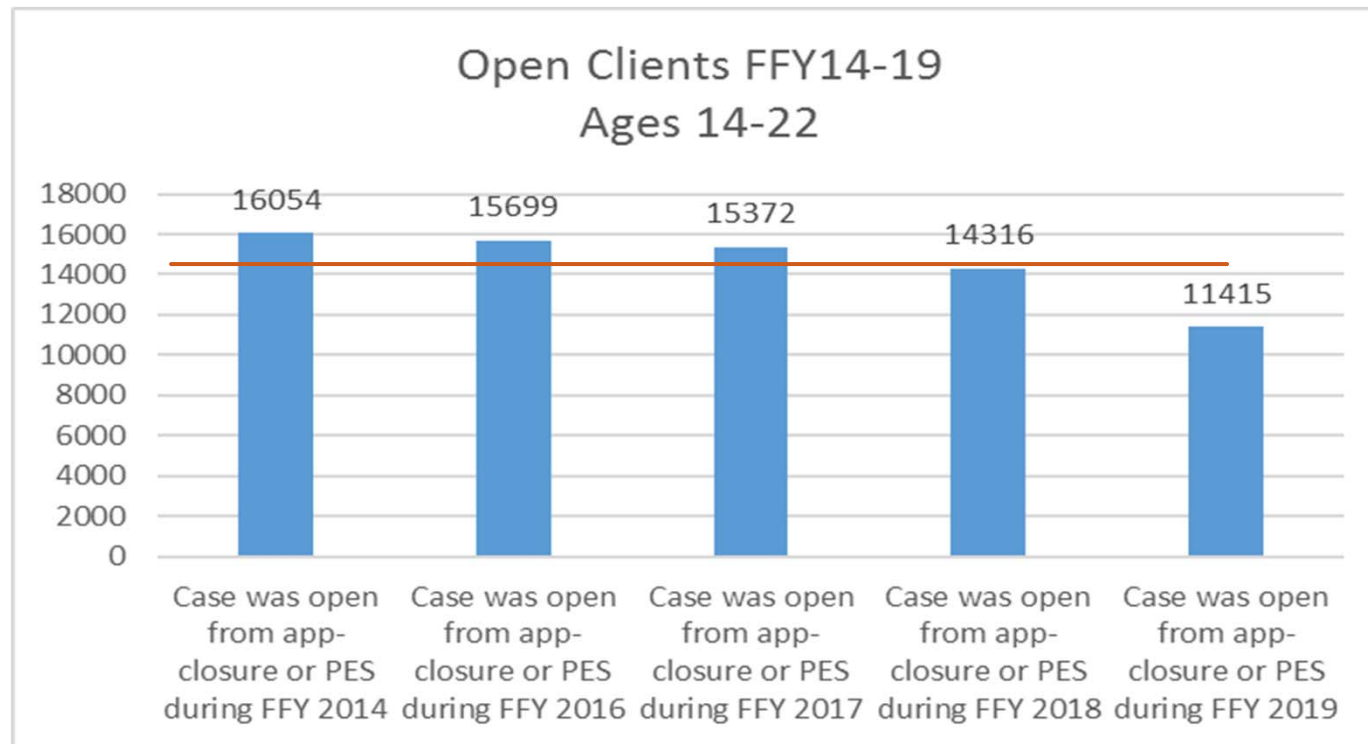


# Who Have We Served In Past?

## Number of Open Clients

Average of 14, 571 Open Clients Age 14-22 FFY14-19

(Range of 11,415 to 16,054 with x = 14,571 open per year in this age group)



An average of 40% of all open cases were 14-22 years of age



# What Can DARS Expect?

## Data Source: Virginia Department of Education

- Data from the Virginia Department of Education on students with disabilities enrolled either in *public*, *private* or *home schooled* for the 2018-2019 school year were obtained.
- Source:  
[http://www.doe.virginia.gov/statistics\\_reports/enrollment/index.shtml](http://www.doe.virginia.gov/statistics_reports/enrollment/index.shtml)
- Build a table  
<https://p1pe.doe.virginia.gov/apex/f?p=180:1:14810908846406:::>
- There were a total of 52,771 students grade 9 through 12 who were considered to have disabilities in the 2018-2019 school year.
- **Tip:** Call your education agency as they may have data not published but willing to share or data in a different format.

# 52,771 Students with Disabilities Grades 9-12\*

## Breakdown by Grade Level

\*Not RSA Definition (simply age criteria)

- The breakdown by grade level is shown below
  - Largest percentage were in 9<sup>th</sup> grade
    - In past DARS typically served “transition clients” in the 11<sup>th</sup> or 12<sup>th</sup> grade due to resources.

9th Grade	15,284	29%
10th Grade	12,927	24%
11th Grade	11,364	22%
12th Grade	13,196	25%
Total	52,771	100%

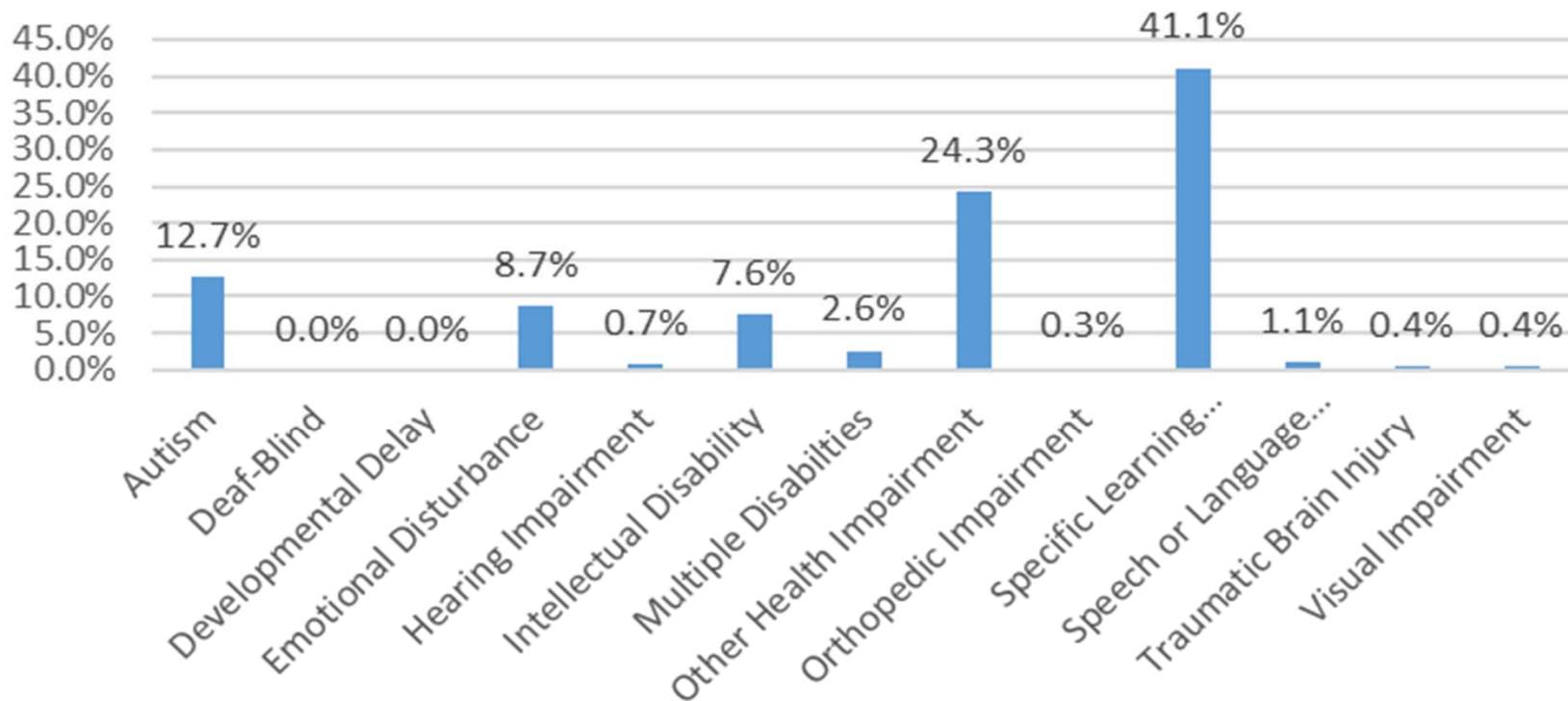
## DARS Serving Approximately 21.6% of Students with Disabilities In Grades 9-12 in VA

- DARS in ffy19 past had 11,415 open clients 14-22 years of age
- Dept of Education reported 52,771
- Reaching 21.6% of Dept. of Education population
- Note: Virginia has categories closed under Order of Selection and not all persons reported by the Dept. of Education may want or be eligible for our services.

## Disabilities of Students (%) 9-12<sup>th</sup> Grade

Top 3:	Specific Learning Disability	41% (n= 21,695)
	Other Health Impairment	24% (n=12,805)
	Autism	13% (n=6,703)

Disability of Students in Virginia Schools 2018-2019 (%)



# Type of Disability

## Virginia Students 2018-2019 Academic Year

Autism	Deaf-Blind	Developmental Delay	Emotional Disturbance	Hearing Impairment	Intellectual Disability	Multiple Disabilities	Other Health Impairment	Orthopedic Impairment	Specific Learning Disabilities	Speech or Language Impairment	Traumatic Brain Injury	Visual Impairment	Total
1686			1346	105	823	261	4016	28	6657	253	50	59	15284
1509			1171	88	767	202	3313	43	5580	155	45	54	12927
1398			1065	83	823	227	2793	50	4730	97	39	59	11364
2110			1026	95	1616	677	2683	53	4728	91	65	52	13196
6703	0	0	4608	371	4029	1367	12805	174	21695	596	199	224	52771
12.7%	0.0%	0.0%	8.7%	0.7%	7.6%	2.6%	24.3%	0.3%	41.1%	1.1%	0.4%	0.4%	100.0%

Sample size 21,695 specific learning disabilities  
12,805 other health impairments  
6,703 autism

## FERPA (Family Educational Rights and Privacy Act)

- Data may be missing if  $n$  is small with regard to variable or variables under study as saw with blank or zero values in some of the cells.
- <https://studentprivacy.ed.gov/frequently-asked-questions>

## Pipeline of Students In Future

Source: Virginia Dept of Education

Additional 131,125 in Pre School-8th

Average of 13,112 per year

For school year 2018-2019 there were an additional 131,124 disabled students with an average of 13,112 per grade

Largest  
increase  
2<sup>nd</sup> to  
3<sup>rd</sup>  
grade

{

2018-2019 Year	
Pre School	12,244
Kindergarten	11,100
1st Grade	11,420
2nd Grade	12,581
3rd Grade	13,765
4th Grade	14,606
5th Grad	14,487
6th Grade	13,866
7th Grade	13,820
8th Grade	13,235
Total	131,124
Average	13,112

See slight  
increase in #  
as age  
increases:  
Average age  
of dx of  
autism is 4  
years of age  
while average  
age for  
learning  
disabilities is  
8 years.

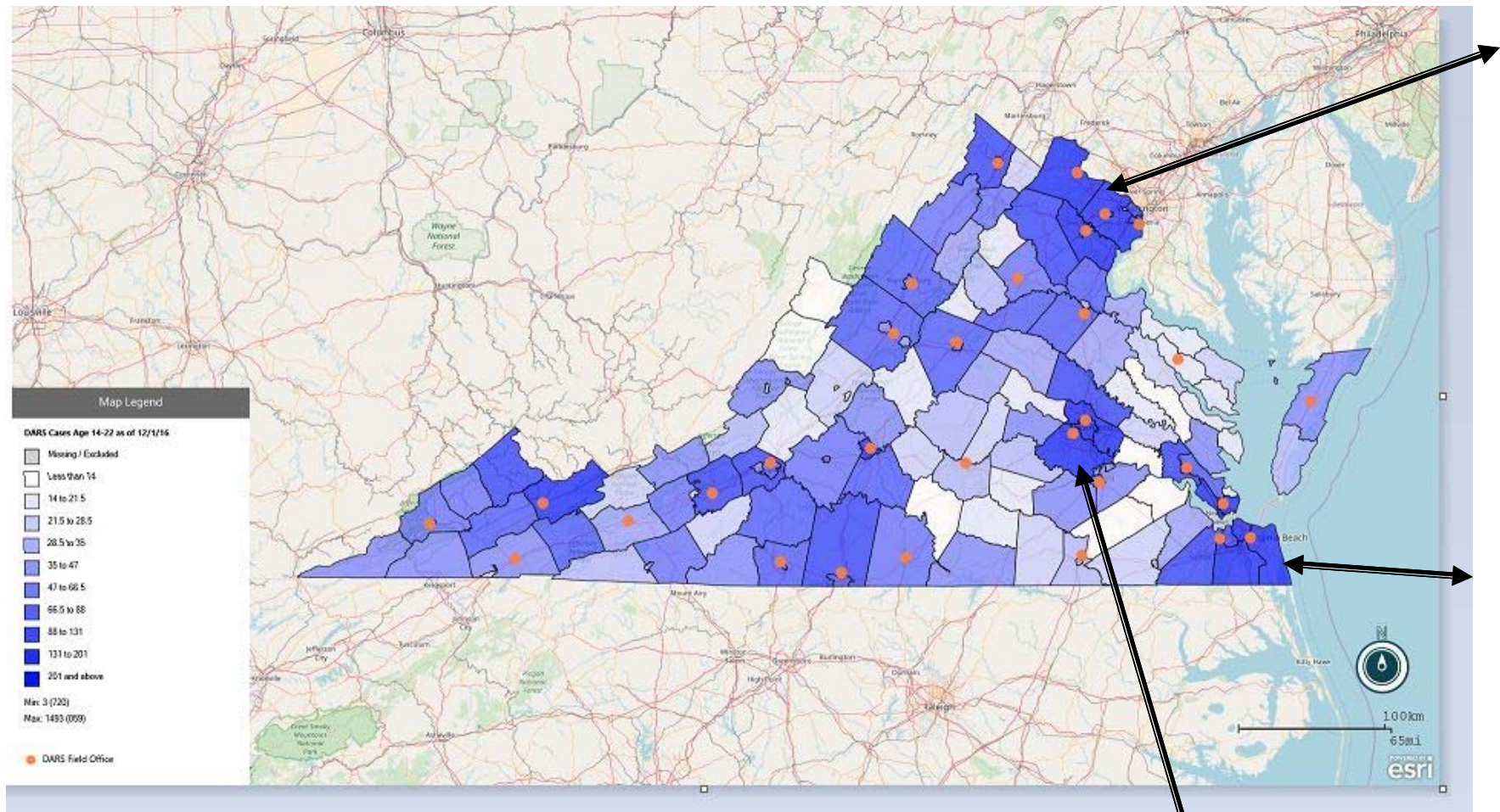
# How Do These Numbers Translate In to Strategic Planning?

- Currently we are reaching only 22% of students with disabilities in Virginia
- Dept. of Education is predicting another 13,000 per year or 2,000 over DARS current eligibilities per year of 11,000.
- Due to WIOA requirements for new services (5 required) and 15% expenditure we had to reconsider our service delivery and used mapping to assist with decision making including:
  - Converting general caseload positions to student caseloads
  - Moved counselors to areas of need.



# Location of DARS Students 14-22 in Virginia 2019

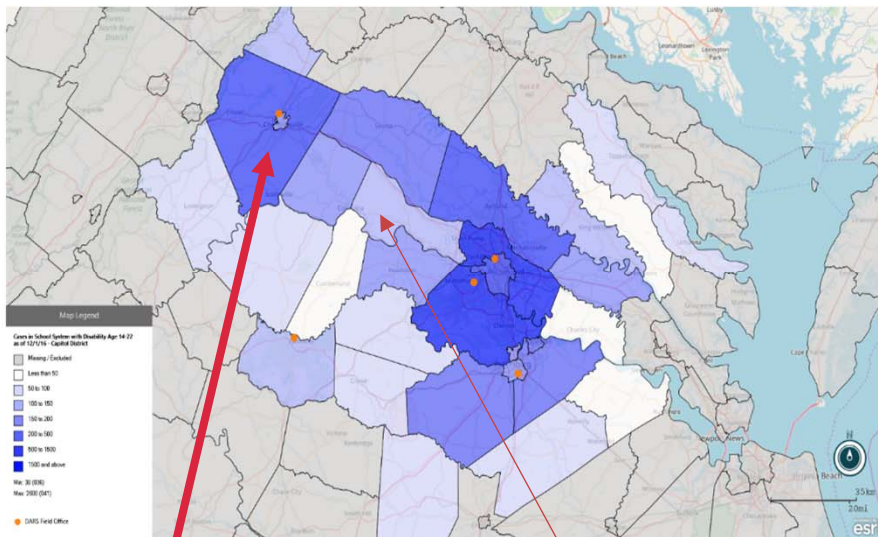
Northern Virginia, Richmond, Tidewater have highest numbers of students with disabilities.



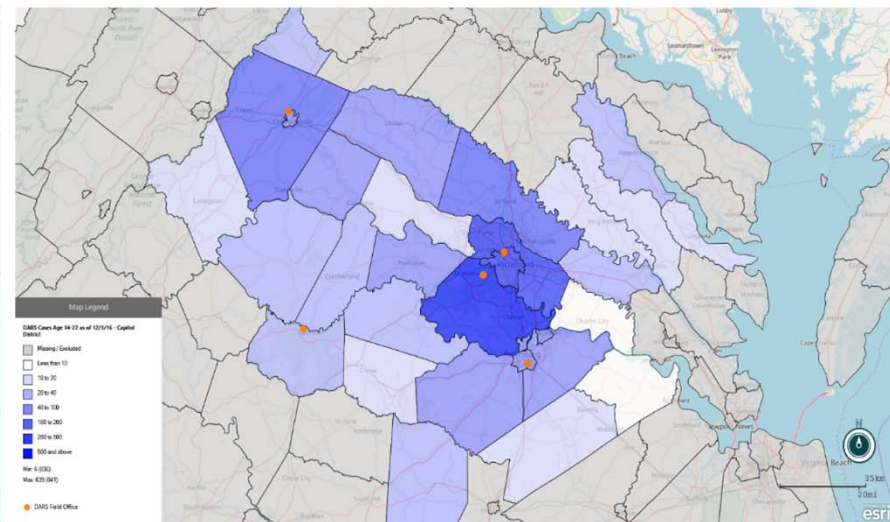
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# We Examined Distribution of Clients in All 5 DARS Districts

## DARS Central District Example



Dept. of  
Education  
Data



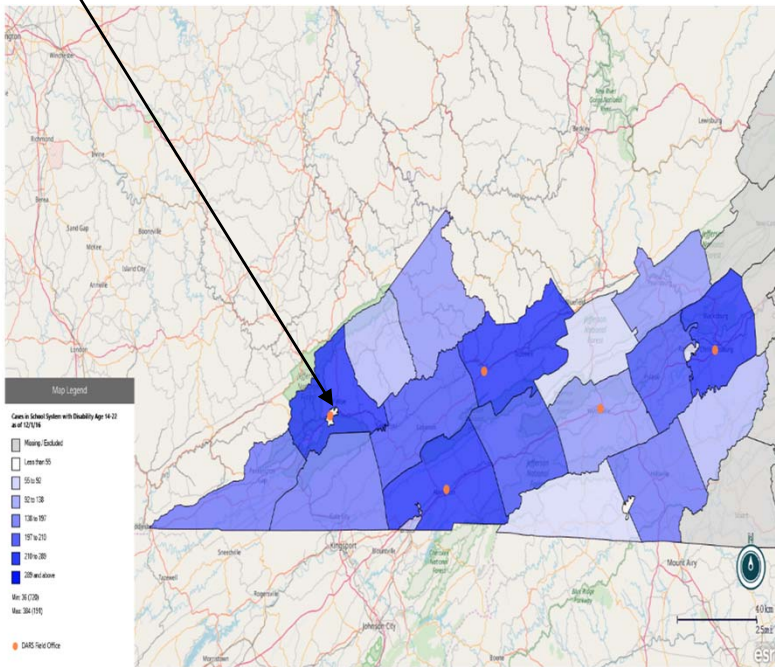
DARS Service Data

Areas of potential underserved clients  
west of Richmond



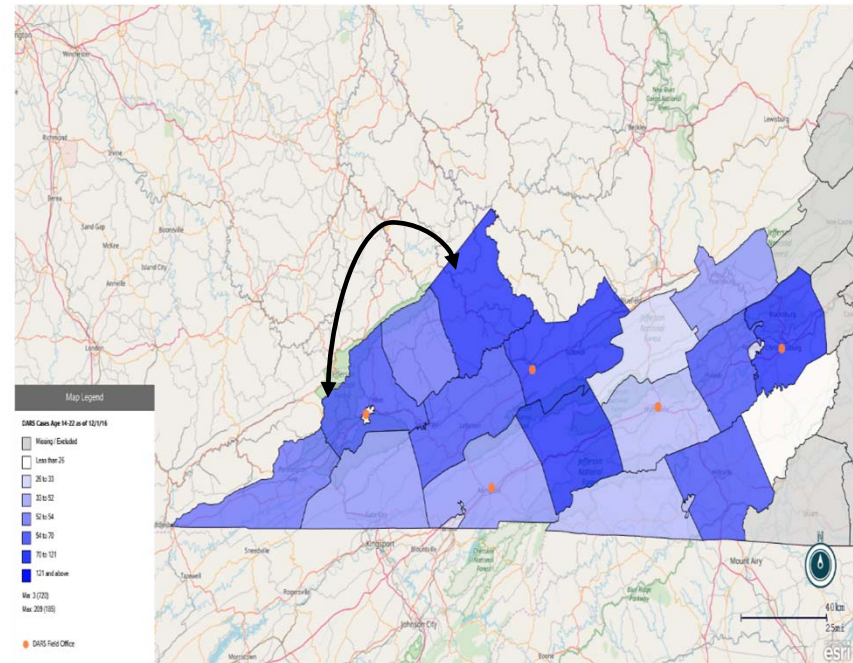
# Southwestern Virginia District

Area of potential need



Dept. of Education

Potential Shift in Resources



DARS Service Area

# Summary

- VA DARS can expect a large number of students with disabilities in coming years.
- We have reallocated resources, but do we need to do more?
- We need to monitor changes in the population over time.
- Do we need disability specific specialists in Autism or other disability types and how many and where do we need them geographically placed.
- Additionally, how do we handle our serving our adult population?


# Tools for Mapping

- Tableau (Approximately \$120/month/individual)
  - Tableau (Several Components) Creator: \$70/month/individual
  - Tableau Explorer: \$35/month/individual
  - Tableau Viewer: \$12/month/individual
- Power BI Desktop (Free Versions)
  - Need latitude and longitude
  - Requires connection to sequel server
- MapLine
  - \$60/month per individual
  - Need latitude and longitude
  - Requires connection to sequel server

# Epi Info

- Epi Info from the CDC - freeware
  - <https://www.cdc.gov/epiinfo/>
    - Windows version
    - Available on Mac's but need special adaptation
    - Mobile version (download at apple store or google play)
      - Useful where IT infrastructure lacking
    - Cloud based version (used for large amounts of data)

# Download Site

 Centers for Disease Control and Prevention  
CDC 24/7: Saving Lives, Protecting People™

[A-Z Index](#)


Epi Info™

[Español](#) | [Français](#) | [Português](#)


Epi Info™

Epi Info™ is a public domain suite of interoperable software tools designed for the global community of public health practitioners and researchers. It provides for easy data entry form and database construction, a customized data entry experience, and data analyses with epidemiologic statistics, maps, and graphs for public health professionals who may lack an information technology background. Epi Info™ is used for outbreak investigations; for developing small to mid-sized disease surveillance systems; as analysis, visualization, and reporting (AVR) components of larger systems; and in the continuing education in the science of epidemiology and public health analytic methods at schools of public health around the world.


Epi Info™ for Windows



Epi Info™ for Mobile

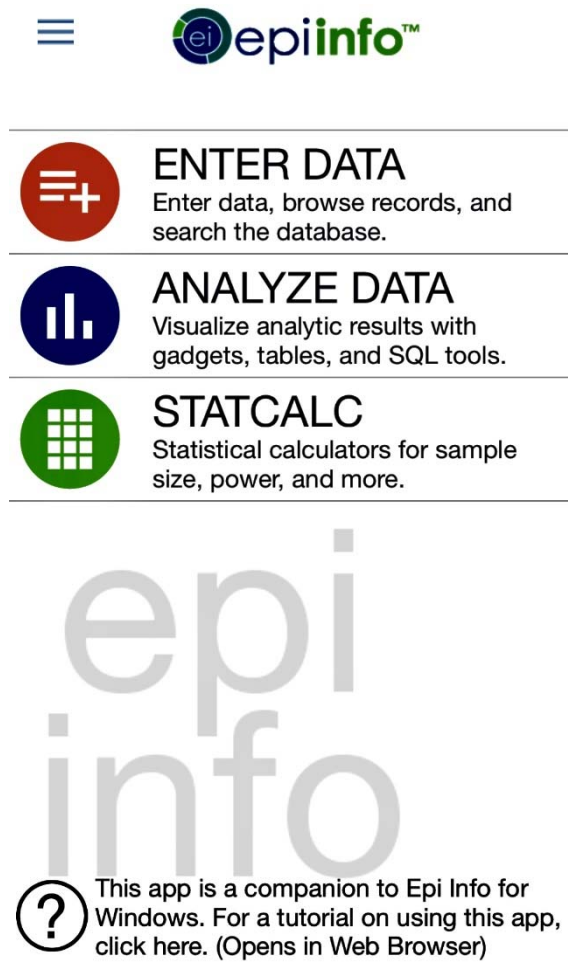


Epi Info™ for Web & Cloud



# Mobile Version

## Limited and Does Not Have Mapping Function





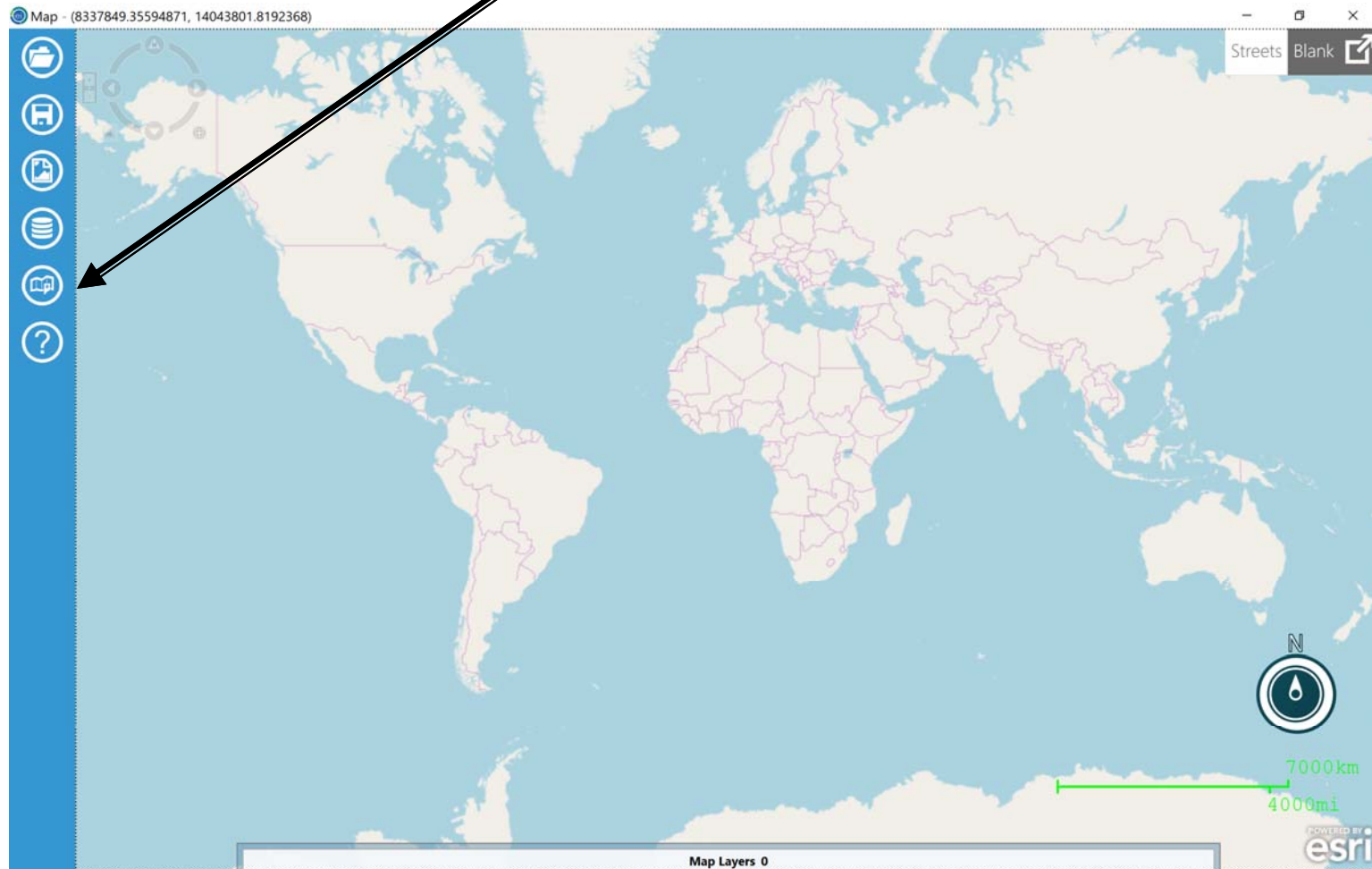
# Using Epi Info 7

- You must download the application to your pc or mobile device. (In Virginia we had to get **approval** from the Virginia Information Technology Agency.)
- Note: Epi Info is also useful for form creation, dashboards and statistical calculators.

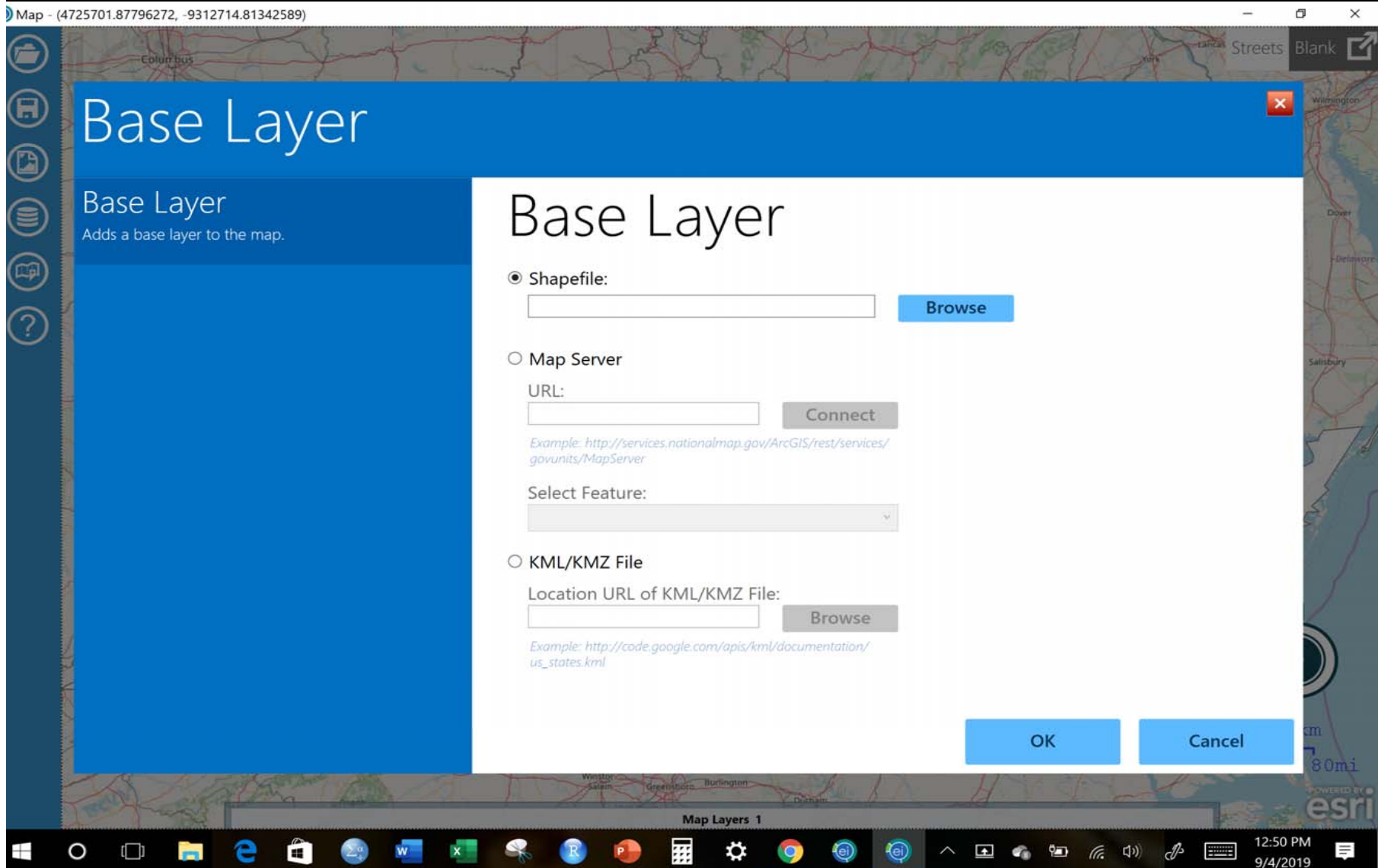


# Blank Canvas

## Add base layer

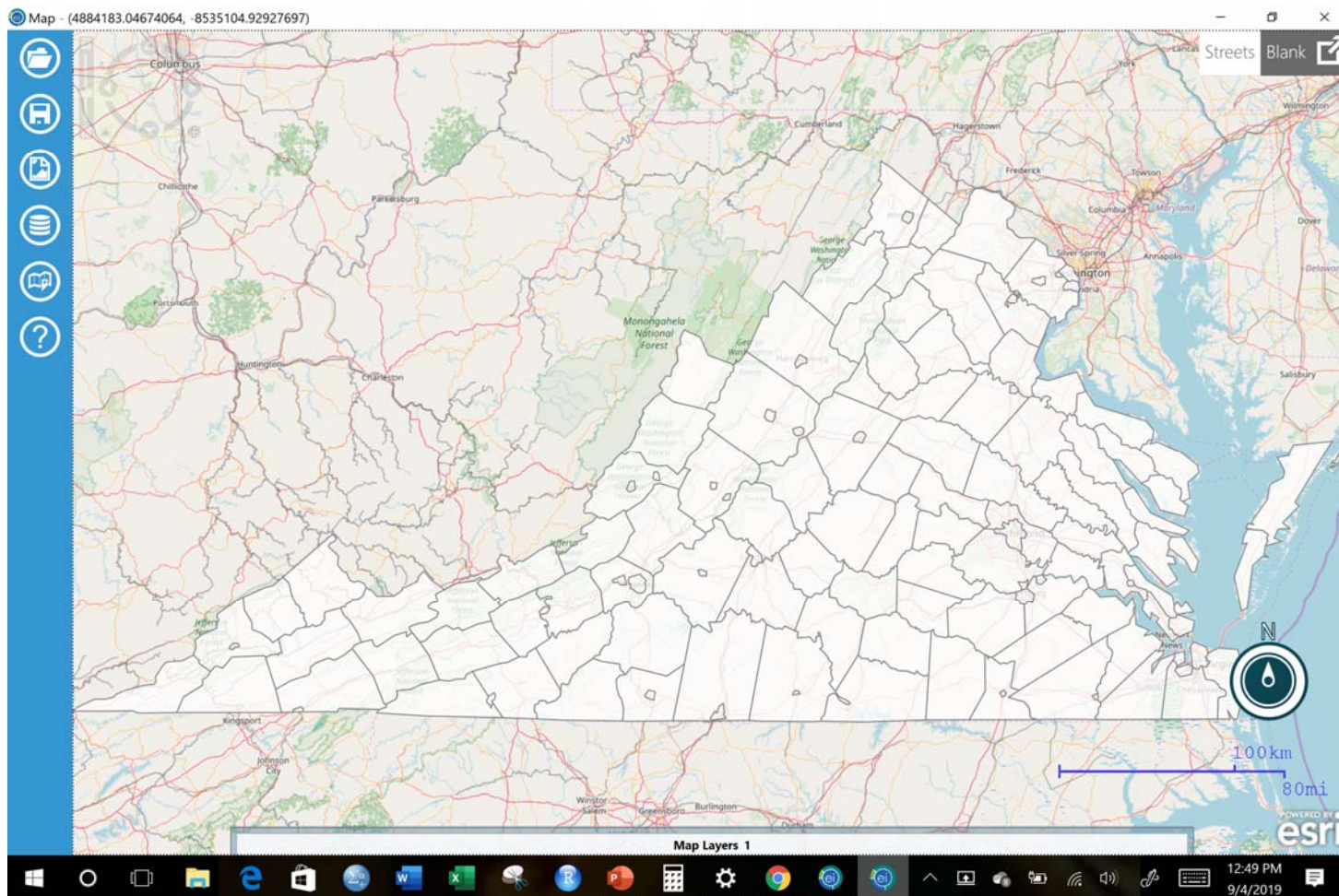


# Add maps from own sources, and map servers such as census



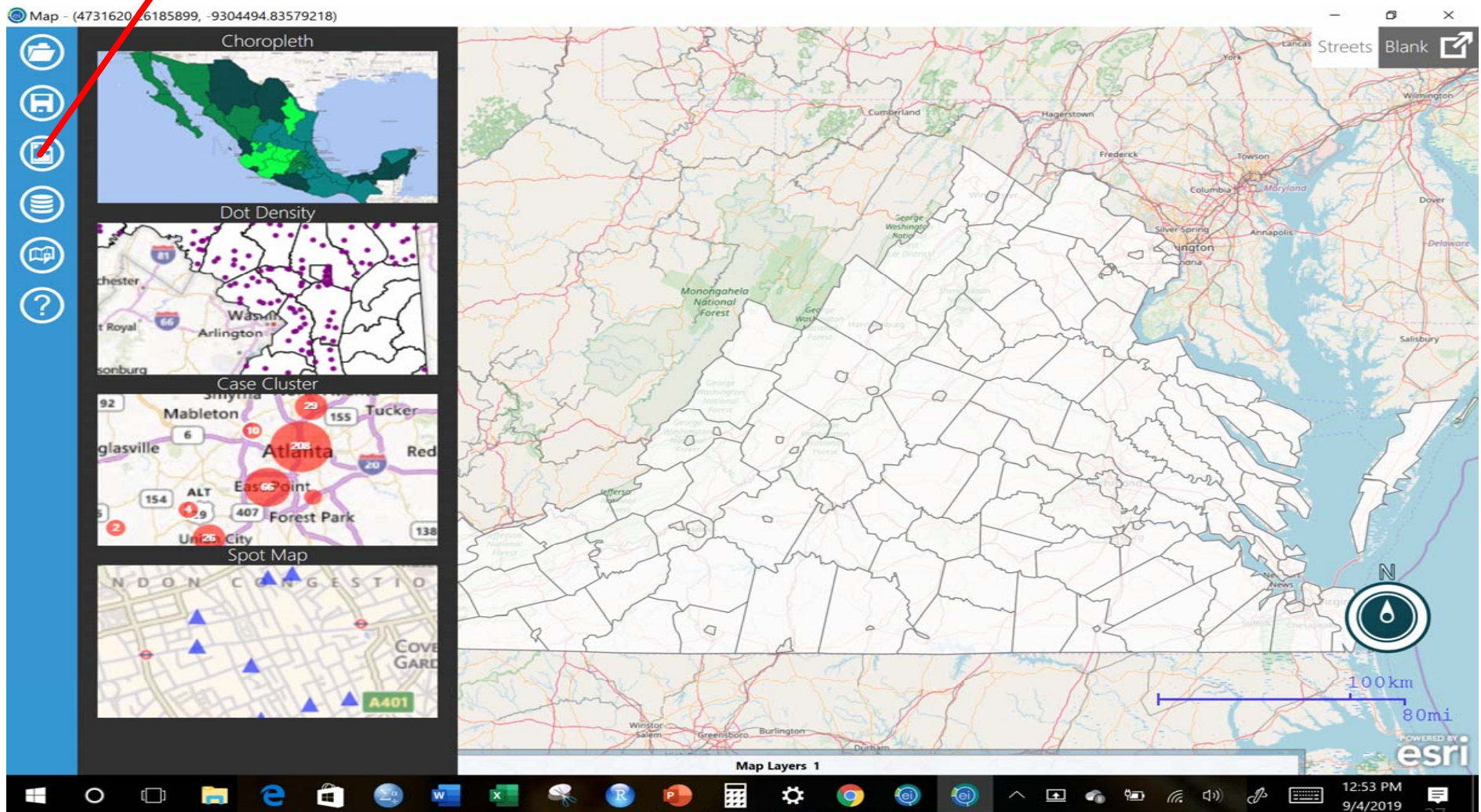


## Browse for VA Shape file (\*.shp)

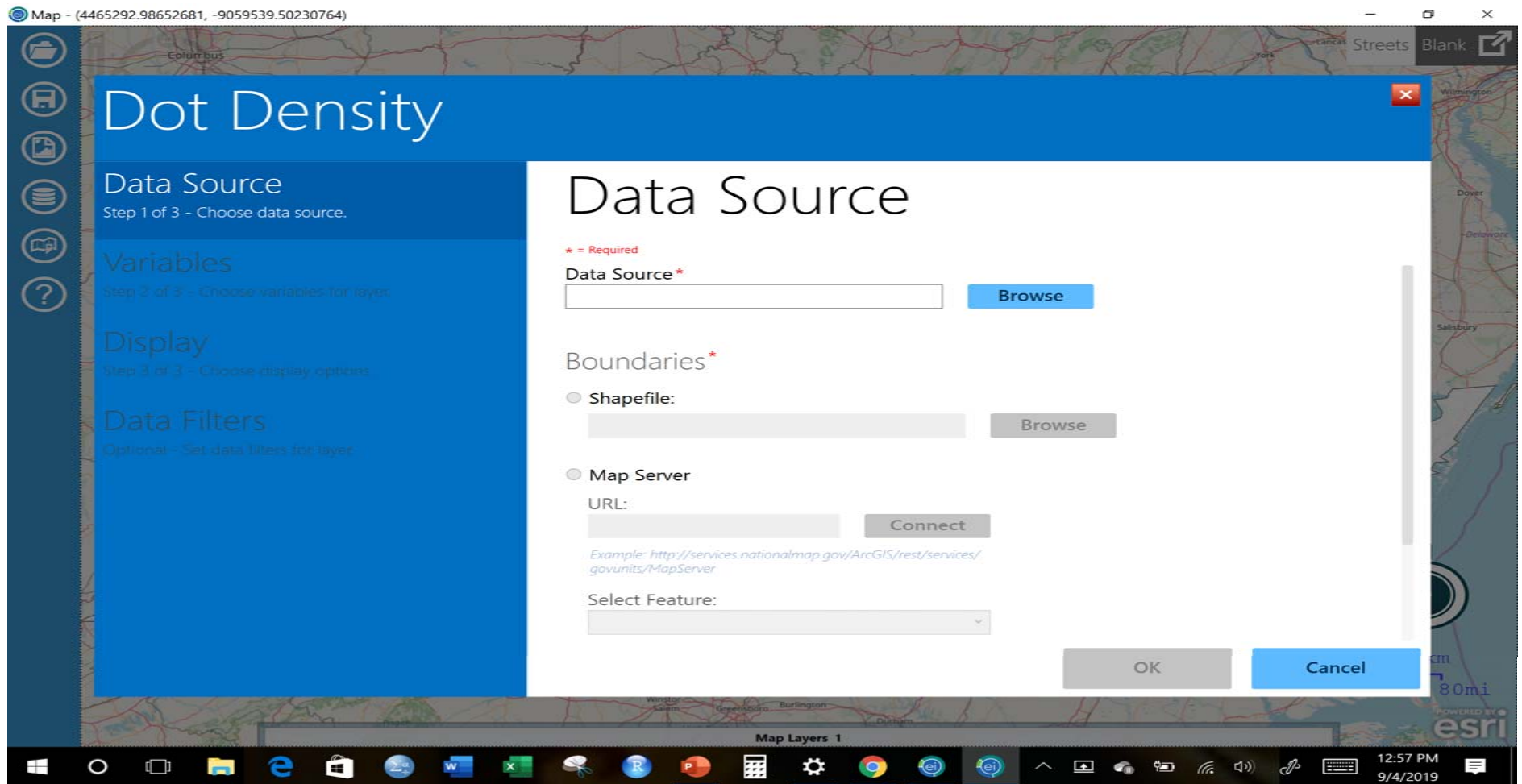




**Add Data Layer : Allows you to choose type of map you wish to create, data can be from EXCEL, ACCESS, CSV**



# Add Data by Browsing for EXCEL, etc.



# Many Epi Info Resources

- CDC site has tutorials

<https://www.cdc.gov/epiinfo/support/tutorials.html>

- Many good YouTube videos

# Conclusions-Use of Mapping

- Mapping has been helpful to Virginia DARS in several projects.
  - Office Locations
  - Needs Assessments
    - Location of unserved/underserved populations
    - Compared census/etc. population estimates and characteristics of individuals with disabilities in Virginia to DARS population
    - Change in populations over time
  - Relocation of Staff Resources
- If budgetary constraints in place consider free ware for mapping.



# Questions?

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