



High school career and technical education program alignment to the labor market in Maryland

Career and Technical Education, Education that Works

Division of Career and College Readiness

December 2021



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Suggested citation: Harris, J., Gagnon, D., Cao, S., Kelly, H., Schaefer, V., Booker-Dwyer, T., Belton, N., Friday, M., & Griffin, J. (2021). High school career and technical education program alignment to the labor market in Maryland. Region 4 Comprehensive Center, Washington, DC.

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Introduction

To ensure that students are prepared for the workforce, part of Maryland State Department of Education's (MSDE) vision for career and technical education (CTE) is for all students to have access and opportunities to engage in CTE programs of study that align to occupations that are high-wage, high-skill, and/or in-demand (MSDE, 2020).¹ MSDE's Division of Career and College Readiness has been reviewing the state's CTE program offerings to ensure their alignment with this vision. To support this effort, the Region 4 Comprehensive Center evaluated the alignment between Maryland's high school CTE program offerings and the labor market by examining the following research questions:

- In each workforce region of Maryland, do occupations that are high-wage, high-skill, and in-demand have an aligned CTE program of study offered?
- In each workforce region of Maryland, do CTE programs of study offered align with occupations that are high-wage, high-skill, and/or in-demand?
- For the unaligned CTE programs of study, do any of them align to high-wage, high-skill, and in-demand occupations in other workforce regions in Maryland?

Key terms as defined by this study

- **High-wage occupations.** Occupations that lead to careers that exceed the state's average annual wage (\$58,770).
- **High-skill occupations.** Occupations that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system, that do not require more than an associate's degree or 5 years or more of work experience.
- **In-demand occupations.** The 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate greater than or equal to 7 percent.
- **Unaligned CTE program.** A CTE program that is not aligned to an occupation that is high-wage, high-skill, or in-demand in the region.

This study uses a regional approach to answer the research questions. This regional approach is based on regions defined by the Maryland Department of Labor (Table 1); the MSDE has conducted similar analyses at the state level.² The analysis for the first research question identifies career opportunities that are high-wage, high-skill, and in-demand in each region of the state and determines if the region's high schools offer CTE programs aligned to these occupations.³ The purpose of this analysis is to identify areas where additional or modified CTE program offerings would be beneficial. The analysis for the second question identifies regional CTE programs that do not align with an occupation that is high-wage, high-skill, and/or in-demand (unaligned CTE programs). The third research question leads to a deeper examination of unaligned CTE programs to determine if they prepare graduates for occupations that are in-

¹ https://s3.amazonaws.com/PCRN/docs/stateplan/MD_2020_State_Plan.pdf

² This study uses slightly different definitions for in-demand and high-skill occupations compared to the definitions the MSDE uses because this study uses a region-level approach for the analysis and focuses on entry-level occupations. See <https://www.mdctedata.org/dashboards/labormarket.php> for MSDE's state-level study and definitions.

³ This study also includes CTE program offerings available to high school students at CTE centers in the region.

demand in other regions of the state. Research questions 2 and 3 can help the MSDE in their examination of their CTE program offerings as they work towards their vision for CTE-career alignment.

Table 1. Workforce regions in Maryland

Workforce region	School systems included in the region
Anne Arundel	Anne Arundel County
Baltimore City	Baltimore City
Baltimore County	Baltimore County
Frederick	Frederick County
Lower Shore	Somerset County, Wicomico County, and Worcester County
Mid-Maryland	Carroll County and Howard County
Montgomery	Montgomery County
Prince George's	Prince George's County
Southern Maryland	Calvert County, Charles County, and St. Mary's County
Susquehanna	Cecil County and Harford County
Upper Shore	Caroline County, Dorchester County, Kent Count, Queen Anne's County, and Talbot County
Western Maryland	Allegany County, Garrett County, and Washington County

Source: [Maryland Department of Labor](#)

Findings

There is a wide range in the number of occupations in each region that are high-wage, high-skill, and in-demand and in the percentage of these occupations that have an aligned CTE program. For example, to get a sense of the regional variation, Prince George's has over three times the number of high-wage, high-skill, and in-demand occupations compared to Upper Shore ([Table 2](#)). Across the state, 33 percent of the occupations that are high-wage, high-skill, and in-demand have an aligned CTE program in one or more high schools in the region. Example high-wage, high-skill, and in-demand occupations have an aligned CTE program include Computer Network Architects; Information Security Analysts; and Plumbers, Pipefitters, and Steamfitters. Susquehanna has the highest percentage of high-wage, high-skill, and in-demand occupations with an aligned CTE program in the region (50 percent); Frederick has the lowest percentage (20 percent).

Table 2. Percentage of regional high-wage, high-skill, and in-demand occupations with aligned high school CTE programs offered in the region

Workforce region*	Number of high schools in the region	Number of occupations in the region that are high-wage, high-skill, and in-demand	Percentage of high-wage, high-skill, and in-demand occupations that have an aligned CTE program offered in at least one high school
Anne Arundel	21	24	42%
Baltimore City	38	17	35%
Baltimore County	38	12	42%
Frederick	14	10	20%
Lower Shore	13	16	25%
Mid-Maryland	27	18	39%
Montgomery	32	27	26%
Prince George's	38	28	25%
Southern Maryland	21	17	41%
Susquehanna	18	14	50%
Upper Shore	11	9	22%
Western Maryland	17	17	35%
Statewide	288	209	33%

*Table 1 shows the school systems that comprise each workforce region.

Note: Shading highlights the smallest (purple) and largest (green) values in a column. Workforce regions are defined by the Maryland Department of Labor. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) and occupations that have a projected long-term growth rate that is greater than or equal to 7 percent.

Statewide, 77 percent of CTE programs are regionally aligned to at least one high-wage occupation, 71 percent are regionally aligned to at least one high-skill occupation, and 61 percent are regionally aligned to at least one in-demand occupation (Table 3). Seventeen percent of CTE programs are regionally aligned to at least one occupation that is high-wage, high-skill, and in-demand. Only four percent of programs are not aligned to an occupation that is high-wage, high-skill, or in-demand.

In Lower Shore, 26 percent of CTE programs align with at least one high-wage, high-skill, and in-demand occupation. The Frederick region has the lowest percentage of CTE programs that align with at least one high-wage, high-skill, and in-demand occupation (6 percent). No programs in Lower Shore are unaligned, while seven percent of the CTE programs in Susquehanna are unaligned. Example CTE programs in Susquehanna that are unaligned include Construction maintenance professions: welding (MD CIP 475300) and Fire emergency medical training/high school cadet (MD CIP 430250).

Table 3. Percent of regional CTE program offerings that are aligned to the region's labor market

Workforce region*	Number of CTE programs	Percent of CTE programs aligned with at least one high-wage occupation	Percent of CTE programs aligned with at least one high-skill occupation	Percent of CTE programs aligned with at least one in-demand occupation	Percent of CTE programs aligned with at least one high-wage, high-skill, and in-demand occupation	Percent of CTE programs aligned with any high-wage, high-skill, and/or in-demand occupations
Anne Arundel	42	71%	71%	69%	19%	98%
Baltimore City	39	77%	64%	67%	15%	95%
Baltimore County	42	76%	64%	48%	14%	98%
Frederick	32	78%	72%	59%	6%	100%
Lower Shore	35	80%	77%	66%	26%	97%
Mid-Maryland	47	79%	68%	57%	15%	98%
Montgomery	46	80%	67%	61%	17%	96%
Prince George's	34	74%	62%	59%	12%	94%
Southern Maryland	49	73%	78%	61%	20%	96%
Susquehanna	43	74%	74%	60%	21%	93%
Upper Shore	34	82%	71%	62%	12%	97%
Western Maryland	45	84%	78%	60%	22%	96%
Statewide	488	77%	71%	61%	17%	96%

*Table 1 shows the school systems that comprise each workforce region.

Note: Shading highlights the smallest (purple) and largest (green) values in a column. Workforce regions are defined by the Maryland Department of Labor. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent.

Of the state's 18 CTE programs that are unaligned in the region, 100 percent are aligned to an in-demand occupation in another region of the state ([Table 4](#)).

Table 4. Percentage of regionally unaligned CTE programs that are aligned to an in-demand occupation in a different region in the state

Workforce region*	Number of CTE programs	Number of CTE programs that are not aligned with a high-wage, high-skill, or in-demand occupation in the region (unaligned CTE programs)	Percent of CTE programs that are unaligned	Percent of unaligned CTE programs that are in-demand in another region in the state	Percent of CTE programs that are unaligned statewide
Anne Arundel	42	1	2%	100%	0%
Baltimore City	39	2	5%	100%	0%
Baltimore County	42	1	2%	100%	0%
Frederick	32	0	0%	N/A	0%
Lower Shore	35	1	3%	100%	0%
Mid-Maryland	47	1	2%	100%	0%
Montgomery	46	2	4%	100%	0%
Prince George's	34	2	6%	100%	0%
Southern Maryland	49	2	4%	100%	0%
Susquehanna	43	3	7%	100%	0%
Upper Shore	34	1	3%	100%	0%
Western Maryland	45	2	4%	100%	0%
Statewide	488	18	4%	100%	0%

*[Table 1](#) shows the school systems that comprise each workforce region.

Note: Shading highlights the smallest (green) and largest (purple) values in a column. Workforce regions are defined by the Maryland Department of Labor. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent.

Contextualizing the findings

While this analysis provides the MSDE with information to help determine which CTE programs to offer for alignment to the state's labor market, the findings must be viewed in context with the following considerations.

A student-level analysis is needed to determine whether the number of available programs meets the labor-market demand. For example, labor-market demand for an occupation could be satisfied by one high school offering an aligned CTE program if the number of students completing the program fills the available employment opportunities.

Labor-market demand may be satisfied by employees coming from other regions of the state or neighboring states.

The regional labor-market projection data uses a higher-level standard occupation code, which sometimes results from grouping occupations that fall into different job zones. The projections for this higher-level occupational grouping may be driven by occupations that are not entry level. Excluding occupations that are not entry-level was not always possible because of this higher-level grouping.

High school CTE programs may not be feasible for some high-wage, high-skill, and/or in-demand occupations, such as occupations that require employees to be 18 years old.

Unaligned CTE programs may be preparing students for occupations that are in-demand in neighboring states. In some regions, a sizable portion of the workforce goes outside the state for work ([Table 5](#)).

The data used to identify high-skill occupations came from a national source and may not accurately represent the skill level required for these occupations in Maryland. Similarly, the data used to identify high-wage occupations was at the state level and may not capture regional variation in wages.

Table 5. Where people in each workforce region go for work

Workforce region*	Maryland (%)	District of Columbia (%)	Virginia (%)	Pennsylvania (%)	New York (%)	Delaware (%)	New Jersey (%)	West Virginia (%)
Anne Arundel	89.9	5.5	2.9	0.5	0.3	0.0	0.0	0.0
Baltimore City	95.9	1.6	0.8	0.5	0.4	0.0	0.0	0.0
Baltimore County	95.9	1.2	0.9	0.8	0.3	0.0	0.0	0.0
Frederick	87.7	2.7	5.8	1.7	1.2	0.0	0.0	0.0
Lower Shore	87.1	0.0	3	0.7	0.0	7.5	0.4	0.0
Mid-Maryland	91.5	3.8	2.3	1.2	0.3	0.0	0.0	0.0
Montgomery	69.5	19.7	9.1	0.4	0.4	0.0	0.0	0.0
Prince George	57.1	30.8	11	0.2	0.2	0.0	0.0	0.0
Southern Maryland	77	12.6	9.2	0.3	0.0	0.0	0.1	0.0
Susquehanna	86.4	0.7	0.8	2.9	0.0	7.9	0.0	0.0
Upper Shore	89.3	1.5	1.2	1.1	0.0	5.7	0.0	0.0
Western Maryland	85.7	0.7	2.4	4.8	0.0	0.0	0.0	5.4

*[Table 1](#) shows the school systems that comprise each workforce region.

Note: Based on data from 2018. Cells are shaded in the Maryland column if they fall below 80 percent. Cells in the columns that follow are shaded if they are above 5 percent, with darker shading for values above 10 percent.

Source: <https://www.dlrr.state.md.us/lmi/wiocommuting/>

Research Questions

To ensure that students are prepared for the workforce, part of Maryland State Department of Education's (MSDE) vision for career and technical education (CTE) is for all students to have access and opportunities to engage in CTE programs of study that align to occupations that are high-wage, high-skill, and/or in-demand (MSDE, 2020a).⁴ MSDE's Division of Career and College Readiness has been reviewing the state's CTE program offerings to ensure their alignment with this vision. To support this effort, the Region 4 Comprehensive Center evaluated the alignment between Maryland's high school CTE program offerings and the labor market by examining the following research questions:

- In each workforce region of Maryland, do occupations that are high-wage, high-skill, and in-demand have an aligned CTE program of study offered?
- In each workforce region of Maryland, do CTE programs of study offered align with occupations that are high-wage, high-skill, and/or in-demand?
- For the unaligned CTE programs of study, do any of them align to high-wage, high-skill, and in-demand occupations in other workforce regions in Maryland?

Data

This study used publicly available data and administrative data provided by the MSDE ([Table 6](#)). Public data from the U.S. Bureau of Labor Statistics, Maryland Department of Labor, and O*NET Online provided average wages, long-term projections, and skill requirements for occupations. The MSDE provided a list of high schools in each workforce region, CTE program offerings at each high school, and a crosswalk that identifies the alignment between CTE programs and occupations, using classification of instructional program (CIP) and standard occupational classification (SOC) codes. This section further explains how this study processed data from these sources to identify high-wage, high-skill, and in-demand occupations in each workforce region in Maryland.

⁴ https://s3.amazonaws.com/PCRN/docs/stateplan/MD_2020_State_Plan.pdf

Table 6. Data sources

Data	Element Used	Data Source
Occupations		
A. May 2020 State Occupational Employment and Wage Estimates	Occupation average wage	U.S. Bureau of Labor Statistics
B. Workforce Region Occupational Projections – Maryland Occupation Projections – 2018–28	Occupation projected openings, occupation growth rate, occupation education value, and occupation work experience value	Maryland Department of Labor
C. Maryland Counties by Workforce Region	County, workforce region	Maryland Department of Labor
D. Occupation Job Zone Information by Standard Occupational Classification (SOC)	Occupation job zone	O*NET Online
School Programs		
E. 2020 Maryland Schools with Department of Labor Workforce Regions	High school IDs and names, workforce region	Provided by MSDE
F. 2021 List of Approved CTE Programs at Maryland High Schools	High school IDs and names, CTE program title, Maryland Classification of Instructional Programs (CIP) code	Provided by MSDE
CTE program to occupation crosswalk		
G. Maryland Programs 2020 CIP to SOC Crosswalk with National CIP Alignment	Maryland CIP code, national CIP code, SOC code	Provided by MSDE

Source: Authors' compilation.

Methods

This section describes how the study identified the occupations of interest (high-wage, high-skill, and in-demand occupations) and the analytic approach for each research question. The definitions used in this study slightly differ from the definitions used by the MSDE because this study used a region-level analysis and focused on entry-level occupations.⁵

Identifying occupations of interest

High-wage. This study adopts MSDE's definition of high-wage occupations as those with an annual wage exceeding the state's average annual wage, which was \$58,770 in 2018 (MSDE, 2020b). This study identified high-wage occupations at the state level. Detailed disaggregated data at the workforce regional level was not available when this study was conducted. *May 2020 State Occupational Employment and Wage Estimates* (Data A) from the U.S. Bureau of Labor Statistics provided average wage data for occupations in Maryland by SOC code and job title. All occupations with an average wage higher than \$58,770 were classified as high-wage occupations.

⁵ See <https://www.mdctedata.org/dashboards/labormarket.php> for MSDE's state-level CTE alignment study and definitions of high-wage, high-skill, and in-demand.

High-skill. This study used *Occupation Job Zone Information by SOC Code* (Data D) from the U.S. Department of Labor's O*Net system to identify the skill level for each occupation.⁶ Because this data came from a national source, it may not accurately represent the skill level required for these occupations in Maryland or capture differences across regions within the state. The job-zone data is available at a more detailed occupation level (e.g., SOC code 11-1011.00) compared to projection and wage data (e.g., SOC code 11-1011). To resolve this discrepancy, this study groups all occupations under the same higher-level SOC code. For example, SOC code 11-1011.00 and SOC code 11-1011.03 were grouped as SOC code 11-1011. In some cases, this resulted in grouping occupations that fell in different job zones. If any of the occupations in a higher-level SOC code aligned with the high-skill definition described, this higher-level occupation was treated as a high-skill occupation. While this study tried to exclude occupations that are not entry-level, this was not always possible because of this higher-level occupation grouping.

This study restricted high-skill occupations to those in job zones 3 or 4. These occupations typically require some vocational or postsecondary education. Occupations in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations in job zone 5 were excluded because these occupations typically require graduate school. This portion of the analysis used occupation education values and occupation work experience values from the occupation projection data (Data B).

This study also excluded occupations that require more than an associate's degree or five or more years of work experience because these occupations are typically not entry-level positions for which high school graduates are eligible. Occupations that fit this exclusion criteria were excluded regardless of their job zones.

In-demand. Within each workforce region in Maryland, this study defines in-demand occupations to be the 20 occupations with the highest projected openings in 2028 and occupations with a projected long-term growth rate greater than or equal to seven percent.

Maryland Occupation Projections – 2018–28 (Data B) provide 2018–28 occupation projection data by workforce region. According to a previous study conducted by the MSDE (MSDE, 2020b), occupations with a growth rate of at least seven percent over ten years are in-demand.⁷ Thus, this study identifies occupations with a projected growth rate from 2018 to 2028 that is greater than or equal to seven percent as in-demand occupations. This study also includes the 20 occupations with the highest 2028 projections as in-demand occupations.

Although *Workforce Region Occupational Projections – Maryland Occupation Projections – 2018-2028* (Data B) provides separate projections for Carroll County and Howard County, *Maryland Counties by Workforce Regions* (Data C) classifies Carroll County and Howard County under the Mid-Maryland Workforce Region; therefore, we summed the Carroll and Howard counties' occupation projections in *Workforce Region Occupational Projections* (Data B) as projections for Mid-Maryland Workforce Region.

⁶ All data was retrieved from the website on June 7, 2021. As the O*Net system is making a continuous effort to update their data, some results are subject to change.

⁷ <https://www.mdctedata.org/dashboards/labormarket.php>

Analytic approach

After identifying the occupations of interest, this study mapped these occupations to CTE programs using *Maryland Programs 2020 CIP to SOC Crosswalk with National CIP Alignment* (Data G), provided by the MSDE. CTE program alignment to occupations was determined using national CIP codes. CTE program-to-occupation alignment could be a many-to-many relationship, meaning that one CTE program can align with multiple occupations and one occupation can be served by multiple CTE programs. The 11 programs listed as having no matching occupations in *Maryland Programs 2020 CIP to SOC Crosswalk with National CIP Alignment* (Data G) were excluded from the analysis.⁸

A listing of CTE programs available in each high school in Maryland came from *2021 List of Approved CTE Programs at Maryland High Schools* (Data F). The workforce region information for each high school was obtained from *2020 Maryland Schools with Department of Labor Workforce Regions* (Data E). These data were also used to calculate the total number of high schools in each workforce region. All schools with type “H” were recognized as high schools. To determine if schools without school-type information were high schools, this study used National Center of Education Statistics (NCES) school profiles.

Programs of the same MD CIP code but different CIP titles were condensed into one for program-level analysis. The umbrella program title was used for the condensed program and high schools providing any programs with the MD CIP code were counted as providing this program. For example, under MD CIP code 100290, there are three different CIP titles: “Audiovisual Communications and Broadcast Technologies - Digital Communications,” “Audiovisual Communications and Broadcast Technologies - Game Development and Animation,” and “Audiovisual Communications and Broadcast Technologies - Multimedia and Graphics Design.” Each high school may offer any numbers of these programs. This study condensed these three programs into one with MD CIP code 100290 and MD CIP title “Audiovisual Communications and Broadcast Technologies.” If a high school provides any of the three programs, it is counted towards the number of high schools providing CTE program “Audiovisual Communications and Broadcast Technologies (100290).”

The following information describes the analytic approach for each research question.

Research Question 1: In each workforce region of Maryland, do occupations that are high-wage, high-skill, and in-demand have an aligned CTE program of study offered?

Within each workforce region, this study identified all occupations that were in-demand, high-wage, and high-skill and checked if there were any aligned CTE programs offered in any high schools in the region. When one occupation was aligned with multiple CTE programs, if any of these programs were offered at high schools in the region, the occupation was considered as having an aligned CTE program offering.

Research Question 2: In each workforce region of Maryland, do CTE programs of study offered align with occupations that are high-wage, high-skill, and/or in-demand?

For all the CTE programs offered in each region, this study first determined if their aligned occupations were high-wage, high-skill, and/or in-demand. The complete list of occupations used for evaluation in each region was the combination of occupations with projection data in

⁸ These CTE programs align to numerous occupations, but a list of occupations was not included in the crosswalk.

this region, all occupations with job zone information and all occupations with wage information. Most of the CTE programs were aligned with more than one occupation. In such situations, this study used the best cases when evaluating each criterion. For example, if any aligned occupations were in-demand, the CTE program was considered aligned with an in-demand occupation. This study also identified CTE programs that were aligned to an occupation that was high-wage, high-skill, and in-demand and CTE programs that were not aligned to a high-wage, high-skill, or in-demand occupation (unaligned program).

Research Question 3: For the unaligned CTE programs of study, do any of them align with high-wage, high-skill, and/or in-demand occupations in other workforce regions in Maryland?

After identifying unaligned regional CTE programs for research question 2, this study assessed whether the unaligned CTE programs were aligned to occupations of interest elsewhere in the state. As previously mentioned, high-skill and high-wage data were not available at the regional level, which limits this study's ability to identify the variation across workforce regions. Only the occupation projection data used for the in-demand evaluation is disaggregated at the regional level. Thus, for this research question, the focus was on looking at CTE programs that were unaligned within the region and then checking to see if they aligned to an in-demand occupation in another workforce region in Maryland.

Limitations

While this analysis provides the MSDE with information to help determine which CTE programs to offer in high school, the findings must be reviewed in context with the following considerations.

- A student-level analysis is needed to determine whether the number of available programs meets the labor-market demand. For example, if the number of students completing an aligned CTE program at one high school fills the related employment opportunities in the region, demand may be satisfied.
- Labor-market demand may be satisfied by employees coming from other regions of the state or neighboring states.
- The regional labor-market projection data uses a higher-level standard occupation code, which sometimes results in grouping occupations that fall into different job zones. The projections for this higher-level occupational grouping may be driven by occupations that are not entry level. Excluding occupations that are not entry-level was not always possible because of this higher-level grouping.
- High-school CTE programs may not be feasible for some high-wage, high-skill, and/or in-demand occupations, such as occupations that require employees to be 18 years old.
- Unaligned CTE programs may be preparing students for occupations that are in-demand in neighboring states. In some regions a sizable portion of the workforce goes outside the state for work.
- The data used to identify high-skill occupations came from a national source and may not accurately represent the skill level required for these occupations in Maryland. Similarly, the data used to identify high-wage occupations was at the state level and may not capture regional variation in wages.

Research question: In each region of Maryland, do occupations that are in-demand, high-wage, and high-skill have an aligned CTE program of study?

Table 1.A. Occupations that are in-demand in the Anne Arundel Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Architectural and Civil Drafters	17-3011	156	11%	66,810	3	Drafting and Design Technology (151390)	1	5%
Captains, Mates, and Pilots of Water Vessels	53-5021	59	13%	80,460	3	N/A	N/A	N/A
Computer Network Architects	15-1241	569	20%	129,560	3-4	IT Networking Academy (CISCO) - CCENT (110950)	1	5%
						IT Networking Academy (CISCO) - CCNA Security (110952)	1	5%
Computer Network Support Specialists	15-1231	796	8%	76,040	4	Computer and Information	3	14%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
						Sciences (110190)		
						IT Networking Academy (CISCO) - CCENT (110950)	1	5%
						IT Networking Academy (CISCO) - CCNA Security (110952)	1	5%
Computer Programmers	15-1251	399	10%	95,320	4	Computer and Information Sciences (110190)	3	14%
Computer Systems Analysts	15-1211	894	12%	100,770	4	IT Networking Academy (CISCO) - CCENT (110950)	1	5%
						IT Networking Academy (CISCO) - CCNA Security (110952)	1	5%
Crane and Tower Operators	53-7021	80	10%	67,480	3	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Diagnostic Medical Sonographers	29-2032	79	30%	79,380	3	N/A	N/A	N/A
Electrical Power-Line Installers and Repairers	49-9051	197	9%	66,610	3	Construction Trades Professions - Electrical (465300)	2	10%
Electricians	47-2111	1,415	12%	59,810	3	N/A	N/A	N/A
First-Line Supervisors of Mechanics, Installers, and Repairers	49-1011	1,345	11%	71,380	3	Construction Trades Professions - Electrical (465300)	2	10%
						Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	2	10%
First-Line Supervisors of Non-Retail Sales Workers	41-1012	1,067	15%	96,480	4	N/A	N/A	N/A
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021	1,293	15%	63,990	3	Construction Maintenance Professions - HVAC (475200)	2	10%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Information Security Analysts	15-1212	625	16%	111,310	4	IT Networking Academy (CISCO) - CCENT (110950)	1	5%
						IT Networking Academy (CISCO) - CCNA Security (110952)	1	5%
Insurance Sales Agents	41-3021	1,022	9%	63,570	4	N/A	N/A	N/A
Life, Physical, and Social Science Technicians, All Other	19-4099	65	16%	68,810	3-4	N/A	N/A	N/A
Network and Computer Systems Administrators	15-1244	806	15%	113,840	4	N/A	N/A	N/A
Plumbers, Pipefitters, and Steamfitters	47-2152	832	15%	60,530	3	Construction Trades Professions - Plumbing (465500)	2	10%
Private Detectives and Investigators	33-9021	1,167	20%	60,090	3	N/A	N/A	N/A
Property, Real Estate, and Community	11-9141	1,521	58%	77,410	4	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Association Managers								
Radiologic Technologists	29-2034	97	15%	70,530	3	N/A	N/A	N/A
Respiratory Therapists	29-1126	153	35%	68,980	3	N/A	N/A	N/A
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	41-4012	2,519	13%	76,750	4	N/A	N/A	N/A
Telecommunications Equipment Installers and Repairers, Except Line Installers	49-2022	276	27%	65,760	3	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department's system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlrr.state.md.us/lmi/iandoproj/wias.shtml>.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Anne Arundel Workforce Region, which covers Anne Arundel county. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Table 2.A. Occupations that are in-demand in the Baltimore City Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Computer Network Architects	15-1241	649	12%	129,560	3-4	IT Networking Academy (CISCO) - CCENT (110950)	7	18%
						P-TECH: Cybersecurity Assurance and Computer Information Systems (110980)	1	3%
Computer Programmers	15-1251	544	7%	95,320	4	Computer and Information Sciences (110190)	6	16%
						Computer Science (PLTW) (110255)	2	5%
Computer Systems Analysts	15-1211	852	8%	100,770	4	IT Networking Academy (CISCO) - CCENT (110950)	7	18%
						P-TECH: Cybersecurity Assurance and Computer Information Systems (110980)	1	3%
Diagnostic Medical Sonographers	29-2032	353	15%	79,380	3	N/A	N/A	N/A
Electrical Power-Line Installers and Repairers	49-9051	758	9%	66,610	3	Construction Trades Professions - Electrical (465300)	2	5%
Electricians	47-2111	979	10%	59,810	3	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Elevator Installers and Repairers	47-4021	218	11%	87,130	3	N/A	N/A	N/A
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021	583	8%	63,990	3	Construction Maintenance Professions - HVAC (475200)	1	3%
Information Security Analysts	15-1212	206	8%	111,310	4	Computer Science (PLTW) (110255)	2	5%
						IT Networking Academy (CISCO) - CCENT (110950)	7	18%
						P-TECH: Cybersecurity Assurance and Computer Information Systems (110980)	1	3%
Insurance Sales Agents	41-3021	627	10%	63,570	4	N/A	N/A	N/A
Magnetic Resonance Imaging Technologists	29-2035	149	12%	78,610	3	N/A	N/A	N/A
Network and Computer Systems Administrators	15-1244	675	10%	113,840	4	N/A	N/A	N/A
Occupational Health and Safety Specialists	19-5011	145	9%	83,080	4	N/A	N/A	N/A
Occupational Therapy Assistants	31-2011	174	38%	65,290	3	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Plumbers, Pipefitters, and Steamfitters	47-2152	401	12%	60,530	3	N/A	N/A	N/A
Private Detectives and Investigators	33-9021	73	9%	60,090	3	N/A	N/A	N/A
Respiratory Therapists	29-1126	446	19%	68,980	3	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department's system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlir.state.md.us/lmi/iandoproj/wias.shtml>.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Baltimore City Workforce Region, which covers Baltimore city. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Table 3.A. Occupations that are in-demand in the Baltimore County Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Computer Network Architects	15-1241	318	7%	129,560	3-4	IT Networking Academy (CISCO) - CCENT (110950)	5	13%
						IT Networking Academy (CISCO) - CCNA Routing and Switching (110951)	5	13%
						IT Networking Academy (CISCO) - CCNA Security (110952)	5	13%
Diagnostic Medical Sonographers	29-2032	237	10%	79,380	3	N/A	N/A	N/A
Electricians	47-2111	2,545	11%	59,810	3	N/A	N/A	N/A
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021	1,216	13%	63,990	3	Construction Maintenance Professions - HVAC (475200)	1	3%
Information Security Analysts	15-1212	381	8%	111,310	4	IT Networking Academy (CISCO) -	5	13%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
						CCENT (110950)		
						IT Networking Academy (CISCO) - CCNA Routing and Switching (110951)	5	13%
						IT Networking Academy (CISCO) - CCNA Security (110952)	5	13%
Insurance Sales Agents	41-3021	1,935	11%	63,570	4	N/A	N/A	N/A
Life, Physical, and Social Science Technicians, All Other	19-4099	135	8%	68,810	3-4	Criminal Justice, Law and Society (430190)	3	8%
Network and Computer Systems Administrators	15-1244	1,043	8%	113,840	4	N/A	N/A	N/A
Occupational Therapy Assistants	31-2011	126	19%	65,290	3	N/A	N/A	N/A
Plumbers, Pipefitters, and Steamfitters	47-2152	2,373	15%	60,530	3	Construction Trades Professions -	2	5%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
						Plumbing (465500)		
Respiratory Therapists	29-1126	177	16%	68,980	3	N/A	N/A	N/A
Stationary Engineers and Boiler Operators	51-8021	107	10%	67,550	3	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department’s system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlfr.state.md.us/lmi/iandoproj/wias.shtml>.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Baltimore County Workforce Region, which covers Baltimore county. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor’s O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate’s degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state’s average annual wage (\$58,770). Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Table 4.A. Occupations that are in-demand in the Frederick Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Computer Programmers	15-1251	133	9%	95,320	4	Computer and Information Sciences (110190)	10	71%
Crane and Tower Operators	53-7021	64	10%	67,480	3	N/A	N/A	N/A
Dental Hygienists	29-1292	86	25%	87,540	3	N/A	N/A	N/A
Electricians	47-2111	1,009	12%	59,810	3	N/A	N/A	N/A
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021	499	16%	63,990	3	Construction Maintenance Professions - HVAC (475200)	1	7%
Network and Computer Systems Administrators	15-1244	156	9%	113,840	4	N/A	N/A	N/A
Occupational Therapy Assistants	31-2011	195	52%	65,290	3	N/A	N/A	N/A
Plumbers, Pipefitters, and Steamfitters	47-2152	214	14%	60,530	3	N/A	N/A	N/A
Property, Real Estate, and Community Association Managers	11-9141	549	8%	77,410	4	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Radiologic Technologists	29-2034	92	11%	70,530	3	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department's system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlr.state.md.us/lmi/iandoproj/wias.shtml>.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Frederick Workforce Region, which covers Frederick county. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Table 5.A. Occupations that are in-demand in the Lower Shore Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Advertising Sales Agents	41-3011	75	9%	77,130	4	N/A	N/A	N/A
Computer Programmers	15-1251	172	15%	95,320	4	Computer and Information Sciences (110190)	3	23%
						Computer Science (PLTW) (110255)	1	8%
Electricians	47-2111	357	10%	59,810	3	N/A	N/A	N/A
Firefighters	33-2011	78	11%	64,490	3	N/A	N/A	N/A
First-Line Supervisors of Police and Detectives	33-1012	178	13%	102,980	3	Criminal Justice, Law and Society (430190)	2	15%
						Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	1	8%
						Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	2	15%
						Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	1	8%
Heating, Air Conditioning, and	49-9021	390	13%	63,990	3	Construction Maintenance Professions - HVAC (475200)	3	23%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Refrigeration Mechanics and Installers								
Information Security Analysts	15-1212	137	15%	111,310	4	Computer Science (PLTW) (110255)	1	8%
						IT Networking Academy (CISCO) - CCNA Security (110952)	1	8%
						IT Networking Academy (CISCO) - CCNA Cybersecurity Operations (110953)	1	8%
Insurance Sales Agents	41-3021	316	9%	63,570	4	N/A	N/A	N/A
Network and Computer Systems Administrators	15-1244	155	14%	113,840	4	N/A	N/A	N/A
Plumbers, Pipefitters, and Steamfitters	47-2152	374	13%	60,530	3	N/A	N/A	N/A
Police and Sheriff's Patrol Officers	33-3051	524	13%	73,700	3	N/A	N/A	N/A
Property, Real Estate, and Community	11-9141	351	7%	77,410	4	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Association Managers								
Radiologic Technologists	29-2034	213	15%	70,530	3	N/A	N/A	N/A
Respiratory Therapists	29-1126	66	20%	68,980	3	N/A	N/A	N/A
Special Education Teachers, Middle School	25-2057	54	8%	74,540	4	N/A	N/A	N/A
Special Education Teachers, Secondary School	25-2058	86	10%	82,280	4	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department's system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlir.state.md.us/lmi/iandoproj/wias.shtml>.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Lower Shore Workforce Region, which covers Somerset county, Wicomico county, and Worcester county. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Table 6.A. Occupations that are in-demand in the Mid-Maryland Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Computer Network Support Specialists	15-1231	383	9%	76,040	4	Computer and Information Sciences (110190)	20	74%
						Computer Science (PLTW) (110255)	1	4%
						IT Networking Academy (CISCO) - CCENT (110950)	2	7%
						IT Networking Academy (CISCO) - CCNA Security (110952)	1	4%
Computer Occupations, All Other	15-1299	177	11%	118,880	4	Computer Science (PLTW) (110255)	1	4%
Computer Programmers	15-1251	143	8%	95,320	4	Computer and Information Sciences (110190)	20	74%
						Computer Science (PLTW) (110255)	1	4%
Computer Systems Analysts	15-1211	1,026	11%	100,770	4	IT Networking Academy (CISCO) - CCENT (110950)	2	7%
						IT Networking Academy (CISCO) - CCNA Security (110952)	1	4%
Electricians	47-2111	1,868	12%	59,810	3	N/A	N/A	N/A
Firefighters	33-2011	462	10%	64,490	3	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
First-Line Supervisors of Fire Fighting and Prevention Workers	33-1021	105	12%	101,760	3	N/A	N/A	N/A
First-Line Supervisors of Police and Detectives	33-1012	316	13%	102,980	3	Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	1	4%
						Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	2	7%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021	743	15%	63,990	3	Construction Maintenance Professions - HVAC (475200)	2	7%
Information Security Analysts	15-1212	214	10%	111,310	4	Computer Science (PLTW) (110255)	1	4%
						IT Networking Academy (CISCO) - CCENT (110950)	2	7%
						IT Networking Academy (CISCO) - CCNA Security (110952)	1	4%
Insurance Sales Agents	41-3021	613	10%	63,570	4	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Life, Physical, and Social Science Technicians, All Other	19-4099	72	7%	68,810	3-4	N/A	N/A	N/A
Network and Computer Systems Administrators	15-1244	842	8%	113,840	4	N/A	N/A	N/A
Plumbers, Pipefitters, and Steamfitters	47-2152	903	15%	60,530	3	N/A	N/A	N/A
Police and Sheriff's Patrol Officers	33-3051	840	12%	73,700	3	N/A	N/A	N/A
Respiratory Therapists	29-1126	68	17%	68,980	3	N/A	N/A	N/A
Stationary Engineers and Boiler Operators	51-8021	217	7%	67,550	3	N/A	N/A	N/A
Telecommunications Equipment Installers and Repairers, Except Line Installers	49-2022	162	15%	65,760	3	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department's system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor https://www.dlr.state.md.us/lmi/iandoproj/wias_shtml.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Mid-Maryland Workforce Region, which covers Carroll county and Howard county. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Table 7.A. Occupations that are in-demand in the Montgomery Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Aircraft Mechanics and Service Technicians	49-3011	58	9%	76,480	3	N/A	N/A	N/A
Avionics Technicians	49-2091	460	10%	76,600	3	N/A	N/A	N/A
Computer Network Architects	15-1241	480	7%	129,560	3-4	IT Networking Academy (CISCO) - CCENT (110950)	6	19%
						IT Networking Academy (CISCO) - CCNA Routing and Switching (110951)	7	22%
						P-TECH: Pathways in Network and Information Technology (110970)	1	3%
Computer Programmers	15-1251	706	8%	95,320	4	Computer and Information Sciences (110190)	25	78%
Computer Systems Analysts	15-1211	1,529	12%	100,770	4	IT Networking Academy	6	19%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
						(CISCO) - CCENT (110950)		
						IT Networking Academy (CISCO) - CCNA Routing and Switching (110951)	7	22%
						P-TECH: Pathways in Network and Information Technology (110970)	1	3%
Dental Hygienists	29-1292	603	26%	87,540	3	N/A	N/A	N/A
Diagnostic Medical Sonographers	29-2032	276	23%	79,380	3	N/A	N/A	N/A
Electricians	47-2111	1,519	15%	59,810	3	N/A	N/A	N/A
Electro-Mechanical Technicians	17-3024	122	8%	65,040	3	N/A	N/A	N/A
Firefighters	33-2011	1,166	8%	64,490	3	N/A	N/A	N/A
First-Line Supervisors of Fire Fighting and Prevention Workers	33-1021	371	8%	101,760	3	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
First-Line Supervisors of Police and Detectives	33-1012	293	7%	102,980	3	Criminal Justice, Law and Society (430190)	4	13%
						Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	2	6%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021	1,205	13%	63,990	3	Construction Maintenance Professions - HVAC (475200)	2	6%
Information Security Analysts	15-1212	408	8%	111,310	4	IT Networking Academy (CISCO) - CCENT (110950)	6	19%
						IT Networking Academy (CISCO) - CCNA Routing and Switching (110951)	7	22%
						P-TECH: Pathways in Network and Information	1	3%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
						Technology (110970)		
Insurance Sales Agents	41-3021	1,701	9%	63,570	4	N/A	N/A	N/A
Magnetic Resonance Imaging Technologists	29-2035	72	13%	78,610	3	N/A	N/A	N/A
Mobile Heavy Equipment Mechanics, Except Engines	49-3042	221	8%	59,130	3	N/A	N/A	N/A
Network and Computer Systems Administrators	15-1244	930	9%	113,840	4	N/A	N/A	N/A
Occupational Therapy Assistants	31-2011	197	44%	65,290	3	N/A	N/A	N/A
Plumbers, Pipefitters, and Steamfitters	47-2152	2,153	15%	60,530	3	Construction Trades Professions - Plumbing (465500)	2	6%
Police and Sheriff's Patrol Officers	33-3051	1,994	8%	73,700	3	N/A	N/A	N/A
Private Detectives and Investigators	33-9021	234	9%	60,090	3	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Property, Real Estate, and Community Association Managers	11-9141	3,075	8%	77,410	4	N/A	N/A	N/A
Radiologic Technologists	29-2034	679	10%	70,530	3	N/A	N/A	N/A
Real Estate Brokers	41-9021	857	7%	84,420	4	N/A	N/A	N/A
Respiratory Therapists	29-1126	299	16%	68,980	3	N/A	N/A	N/A
Stationary Engineers and Boiler Operators	51-8021	562	10%	67,550	3	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department's system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlr.state.md.us/lmi/iandoproj/wias.shtml>.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Montgomery Workforce Region, which covers Montgomery county. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770).

Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Table 8.A. Occupations that are in-demand in the Prince George’s Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Aerospace Engineering and Operations Technicians	17-3021	72	13%	80,680	3	N/A	N/A	N/A
Aircraft Mechanics and Service Technicians	49-3011	622	8%	76,480	3	N/A	N/A	N/A
Cardiovascular Technologists and Technicians	29-2031	148	10%	67,260	3	N/A	N/A	N/A
Commercial Pilots	53-2012	110	13%	119,420	3	N/A	N/A	N/A
Computer Network Architects	15-1241	309	9%	129,560	3-4	IT Networking Academy (CISCO) - CCENT (110950)	4	11%
Computer Network Support Specialists	15-1231	402	7%	76,040	4	IT Networking Academy (CISCO) - CCENT (110950)	4	11%
Computer Programmers	15-1251	337	9%	95,320	4	N/A	N/A	N/A
Computer Systems Analysts	15-1211	494	8%	100,770	4	IT Networking Academy (CISCO) - CCENT (110950)	4	11%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Dental Hygienists	29-1292	66	25%	87,540	3	N/A	N/A	N/A
Diagnostic Medical Sonographers	29-2032	288	28%	79,380	3	N/A	N/A	N/A
Electrical and Electronics Engineering Technicians	17-3023	746	8%	76,250	3	N/A	N/A	N/A
Electrical and Electronics Installers and Repairers, Transportation Equipment	49-2093	252	10%	86,140	3	N/A	N/A	N/A
Electrical Power-Line Installers and Repairers	49-9051	396	10%	66,610	3	Construction Trades Professions - Electrical (465300)	4	11%
Electricians	47-2111	4,473	12%	59,810	3	N/A	N/A	N/A
Electro-Mechanical Technicians	17-3024	88	9%	65,040	3	N/A	N/A	N/A
Elevator Installers and Repairers	47-4021	777	10%	87,130	3	N/A	N/A	N/A
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021	1,538	13%	63,990	3	Construction Maintenance Professions - HVAC (475200)	2	5%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Industrial Engineering Technicians	17-3026	166	7%	75,970	3-4	N/A	N/A	N/A
Information Security Analysts	15-1212	591	9%	111,310	4	IT Networking Academy (CISCO) - CCENT (110950)	4	11%
Insurance Sales Agents	41-3021	511	10%	63,570	4	N/A	N/A	N/A
Magnetic Resonance Imaging Technologists	29-2035	119	23%	78,610	3	N/A	N/A	N/A
Mechanical Engineering Technicians	17-3027	106	8%	64,410	3	N/A	N/A	N/A
Plumbers, Pipefitters, and Steamfitters	47-2152	1,805	14%	60,530	3	Construction Trades Professions - Plumbing (465500)	1	3%
Property, Real Estate, and Community Association Managers	11-9141	1,381	9%	77,410	4	N/A	N/A	N/A
Radiation Therapists	29-1124	64	16%	89,840	3	N/A	N/A	N/A
Radiologic Technologists	29-2034	421	14%	70,530	3	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Respiratory Therapists	29-1126	126	20%	68,980	3	N/A	N/A	N/A
Stationary Engineers and Boiler Operators	51-8021	296	7%	67,550	3	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department's system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlir.state.md.us/lmi/iandoproj/wias.shtml>.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Prince George's Workforce Region, which covers Prince George's county. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Table 9.A. Occupations that are in-demand in the Southern Maryland Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Aircraft Mechanics and Service Technicians	49-3011	1,038	8%	76,480	3	Airframe Mechanics and Aircraft Maintenance Technology (470607)	1	5%
Computer Occupations, All Other	15-1299	605	8%	118,880	4	N/A	N/A	N/A
Electricians	47-2111	943	12%	59,810	3	Local Construction Trades - Electrical (460302)	1	5%
Firefighters	33-2011	99	10%	64,490	3	N/A	N/A	N/A
First-Line Supervisors of Mechanics, Installers, and Repairers	49-1011	735	8%	71,380	3	Construction Trades Professions - Electrical (465300)	2	10%
						Local Automotive Transportation Technologies (470601)	1	5%
						Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	4	19%
First-Line Supervisors of	33-1012	387	15%	102,980	3	Criminal Justice, Law and Society (430190)	6	29%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Police and Detectives								
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021	535	16%	63,990	3	Construction Maintenance Professions - HVAC (475200)	3	14%
Information Security Analysts	15-1212	116	8%	111,310	4	IT Networking Academy (CISCO) - CCENT (110950)	2	10%
						IT Networking Academy (CISCO) - CCNA Security (110952)	2	10%
Insurance Sales Agents	41-3021	173	9%	63,570	4	N/A	N/A	N/A
Mobile Heavy Equipment Mechanics, Except Engines	49-3042	79	11%	59,130	3	N/A	N/A	N/A
Network and Computer Systems Administrators	15-1244	86	8%	113,840	4	N/A	N/A	N/A
Plumbers, Pipefitters, and Steamfitters	47-2152	165	15%	60,530	3	Construction Trades Professions - Plumbing (465500)	1	5%
Police and Sheriff's Patrol Officers	33-3051	502	14%	73,700	3	N/A	N/A	N/A
Property, Real Estate, and Community	11-9141	220	11%	77,410	4	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Association Managers								
Radiologic Technologists	29-2034	188	9%	70,530	3	N/A	N/A	N/A
Respiratory Therapists	29-1126	67	22%	68,980	3	N/A	N/A	N/A
Special Education Teachers, Secondary School	25-2058	181	10%	82,280	4	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department's system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dllr.state.md.us/lmi/iandoproj/wias.shtml>.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Southern Maryland Workforce Region, which covers Calvert county, Charles county, and St. Mary's county. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Table 10.A. Occupations that are in-demand in the Susquehanna Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Computer Network Architects	15-1241	109	8%	129,560	3-4	P-TECH: Information Systems/Cybersecurity (110180)	1	6%
						IT Networking Academy (CISCO) - CCENT (110950)	2	11%
Computer Systems Analysts	15-1211	363	9%	100,770	4	P-TECH: Information Systems/Cybersecurity (110180)	1	6%
						IT Networking Academy (CISCO) - CCENT (110950)	2	11%
Dental Hygienists	29-1292	142	26%	87,540	3	N/A	N/A	N/A
Electrical and Electronics Engineering Technicians	17-3023	289	8%	76,250	3	N/A	N/A	N/A
Electricians	47-2111	1,191	11%	59,810	3	Local Construction Trades - Electrical (460302)	1	6%
First-Line Supervisors of Police and Detectives	33-1012	214	10%	102,980	3	Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	1	6%
						Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	2	11%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
						Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	1	6%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021	245	12%	63,990	3	Local Construction Maintenance - HVAC (470201)	1	6%
Information Security Analysts	15-1212	97	9%	111,310	4	Computer Science (PLTW) (110255)	4	22%
						P-TECH: Information Systems/Cybersecurity (110180)	1	6%
						IT Networking Academy (CISCO) - CCENT (110950)	2	11%
Insurance Sales Agents	41-3021	360	10%	63,570	4	N/A	N/A	N/A
Network and Computer Systems Administrators	15-1244	204	9%	113,840	4	N/A	N/A	N/A
Plumbers, Pipefitters, and Steamfitters	47-2152	679	15%	60,530	3	Construction Trades Professions - Plumbing (465500)	1	6%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Police and Sheriff's Patrol Officers	33-3051	667	10%	73,700	3	N/A	N/A	N/A
Private Detectives and Investigators	33-9021	107	11%	60,090	3	N/A	N/A	N/A
Radiologic Technologists	29-2034	233	13%	70,530	3	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department's system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dllr.state.md.us/lmi/iandoproj/wias.shtml>.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Susquehanna Workforce Region, which covers Cecil county and Harford county. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Table 11.A. Occupations that are in-demand in the Upper Shore Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Commercial Pilots	53-2012	63	11%	119,420	3	N/A	N/A	N/A
Electricians	47-2111	264	12%	59,810	3	N/A	N/A	N/A
First-Line Supervisors of Police and Detectives	33-1012	119	12%	102,980	3	Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	3	27%
						Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	1	9%
						Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	1	9%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021	319	12%	63,990	3	Local Construction Maintenance - HVAC (470201)	1	9%
Insurance Sales Agents	41-3021	205	8%	63,570	4	N/A	N/A	N/A
Mobile Heavy Equipment	49-3042	58	12%	59,130	3	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Mechanics, Except Engines								
Plumbers, Pipefitters, and Steamfitters	47-2152	135	15%	60,530	3	N/A	N/A	N/A
Police and Sheriff's Patrol Officers	33-3051	354	13%	73,700	3	N/A	N/A	N/A
Special Education Teachers, Secondary School	25-2058	83	9%	82,280	4	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department's system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlrr.state.md.us/lmi/iandoproj/wias.shtml>.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Upper Shore Workforce Region, which covers Caroline county, Dorchester county, Kent county, Queen Anne's county, and Talbot county. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Table 12.A. Occupations that are in-demand in the Western Maryland Workforce Region, have high wages, and require high skills and aligned career and technical education (CTE) programs offered in the region.

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Cardiovascular Technologists and Technicians	29-2031	112	10%	67,260	3	N/A	N/A	N/A
Computer Network Architects	15-1241	149	14%	129,560	3-4	IT Networking Academy (CISCO) - CCENT (110950)	2	12%
						P-TECH: Cybersecurity (110960)	1	6%
Dental Hygienists	29-1292	113	26%	87,540	3	N/A	N/A	N/A
Diagnostic Medical Sonographers	29-2032	114	24%	79,380	3	N/A	N/A	N/A
Electrical Power-Line Installers and Repairers	49-9051	99	11%	66,610	3	Construction Trades Professions - Electrical (465300)	2	12%
						Construction Trades Professions - Electrical (BARR Academy) (465300)	7	41%
Electricians	47-2111	501	9%	59,810	3	N/A	N/A	N/A
Firefighters	33-2011	328	11%	64,490	3	N/A	N/A	N/A
First-Line Supervisors of Police and Detectives	33-1012	130	10%	102,980	3	Criminal Justice, Law and Society (430190)	1	6%

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
						Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	3	18%
						Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	1	6%
						Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	2	12%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	49-9021	239	12%	63,990	3	Construction Maintenance Professions - HVAC (475200)	1	6%
						Construction Maintenance Professions - HVAC (BARR Academy) (475200)	7	41%
Information Security Analysts	15-1212	66	10%	111,310	4	Computer Science (PLTW) (110255)	1	6%
						IT Networking Academy (CISCO) - CCENT (110950)	2	12%
						P-TECH: Cybersecurity (110960)	1	6%
Insurance Sales Agents	41-3021	313	11%	63,570	4	N/A	N/A	N/A

Occupational Title	Standard Occupational Classification (SOC) Code ¹	Long-Term Projected Employment Openings in the Region (2028) ²	Long-Term Projected Growth Rate in the Region (2018–28) ²	Average Annual Wage ³	Job Zone ⁴	Title of Aligned CTE Program Offered in the Region (MD CIP Code)	Number of Public High Schools in the Region Offering the CTE Program	Percent of Public High Schools in the Region Offering the CTE Program
Occupational Therapy Assistants	31-2011	208	45%	65,290	3	N/A	N/A	N/A
Plumbers, Pipefitters, and Steamfitters	47-2152	392	15%	60,530	3	Construction Trades Professions - Plumbing (BARR Academy) (465500)	7	41%
Police and Sheriff's Patrol Officers	33-3051	350	10%	73,700	3	N/A	N/A	N/A
Property, Real Estate, and Community Association Managers	11-9141	369	8%	77,410	4	N/A	N/A	N/A
Radiologic Technologists	29-2034	234	14%	70,530	3	N/A	N/A	N/A
Respiratory Therapists	29-1126	123	22%	68,980	3	N/A	N/A	N/A

N/A means there are no aligned CTE programs for that occupation in the region.

¹SOC codes come from the U.S. Department of Labor and are part of the department's system for classifying workers into occupational categories.

²Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlr.state.md.us/lmi/iandoproj/wias.shtml>.

³Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Note: This table provides information for the Western Maryland Workforce Region, which covers Allegany county, Garrett county, and Washington county. In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2018–28) as well as occupations that have a projected long-term growth rate that is greater than or equal to 7 percent. High-skill occupations are those that are in job zones 3 or 4, as defined by the U.S. Department of Labor's O*Net system. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Occupations are only included in the table if they are in demand, high wage, and high skill. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

Research questions:

In each region of Maryland, do CTE programs of study align with occupations that are in-demand, high-skill, and/or high-wage?

Where applicable, do any of the unaligned CTE programs of study align with in-demand, high-skill, and/or high-wage occupations available in other regions in Maryland?

Table 1.B. Career and technical education (CTE) programs offered in the Anne Arundel Workforce Region and their alignment to occupations that are in demand (either in the Anne Arundel region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Anne Arundel Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Academy of Health Professions - Allied Health Intern (510056)	1	5%	6	Yes	Yes	Yes	Yes
Academy of Health Professions - Certified Clinical Medical Assistant (510053)	2	10%	2	Yes	Yes	No	Yes
Academy of Health Professions - Certified Nursing Assistant (510050)	2	10%	1	Yes	Yes	No	Yes
Academy of Health Professions - Pharmacy Technician (510051)	1	5%	2	Yes	Yes	No	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Anne Arundel Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Accounting and Finance (520354)	3	14%	7	Yes	Yes	Yes	No
Autobody/Collision Repair Technician (470635)	2	10%	4	No	No	Yes	Yes
Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	2	10%	2	Yes	Yes	Yes	Yes
Baking and Pastry Arts (ACF) (120555)	1	5%	2	Yes	Yes	No	No
Barbering (120402)	2	10%	1	No	No	No	Yes
Biomedical Science (PLTW) (511150)	2	10%	3	Yes	Yes	Yes	No
Business Administrative Services (520451)	6	29%	4	No	No	Yes	Yes
Business Management (520251)	9	43%	23	Yes	Yes	Yes	Yes
Careers in Cosmetology (120450)	2	10%	5	No	Yes	No	Yes
Computer and Information Sciences (110190)	3	14%	7	Yes	Yes	Yes	Yes
Construction Design and Management (151350)	1	5%	1	Yes	Yes	Yes	No
Construction Maintenance Professions - HVAC (475200)	2	10%	1	Yes	Yes	Yes	Yes
Construction Maintenance Professions - Welding (475300)	2	10%	2	Yes	Yes	No	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Anne Arundel Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Construction Trades Professions - Carpentry (465200)	2	10%	2	Yes	Yes	Yes	No
Construction Trades Professions - Electrical (465300)	2	10%	3	Yes	Yes	Yes	Yes
Construction Trades Professions - Masonry (465100)	1	5%	4	Yes	Yes	Yes	Yes
Construction Trades Professions - Plumbing (465500)	2	10%	3	Yes	Yes	Yes	Yes
Culinary Arts (ACF) (120550)	2	10%	5	Yes	Yes	No	No
Curriculum for Agricultural Science Education (CASE) (010050)	2	10%	5	No	Yes	Yes	Yes
Drafting and Design Technology (151390)	1	5%	4	Yes	No	Yes	Yes
Early Childhood Education Child Development Associate (CDA) Preschool (131209)	1	5%	6	No	Yes	Yes	Yes
Early Childhood Education/Child Care (200201)	13	62%	1	No	Yes	No	No
Food and Beverage Management (Prostart) (520955)	14	67%	2	Yes	Yes	Yes	Yes
Graphic Communications (PrintED) (100350)	2	10%	1	No	No	No	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Anne Arundel Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Health Professions/Allied Health Professions and Related Sciences (510000)	1	5%	1	Yes	Yes	Yes	No
Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	1	5%	3	No	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	1	5%	3	No	Yes	Yes	Yes
Interactive Media Production (100150)	3	14%	2	Yes	No	Yes	No
IT Networking Academy (CISCO) - CCENT (110950)	1	5%	6	Yes	Yes	Yes	Yes
IT Networking Academy (CISCO) - CCNA Security (110952)	1	5%	6	Yes	Yes	Yes	Yes
Local Construction Maintenance - Building/Property Maintenance (460401)	1	5%	4	Yes	Yes	Yes	Yes
Manufacturing Engineering Technology (MSSC) (150613)	1	5%	1	No	No	Yes	Yes
Marine Maintenance and Repair Technology (470616)	1	5%	1	No	No	No	Yes
Marketing (521451)	7	33%	7	Yes	Yes	Yes	Yes
Medium/Heavy Truck Technician - Diesel (NATEF) (470655)	1	5%	1	Yes	No	No	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Anne Arundel Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Natural Resources and Conservation (030101)	1	5%	4	Yes	Yes	Yes	Yes
Pre-Engineering (PTLW) (155000)	5	24%	3	Yes	Yes	Yes	No
Transportation, Logistics and Cargo Security (520209)	1	5%	1	No	Yes	Yes	No

Note: This table provides information for the Anne Arundel Workforce Region, which covers Anne Arundel county. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlfr.state.md.us/lmi/iandoproj/wias.shtml>.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Table 2.B. Career and technical education (CTE) programs offered in the Baltimore City Workforce Region and their alignment to occupations that are in demand (either in the Baltimore City region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Baltimore City Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Academy of Health Professions - Certified Nursing Assistant (510050)	7	18%	1	No	Yes	No	Yes
Academy of Health Professions - Dental Assistant (510052)	1	3%	2	Yes	Yes	No	Yes
Academy of Health Professions - Pharmacy Technician (510051)	2	5%	2	Yes	Yes	No	Yes
Accounting and Finance (520354)	5	13%	7	Yes	Yes	Yes	No
Biomedical Science (PLTW) (511150)	3	8%	3	Yes	Yes	Yes	No
Business Administrative Services (520451)	3	8%	4	No	No	Yes	Yes
Business Management (520251)	2	5%	23	Yes	Yes	Yes	Yes
Careers in Cosmetology (120450)	3	8%	5	Yes	Yes	No	Yes
Computer and Information Sciences (110190)	6	16%	7	Yes	Yes	Yes	Yes
Computer Science (PLTW) (110255)	2	5%	13	Yes	Yes	Yes	Yes
Construction Design and Management (151350)	6	16%	1	Yes	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Baltimore City Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Construction Maintenance Professions - HVAC (475200)	1	3%	1	Yes	Yes	Yes	Yes
Construction Trades Professions - Carpentry (465200)	4	11%	2	Yes	Yes	Yes	No
Construction Trades Professions - Electrical (465300)	2	5%	3	Yes	Yes	Yes	Yes
Construction Trades Professions - Masonry (465100)	2	5%	4	Yes	Yes	Yes	Yes
Criminal Justice, Law and Society (430190)	4	11%	4	No	Yes	Yes	Yes
Curriculum for Agricultural Science Education (CASE) (010050)	2	5%	5	Yes	Yes	Yes	Yes
Early Childhood Education/Child Care (200201)	4	11%	1	Yes	Yes	No	No
Fire Emergency Medical Training/ High School Cadet (MFRI) (430250)	1	3%	3	Yes	Yes	No	No
Food and Beverage Management (Prostart) (520955)	5	13%	2	Yes	Yes	Yes	Yes
Graphic Communications (PrintED) (100350)	3	8%	1	No	No	No	Yes
Health Professions/Allied Health Professions and Related Sciences (510000)	4	11%	1	Yes	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Baltimore City Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	1	3%	3	No	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	1	3%	3	No	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	1	3%	3	No	Yes	Yes	Yes
Hospitality and Tourism Management (520954)	1	3%	4	Yes	Yes	Yes	Yes
Interactive Media Production (100150)	6	16%	2	Yes	No	Yes	No
IT Networking Academy (CISCO) - CCENT (110950)	7	18%	6	Yes	Yes	Yes	Yes
Local Automotive Collision Repair (470602)	1	3%	4	No	No	Yes	Yes
Local Automotive Transportation Technologies (470601)	3	8%	2	No	Yes	Yes	Yes
Local Construction Maintenance- Welding (480508)	1	3%	2	No	Yes	No	No
Local Construction Trades Academy (460000)	1	3%	1	Yes	Yes	Yes	No
Manufacturing Engineering Technology (NIMS) -	1	3%	1	No	No	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Baltimore City Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Machining Operations (150650)							
Marine Science (490309)	1	3%	7	Yes	Yes	Yes	No
Nail Specialist and Manicurist (120410)	1	3%	1	No	Yes	No	No
P-TECH: Cybersecurity Assurance and Computer Information Systems (110980)	1	3%	6	Yes	Yes	Yes	Yes
Pre-Engineering (PTLW) (155000)	7	18%	3	No	Yes	Yes	No
Restaurant, Culinary, and Catering Management (120504)	2	5%	4	Yes	Yes	Yes	Yes
Teacher Academy of Maryland (130150)	1	3%	3	Yes	No	Yes	No

Note: This table provides information for the Baltimore City Workforce Region, which covers Baltimore city. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlfr.state.md.us/lmi/iandoproj/wias.shtml>.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Table 3.B. Career and technical education (CTE) programs offered in the Baltimore County Workforce Region and their alignment to occupations that are in demand (either in the Baltimore County region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Baltimore County Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Academy of Finance (NAF) (520850)	3	8%	13	Yes	Yes	Yes	No
Academy of Health Professions - Allied Health Dual Enrollment (510057)	1	3%	1	Yes	Yes	Yes	No
Academy of Health Professions - Allied Health Intern (510056)	1	3%	6	No	Yes	Yes	Yes
Academy of Health Professions - Certified Nursing Assistant (510050)	4	11%	1	No	Yes	No	Yes
Academy of Health Professions - Dental Assistant (510052)	1	3%	2	No	Yes	No	Yes
Academy of Health Professions - Pharmacy Technician (510051)	2	5%	2	No	Yes	No	Yes
Academy of Health Professions - Physical Rehabilitation (510054)	1	3%	1	Yes	Yes	No	Yes
Accounting and Finance (520354)	22	58%	7	Yes	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Baltimore County Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Aeronautics, Aviation, Aerospace Science and Technology - Aviation Technology and the Future (490101)	2	5%	1	No	Yes	Yes	No
Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	3	8%	2	No	Yes	Yes	Yes
Baking and Pastry Arts (ACF) (120555)	1	3%	2	Yes	Yes	No	No
Biomedical Science (PLTW) (511150)	8	21%	3	No	Yes	Yes	No
Business Administrative Services (520451)	6	16%	4	No	No	Yes	Yes
Business Management (520251)	22	58%	23	Yes	Yes	Yes	Yes
Careers in Cosmetology (120450)	4	11%	5	Yes	Yes	No	Yes
Computer and Information Sciences (110190)	24	63%	7	No	Yes	Yes	Yes
Construction Design and Management (151350)	3	8%	1	Yes	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Baltimore County Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Construction Maintenance Professions - HVAC (475200)	1	3%	1	Yes	Yes	Yes	Yes
Construction Trades Professions - Carpentry (465200)	5	13%	2	Yes	Yes	Yes	No
Construction Trades Professions - Electrical (465300)	1	3%	3	No	Yes	Yes	Yes
Construction Trades Professions - Plumbing (465500)	2	5%	3	Yes	Yes	Yes	Yes
Criminal Justice, Law and Society (430190)	3	8%	4	Yes	Yes	Yes	Yes
Culinary Arts (ACF) (120550)	4	11%	5	Yes	Yes	No	No
Curriculum for Agricultural Science Education (CASE) (010050)	1	3%	5	No	Yes	Yes	Yes
Early Childhood Education/Child Care (200201)	8	21%	1	No	Yes	No	No
Engineering Technology (150000)	1	3%	3	No	No	Yes	Yes
Food and Beverage Management (Prostart) (520955)	13	34%	2	Yes	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Baltimore County Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Graphic Communications (PrintED) (100350)	2	5%	1	No	No	No	Yes
Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	6	16%	3	No	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	1	3%	3	No	Yes	Yes	Yes
Interactive Media Production (100150)	9	24%	2	No	No	Yes	No
IT Networking Academy (CISCO) - CCENT (110950)	5	13%	6	Yes	Yes	Yes	Yes
IT Networking Academy (CISCO) - CCNA Routing and Switching (110951)	5	13%	6	Yes	Yes	Yes	Yes
IT Networking Academy (CISCO) - CCNA Security (110952)	5	13%	6	Yes	Yes	Yes	Yes
Local Construction Trades Academy - Building and Construction	3	8%	1	Yes	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Baltimore County Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Technology (460000)							
Marketing (521451)	22	58%	7	Yes	Yes	Yes	No
Medium/Heavy Truck Technician - Diesel (NATEF) (470655)	1	3%	1	No	No	No	Yes
Natural Resources and Conservation (030101)	1	3%	4	Yes	Yes	Yes	Yes
P-TECH: Design, Fabrication, and Advanced Manufacturing (150680)	1	3%	1	No	No	Yes	Yes
P-TECH: Engineering Technology (150060)	1	3%	3	No	No	Yes	Yes
Pre-Engineering (PTLW) (155000)	8	21%	3	No	Yes	Yes	No
Teacher Academy of Maryland (130150)	8	21%	3	No	No	Yes	No

Note: This table provides information for the Baltimore County Workforce Region, which covers Baltimore county. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlr.state.md.us/lmi/iandoproj/wias.shtml>.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically

require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&g=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Table 4.B. Career and technical education (CTE) programs offered in the Frederick Workforce Region and their alignment to occupations that are in demand (either in the Frederick region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Frederick Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Academy of Health Professions - Allied Health Dual Enrollment (510057)	1	7%	1	Yes	Yes	Yes	No
Academy of Health Professions - Certified Clinical Medical Assistant (510053)	1	7%	2	Yes	Yes	No	Yes
Academy of Health Professions - Certified Nursing Assistant (510050)	1	7%	1	Yes	Yes	No	Yes
Academy of Health Professions - Pharmacy Technician (510051)	1	7%	2	Yes	Yes	No	Yes
Academy of Health Professions - Physical Rehabilitation (510054)	1	7%	1	Yes	Yes	No	Yes
Accounting and Finance (520354)	10	71%	7	Yes	Yes	Yes	No
Agricultural Sciences and Operations (018000)	9	64%	3	No	No	Yes	Yes
Audiovisual Communications and Broadcast	1	7%	3	No	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Frederick Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Technologies (100290)							
Autobody/Collision Repair Technician (470635)	1	7%	4	No	No	Yes	Yes
Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	1	7%	2	No	Yes	Yes	Yes
Biomedical Science (PLTW) (511150)	2	14%	3	No	Yes	Yes	No
Business Administrative Services (520451)	10	71%	4	No	No	Yes	Yes
Business Management (520251)	10	71%	23	Yes	Yes	Yes	Yes
Computer and Information Sciences (110190)	10	71%	7	Yes	Yes	Yes	Yes
Construction Design and Management (151350)	10	71%	1	Yes	Yes	Yes	No
Construction Maintenance Professions - HVAC (475200)	1	7%	1	Yes	Yes	Yes	Yes
Construction Trades Professions - Carpentry (465200)	1	7%	2	Yes	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Frederick Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Construction Trades Professions - Electrical (465300)	1	7%	3	No	Yes	Yes	Yes
Drafting and Design Technology (151390)	1	7%	4	No	No	Yes	Yes
Early Childhood Education/Child Care (200201)	9	64%	1	Yes	Yes	No	No
Graphic Communications (PrintED) (100350)	1	7%	1	No	No	No	Yes
Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	1	7%	3	Yes	Yes	Yes	Yes
Horticultural Services - CPH (010650)	1	7%	5	Yes	Yes	Yes	Yes
Interactive Media Production (100150)	1	7%	2	No	No	Yes	Yes
IT Networking Academy (CISCO) - CCENT (110950)	1	7%	6	Yes	Yes	Yes	Yes
IT Networking Academy (CISCO) - CCNA Cybercesurity Operations (110953)	1	7%	6	Yes	Yes	Yes	Yes
IT Networking Academy (CISCO) -	1	7%	6	Yes	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Frederick Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
CCNA Security (110952)							
Local Automotive Transportation Technologies (470601)	1	7%	2	No	Yes	Yes	Yes
Local Construction Maintenance - Welding (480508)	1	7%	2	Yes	Yes	No	No
Pre-Engineering (PTLW) (155000)	2	14%	3	No	Yes	Yes	No
Restaurant, Culinary and Catering Management (120504)	1	7%	4	Yes	Yes	Yes	Yes
Teacher Academy of Maryland (130150)	1	7%	3	No	No	Yes	No

Note: This table provides information for the Frederick Workforce Region, which covers Frederick county. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlir.state.md.us/lmi/iandoproj/wias.shtml>.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&g=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Table 5.B. Career and technical education (CTE) programs offered in the Lower Shore Workforce Region and their alignment to occupations that are in demand (either in the Lower Shore region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Lower Shore Region	Aligned to an In-Demand Occupation in Any Region of the State	Aligned to a High-Wage Occupation	Aligned to a High-Skill Occupation
Academy of Health Professions - Certified Nursing Assistant (510050)	2	15%	1	Yes	Yes	No	Yes
Accounting and Finance (520354)	8	62%	7	Yes	Yes	Yes	Yes
Autobody/Collision Repair Technician (NATEF) (470635)	1	8%	4	No	No	Yes	Yes
Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	3	23%	2	No	Yes	Yes	Yes
Biomedical Science (PLTW) (511150)	2	15%	3	No	Yes	Yes	Yes
Business Administrative Services (520451)	9	69%	4	No	No	Yes	Yes
Business Management (520251)	4	31%	23	Yes	Yes	Yes	Yes
Careers in Cosmetology (120450)	2	15%	5	No	Yes	No	Yes
Computer and Information Sciences (110190)	3	23%	7	Yes	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Lower Shore Region	Aligned to an In-Demand Occupation in Any Region of the State	Aligned to a High-Wage Occupation	Aligned to a High-Skill Occupation
Computer Science (PLTW) (110255)	1	8%	13	Yes	Yes	Yes	Yes
Construction Design and Management (151350)	1	8%	1	Yes	Yes	Yes	No
Construction Maintenance Professions - HVAC (475200)	3	23%	1	Yes	Yes	Yes	Yes
Construction Maintenance Professions - Welding (475300)	2	15%	2	No	Yes	No	No
Construction Trades Professions - Carpentry (465200)	3	23%	2	Yes	Yes	Yes	No
Construction Trades Professions - Electrical (465300)	2	15%	3	No	Yes	Yes	Yes
Construction Trades Professions - Masonry (465100)	2	15%	4	Yes	Yes	Yes	Yes
Criminal Justice, Law and Society (430190)	2	15%	4	Yes	Yes	Yes	Yes
Culinary Arts (ACF) (120550)	3	23%	5	Yes	Yes	No	No
Curriculum for Agricultural Science Education (CASE) (010050)	1	8%	5	No	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Lower Shore Region	Aligned to an In-Demand Occupation in Any Region of the State	Aligned to a High-Wage Occupation	Aligned to a High-Skill Occupation
Early Childhood Education/Child Care (200201)	2	15%	1	Yes	Yes	No	No
Fire Emergency Medical Training/ High School Cadet (MFRI) (430250)	2	15%	3	Yes	Yes	No	No
Health Professions/Allied Health Professions and Related Sciences (510000)	2	15%	1	Yes	Yes	Yes	No
Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	2	15%	3	Yes	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	1	8%	3	Yes	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	1	8%	3	Yes	Yes	Yes	Yes
Horticultural Services - CPH (010650)	2	15%	5	Yes	Yes	Yes	Yes
Hospitality and Tourism Management (520954)	1	8%	4	Yes	Yes	Yes	Yes
Interactive Media Production (100150)	3	23%	2	No	No	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Lower Shore Region	Aligned to an In-Demand Occupation in Any Region of the State	Aligned to a High-Wage Occupation	Aligned to a High-Skill Occupation
IT Networking Academy (CISCO) - CCNA Cybersecurity Operations (110953)	1	8%	6	Yes	Yes	Yes	Yes
IT Networking Academy (CISCO) - CCNA Security (110952)	1	8%	6	Yes	Yes	Yes	Yes
Manufacturing Engineering Technology (MSSC) (150613)	1	8%	1	No	No	Yes	Yes
Marketing (521451)	6	46%	7	Yes	Yes	Yes	Yes
Medium/Heavy Truck Technician- Diesel (NATEF) (470655)	1	8%	1	No	No	No	Yes
Pre-Engineering (PTLW) (155000)	3	23%	3	Yes	Yes	Yes	Yes
Teacher Academy of Maryland (130150)	6	46%	3	No	No	Yes	No

Note: This table provides information for the Lower Shore Workforce Region, which covers Somerset county, Wicomico county, and Worcester county. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlrr.state.md.us/lmi/iandoproj/wias.shtml>.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&g=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Table 6.B. Career and technical education (CTE) programs offered in the Mid-Maryland Workforce Region and their alignment to occupations that are in demand (either in the Mid-Maryland region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Mid-Maryland Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Academy of Finance (NAF) (520850)	8	30%	13	Yes	Yes	Yes	No
Academy of Health Professions - Allied Health Intern (510056)	1	4%	6	Yes	Yes	Yes	Yes
Academy of Health Professions - Allied Health Other Specialty (510055)	1	4%	6	Yes	Yes	Yes	Yes
Academy of Health Professions - Certified Clinical Medical Assistant (510053)	1	4%	2	Yes	Yes	No	Yes
Academy of Health Professions - Certified Nursing Assistant (510050)	2	7%	1	Yes	Yes	No	Yes
Academy of Health Professions - Physical Rehabilitation (510054)	1	4%	1	No	Yes	No	Yes
Accounting and Finance (520354)	20	74%	7	Yes	Yes	Yes	No
Agricultural Sciences and Operations (018000)	7	26%	3	No	No	Yes	Yes
Audiovisual Communications and Broadcast Technologies (100290)	8	30%	3	No	Yes	Yes	Yes
Autobody/Collision Repair Technician (470635)	1	4%	4	No	No	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Mid-Maryland Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	2	7%	2	No	Yes	Yes	Yes
Baking and Pastry Arts (ACF) (120555)	1	4%	2	Yes	Yes	No	No
Biomedical Science (PLTW) (511150)	1	4%	3	No	Yes	Yes	No
Business Management (520251)	21	78%	23	Yes	Yes	Yes	Yes
Careers in Cosmetology (120450)	1	4%	5	No	Yes	No	Yes
Computer and Information Sciences (110190)	20	74%	7	Yes	Yes	Yes	Yes
Computer Science (PLTW) (110255)	1	4%	13	Yes	Yes	Yes	Yes
Construction Design and Management (151350)	1	4%	1	Yes	Yes	Yes	No
Construction Maintenance Professions - HVAC (475200)	2	7%	1	Yes	Yes	Yes	Yes
Construction Maintenance Professions - Welding (475300)	1	4%	2	No	Yes	No	No
Construction Trades Professions - Carpentry (465200)	1	4%	2	Yes	Yes	Yes	No
Construction Trades Professions - Electrical (465300)	1	4%	3	No	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Mid-Maryland Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Construction Trades Professions - Masonry (465100)	1	4%	4	Yes	Yes	Yes	Yes
Culinary Arts (ACF) (120550)	1	4%	5	Yes	Yes	No	No
Curriculum for Agricultural Science Education (CASE) (010050)	8	30%	5	Yes	Yes	Yes	Yes
Drafting and Design Technology (151390)	1	4%	4	No	No	Yes	Yes
Early Childhood Education/Child Care (200201)	19	70%	1	Yes	Yes	No	No
Food and Beverage Management (Prostart) (520955)	7	26%	2	Yes	Yes	Yes	Yes
Graphic Communications (PrintED) (100350)	10	37%	1	No	No	No	Yes
Health Professions/Allied Health Professions and Related Sciences (510000)	1	4%	1	Yes	Yes	Yes	No
Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	1	4%	3	Yes	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	2	7%	3	Yes	Yes	Yes	Yes
Interactive Media Production (100150)	1	4%	2	No	No	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Mid-Maryland Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
IT Networking Academy (CISCO) - CCENT (110950)	2	7%	6	Yes	Yes	Yes	Yes
IT Networking Academy (CISCO) - CCNA Security (110952)	1	4%	6	Yes	Yes	Yes	Yes
Local Automotive Transportation Technologies (470601)	1	4%	2	No	Yes	Yes	Yes
Local Construction Maintenance - Building/Property Maintenance (460401)	1	4%	4	Yes	Yes	Yes	Yes
Local Construction Trades - Carpentry (460201)	1	4%	2	Yes	Yes	Yes	No
Manufacturing Engineering Technology - Digital Fabrication and Manufacturing (150613)	9	33%	1	No	No	Yes	Yes
Manufacturing Engineering Technology (NIMS) - Machining Operations (150650)	1	4%	1	No	No	Yes	Yes
Marketing (521451)	20	74%	7	Yes	Yes	Yes	No
Medium/Heavy Truck Technician - Diesel (NATEF) (470655)	1	4%	1	No	No	No	Yes
Natural Resources and Conservation (030101)	7	26%	4	No	Yes	Yes	Yes
Pre-Engineering (PTLW) (155000)	14	52%	3	No	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Mid-Maryland Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Restaurant, Culinary, and Catering Management (120504)	13	48%	4	Yes	Yes	Yes	Yes
Teacher Academy of Maryland (130150)	20	74%	3	No	No	Yes	No
Textile and Fashion Design, Merchandising and Management (200301)	8	30%	2	No	No	Yes	No

Note: This table provides information for the Mid-Maryland Workforce Region, which covers Carroll county and Howard county. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlir.state.md.us/lmi/iandoproj/wias.shtml>.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Table 7.B. Career and technical education (CTE) programs offered in the Montgomery Workforce Region and their alignment to occupations that are in demand (either in the Montgomery region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Montgomery Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Academy of Finance (NAF) (520850)	5	16%	13	Yes	Yes	Yes	No
Academy of Health Professions - Allied Health Dual Enrollment (510057)	8	25%	1	Yes	Yes	Yes	No
Academy of Health Professions - Allied Health Intern (510056)	8	25%	6	Yes	Yes	Yes	Yes
Academy of Health Professions - Certified Clinical Medical Assistant (510053)	4	13%	2	Yes	Yes	No	Yes
Academy of Health Professions - Certified Nursing Assistant (510050)	5	16%	1	Yes	Yes	No	Yes
Academy of Health Professions - Pharmacy Technician (510051)	2	6%	2	Yes	Yes	No	Yes
Academy of Health Professions - Physical Rehabilitation (510054)	2	6%	1	Yes	Yes	No	Yes
Accounting and Finance (520354)	5	16%	7	Yes	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Montgomery Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Aeronautics, Aviation, Aerospace Science and Technology (490101)	1	3%	1	No	Yes	Yes	No
Audiovisual Communications and Broadcast Technologies (100290)	8	25%	3	No	Yes	Yes	Yes
Autobody/Collision Repair Technician (470635)	1	3%	4	No	No	Yes	Yes
Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	1	3%	2	No	Yes	Yes	Yes
Biomedical Science (PLTW) (511150)	3	9%	3	No	Yes	Yes	No
Biotechnology (261201)	1	3%	3	No	Yes	Yes	No
Business Administrative Services (520451)	2	6%	4	No	No	Yes	Yes
Business Management (520251)	7	22%	23	Yes	Yes	Yes	Yes
Careers in Cosmetology (120450)	2	6%	5	Yes	Yes	No	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Montgomery Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Computer and Information Sciences (110190)	25	78%	7	Yes	Yes	Yes	Yes
Construction Design and Management (151350)	1	3%	1	Yes	Yes	Yes	No
Construction Maintenance Professions - HVAC (475200)	2	6%	1	Yes	Yes	Yes	Yes
Construction Trades Professions - Carpentry (465200)	2	6%	2	Yes	Yes	Yes	No
Construction Trades Professions - Electrical (465300)	2	6%	3	No	Yes	Yes	Yes
Construction Trades Professions - Masonry (465100)	2	6%	4	Yes	Yes	Yes	Yes
Construction Trades Professions - Plumbing (465500)	2	6%	3	Yes	Yes	Yes	Yes
Criminal Justice, Law and Society (430190)	4	13%	4	Yes	Yes	Yes	Yes
Culinary Arts (ACF) (120550)	3	9%	5	Yes	Yes	No	No
Curriculum for Agricultural Science Education (CASE) (010050)	3	9%	5	No	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Montgomery Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Drafting and Design Technology (151390)	1	3%	4	No	No	Yes	Yes
Early Childhood Education Child Development Associate (CDA) Preschool (131209)	10	31%	6	Yes	Yes	Yes	Yes
Early Childhood Education/Child Care (200201)	20	63%	1	No	Yes	No	No
Fire Emergency Medical Training/ High School Cadet (MFRI) (430250)	25	78%	3	No	Yes	No	No
Food and Beverage Management (Prostart) (520955)	6	19%	2	Yes	Yes	Yes	Yes
Graphic Communications (PrintED) (100350)	1	3%	1	No	No	No	Yes
Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	2	6%	3	Yes	Yes	Yes	Yes
Horticultural Services - CPH (010650)	2	6%	5	Yes	Yes	Yes	Yes
Hospitality and Tourism	4	13%	4	Yes	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Montgomery Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Management (520954)							
Hospitality and Tourism Services Administration and Management (520980)	1	3%	4	Yes	Yes	Yes	Yes
Interactive Media Production (100150)	2	6%	2	No	No	Yes	No
IT Networking Academy (CISCO) - CCENT (110950)	6	19%	6	Yes	Yes	Yes	Yes
IT Networking Academy (CISCO) - CCNA Routing and Switching (110951)	7	22%	6	Yes	Yes	Yes	Yes
Local Automotive Collision Repair (470602)	1	3%	4	No	No	Yes	Yes
Local Automotive Transportation Technologies (470601)	3	9%	2	No	Yes	Yes	Yes
Marketing (521451)	4	13%	7	Yes	Yes	Yes	No
P-TECH: Pathways in Network and Information Technology (110970)	1	3%	6	Yes	Yes	Yes	Yes
Pre-Engineering (PTLW) (155000)	14	44%	3	No	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Montgomery Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Teacher Academy of Maryland (130150)	2	6%	3	No	No	Yes	No

Note: This table provides information for the Montgomery Workforce Region, which covers Montgomery county. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlir.state.md.us/lmi/iandoproj/wias.shtml>.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Table 8.B. Career and technical education (CTE) programs offered in the Prince George’s Workforce Region and their alignment to occupations that are in demand (either in the Prince George’s region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Prince George’s Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Academy of Finance (NAF) (520850)	6	16%	13	Yes	Yes	Yes	No
Academy of Health Professions - Certified Clinical Medical Assistant (510053)	3	8%	2	Yes	Yes	No	Yes
Academy of Health Professions - Certified Nursing Assistant (510050)	5	13%	1	Yes	Yes	No	Yes
Academy of Health Professions - Pharmacy Technician (510051)	1	3%	2	Yes	Yes	No	Yes
Accounting and Finance (520354)	1	3%	7	Yes	Yes	Yes	No
Autobody/Collision Repair Technician (470635)	1	3%	4	Yes	No	Yes	Yes
Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	1	3%	2	No	Yes	Yes	Yes
Barbering (120402)	2	5%	1	No	No	No	Yes
Biomedical Science (PLTW) (511150)	2	5%	3	No	Yes	Yes	No
Business Administrative Services (520451)	3	8%	4	No	No	Yes	Yes
Business Management (520251)	5	13%	23	Yes	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Prince George's Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Careers in Cosmetology (120450)	5	13%	5	Yes	Yes	No	Yes
Construction Design and Management (151350)	1	3%	1	Yes	Yes	Yes	No
Construction Maintenance Professions - HVAC (475200)	2	5%	1	Yes	Yes	Yes	Yes
Construction Trades Professions - Carpentry (465200)	4	11%	2	Yes	Yes	Yes	No
Construction Trades Professions - Electrical (465300)	4	11%	3	Yes	Yes	Yes	Yes
Construction Trades Professions - Masonry (465100)	2	5%	4	Yes	Yes	Yes	Yes
Construction Trades Professions - Plumbing (465500)	1	3%	3	Yes	Yes	Yes	Yes
Culinary Arts (ACF) (120550)	5	13%	5	Yes	Yes	No	No
Curriculum for Agricultural Science Education (CASE) (010050)	3	8%	5	No	Yes	Yes	Yes
Early Childhood Education/Child Care (200201)	11	29%	1	No	Yes	No	No
Environmental Studies/ Natural Resources (030150)	2	5%	3	Yes	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Prince George's Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Fire Emergency Medical Training/ High School Cadet (MFRI) (430250)	2	5%	3	No	Yes	No	No
Food and Beverage Management (Prostart) (520955)	11	29%	2	Yes	Yes	Yes	Yes
Graphic Communications (PrintED) (100350)	1	3%	1	No	No	No	Yes
Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	6	16%	3	No	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	4	11%	3	No	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	1	3%	3	No	Yes	Yes	Yes
Interactive Media Production (100150)	3	8%	2	No	No	Yes	No
IT Networking Academy (CISCO) - CCENT (110950)	4	11%	6	Yes	Yes	Yes	Yes
P-TECH: Health Information Management (510760)	1	3%	3	Yes	Yes	Yes	No
P-TECH: Hospitality Services Management (520960)	1	3%	4	Yes	Yes	Yes	Yes
Pre-Engineering (PTLW) (155000)	7	18%	3	No	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Prince George's Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Teacher Academy of Maryland (130150)	4	11%	3	No	No	Yes	No

Note: This table provides information for the Prince George's Workforce Region, which covers Prince George's county. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlrr.state.md.us/lmi/iandoproj/wias.shtml>.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&g=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Table 9.B. Career and technical education (CTE) programs offered in the Southern Maryland Workforce Region and their alignment to occupations that are in demand (either in the Southern Maryland region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Southern Maryland Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Academy of Finance (NAF) (520850)	8	38%	13	Yes	Yes	Yes	Yes
Academy of Health Professions - Certified Clinical Medical Assistant (510053)	2	10%	2	Yes	Yes	No	Yes
Academy of Health Professions - Certified Nursing Assistant (510050)	3	14%	1	Yes	Yes	No	Yes
Academy of Health Professions - Dental Assistant (510052)	1	5%	2	Yes	Yes	No	Yes
Academy of Health Professions - Pharmacy Technician (510051)	2	10%	2	Yes	Yes	No	Yes
Academy of Health Professions - Physical Rehabilitation (510054)	3	14%	1	Yes	Yes	No	Yes
Accounting and Finance (520354)	5	24%	7	Yes	Yes	Yes	No
Airframe Mechanics and Aircraft Maintenance	1	5%	2	Yes	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Southern Maryland Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Technology (470607)							
Audiovisual Communications and Broadcast Technologies (100290)	1	5%	3	No	Yes	Yes	Yes
Autobody/Collision Repair Technician (470635)	1	5%	4	No	No	Yes	Yes
Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	4	19%	2	Yes	Yes	Yes	Yes
Biomedical Science (PLTW) (511150)	10	48%	3	No	Yes	Yes	Yes
Business Administrative Services (520451)	8	38%	4	No	No	Yes	Yes
Business Management (520251)	15	71%	23	Yes	Yes	Yes	Yes
Careers in Cosmetology (120450)	2	10%	5	No	Yes	No	Yes
Computer and Information Sciences (110190)	16	76%	7	No	Yes	Yes	Yes
Construction Design and Management (151350)	1	5%	1	Yes	Yes	Yes	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Southern Maryland Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Construction Maintenance Professions - HVAC (475200)	3	14%	1	Yes	Yes	Yes	Yes
Construction Maintenance Professions - Welding (475300)	1	5%	2	No	Yes	No	No
Construction Trades Professions - Carpentry (465200)	1	5%	2	Yes	Yes	Yes	No
Construction Trades Professions - Electrical (465300)	2	10%	3	Yes	Yes	Yes	Yes
Construction Trades Professions - Plumbing (465500)	1	5%	3	Yes	Yes	Yes	Yes
Criminal Justice, Law and Society (430190)	6	29%	4	Yes	Yes	Yes	Yes
Culinary Arts (ACF) (120550)	2	10%	5	Yes	Yes	No	No
Curriculum for Agricultural Science Education (CASE) (010050)	3	14%	5	No	Yes	Yes	Yes
Drafting and Design Technology (151390)	2	10%	4	No	No	Yes	Yes
Early Childhood Education/Child Care (200201)	5	24%	1	Yes	Yes	No	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Southern Maryland Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Engineering Technology (150000)	1	5%	3	No	No	Yes	Yes
Fire Emergency Medical Training/ High School Cadet (MFRI) (430250)	12	57%	3	Yes	Yes	No	No
Food and Beverage Management (Prostart) (520955)	1	5%	2	Yes	Yes	Yes	Yes
Graphic Communications (PrintED) (100350)	3	14%	1	No	No	No	Yes
Hospitality and Tourism Services Administration and Management (520980)	1	5%	4	Yes	Yes	Yes	Yes
Interactive Media Production (100150)	6	29%	2	No	No	Yes	Yes
IT Networking Academy (CISCO) - CCENT (110950)	2	10%	6	Yes	Yes	Yes	Yes
IT Networking Academy (CISCO) - CCNA Security (110952)	2	10%	6	Yes	Yes	Yes	Yes
Local Automotive Collision Repair (470602)	1	5%	4	No	No	Yes	Yes
Local Automotive Transportation	1	5%	2	Yes	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Southern Maryland Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Technologies (470601)							
Local Construction Maintenance - Building/Property Maintenance (460401)	1	5%	4	Yes	Yes	Yes	Yes
Local Construction Maintenance - Welding (480508)	2	10%	2	No	Yes	No	No
Local Construction Trades - Carpentry (460201)	1	5%	2	Yes	Yes	Yes	No
Local Construction Trades - Electrical (460302)	1	5%	4	Yes	Yes	Yes	Yes
Local Construction Trades - Masonry (460101)	1	5%	4	Yes	Yes	Yes	Yes
Manufacturing Engineering Technology (MSSC) (150613)	1	5%	1	No	No	Yes	Yes
Manufacturing Engineering Technology (NIMS) - Machining Operations (150650)	1	5%	1	No	No	Yes	Yes
Medium/Heavy Truck Technician - Diesel (NATEF) (470655)	1	5%	1	No	No	No	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Southern Maryland Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Natural Resources and Conservation (030101)	1	5%	4	No	Yes	Yes	Yes
Pre-Engineering (PTLW) (155000)	9	43%	3	Yes	Yes	Yes	No
Restaurant, Culinary, and Catering Management (120504)	1	5%	4	Yes	Yes	Yes	Yes
Teacher Academy of Maryland (130150)	11	52%	3	No	No	Yes	No

Note: This table provides information for the Southern Maryland Workforce Region, which covers Calvert county, Charles county, and St. Mary's county. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dllr.state.md.us/lmi/iandoproj/wias.shtml>.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&g=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Table 10.B. Career and technical education (CTE) programs offered in the Susquehanna Workforce Region and their alignment to occupations that are in demand (either in the Susquehanna region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Susquehanna Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Academy of Finance (NAF) (520850)	1	6%	13	Yes	Yes	Yes	Yes
Academy of Health Professions - Certified Clinical Medical Assistant (510053)	1	6%	2	Yes	Yes	No	Yes
Academy of Health Professions - Certified Nursing Assistant (510050)	2	11%	1	Yes	Yes	No	Yes
Academy of Health Professions - Physical Rehabilitation (510054)	1	6%	1	No	Yes	No	Yes
Accounting and Finance (520354)	9	50%	7	Yes	Yes	Yes	No
Agricultural Sciences and Operations (018000)	2	11%	3	No	No	Yes	Yes
Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	2	11%	2	No	Yes	Yes	Yes
Biomedical Science (PLTW) (511150)	4	22%	3	No	Yes	Yes	Yes
Business Management (520251)	9	50%	23	Yes	Yes	Yes	Yes
Careers in Cosmetology (120450)	2	11%	5	Yes	Yes	No	Yes
Computer Science (PLTW) (110255)	4	22%	13	Yes	Yes	Yes	Yes
Construction Maintenance Professions - Industrial Maintenance (475100)	1	6%	4	Yes	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Susquehanna Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Construction Maintenance Professions - Welding (475300)	1	6%	2	No	Yes	No	No
Construction Trades Professions - Carpentry (465200)	1	6%	2	Yes	Yes	Yes	No
Construction Trades Professions - Electrical (465300)	1	6%	3	No	Yes	Yes	Yes
Construction Trades Professions - Plumbing (465500)	1	6%	3	Yes	Yes	Yes	Yes
Culinary Arts (ACF) (120550)	1	6%	5	Yes	Yes	No	No
Curriculum for Agricultural Science Education (CASE) (010050)	1	6%	5	No	Yes	Yes	Yes
Drafting and Design Technology (151390)	1	6%	4	No	No	Yes	Yes
Early Childhood Education/Child Care (200201)	9	50%	1	Yes	Yes	No	No
Fire Emergency Medical Training/ High School Cadet (MFRI) (430250)	10	56%	3	No	Yes	No	No
Food and Beverage Management (Prostart) (520955)	14	78%	2	Yes	Yes	Yes	Yes
Graphic Communications (PrintED) (100350)	1	6%	1	No	No	No	Yes
Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	2	11%	3	Yes	Yes	Yes	Yes
Homeland Security and Emergency Preparedness -	1	6%	3	Yes	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Susquehanna Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Homeland Security Sciences (430350)							
Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	1	6%	3	Yes	Yes	Yes	Yes
Horticultural Services - CPH (010650)	1	6%	5	Yes	Yes	Yes	Yes
Interactive Media Production (100150)	5	28%	2	No	No	Yes	No
IT Networking Academy (CISCO) - CCENT (110950)	2	11%	6	Yes	Yes	Yes	Yes
Local Automotive Transportation Technologies (470601)	1	6%	2	No	Yes	Yes	Yes
Local Construction Maintenance - HVAC (470201)	1	6%	1	Yes	Yes	Yes	Yes
Local Construction Maintenance - Welding (480508)	1	6%	2	No	Yes	No	No
Local Construction Trades - Carpentry (460201)	1	6%	2	Yes	Yes	Yes	No
Local Construction Trades - Electrical (460302)	1	6%	4	Yes	Yes	Yes	Yes
Local Construction Trades - Masonry (460101)	1	6%	4	Yes	Yes	Yes	Yes
Manufacturing Engineering Technology (MSSC) (150613)	1	6%	1	No	No	Yes	Yes
Marketing (521451)	14	78%	7	Yes	Yes	Yes	Yes
Medium/Heavy Truck Technician - Diesel (NATEF) (470655)	1	6%	1	No	No	No	Yes
Oracle Academy - Java Programming (110850)	2	11%	5	Yes	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Susquehanna Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
P-TECH: Information Systems/Cybersecurity (110180)	1	6%	6	Yes	Yes	Yes	Yes
Pre-Engineering (PTLW) (155000)	9	50%	3	No	Yes	Yes	No
Restaurant, Culinary, and Catering Management (120504)	1	6%	4	Yes	Yes	Yes	Yes
Teacher Academy of Maryland (130150)	4	22%	3	No	No	Yes	No

Note: This table provides information for the Susquehanna Workforce Region, which covers Cecil county and Harford county. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dllr.state.md.us/lmi/iandoproj/wias.shtml>.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&g=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Table 11.B. Career and technical education (CTE) programs offered in the Upper Shore Workforce Region and their alignment to occupations that are in demand (either in the Upper Shore region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Upper Shore Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Academy of Health Professions - Certified Nursing Assistant (510050)	5	45%	1	Yes	Yes	No	Yes
Accounting and Business/Finance Services (520390)	2	18%	6	Yes	Yes	Yes	No
Accounting and Finance (520354)	2	18%	7	Yes	Yes	Yes	Yes
Autobody/Collision Repair Technician (470635)	1	9%	4	No	No	Yes	Yes
Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	6	55%	2	No	Yes	Yes	Yes
Biomedical Science (PLTW) (511150)	8	73%	3	Yes	Yes	Yes	No
Business Administrative Services (520451)	1	9%	4	No	No	Yes	Yes
Business Management (520251)	1	9%	23	Yes	Yes	Yes	Yes
Careers in Cosmetology (120450)	5	45%	5	Yes	Yes	No	Yes
Computer and Information Sciences (110190)	6	55%	7	No	Yes	Yes	Yes
Computer Science (PLTW) (110255)	2	18%	13	Yes	Yes	Yes	Yes
Construction Design and Management (151350)	3	27%	1	Yes	Yes	Yes	No
Construction Maintenance Professions - Welding (475300)	2	18%	2	Yes	Yes	No	No

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Upper Shore Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Construction Trades Professions - Carpentry (465200)	5	45%	2	Yes	Yes	Yes	No
Construction Trades Professions - Electrical (465300)	1	9%	3	No	Yes	Yes	Yes
Construction Trades Professions - Masonry (465100)	2	18%	4	Yes	Yes	Yes	Yes
Culinary Arts (ACF) (120550)	3	27%	5	Yes	Yes	No	No
Curriculum for Agricultural Science Education (CASE) (010050)	6	55%	5	No	Yes	Yes	Yes
Drafting and Design Technology (151390)	1	9%	4	No	No	Yes	Yes
Fire Emergency Medical Training/ High School Cadet (MFRI) (430250)	9	82%	3	No	Yes	No	No
Food and Beverage Management (Prostart) (520955)	2	18%	2	Yes	Yes	Yes	Yes
Health Professions/Allied Health Professions and Related Sciences (510000)	1	9%	1	Yes	Yes	Yes	No
Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	1	9%	3	Yes	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	3	27%	3	Yes	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	1	9%	3	Yes	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Upper Shore Region ¹	Aligned to an In-Demand Occupation in Any Region of the State ²	Aligned to a High-Wage Occupation ³	Aligned to a High-Skill Occupation ⁴
Interactive Media Production (100150)	5	45%	2	No	No	Yes	Yes
IT Networking Academy (CISCO) - CCNA Cybersecurity Operations (110953)	1	9%	6	Yes	Yes	Yes	Yes
Local Construction Maintenance - HVAC (470201)	1	9%	1	Yes	Yes	Yes	Yes
Local Construction Trades Academy (460000)	1	9%	1	Yes	Yes	Yes	No
Manufacturing Engineering Technology (MSSC) (150613)	1	9%	1	No	No	Yes	Yes
Marketing (521451)	3	27%	7	Yes	Yes	Yes	Yes
Medium/Heavy Truck Technician - Diesel (NATEF) (470655)	1	9%	1	No	No	No	Yes
Pre-Engineering (PTLW) (155000)	9	82%	3	No	Yes	Yes	Yes
Teacher Academy of Maryland (130150)	8	73%	3	No	No	Yes	No

Note: This table provides information for the Upper Shore Workforce Region, which covers Caroline county, Dorchester county, Kent county, Queen Anne's county, and Talbot county. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor https://www.dlrr.state.md.us/lmi/iandoproj/wias_shtml.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&q=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

Table 12.B. Career and technical education (CTE) programs offered in the Western Maryland Workforce Region and their alignment to occupations that are in demand (either in the Western Maryland region or another region in the state), have high wages, or require high skills.

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Western Maryland Region	Aligned to an In-Demand Occupation in Any Region of the State	Aligned to a High-Wage Occupation	Aligned to a High-Skill Occupation
Academy of Finance (NAF) (520850)	1	6%	13	Yes	Yes	Yes	Yes
Academy of Health Professions - Certified Nursing Assistant (510050)	2	12%	1	Yes	Yes	No	Yes
Academy of Health Professions - Allied Health Dual Enrollment (510057)	2	12%	1	Yes	Yes	Yes	No
Accounting and Finance (520354)	8	47%	7	Yes	Yes	Yes	Yes
Agricultural Sciences and Operations (018000)	6	35%	3	No	No	Yes	Yes
Audiovisual Communications and Broadcast Technologies (100290)	3	18%	3	No	Yes	Yes	Yes
Autobody/Collision Repair Technician (NATEF) (470635)	2	12%	4	No	No	Yes	Yes
Automotive Technology Maintenance and Light Repair- Plus (NATEF) (470645)	2	12%	2	No	Yes	Yes	Yes
Biomedical Science (PLTW) (511150)	6	35%	3	No	Yes	Yes	Yes
Business Administrative Services (520451)	8	47%	4	No	No	Yes	Yes
Business Management (520251)	8	47%	23	Yes	Yes	Yes	Yes
Careers in Cosmetology (120450)	2	12%	5	Yes	Yes	No	Yes
Computer and Information Sciences (110190)	10	59%	7	No	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Western Maryland Region	Aligned to an In-Demand Occupation in Any Region of the State	Aligned to a High-Wage Occupation	Aligned to a High-Skill Occupation
Computer Science (PLTW) (110255)	1	6%	13	Yes	Yes	Yes	Yes
Construction Design and Management (151350)	2	12%	1	Yes	Yes	Yes	No
Construction Maintenance Professions - HVAC (475200)	8	47%	1	Yes	Yes	Yes	Yes
Construction Maintenance Professions - Welding (475300)	1	6%	2	No	Yes	No	No
Construction Trades Professions - Carpentry (465200)	8	47%	2	Yes	Yes	Yes	No
Construction Trades Professions - Electrical (465300)	9	53%	3	Yes	Yes	Yes	Yes
Construction Trades Professions - Plumbing (465500)	7	41%	3	Yes	Yes	Yes	Yes
Criminal Justice, Law and Society (430190)	1	6%	4	Yes	Yes	Yes	Yes
Culinary Arts (ACF) (120550)	2	12%	5	Yes	Yes	No	No
Curriculum for Agricultural Science Education (CASE) (010050)	4	24%	5	No	Yes	Yes	Yes
Early Childhood Education/Child Care (200201)	6	35%	1	Yes	Yes	No	No
Fire Emergency Medical Training/ High School Cadet (MFRI) (430250)	1	6%	3	No	Yes	No	No
Food and Beverage Management (Prostart) (520955)	2	12%	2	Yes	Yes	Yes	Yes
Graphic Communications (PrintED) (100350)	1	6%	1	No	No	No	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Western Maryland Region	Aligned to an In-Demand Occupation in Any Region of the State	Aligned to a High-Wage Occupation	Aligned to a High-Skill Occupation
Health Professions/Allied Health Professions and Related Sciences (510000)	2	12%	1	Yes	Yes	Yes	No
Homeland Security and Emergency Preparedness - Criminal Justice/Law Enforcement (430351)	1	6%	3	Yes	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Homeland Security Sciences (430350)	3	18%	3	Yes	Yes	Yes	Yes
Homeland Security and Emergency Preparedness - Information/Communications Technology (430352)	2	12%	3	Yes	Yes	Yes	Yes
Hospitality and Tourism Management (520954)	1	6%	4	Yes	Yes	Yes	Yes
Interactive Media Production (100150)	5	29%	2	No	No	Yes	Yes
IT Networking Academy (CISCO) - CCENT (110950)	2	12%	6	Yes	Yes	Yes	Yes
Local Automotive Transportation Technologies (470601)	2	12%	2	No	Yes	Yes	Yes
Local Construction Trades-Carpentry (460201)	3	18%	2	Yes	Yes	Yes	No
Manufacturing Engineering Technology (MSSC) (150613)	2	12%	1	No	No	Yes	Yes
Manufacturing Engineering Technology (NIMS) - Machining Operations (150650)	2	12%	1	No	No	Yes	Yes
Marketing (521451)	6	35%	7	Yes	Yes	Yes	Yes
Natural Resources and Conservation (030101)	2	12%	4	No	Yes	Yes	Yes

Title of CTE program (MD CIP Code)	Number of Public High Schools Offering This Program in the Region	Percent of Public High Schools Offering This Program in the Region	Number of Aligned Occupations	Aligned to an In-Demand Occupation in the Western Maryland Region	Aligned to an In-Demand Occupation in Any Region of the State	Aligned to a High-Wage Occupation	Aligned to a High-Skill Occupation
Oracle Academy - Java Programming (110850)	1	6%	5	Yes	Yes	Yes	Yes
P-TECH: Cybersecurity (110960)	1	6%	6	Yes	Yes	Yes	Yes
Pre-Engineering (PTLW) (155000)	5	29%	3	No	Yes	Yes	Yes
Restaurant, Culinary, and Catering Management (120504)	1	6%	4	Yes	Yes	Yes	Yes
Teacher Academy of Maryland (130150)	2	12%	3	No	No	Yes	No

Note: This table provides information for the Western Maryland Workforce Region, which covers Allegany county, Garrett county, and Washington county. Identification of the alignment between occupations and CTE programs and the availability of CTE programs at each high school came from the Maryland State Department of Education.

¹In-demand occupations are the 20 occupations in the region with the highest long-term projected employment openings (2028) as well as occupations that have a projected long-term growth rate (2018-28) that is greater than or equal to 7 percent. Regional projected employment openings and the projected growth rate were obtained from the Maryland Department of Labor <https://www.dlir.state.md.us/lmi/iandoproj/wias.shtml>.

²In-demand occupations were also identified in other regions of the state.

³High-wage occupations are those that lead to careers that exceed the state's average annual wage (\$58,770). Wage data came from the U.S. Bureau of Labor Statistics https://www.bls.gov/oes/current/oes_md.htm#00-0000. Wage data were only available at the state level. This analysis utilized data from 2020.

⁴High-skill occupations are those that are in job zones 3 or 4. These occupations typically require vocational or postsecondary education. Occupations that are only in job zones 1 or 2 were excluded because these occupations do not require education beyond a high school diploma. Occupations that are only in job zone 5 were excluded because these typically require graduate school. Occupations that require more than an Associate's degree or 5 years or more of work experience were excluded because they are typically not entry-level positions. Job zones are defined and assigned to occupations by the U.S. Department of Labor and can be obtained from O*Net <https://www.onetonline.org/find/zone?z=0&g=Go>. Job zones are nationally defined and may not reflect the actual occupational requirements for occupations in the region.

The content of this report was developed under a grant from the Department of Education through the Office of Program and Grantee Support Services (PGSS) within the Office of Elementary and Secondary Education (OESE) by the Region 4 Comprehensive Center at Policy Studies Associates under Award #S S283B190047. This contains resources that are provided for the reader's convenience. These materials may contain the views and recommendations of various subject matter experts as well as hypertext links, contact addresses, and websites to information created and maintained by other public and private organizations. The U.S. Department of Education does not control or guarantee the accuracy, relevance, timeliness, or completeness of any outside information included in these materials. The views expressed herein do not necessarily represent the positions or policies of the U.S. Department of Education. No official endorsement by the U.S. Department of Education of any product, commodity, service, enterprise, curriculum, or program of instruction mentioned in this document is intended or should be inferred.