

Chesapeake Bay Watershed 2022 Environmental Literacy Report

West Virginia

Results from the ELIT Survey

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J. Sickler
CONSULTING

PREPARED BY

Jessica Sickler & Michelle Lentzner
J. Sickler Consulting

PREPARED FOR

NOAA, Chesapeake Bay Program

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BACKGROUND

Study Purpose & Methods

ELIT Background & Purpose

The Chesapeake Bay Watershed Environmental Literacy Indicator Tool (ELIT) was developed to monitor the capacity and progress of public school districts toward meeting the environmental literacy goal stated in the 2014 Chesapeake Bay Watershed Agreement. The goal was to:

Enable every student in the region to graduate with the knowledge and skills to act responsibly to protect and restore their local watershed.

Three outcomes are stated in the agreement:

1. **Students:** Increase age-appropriate understanding of the watershed through meaningful watershed educational experiences (MWEEs) and rigorous, inquiry-based instruction, with a target of at least one MWEE in elementary, middle, and high school, depending on available resources.
2. **Sustainable Schools:** Increase the number of schools that reduce impact of buildings and grounds on their local watershed, environment, and human health through best practices, including student-led protection and restoration projects.
3. **Environmental Literacy Planning:** Develop a comprehensive and systemic approach to environmental literacy for all students, including policies, practices and voluntary metrics that support environmental literacy goals and outcomes.

The ELIT contributes to monitoring public school districts' progress toward these outcomes, collecting data about:

- School district preparedness to implement a comprehensive and systemic approach to environmental literacy education (Outcome 3);
- Student participation in MWEEs during the school year (Outcome 1);
- School district needs to support further improvements in environmental literacy education.

The ELIT tool was modified in 2022 to reduce the reporting burden on school districts. In this revision, questions about sustainable school practices were eliminated, as relevant data can be obtained through other means.

The ELIT is administered biennially to all local education agencies (LEAs) in six jurisdictions within the Chesapeake Bay Watershed. **This report presents results from West Virginia LEAs, but only those that are within the Chesapeake Bay Watershed.**

ELIT Data Collection

Data Collection Procedure

The ELIT is typically administered every two years as an electronic survey. It is intended to be completed by a single representative from the administration of each LEA (school district) who is able to report on district-wide activities. Additional data-points that are more reliably obtained through non-survey means (e.g., in/out of watershed; student enrollment) are identified from external sources and merged with the survey responses.

Past ELIT data were collected in 2015, 2017, and 2019. Collection was paused in 2021, due to the substantial impacts on school districts due to the COVID-19 pandemic. Collection resumed in 2022 to assess where the region stands in the wake of these impacts on education systems.

NOAA's Chesapeake Bay Program organized data collection in 2022, and representatives from each state's education office led distribution of the survey to LEAs within their jurisdiction. ELIT data collection targets only public school districts. This report only includes responses from public school districts that fall within the Chesapeake Bay Watershed.

Data Collection Timing

The 2022 ELIT asked districts to report on the status of activities for the 2021-22 school year. To support this, the ELIT survey opened for responses in May 2022. The survey remained open for responses through the spring and summer. In response to demand from several states and LEAs for more time to complete the survey, the deadline for completion was extended through the end of November 2022.

Additional Information about Data

The most significant challenge of the ELIT is obtaining a strong response rate from more than 300 LEAs across six states. As greater numbers of LEAs report their activities into this dataset, the Chesapeake Bay Program has a more accurate understanding of the status of environmental literacy activities across the watershed.

The 2019 dataset, which is included in this report when comparing results year-to-year, was a combined dataset that included all 2019 districts that responded, as well as appending any 2017 data from districts that had not updated their responses in 2019. The underlying assumption was that changes in status within non-reporting districts was likely minor over the course of two years (as ELIT change tends to be incremental). This provided a more robust picture of the region at that time.

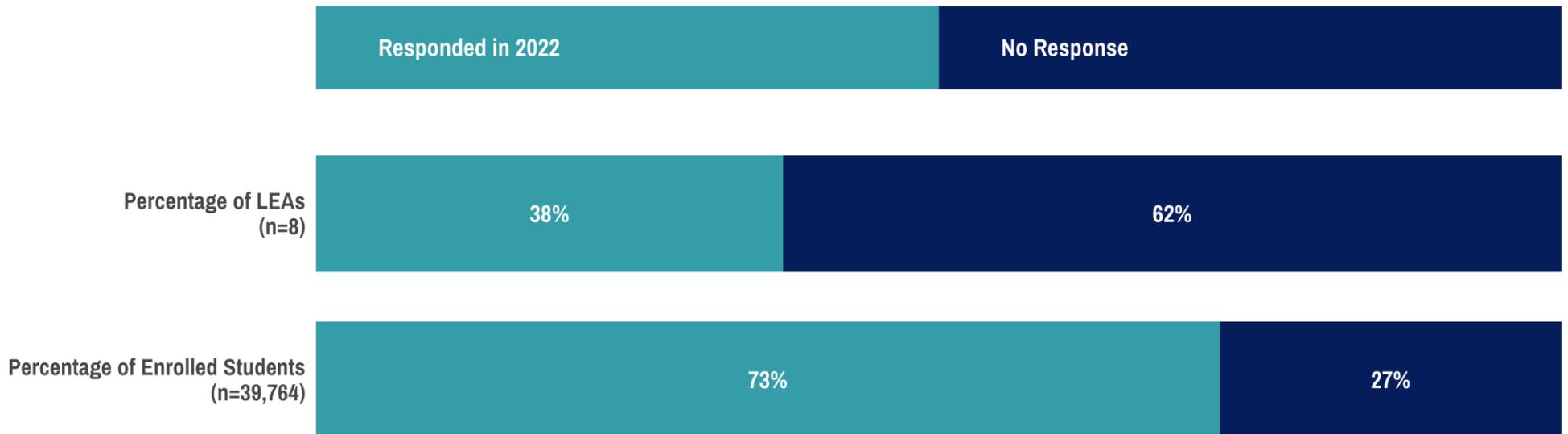
In 2022, because the last ELIT was three years ago, and in those three years there were many, major shifts in all aspects of education systems, we did not append this year's data with any historic data. All data are only what was reported this year.

2022 ELIT Response Rate

3 out of 8 LEAs that are within the Chesapeake Bay watershed in West Virginia completed the ELIT in 2022. This constituted a response rate of 38% of all districts in the watershed. When response rate is considered based on student enrollment, the sample represents 73% of students in the watershed.

West Virginia had a slightly lower response rate in 2022 as compared to 2019. All responses were from districts within the Chesapeake Bay watershed, which represents less than half of all in-watershed districts. Based on this, the data presented in this report likely present some insights, but an incomplete picture of environmental literacy for the districts that fall within the Chesapeake Bay watershed.

ELIT Response Rate: Percentage of all LEAs and of Enrolled Students across West Virginia in 2022



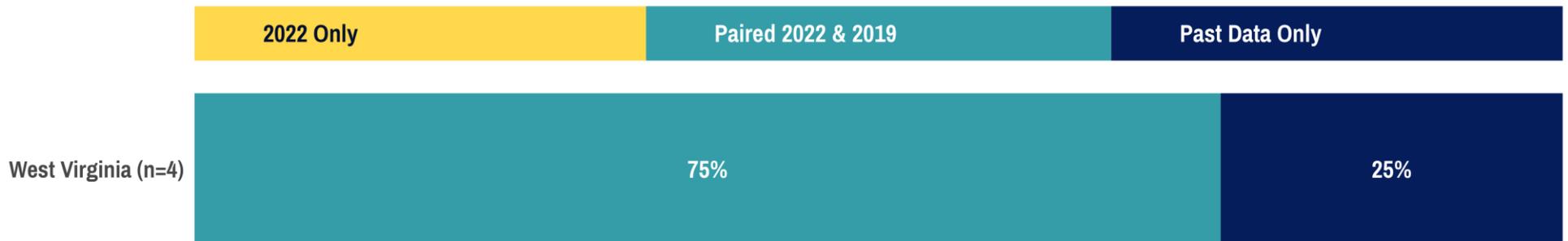
Availability of Paired Year-to-Year Data

All 3 of the LEAs in West Virginia that responded in 2022 also completed the ELIT in 2019. There is one additional LEA that responded in 2019, but did not update their response in 2022.

In the analyses that follow, we use this paired dataset to explore the degree to which changes may have occurred over past years. By isolating comparisons to districts that responded in both current and previous years, we can look at the number of districts who reported increases or decreases in indicators in the past three years.

Repeat ELIT Respondents: Availability of Paired Year-to-Year Data

This graph considers the full, historic dataset of ELIT responses in West Virginia. Segments of the graph show the proportion of districts that were entirely new to ELIT reporting this year, those that have responded at both periods, and those who responded previously, but did not update their data in 2022



Staff Responsible for Sustainable Schools

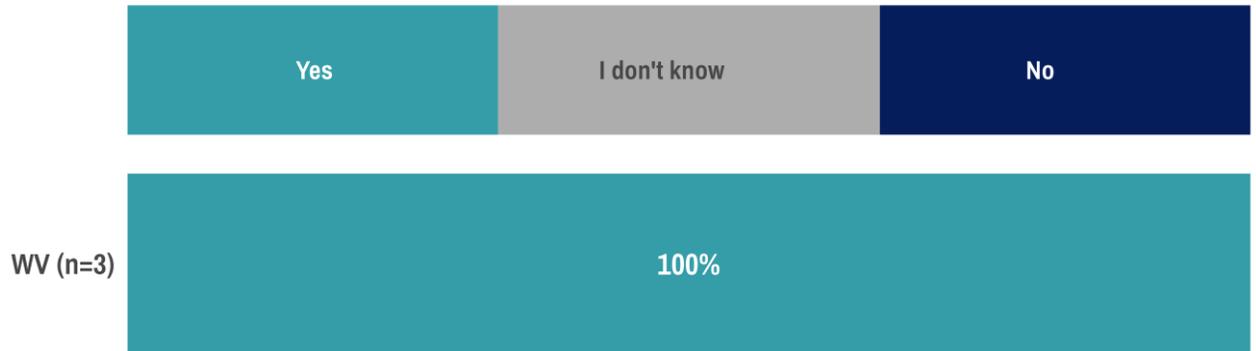
All 3 of the responding LEAs indicated that their district has dedicated staff responsible for sustainable schools.

The 2022 ELIT did not engage in a full inquiry of sustainable schools practices, to reduce the burden on districts where data may be gathered elsewhere. Only one question was asked, which was to gauge if the district had dedicated staff responsible for sustainable school efforts.

West Virginia LEAs all reported having a dedicated staff person responsible for coordinating sustainable school efforts. However, due to small sample size, it is unclear whether trend extends to the rest of the state.

Sustainable Schools: Presence of Support Staff in West Virginia

Responses to the question: Does your LEA have a staff lead or team responsible for coordinating sustainable schools efforts?



RESULTS



**Preparedness to Implement
Environmental Education**

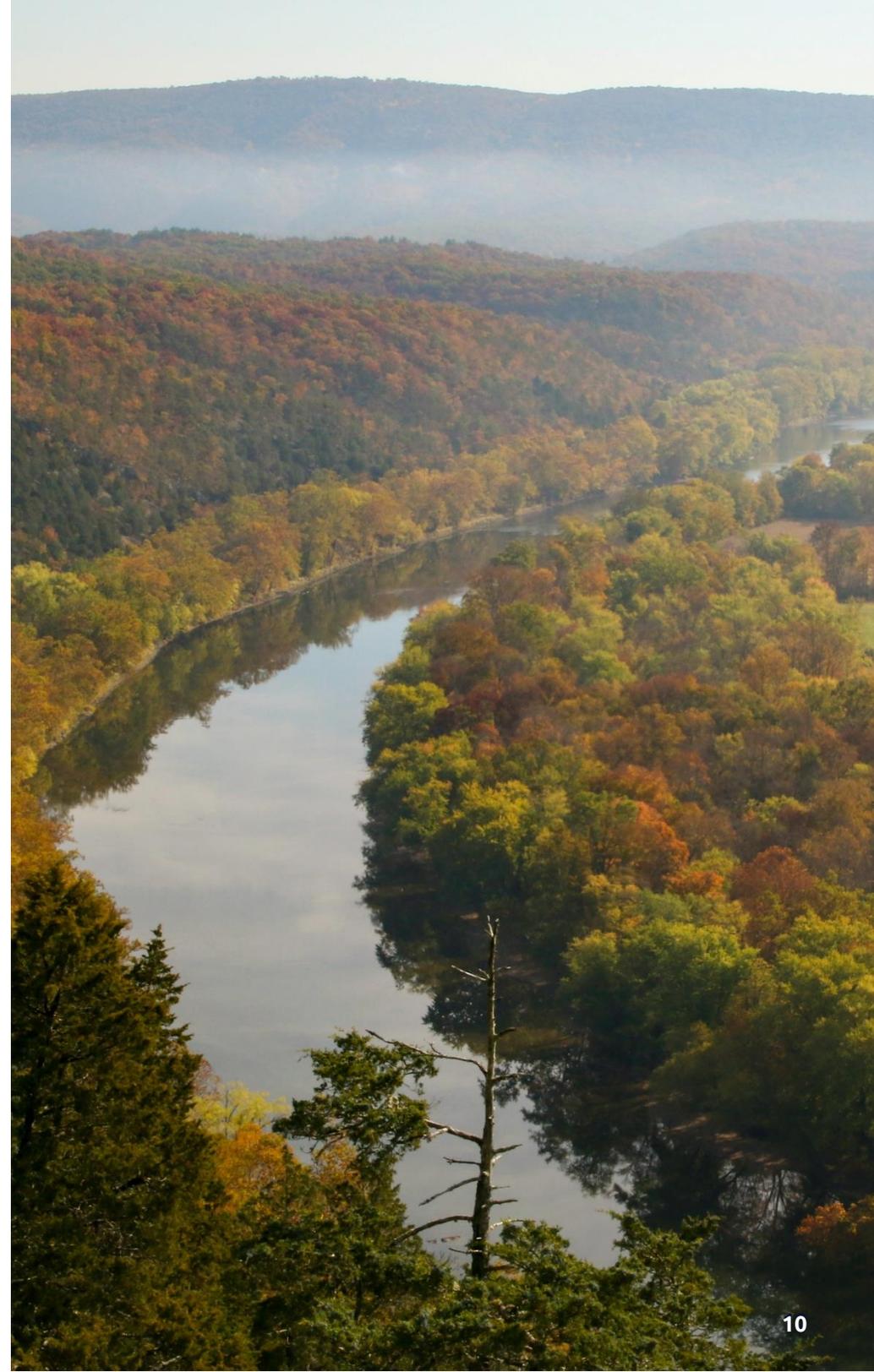
Measurement Overview

To assess each LEA's current capacity to implement a comprehensive and systemic approach to environmental education (EE), respondents considered six elements (below) and indicated for each whether it was:

- Not in place
 - Partially in place
 - Fully in place
- The response for each element was scored with a value of 0, 1, or 2, respectively. These values were summed to arrive at a total preparedness score for the district.

Six Elements Used to Determine LEA Preparedness for EE:

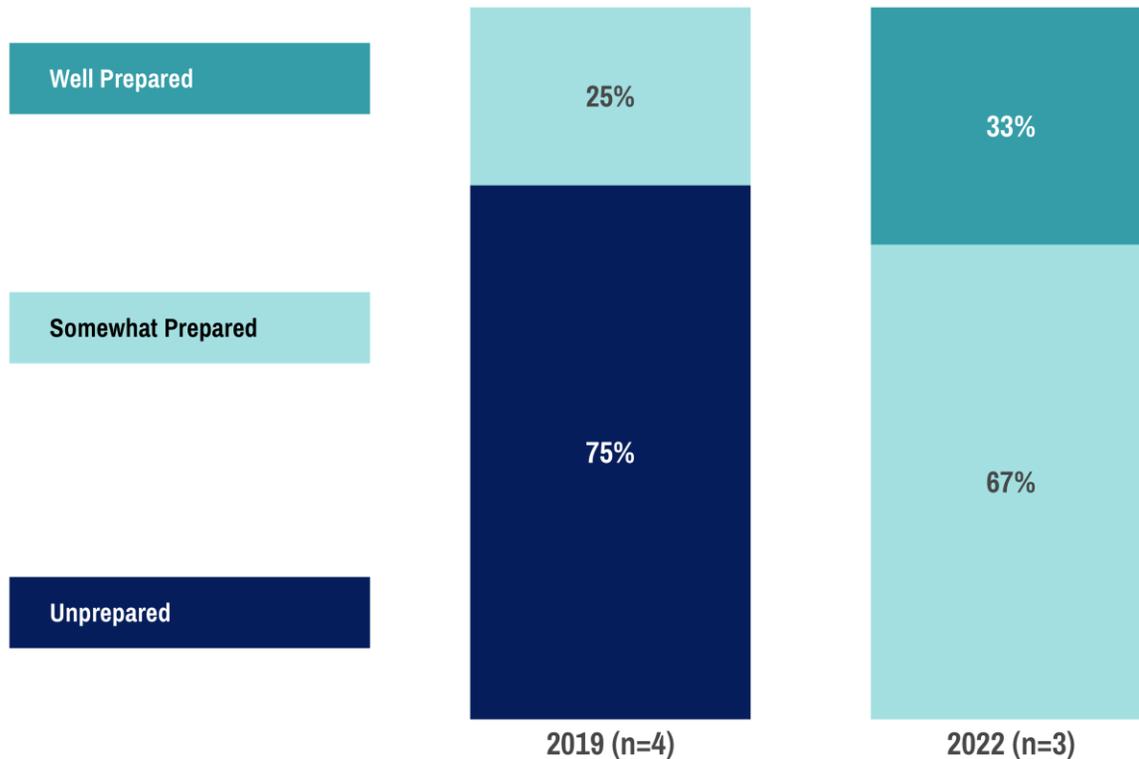
- a) An established program leader for environmental education (providing effective, sustained, and system leadership).
- b) An integrated program infusing environmental concepts into appropriate curricular areas.
- c) Regular communication among staff responsible for environmental education curriculum and program implementation.
- d) A support system in place that enables teachers and administrators to engage in high quality professional development in content knowledge, instructional materials, and methodology related to environmental education.
- e) A plan to ensure opportunities for all students to engage in meaningful watershed educational experiences (MWEEs) at the elementary, middle and high school levels.
- f) Established community partnerships for delivery of environmental education, including implementation of MWEEs.



LEA Preparedness: Trends Over Time

Changes in Environmental Literacy Preparedness Over Time (2017-2022)

Preparedness levels in all reporting LEAs in West Virginia



Two of the three responding LEAs in West Virginia are somewhat prepared to implement high quality environmental education in 2022, and one district is well-prepared. This is a dramatic positive shift from 2019 reports.

Responding LEAs rated how fully their district has implemented the six indicators of planning and infrastructure for high quality EE. Total preparedness scores, across all indicators, were grouped into three levels of preparedness:

Well Prepared: scores from 9-12

Somewhat Prepared: scores from 4-8

Not Prepared: scores from 0-3

Looking at the aggregate numbers, the preparedness of districts improved dramatically from 2019 to 2022.

Exploring the changes in year-to-year data, 2 out of 3 responding districts increased their level of preparedness, while one district stayed on the same level (somewhat prepared).

Comparing Paired 2019 and 2022 Data

Changes in preparedness within individual LEAs for which we have paired data within West Virginia (n=3).



Breaking Down the Elements of Readiness

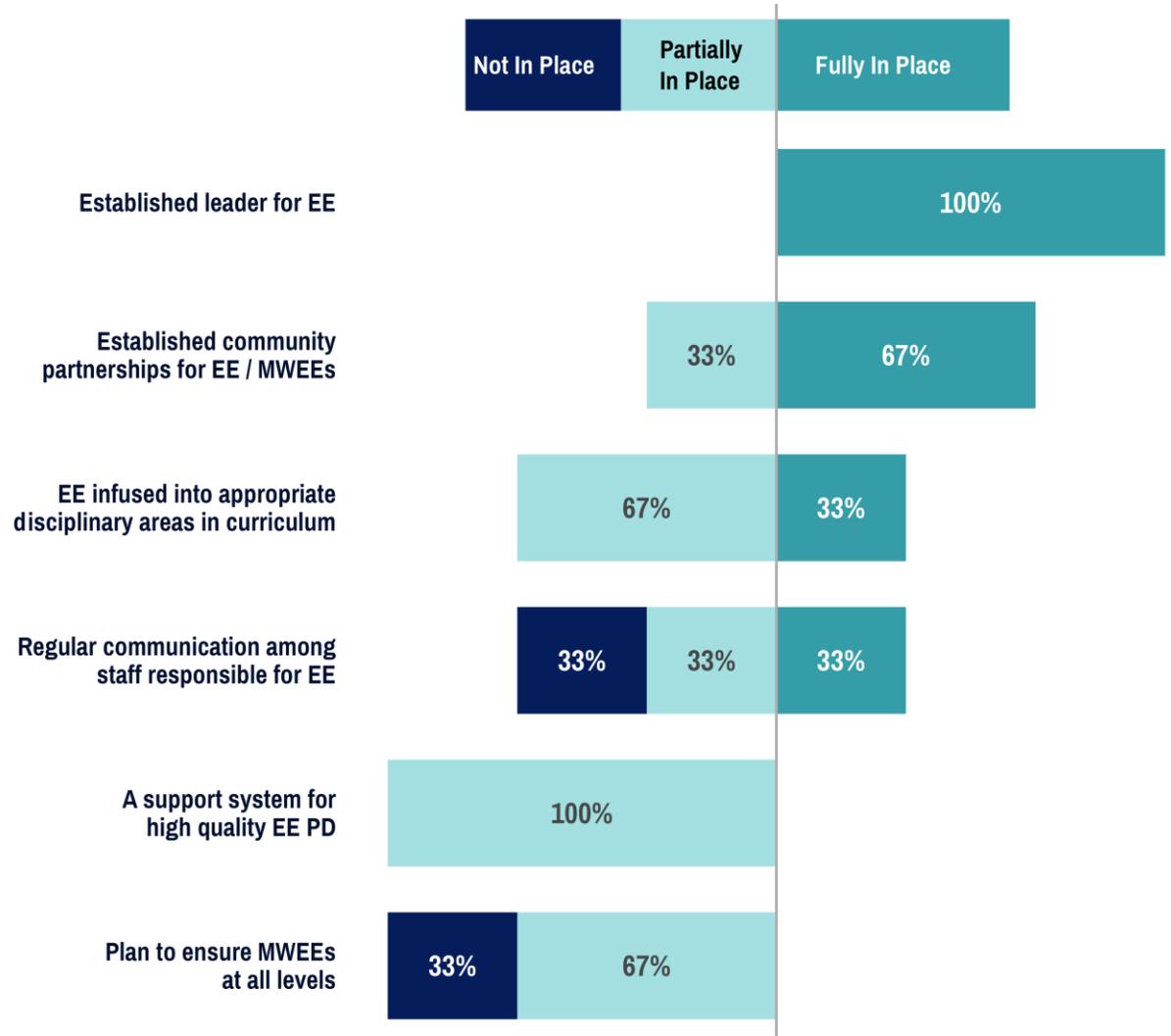
All 3 responding West Virginia LEAs reported having a leader for EE fully established.

The breakdown of readiness within each element in the preparedness indicator show some encouraging trends in districts' preparedness to support environmental literacy. Most notably, all three responding LEAs reported having a leader for EE in place; these positions were not in place in 2019. In fact, no LEA rated any of the elements as fully in place in 2019, indicating great strides in establishing community partnerships, and infusing EE throughout the curriculum.

The next page further breaks down these data, by comparing the three sub-groups (well-prepared, somewhat prepared, or unprepared).

Degree of Readiness for Each Element of LEA Planning and Infrastructure.

Distribution of ratings to individual items in the planning indicator by all LEAs in West Virginia (n=3)



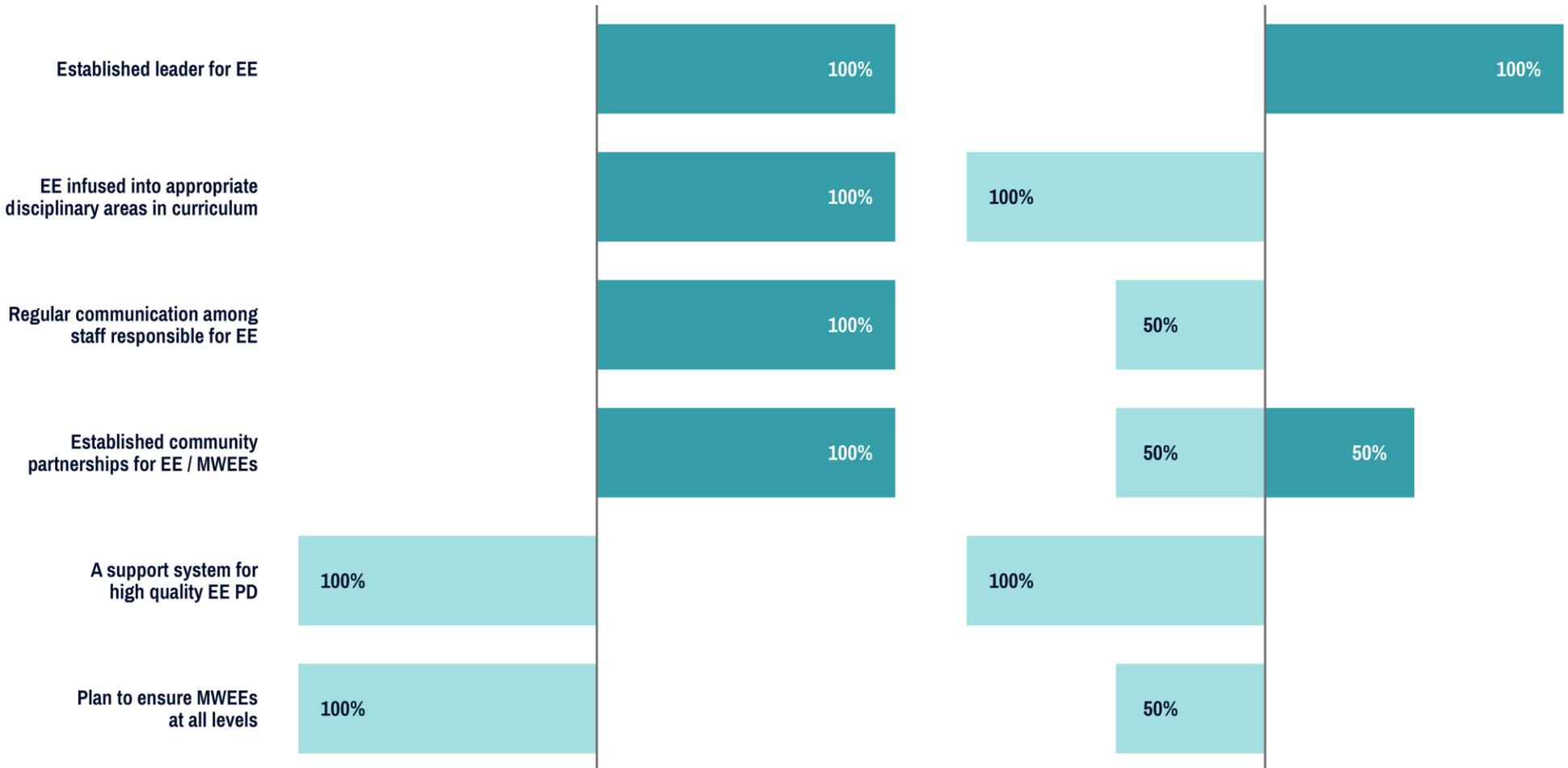
Elements Fully or Partially in Place

Comparing Strategies between Levels of Preparedness



Strategies at Well Prepared LEAs (n=1)

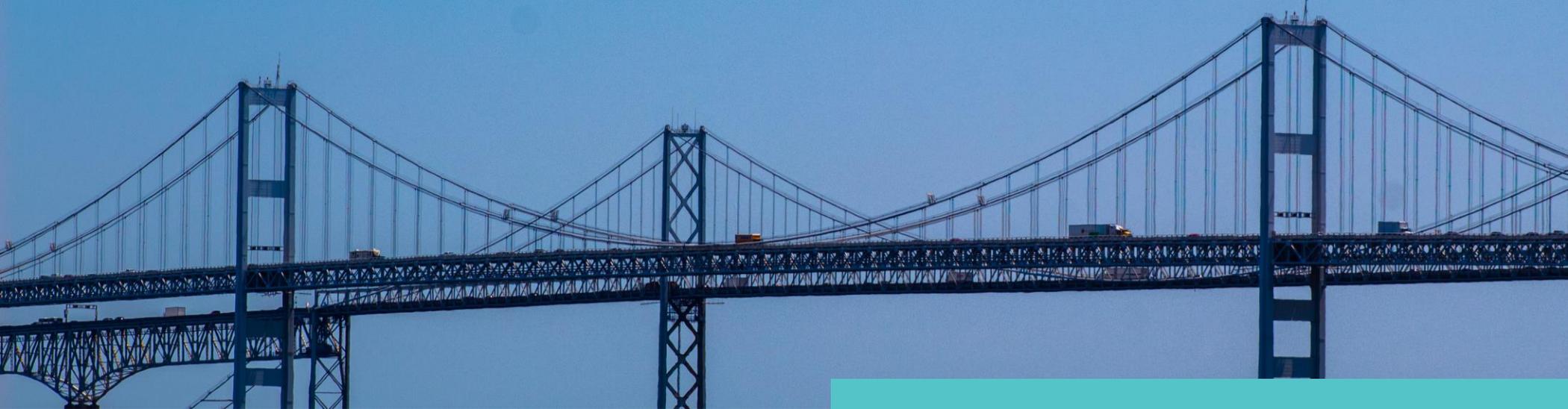
Strategies at Somewhat Prepared LEAs (n=2)



RESULTS

Student Participation in Meaningful Watershed Educational Experiences (MWEEs)





RESULTS: STUDENT PARTICIPATION IN MWEEs

Measurement

To assess the level of student participation in MWEEs within each LEA, respondents were asked to assess the presence of MWEEs within curricular offerings within each grade level (K-12), considering if they were system-wide or isolated to schools or classes. (See detail, right.) Respondents were given a reminder of the complete definition of a MWEE before the questions.

Although respondents reported at individual grade levels, analysis aggregated these data to report results by grade band (elementary, middle, or high school). The aggregation grouped each LEA into one of three levels within each grade band:

- At least one system-wide MWEE provided in the grade band;
- Some MWEE programming in the grade band, but not system-wide;
- No MWEE programming provided in the grade band.

For elementary (K-5) and middle school (6-8) grades, respondents indicated whether the district had:

- A system-wide MWEE experience for students in this grade
- Some schools or classes in this grade participate in MWEEs
- No evidence that students in this grade participate in a MWEE

For high school, MWEEs are more likely to correspond to a course than a grade level. Therefore, respondents reflected on courses at the high school level, indicated if the course was required or elective and whether the district had:

- A system-wide MWEE experience for students in this course
- Some schools or classes participate in MWEEs for this course
- No evidence that students in this course participate in a MWEE

The MWEE level was computed based only on courses that were indicated to be graduation requirements (i.e., needed for all students).

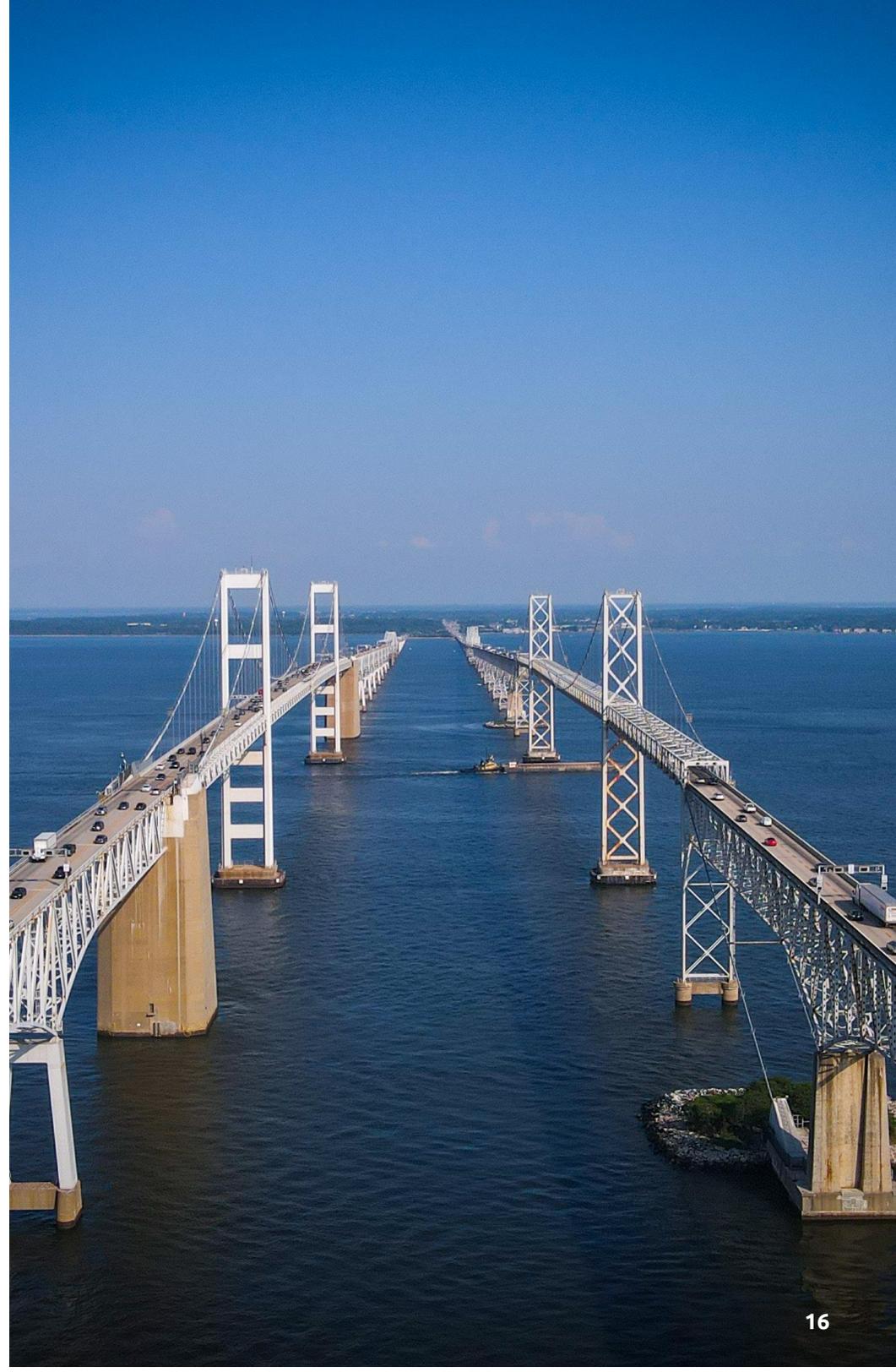
HS MWEE Measurement

A change was made to how data about high school MWEES was collected in 2022, in an effort to make it easier on LEAs and improve accuracy of what was reported.

In past years' ELIT survey, data suggested there may be inaccuracies in how courses were reported, particularly regarding clarifying whether MWEE reporting was clearly limited to *required* courses (a critical part of being considered system-wide). For example, an AP course might be listed as a system-wide MWEE, which indicates the task of focusing on requirements and electives separately was difficult for LEAs to do.

In 2022, the question was streamlined, providing LEAs with an inventory of more specific subjects, including: biology, chemistry, physics, Earth/environmental science, history, government/civics, geography, algebra I, algebra II, geometry, language arts, literature, health/physical education, AP science, AP English, AP math, AP history, with space for write-in courses. LEA representatives reported the presence of MWEES in each of these courses (system-wide, some schools, no evidence) – *regardless* of if it was required or elective. This allowed LEAs to focus on course topics.

A secondary question provided the same list of core subjects (without AP items) and asked them to indicate which courses were graduation requirements. Analysis used this response to distinguish if each MWEE rating (above) pertained to a requirement (for the indicator) or an elective.



Student Participation in MWEEs

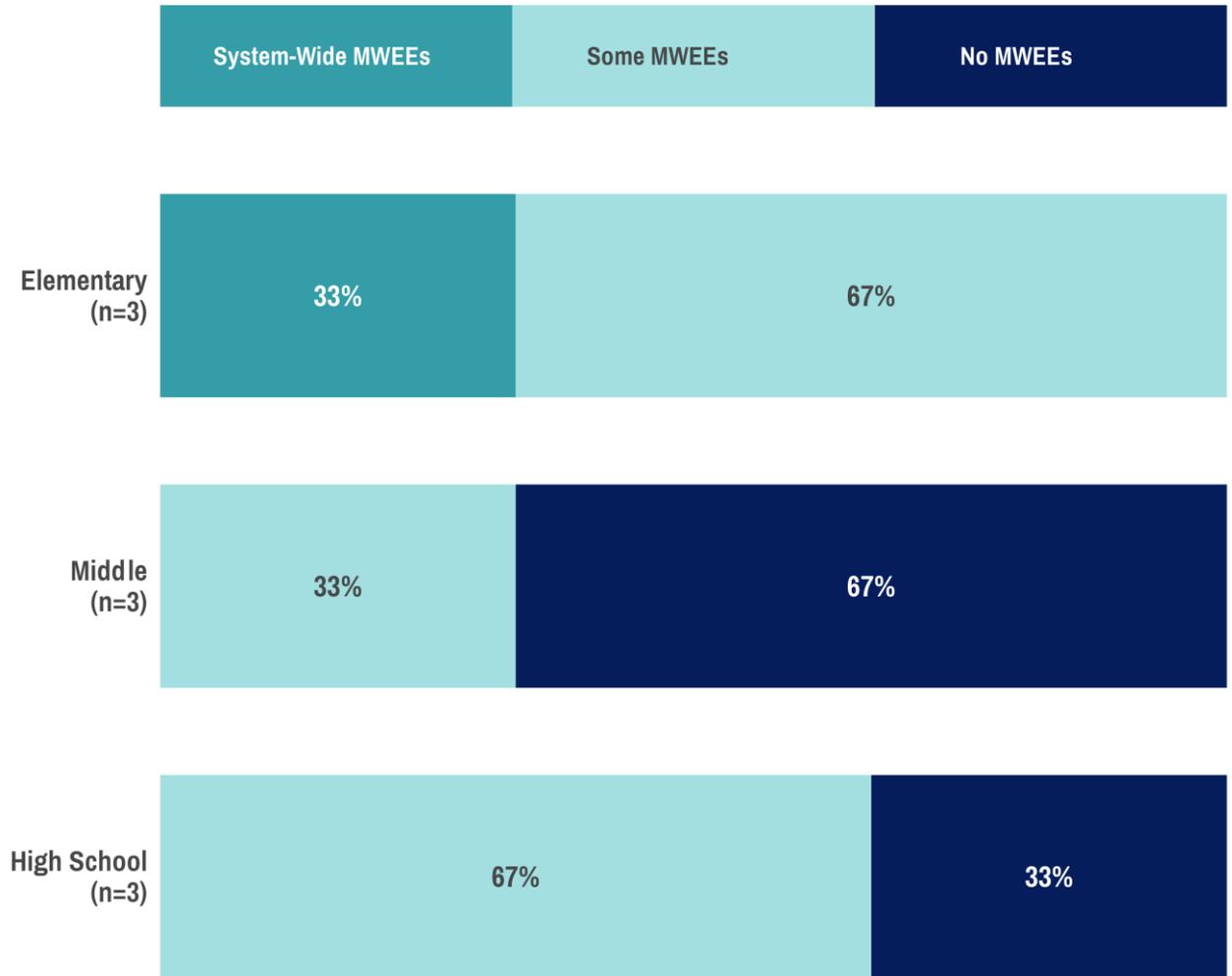
MWEEs were most common at the elementary level among responding districts.

The only system-wide MWEE was reported at the elementary level by a single district. Only one out of three responding LEAs reported any MWEE availability at the middle school level. Two-thirds of districts reported offering some MWEEs at a high school level.

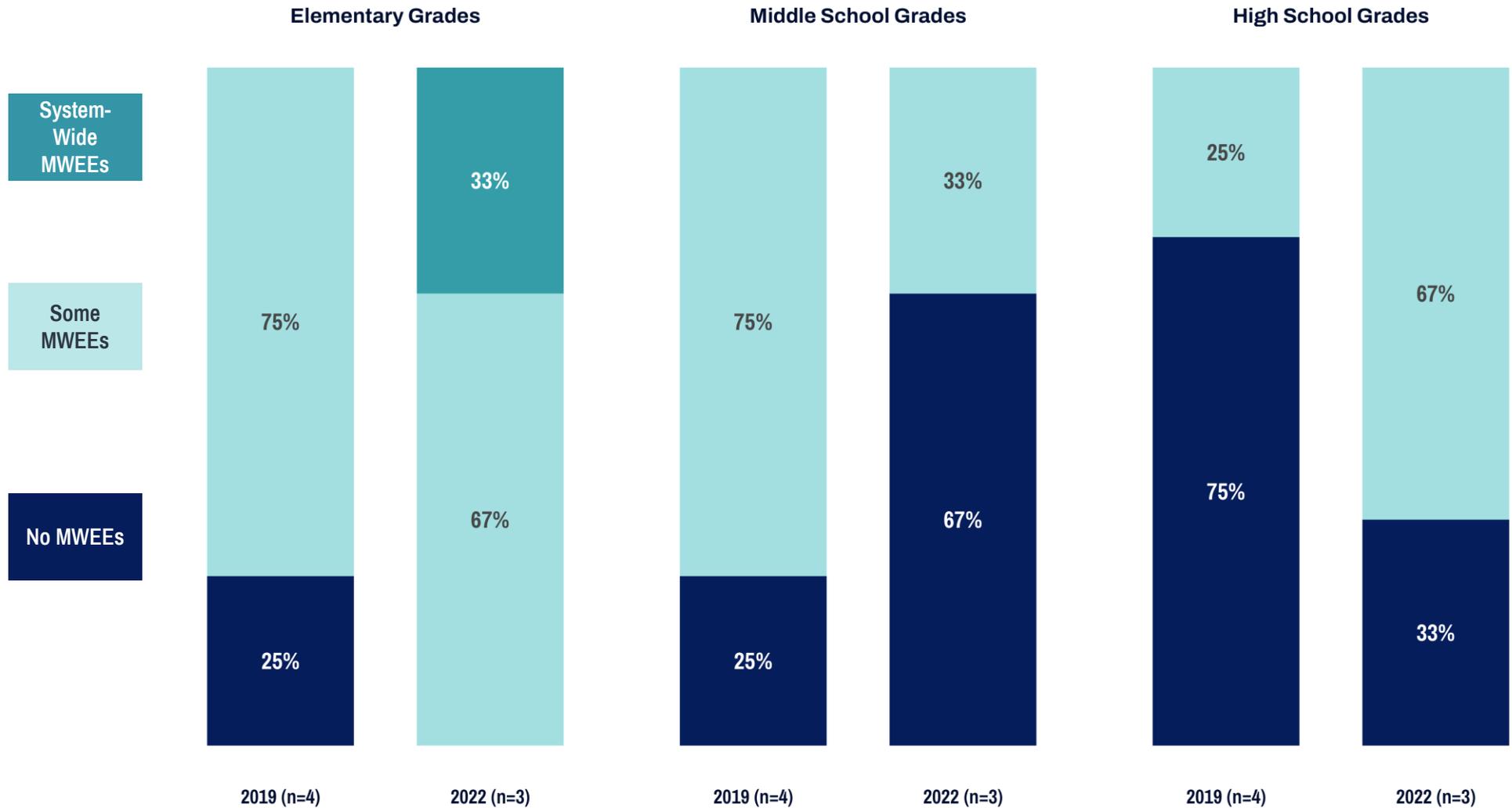
On the next page, 2019 and 2022 results are compared. Access to MWEEs in elementary and high school grades appear to have gone up among reporting districts, while MWEEs in middle school grades have gone down. As mentioned previously, due to the small sample size, these data do not reflect all districts in the watershed or the state of West Virginia.

MWEE Availability among LEAs within West Virginia in 2022

Rates of availability across all responding LEAs. If a district reported there was a system-wide MWEE at any grade level(s), they were scored as having "System-Wide MWEEs"; "No MWEEs" indicates no MWEEs at any grade in the band.



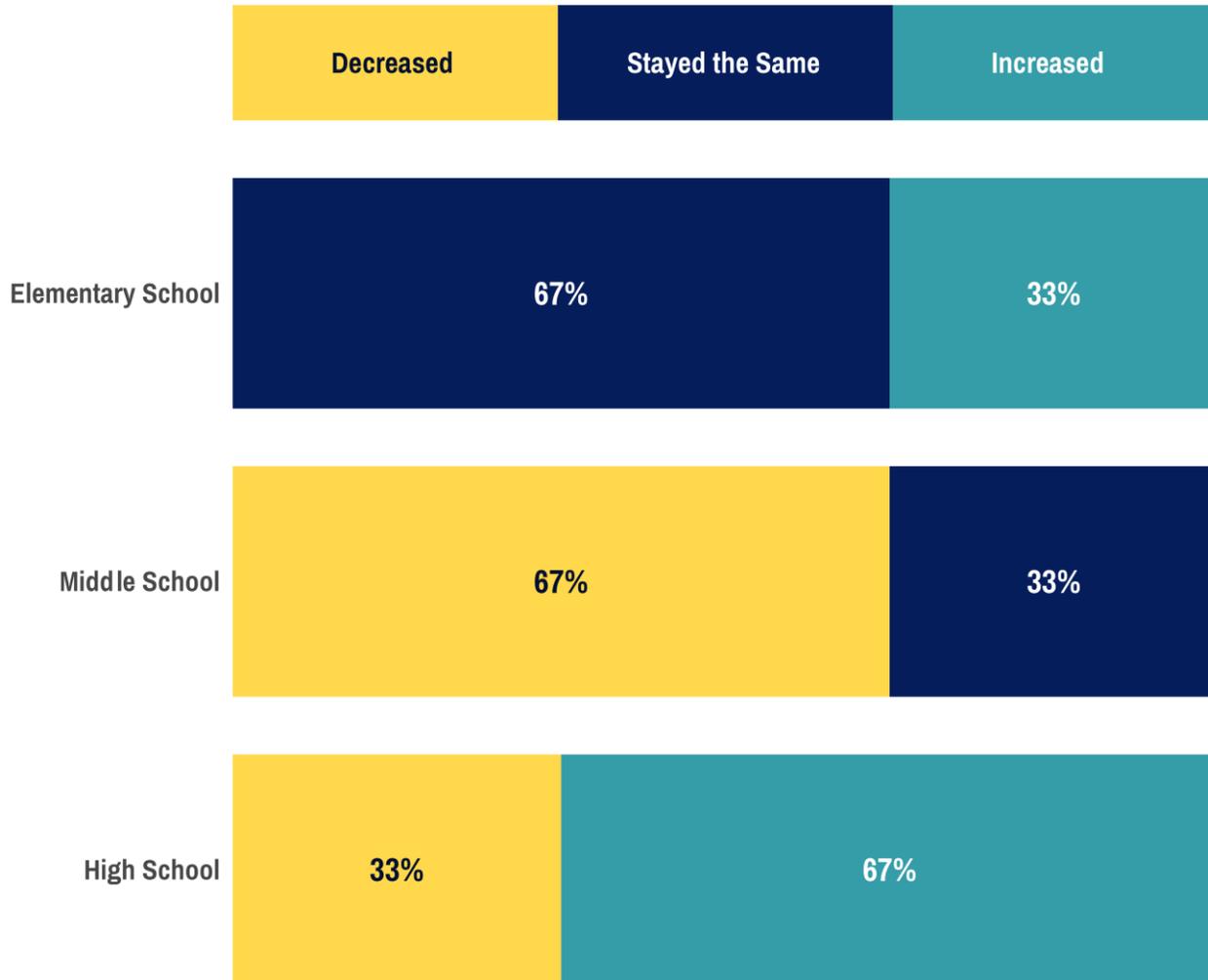
MWEES by Grade Band: Change Over Time



Comparing Change in Paired 2019 and 2022 Data

Comparing Changes in Preparedness within Paired 2019 and 2022 Data

Whether preparedness levels (prior page) increased, decreased, or stayed at the same levels, within individual LEAs in West Virginia for which year-to-year data were available. (n=3)



Exploring the subset of LEAs for which we have year-to-year data, we see rates of MWEEs typically stayed the same or increased at elementary grades, increased in high school, but MWEE levels in middle school grades decreased.

As the three responding LEAs in West Virginia had paired data from 2019, we could see the direction of changes in the levels of MWEEs available at each grade band. This confirms that there was stability and progress at elementary school, at high school, but a contraction at middle school levels.

High School: Courses Using MWEEs

Two LEAs that reported providing MWEEs in high school grade bands in any form. Both of those LEAs reported that they were included in required and elective science courses.

Both LEAs with MWEEs at high school reported they were present in graduation requirement biology and environmental science courses. Both LEAs reported that these MWEEs were incorporated at specific schools, and not system-wide across the district.

Both districts also reported MWEEs being included in AP science courses (by definition, electives). One district reported a MWEE that was included in an elective physics course.

Percentage of LEAs that Provide MWEEs within Each Required Subject (n=2)

Sample is just of LEAs that reported having MWEE(s) in at least one required high school course. Data relies on accurate self-reports that courses are requirements. Teal-colored bars indicate science-focused courses (the most common broad subject area); gray bars indicate non-science courses.



Percentage of LEAs that Provide MWEEs within Each Elective Subject (n=2)

Sample is just of LEAs that reported having MWEE(s) in at least one elective high school course. Data relies on accurate self-reports that courses are requirements. Teal-colored bars indicate science-focused courses (the most common broad subject area); gray bars indicate non-science courses.



RESULTS

Environmental Education Support Needs



Greatest Needs for EE Support

In West Virginia, funding for programming and supplies was rated as the greatest need overall, on average.

Notably, all of the items focused on funding and professional development (PD) across were rated as the most highly needed across LEAs.

In the next tier of need, there was funding for PD and support for interdisciplinary curriculum planning. Support from the central office / administration was rated the lowest need, as was the need for support with building partnerships with EE providers.

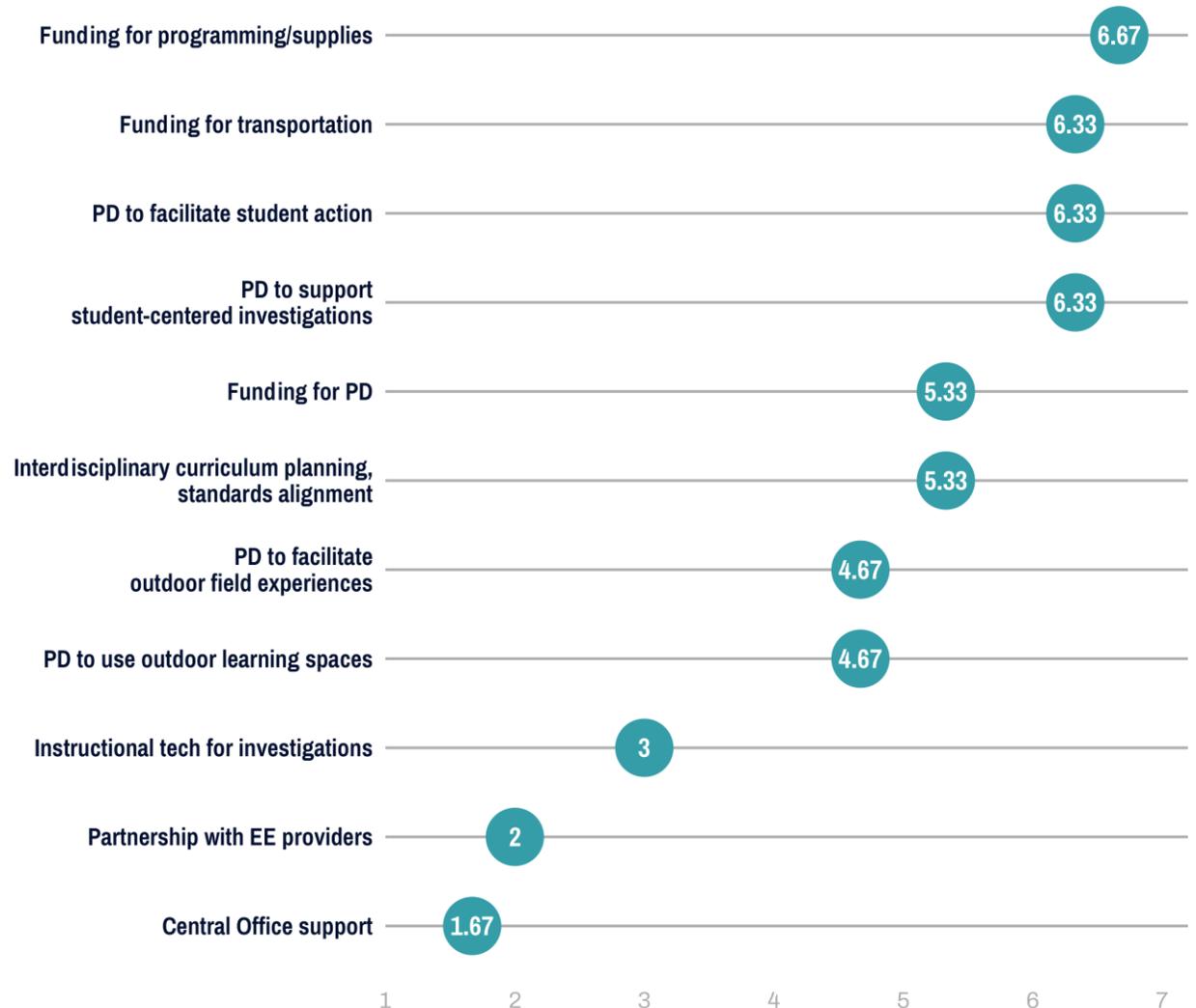
One respondent wrote in “other needs”, although this person did not rate a level of need for this item:

“Substitutes for teachers so they can participate in PD” (no rating given)

Note: the items asked were revised for the 2022 ELIT survey; as a result, there is no year-to-year comparison possible.

Average Ratings of Need for Support in Each Area Statewide (n=3)

Responding LEAs rated their level of need for support in each area from 1 to 7, with 7 being the greatest need.





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Chris Liu-Beers

Bob Burkhard

Taylor Cole

Liz Guertin

Ashley Hajimirsadeghi

Sara Cottle

Max Shein

Mary Oakey



J. Sickler
CONSULTING

For more information about this report, contact:

Jessica Sickler

Shannon Sprague

J. Sickler Consulting

NOAA, Chesapeake Bay Office

jessica@jsickler.net

Shannon.Sprague@noaa.gov