



# Virginia Wastewater Surveillance Program: Community of Practice Meeting

WWS Team

VDH | Office of Environmental Health Services

April 27, 2022



# Agenda

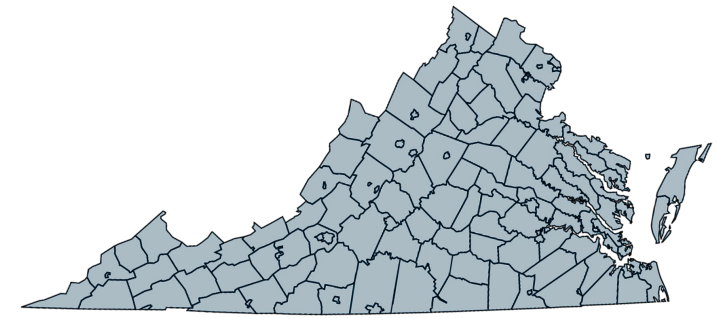
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- ❑ **Updates & Funding Opportunities (5 mins)**
- ❑ **Topic(s) of Interest (15 mins):**
  - ❑ *Inquiring Virginians Want To Know! Sentinel Monitoring & VDH Dashboard Status*
- ❑ **Open Discussion (5-10 mins)**



# Sentinel Monitoring Updates

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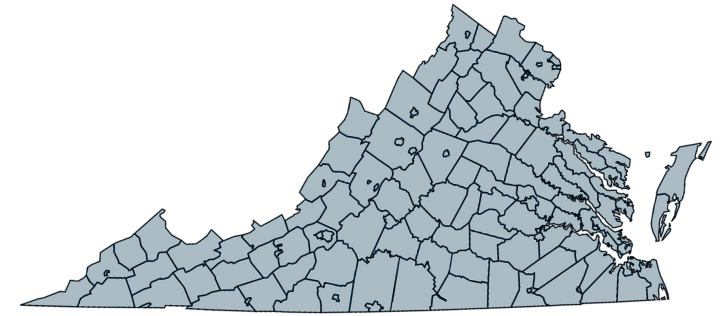


Weekly **SARS-CoV-2** monitoring at influent to **25 wastewater treatment plants** statewide started on **September 13: 32 weeks!**

- ❖ Weekly results sharing with:
  - Utilities
  - Health Department Partners
  - Environmental Health Managers
  - DCIPHER
- ❖ Updated Internal Working Dashboard Now!

# Funding Opportunities

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## ❖ **BP4 Proposal to CDC**

- Next Funding Cycle

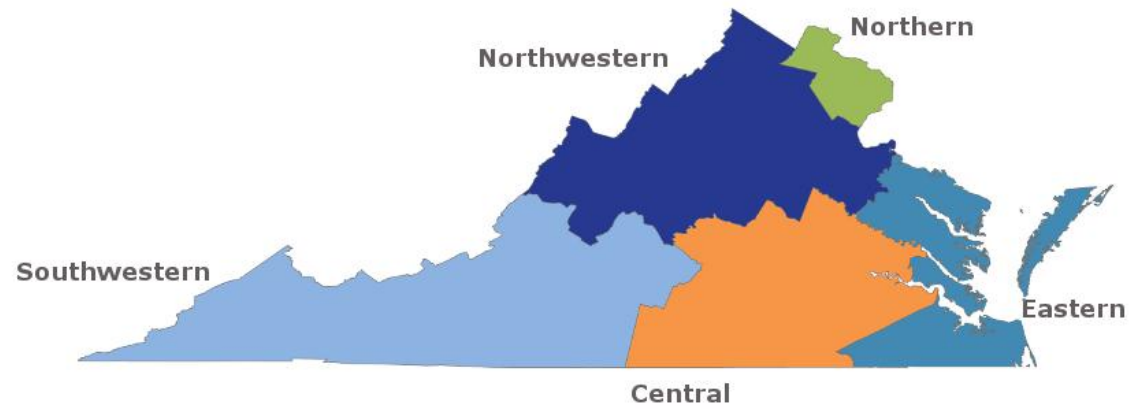
## ❖ **CDC-Biobot Commercial Sampling**

- Still enrolling new sites
- Must not be currently involved in CDC NWSS
- Sampling: twice/week

## ❖ **Localized Projects**

- Application live!

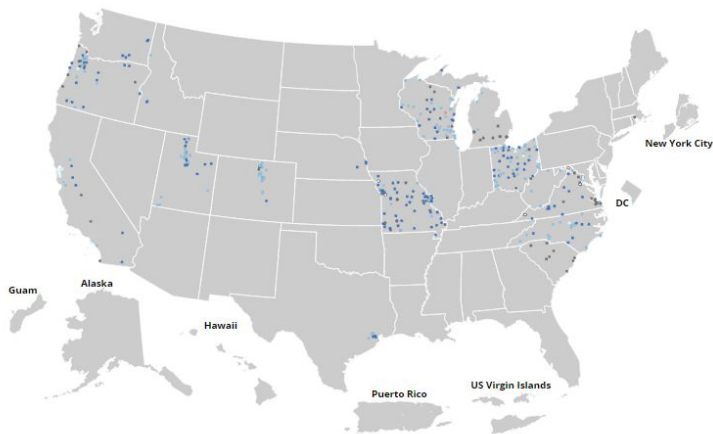
# Sentinel Monitoring



# So, what's going on?

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- Media Requests
- Data Requests
- Concerned Citizens



CDC COVID-19 Data Tracker

*“Where is the data?”*

*“What does WWS show?”*

*“What is happening in my county?”*



**ARL**now

The Virginian-Pilot

**WFXR**  
FOX

wtopnews  
yahoo!news

abc **3NEWS**

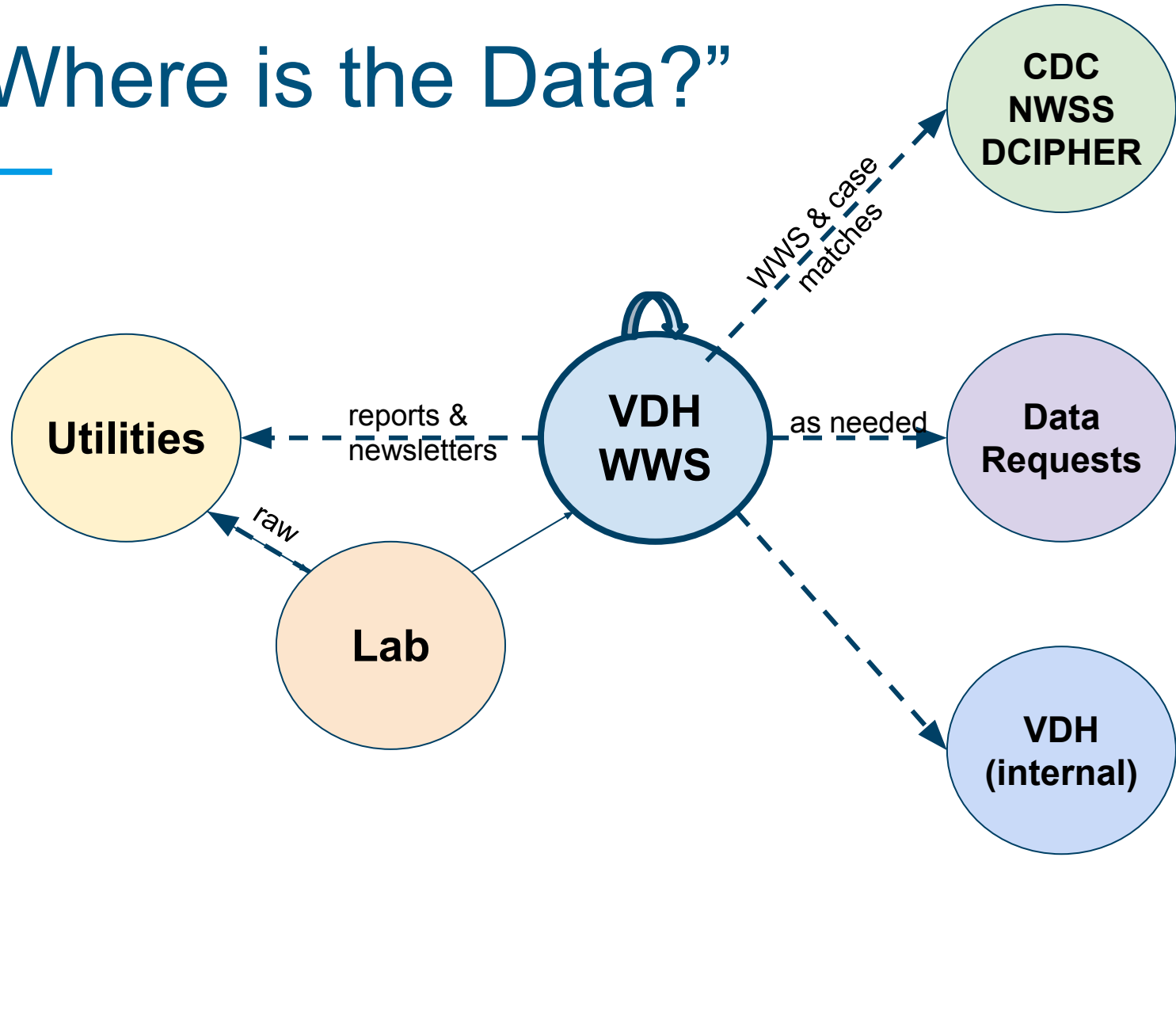
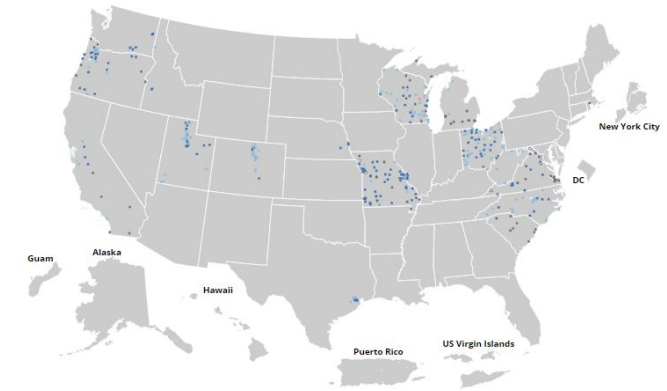
13 NEWSNOW

The Washington Post

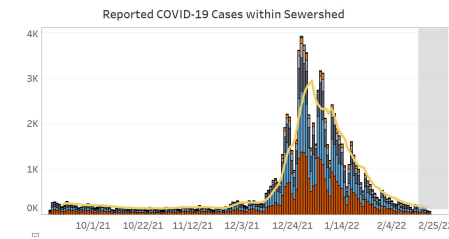
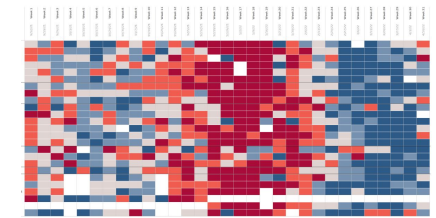
**GCN**

# “Where is the Data?”

## CDC COVID-19 Data Tracker



Ad hoc requests for:  
researchers, concerned citizens, etc.



(In progress)

# “What does WWS show?”

Generally, we combine...

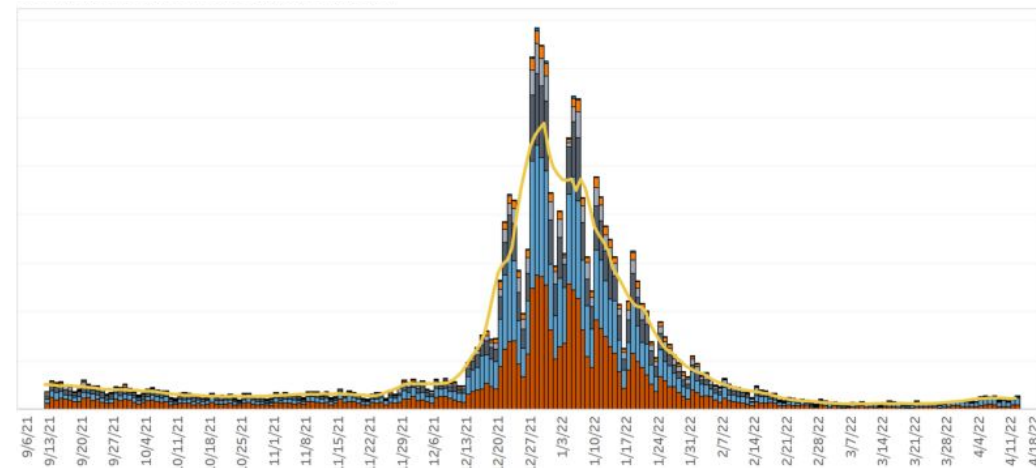
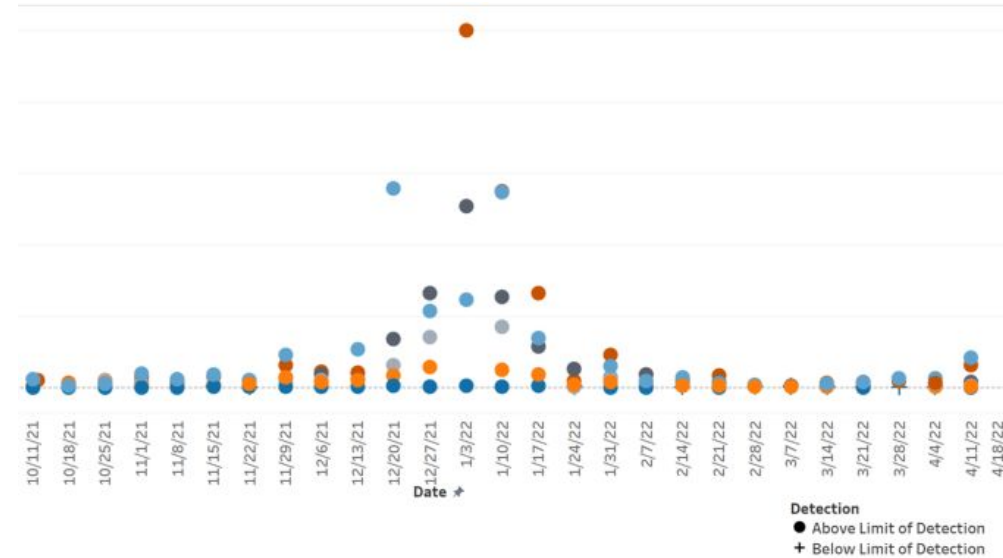
**WWS data** [flow-normalized viral load]

$$\text{Viral Load} = \text{Viral Concentration}_{\text{LAB}} \times \text{Flow}_{\text{METADATA}} \text{ (x constant)}$$

**Sewershed boundaries**



**+/- Daily Case Counts per sewershed**





## *What it **DOES** show...*

- **Flow-normalized Viral Loads** at a snapshot moment for the pooled community
- **Increase/decrease of Viral Loads** at each site
- **Comparison area to pull Case Counts** – we can tag the number of registered VDH cases to each sewershed, but note that both the sewershed boundaries and the case dataset have limitations!

## *What it '**CAN**' show, but we veer away from...*

- **Population-normalized viral loads** – the population numbers we use have limitations
- **Viral load comparisons across sites** – while lab methods (and theoretically collection methods) are fairly standard, each site may differ in community factors or utility infrastructure which make it challenging to fairly compare

## *What it does **NOT** show...*

- **How many infected people are present** – infection shedding and case presentation is variable
- **Where in the sewershed the infected people are** – each utility sample is a pooled collection from the entire sewershed

# “What is happening in my county?”

## Source 1: CDC Data Tracker

Open to: public

### Shows:

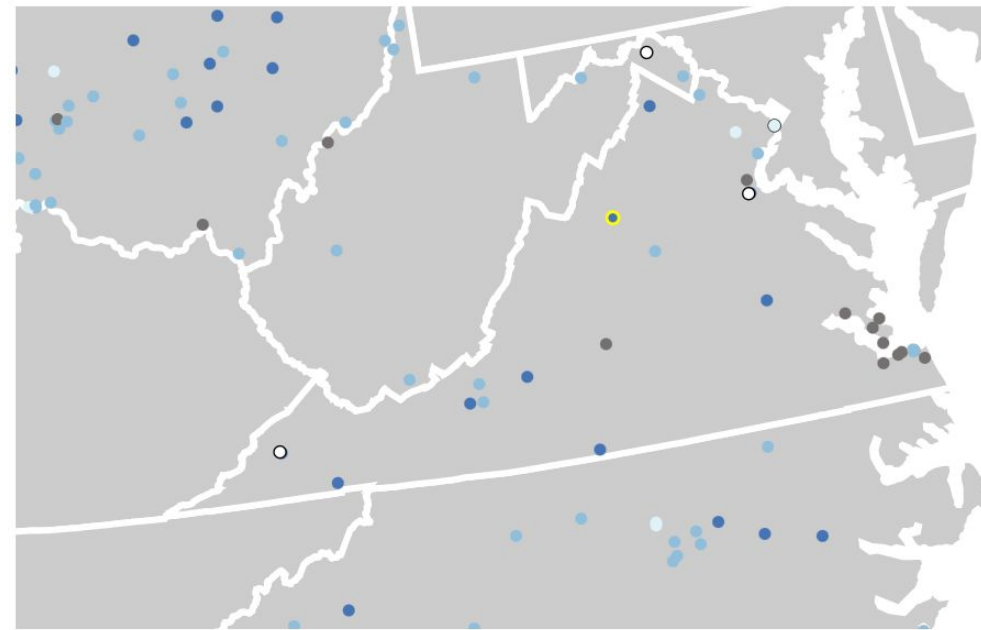
- ALL NWSS sites; general locations
- site viral loads for ~6 months (smoothed)
- current site ‘percent change’ color

### Does not show:

- sewershed boundary
- small sewershed sites (<3,000 people)
- case counts
- viral load history > 6 months; details

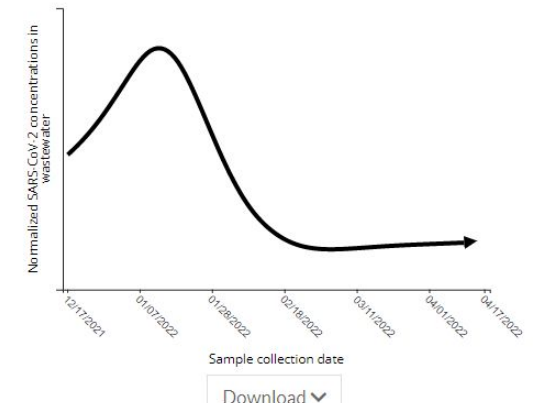
### Useful for:

- Checking if your nearest sampling site currently has high/low viral loads



**Sewershed: 286**  
 Sampling Location: Treatment plant  
 Sewershed Jurisdiction: Virginia  
 Counties: Rockingham, Harrisonburg City  
 Sewershed Population: 81,000  
 First sampling date: 2021-08-30

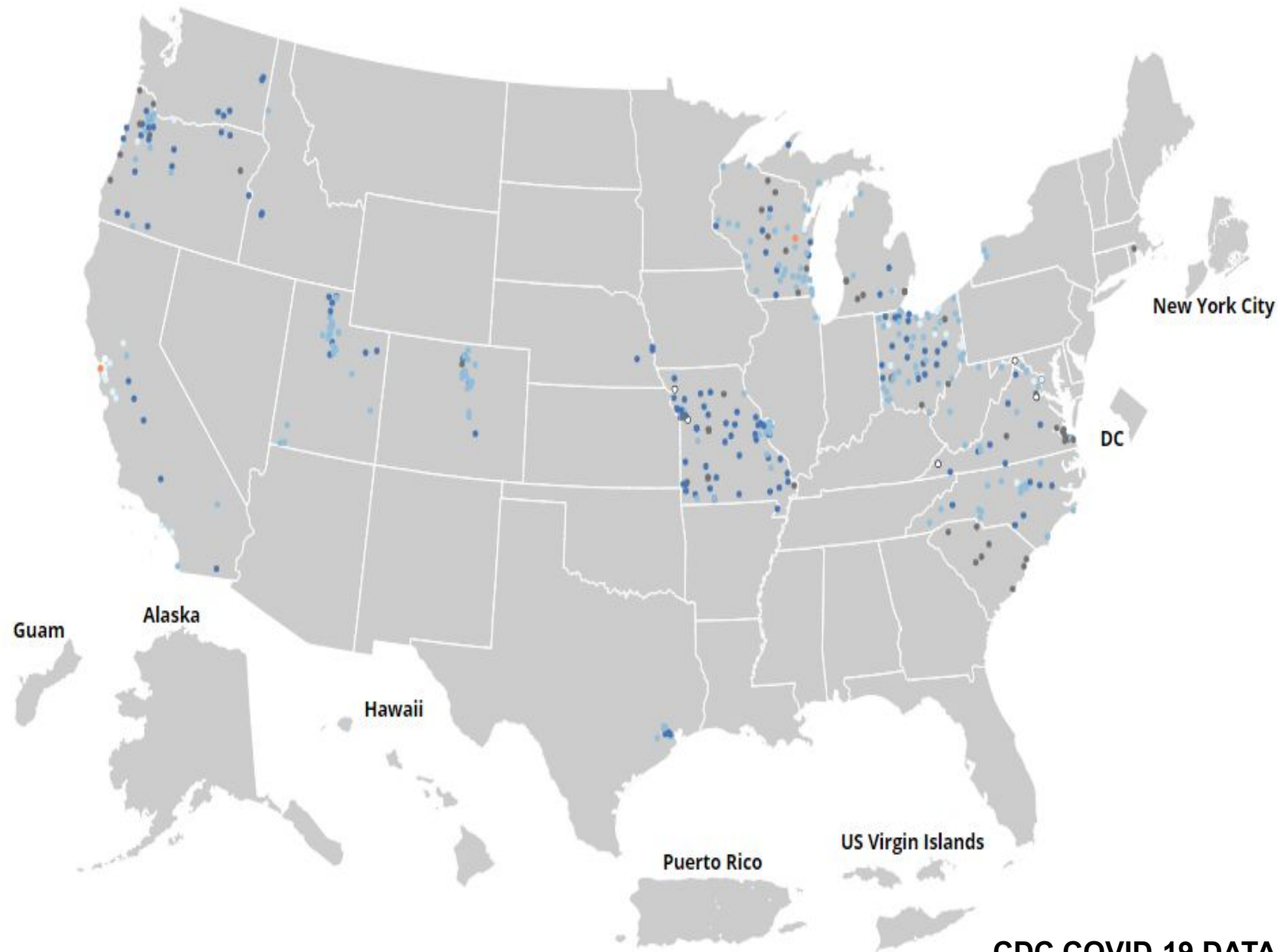
SARS-CoV-2 Concentrations in Wastewater Over Time



## CDC COVID-19 DATA TRACKER

Screenshot taken 4/21/2022

<https://covid.cdc.gov/covid-data-tracker/#wastewater-surveillance>



Current SARS-CoV-2 virus levels by site, United States

Current virus levels category	Num. sites	% sites	Category change in last 7 days
New Site	137	18	0%
1% to 19%	170	22	- 24%
20% to 39%	275	36	0%
40% to 59%	95	12	- 10%
60% to 79%	63	8	29%
80% to 100%	24	3	200%

Total sites with current data: 764

Total number of wastewater sampling sites: 841

[How is the current SARS-CoV-2 level compared to past levels calculated?](#)

### CDC COVID-19 DATA TRACKER

Screenshot taken 4/21/2022

<https://covid.cdc.gov/covid-data-tracker/#wastewater-surveillance>

# “What is happening in my county?”

## Source 2: Public Health Reports

Sent to: VDH public health

### Shows:

- Sentinel Monitoring sites + boundaries
- site percentiles; +/- change
- all viral loads per site/region
- all case counts per site/region

### Does not show:

- detailed sewersheds
- total aggregate statistics
- non-SM sites

### Useful for:

- VDH public health to know if their jurisdiction’s viral load and case counts are changing



Virginia WWS Sentinel Monitoring Program Weekly Summary



# “What is happening in my county?”

## Source 3: (internal) dashboard

Open to: VDH/password

### Shows:

- [IN DEVELOPMENT]
- outlined site boundaries
- site percentiles; +/- change
- all viral loads per site/region
- all case counts per site/region

### Does not show:

- [IN DEVELOPMENT]

### Useful for:

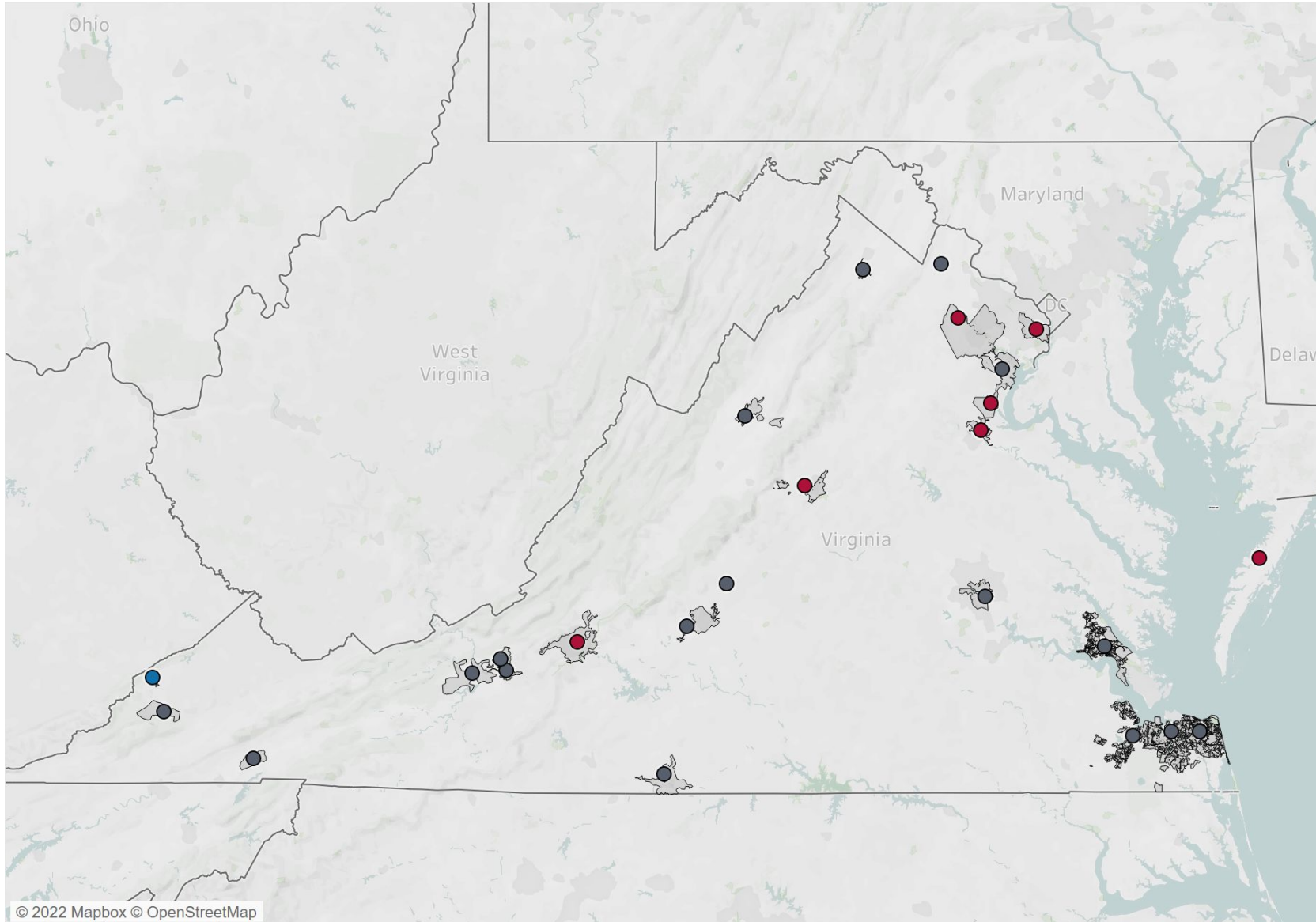
- VDH public health

The screenshot displays the Virginia Department of Health (VDH) website for the COVID-19 Wastewater Surveillance program. The page is titled "Protected: SARS-CoV-2 in Wastewater" and features a large virus icon. A yellow button labeled "Request Your COVID-19 Vaccination Record" is prominent. The main content area includes a section for "COVID-19 Wastewater Surveillance" with a detailed description of the program and its funding. Below this, there is a section for "See the Numbers" with links to "COVID-19 Data In Virginia" and "COVID-19 Data Insights". A "Protect Your Health" section lists various services like "COVID-19 Testing", "COVID-19 Vaccinations", "Treatments", "If You Are Sick", "If You Have Been Exposed", "Isolation & Quarantine", and "COVIDWISE Contact Tracing". The right side of the page contains a "COVID-19 Wastewater Surveillance" section with a detailed description of the program and its funding, and a "See the Numbers" section with links to "COVID-19 Data In Virginia" and "COVID-19 Data Insights".

## VDH WWS Internal Dashboard

Screenshot April 21, 2022. Site in development. Password protected.

# Recent Trends: Week 28



INCREASE

6

PLATEAU

1

DECREASE

0

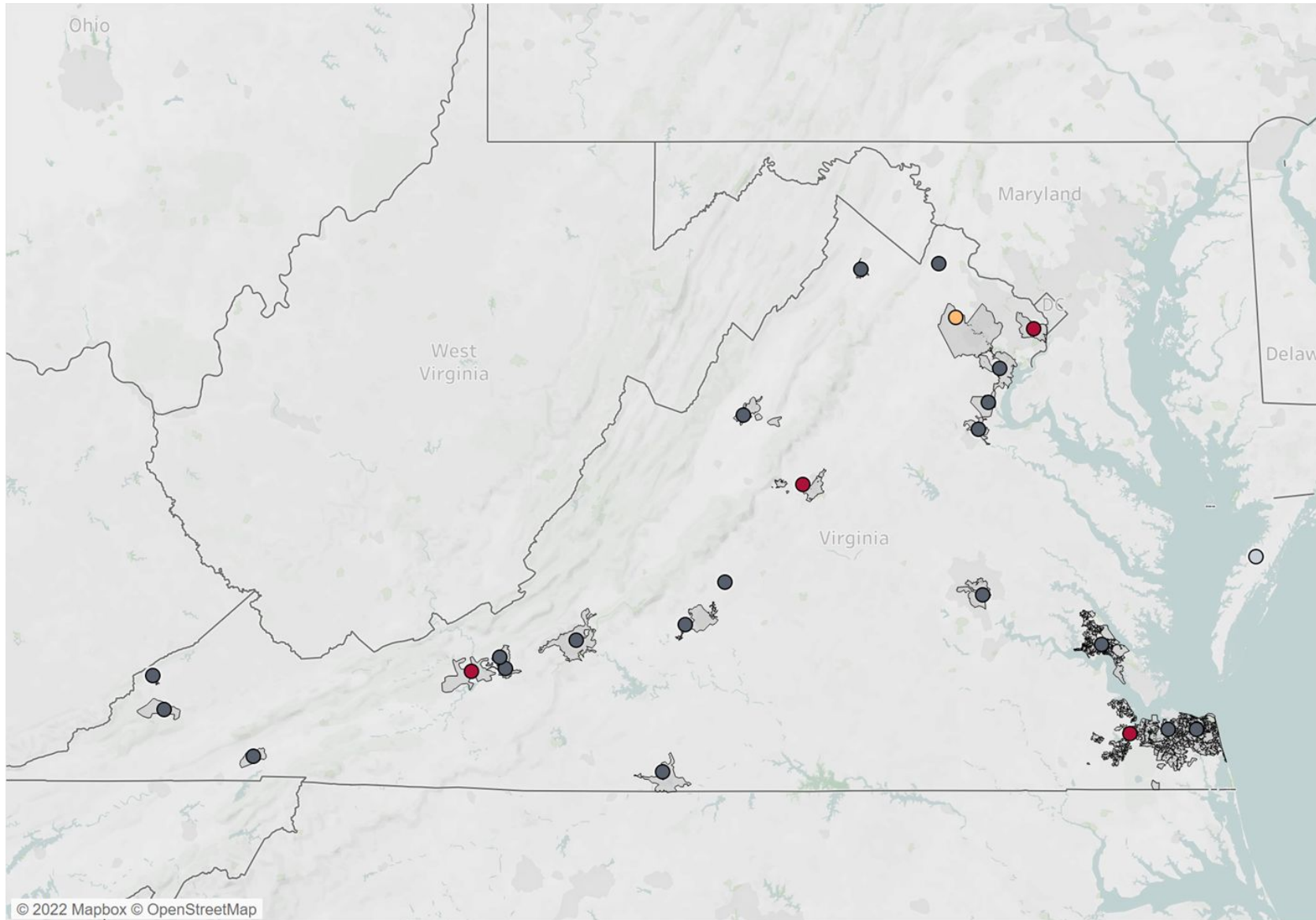
BELOW  
DETECTION

18

NO TREND  
AVAILABLE

0

# Recent Trends: Week 29



INCREASE

4

PLATEAU

1

DECREASE

0

BELOW  
DETECTION

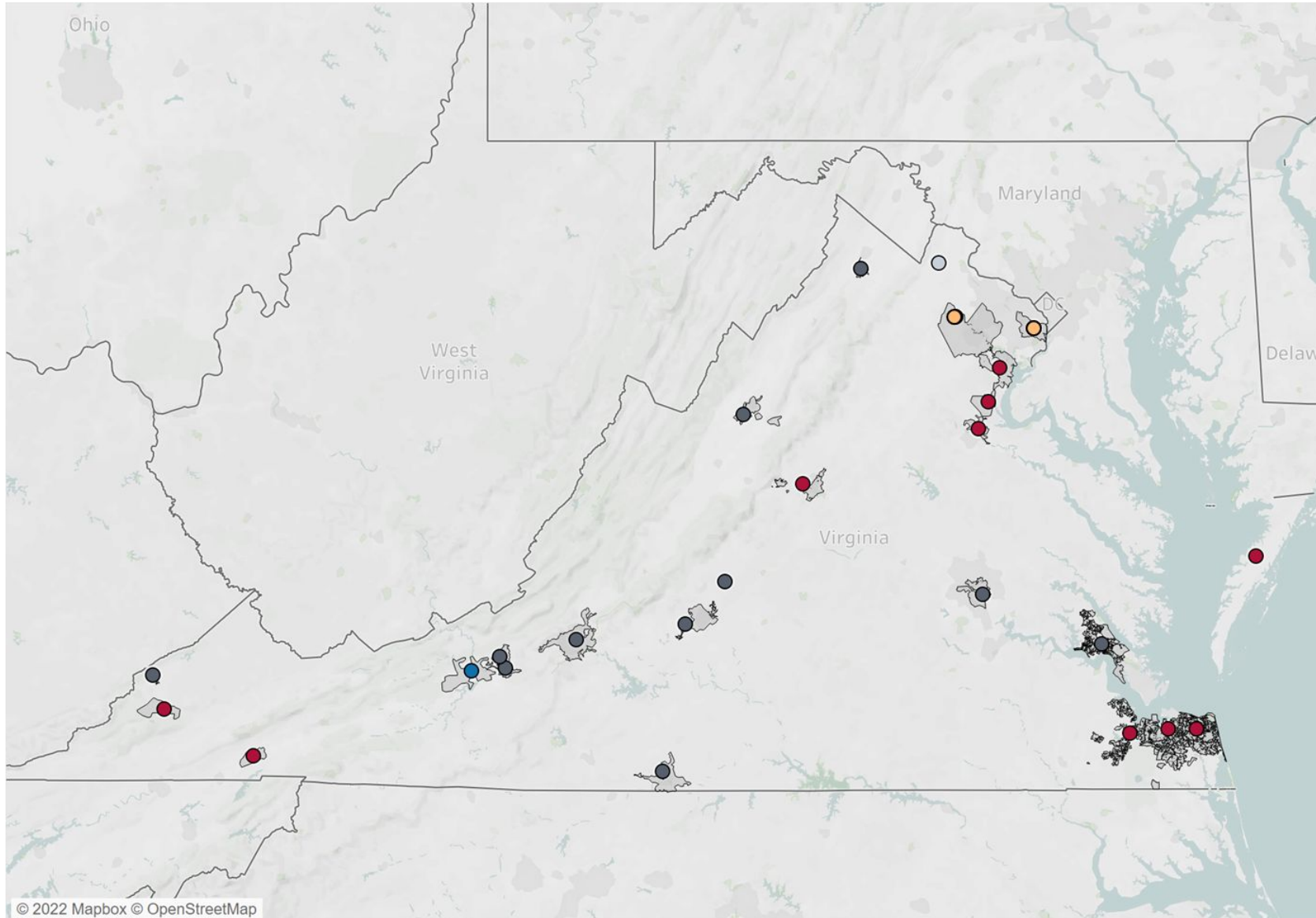
19

NO TREND  
AVAILABLE

1



# Recent Trends: Week 30



INCREASE

10

PLATEAU

2

DECREASE

1

BELOW  
DETECTION

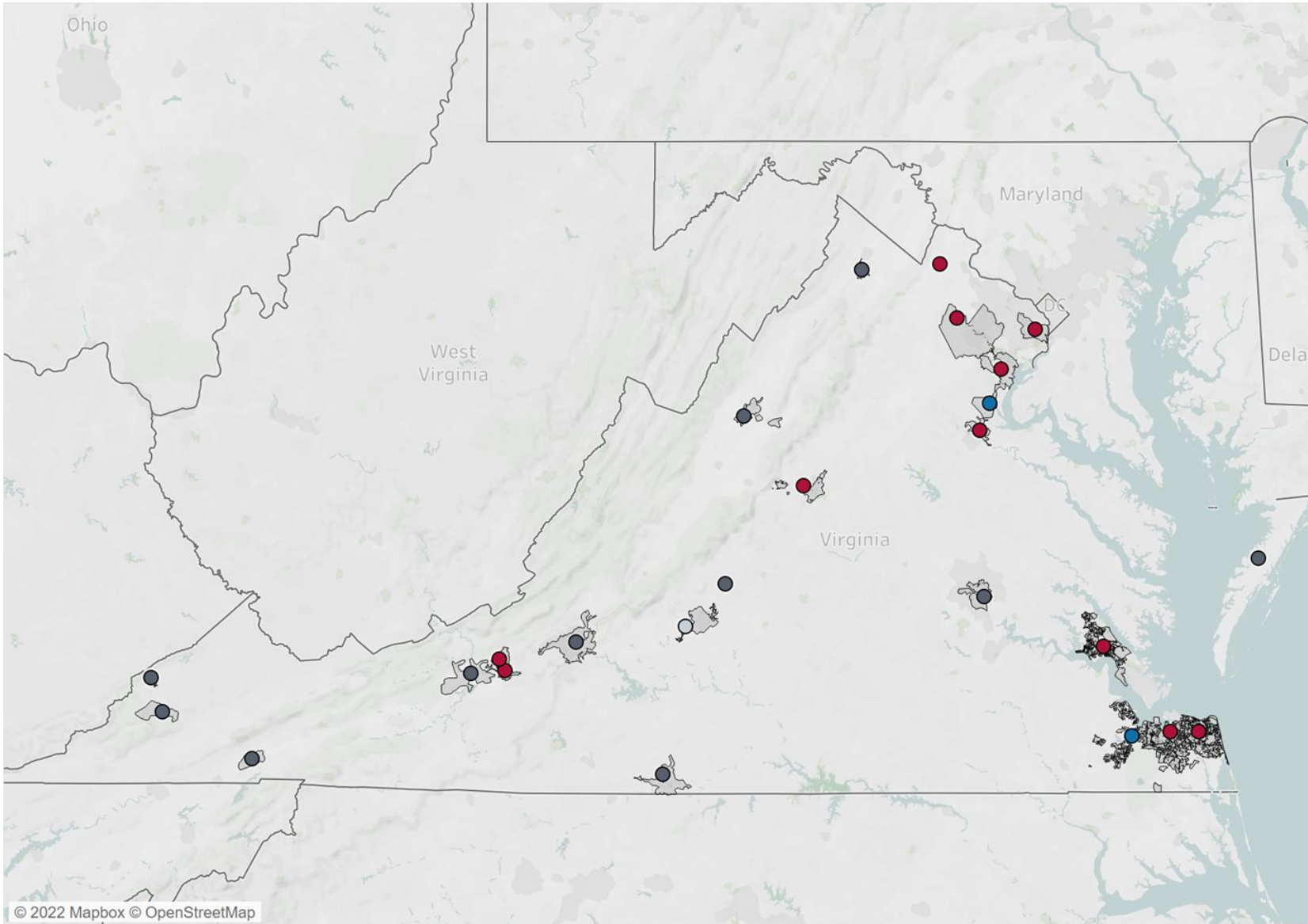
11

NO TREND  
AVAILABLE

1



# Recent Trends: Week 31



INCREASE

11

PLATEAU

0

DECREASE

2

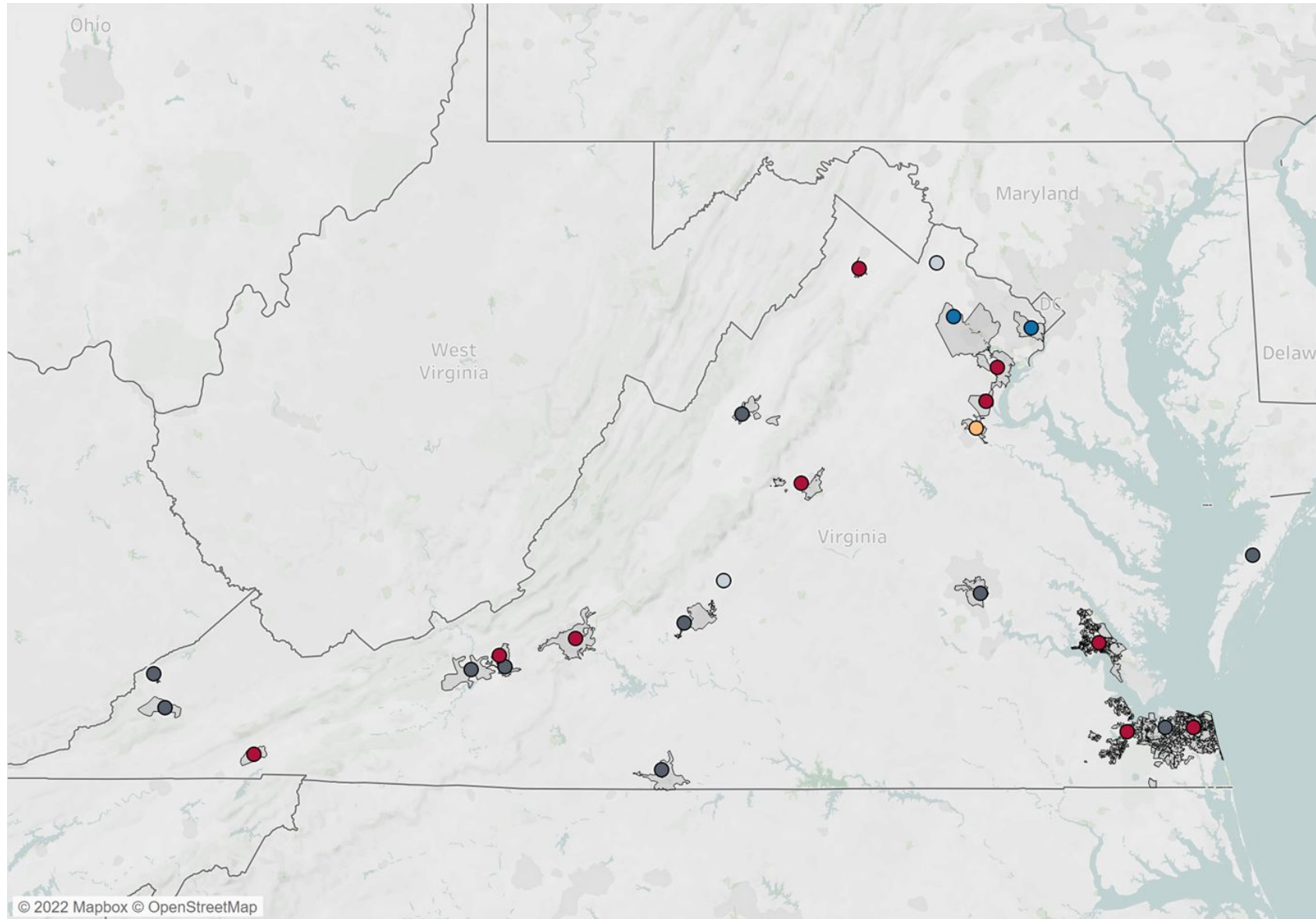
BELOW  
DETECTION

10

NO TREND  
AVAILABLE

1

# Recent Trends: Week 32



INCREASE

10

PLATEAU

1

DECREASE

2

BELOW  
DETECTION

10

NO TREND  
AVAILABLE

1

# Recent Trends: Site-Specific Percentiles

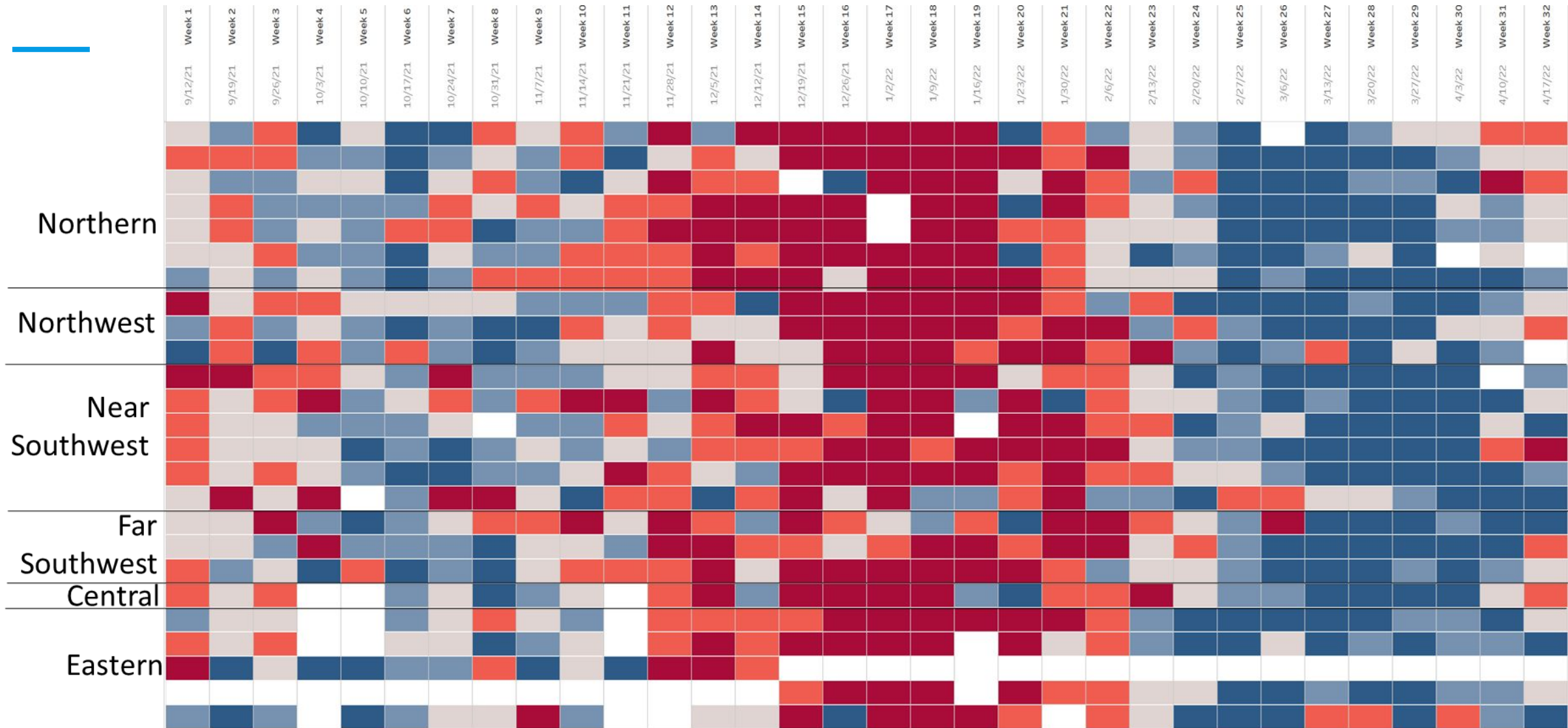
0-19.9

20-39.9

40-59.9

60-79.9

80-100



# Key Takeaways

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- Data is being shared to several platforms
- Several ways to get data for your area:
  - CDC COVID-19 Data Tracker
  - VDH WWS Data Manager
- WWS trends have been down, but are creeping back up
- Interested in becoming a partner-Reach out to us!

# Open Discussion

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thank  
you!

See you next month!

Send inquiries / topics to:  
[rekha.singh@vdh.virginia.gov](mailto:rekha.singh@vdh.virginia.gov)