
Interactive Boundary Explorer

Participant Guided
Exercises

Fall, 2020



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Exercise 1: Learn About Your School

Learn About Your School

In this exercise, we will set up our IBE session and look up key statistics about our school on the summary table. Questions explored include:

- What are the key characteristics of my school as it relates to this boundary analysis?
- How does my school compare to districtwide averages?

1. Set up your session

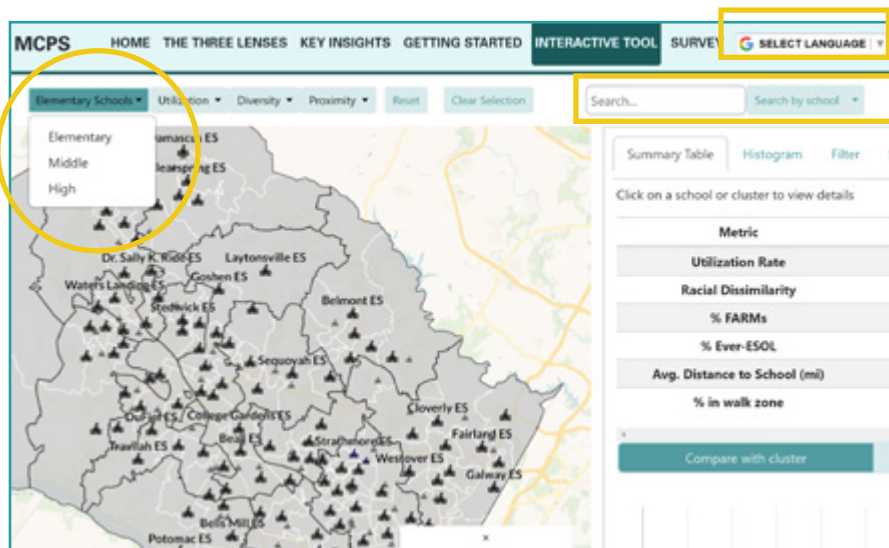
- Select your language from the main menu.
- Select your school level from the tool menu.

Tip: scroll down to the "Interactive Tool" section of the site first.

Tip: by default, the IBE map shows elementary schools.

2. Find your school

- To find your school, either locate it on the map, or search by name in the search bar.

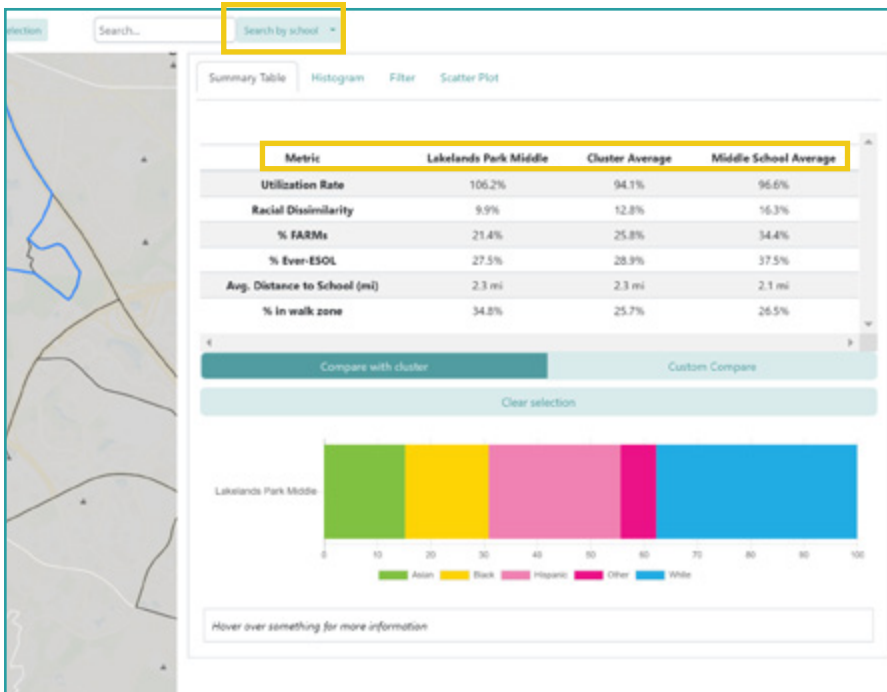


Tip you can also search for schools near a particular address by selecting "search by address" from the drop-down menu. The map will highlight the three closest schools to the address you search for.

3. View the Summary Table

- Look at the summary table on the right hand side of the screen.
- From left to right, the table shows:
 - Metric (data point)
 - Statistics for your school
 - Cluster average (for elementary and middle schools)
 - School level average

Tip: If you are searching for a high school, the cluster average will show the same value as the school average since there is one high school in each cluster. If the high school is in a consortium, "cluster average" will show the consortium average.



Tip: click on your school on the map to see the racial demographics below the summary table.

Discussion

- What do you notice about the statistics for your school? How does it compare to the district average?
- Which metrics stand out to you on the summary table?

Exercise 2: Comparing Schools

Comparing Schools

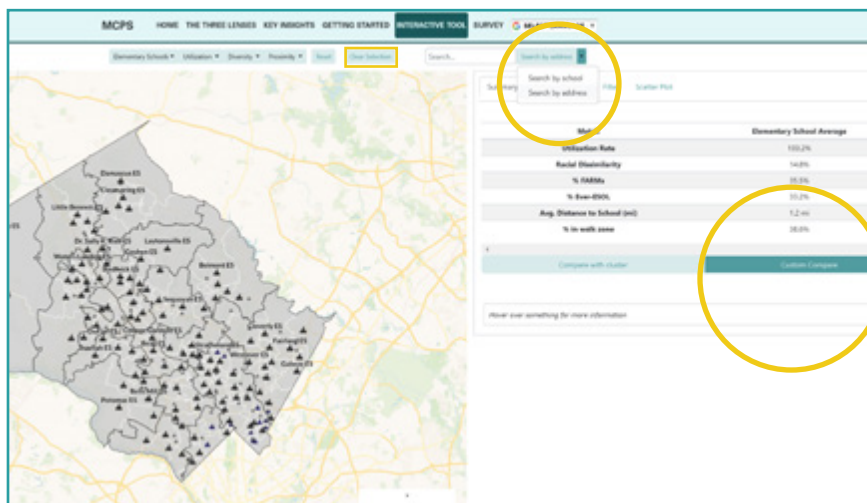
In this exercise, we will compare a school with its nearby schools. This can help us understand:

- How does my school compare to its neighboring schools in terms of utilization, diversity, and proximity?

1. Find three neighboring schools

There are two ways to identify three neighboring schools you want to compare.

- **Search by address:** if you type an address into the search bar, the tool will select the three closest schools to that address.
- **Custom compare:** to select three schools manually, use the custom compare feature. Click “custom compare” in the summary table, then click on three neighboring schools on the map.



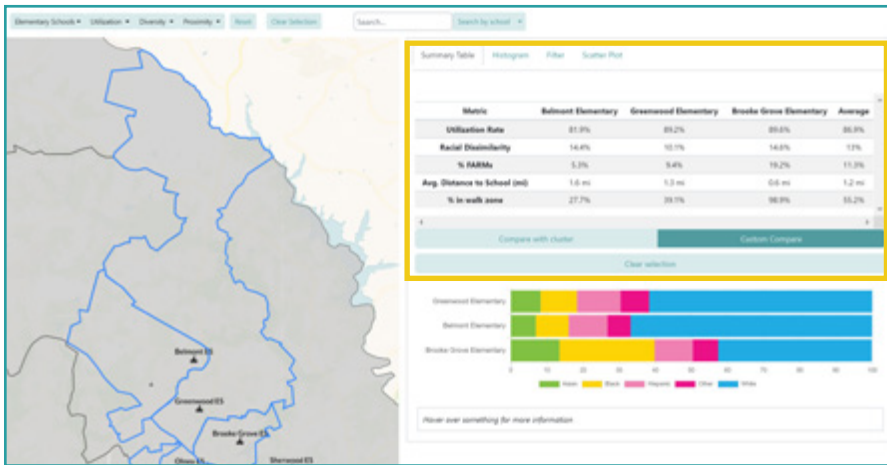
Tip: when a school is selected, its attendance area will be highlighted in blue on the map.

Tip: click the "clear selection" button on the tool menu bar to reset and select new schools on the map.

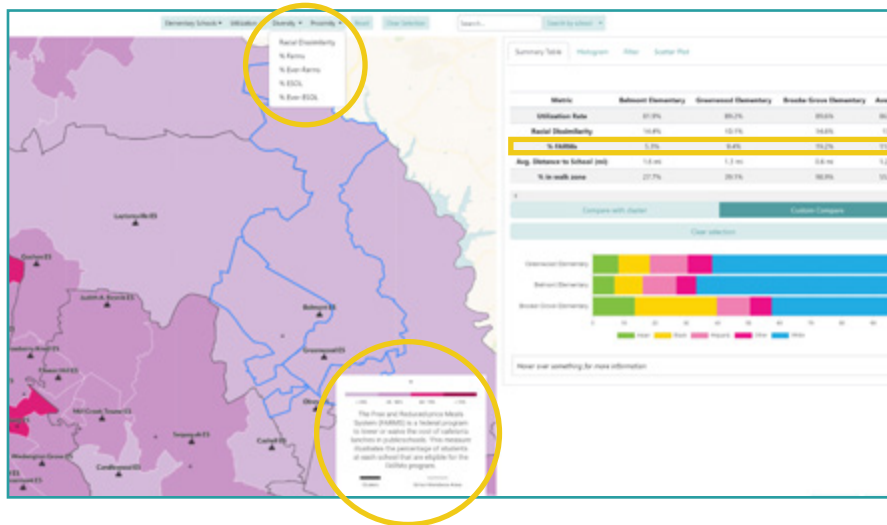
2. View the summary table

Now the summary table shows the statistics for all three of the schools you have selected, plus the average for the set of three.

- Look at each row of the summary table, and observe how the schools you selected compare to one another.
- Look at the fourth column (average). This shows the average for the selected set of schools.



Tip: the racial demographic composition for each school will appear in the area below the summary table. Hover over the bar chart to see the percentage breakdown by racial/ethnic group.



Going deeper: as you explore the summary table, toggle different metrics on and off using the tool menu. This will show a definition of the metric, and allow you to see a visual comparison on the map.

Discussion

- How does your school compare to its nearby schools?
- How much variation is there between these nearby schools? Is there a large range or are they very similar?
- Which metrics stand out to you in the summary table?

Exercise 3: Explore Wider Trends

Exploring Wider Trends

In this exercise, we will explore wider trends in MCPS, by focusing on a particular data point and school level. For example, what are the trends related to ESOL rates at the middle school level? Or, what are the trends related to utilization rates at the high school level? With this metric and school level in mind we will ask:

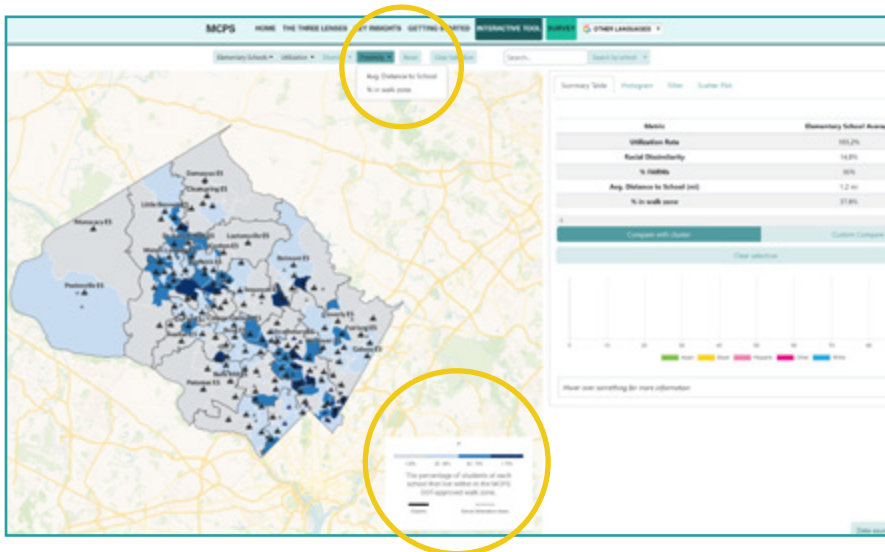
- What is the range of values in the data? Where are the extremes in the data? (i.e. which schools are outliers?)
- What geographic patterns do we see? Which clusters or parts of the district have large disparities (or differences) between nearby schools?

1. Choose a metric and school level

- To start off, select a metric and a school level to focus on. Remember to select your school level from the school level drop-down menu.

2. Look at the distribution on the map

- First, let's look at the geographic pattern of this metric on the map. Select the metric from the interactive tool drop-down menu.



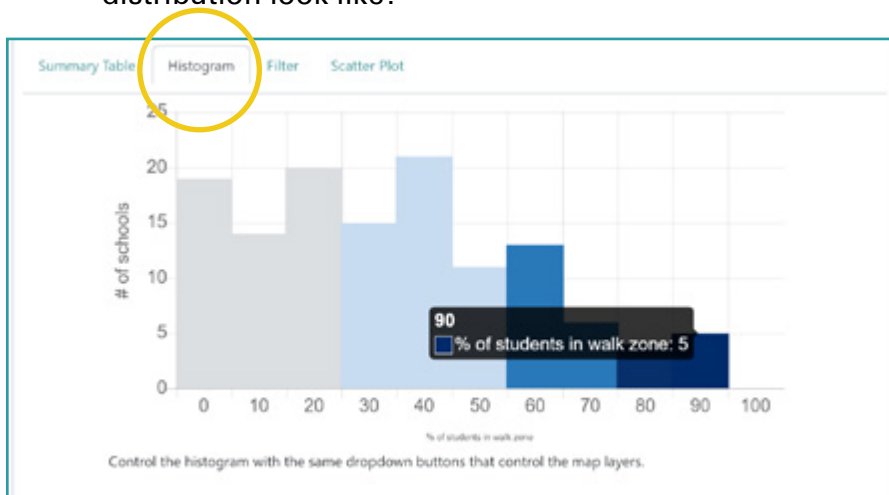
Tip: a choropleth map is a map that is color-coded to show different data values. Each color corresponds to a certain range of values. A choropleth allows us to explore geographic trends or patterns in data.

Tip: a definition of the metric you have selected will appear below the legend.

- Now, the map shows the values for this metric, classified by color. Look at the legend at the bottom right side to see what values each color corresponds to.
- Observe: what patterns do you see on this map? Do you notice any groupings of schools with similar values? Or with very different values?

2. Look at the distribution on a histogram

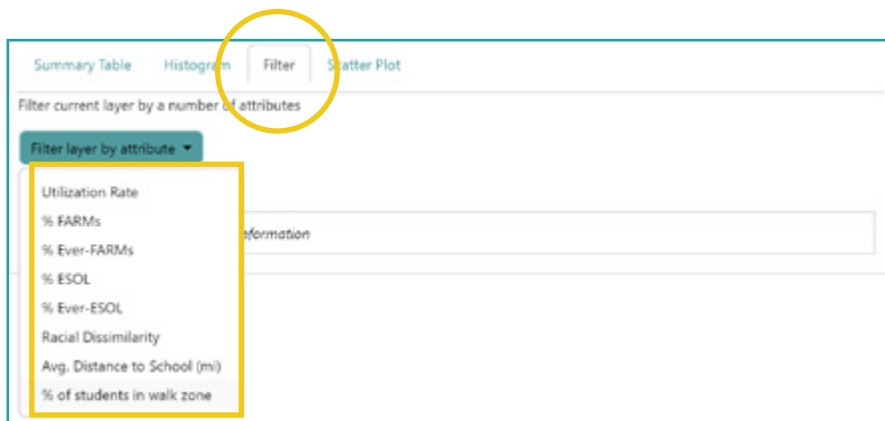
- Click the histogram tab in the summary table to display the data in a histogram. The histogram tab allows us to look at the range of values in the data, and to see which values are most common.
- First, observe the X-axis. This tells us the full range of values in the data. In this example, schools range from 0-10% to 90-100%.
- Now, look at the Y-axis. This tells us how many schools fall into a given range. Which values are most common? What does the distribution look like?



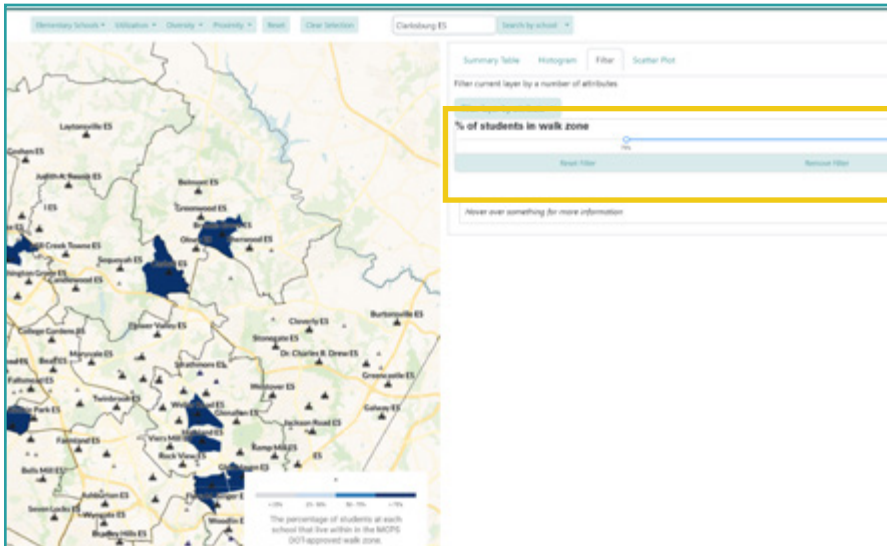
Tip: hover over a bar to see how many schools fall within the selected range. In this case, 5 schools fall within the 90-100% range.

3. Filter the data

- Now that we have seen the overall distribution of the data, we can filter it to see specific ranges on the map.
- Click the "filter" tab to show the filter. Select the metric you want to look at in the drop-down menu.



- Next, use the sliders to select the range you want to see in the data. Now, only the schools that meet this criteria will show up on the map.
- Start by isolating higher values in the data. Then, isolate lower values. What patterns do you see on the map?



Tip: use the summary table to find the district average, and filter based on this average. Or, use the values in the legend as a guide. In this example, the filter is showing schools above 75% (the upper range in the legend).

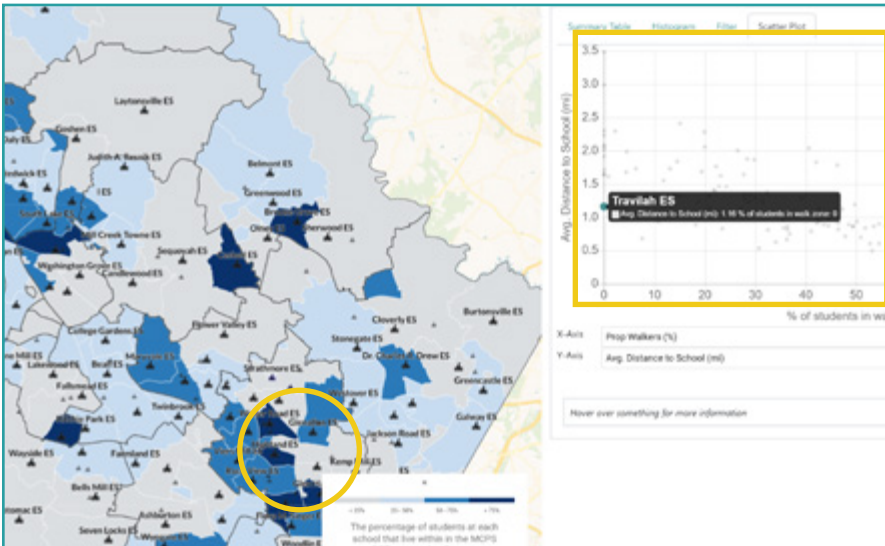
3. Compare two data points in the scatterplot

- Finally, we might want to explore how one metric relates to another one. How do the lenses intersect?
- Select the "scatterplot" tab to show the scatterplot feature.

Going deeper: you can create multiple filters. Simply select another metric from the drop-down menu and a second filter will appear. Now, only schools that fall into *both* of the selected ranges will appear on your map.



- In the X-axis drop-down menu, select the metric you have been exploring in this exercise. In the Y-axis drop-down menu, select a second metric you want to compare.
- Observe the scatterplot: do you see any relationships between these two metrics?



Tip: click on a point in the scatterplot to see the associated school highlighted on the map. You can select as many points as you want to see multiple schools.

Tip: click "clear selection" in the tool menu to clear any selected points.

- Next, look for outliers or extremes in the data. Do any points stand out? Click on a point to see the school name, statistics, and location on the map.

Discussion

- What did you notice about the geographic pattern for the metric you explored. Were there any clusters or parts of the county where you saw groups of extremes? Or large differences between nearby schools?
- Can you observe any relationships between the two metrics you explored?
- What school level would you want to explore next? Do you think you would find different trends at that level?

Exercise 4:

Participant Exercise

Utilization at Your School

Exploring Utilization at Your School

In this exercise, we will focus on utilization rate. How do you think the utilization rate at your school compares to the district average? To nearby schools? This exercise will help us understand:

- What is the utilization rate of my school? How does this compare to the district average?
- How well balanced is utilization between my school and its two closest schools?

1. Set up your session

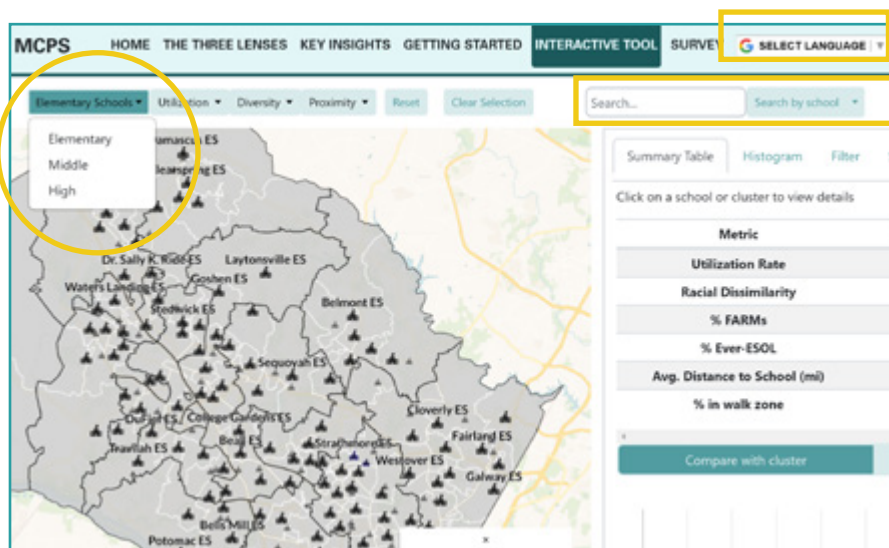
- Select your language from the main menu.
- Select your school level from the tool menu.

Tip: utilization rate is calculated by dividing student enrollment by program capacity. MCPS aims for schools to be within 80-100% utilization.

2. Find your school

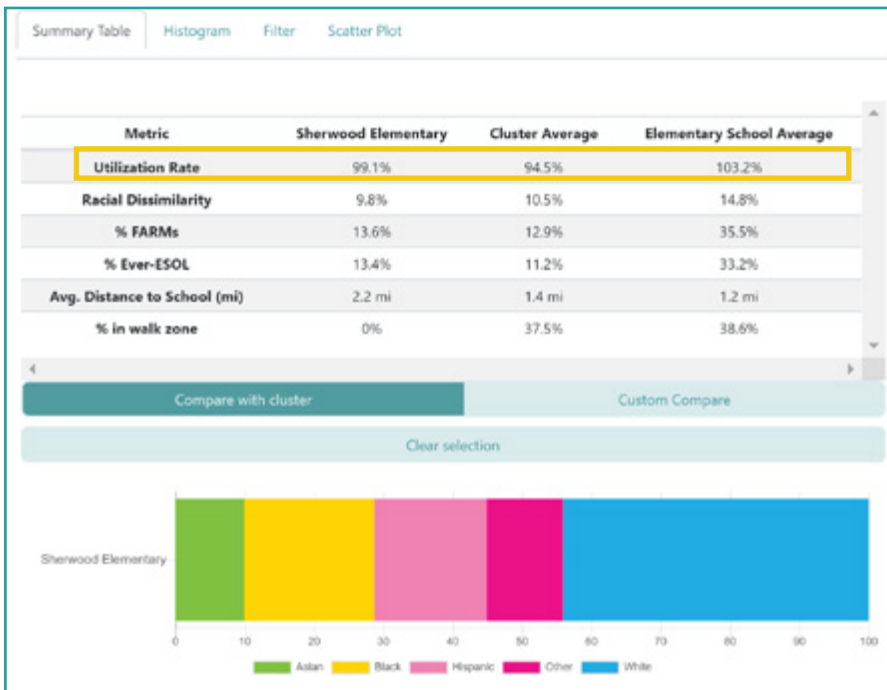
- To find your school, either locate it on the map, or search by name in the search bar.

Tip: by default, the IBE map shows elementary schools.



3. View the summary table

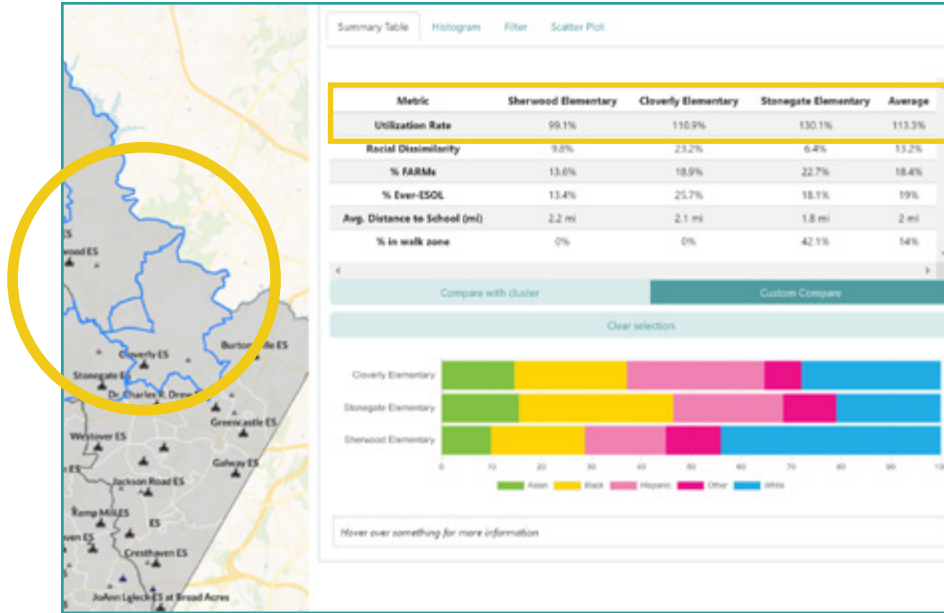
- Look at the summary table on the right hand side of the screen.
- Find the utilization rate in the top row. From left to right, observe how your school's utilization rate compares to the cluster average, and the districtwide average.



Tip: If you are searching for a high school, the cluster average will show the same value as the school average since there is one high school in each cluster. If the high school is on a consortium, "cluster average" will show the consortium average.

4. Compare your school to its closest schools

- Select "custom compare" in the summary table.
- Select two neighboring schools on the map by clicking on their attendance areas.



Tip: the schools you selected on the map will be highlighted with a blue outline. To reset and select different schools, click "clear selection" in the interactive tool menu.

- Now the summary table shows the statistics for your school, plus the two schools you selected. The fourth column shows the average utilization rate of the three schools.

Discussion

- How does your school's utilization rate compare to the districtwide average? To the cluster average?
- Do you think utilization is well-balanced between your school and its neighboring schools? Why or why not?
- Did anything in this exercise surprise you?

**MCPS Districtwide
Boundary Analysis**
Interactive Boundary Explorer