



Environmental Studies Program

Year-One Implementation Evaluation

October 2021

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Table of Contents

| | |
|--|-----------|
| Introduction | 6 |
| Background | 6 |
| Purpose of Program Evaluation | 6 |
| Program Overview | 6 |
| Program Goals and Objectives | 7 |
| Evaluation Design and Methodology | 7 |
| Evaluation Design and Data Collection | 7 |
| VBCPS Data Warehouse | 8 |
| Surveys | 8 |
| Evaluation Questions | 8 |
| Evaluation Results and Discussion | 9 |
| Implementation Timeline | 9 |
| Student Application and Selection Process | 10 |
| Student Characteristics | 11 |
| Perceptions of Application and Selection Process | 12 |
| Staff Selection Process | 13 |
| Professional Learning Opportunities | 14 |
| Program of Studies and Courses Offered | 15 |
| Course Enrollment and Performance | 16 |
| Progress Toward Meeting the Program Goal and Objectives | 18 |
| Broaden Understanding of Sustainability | 18 |
| Utilize the Natural Community | 18 |
| Implement Service-Learning Projects | 19 |
| Integrate Interdisciplinary Instruction | 19 |
| Incorporate Challenge-Based, Collaborative, and Design-Thinking Learning | 20 |
| Earn the Seal of Excellence in Science and the Environment | 20 |
| Establish Collaborative Agreements | 21 |
| Stakeholder Perceptions | 21 |
| Satisfaction | 21 |
| Meeting Students' Needs | 23 |
| Continued Participation | 24 |
| What is Gained From Being Enrolled | 24 |
| Suggested Improvements | 25 |
| Impact of the Pandemic | 25 |
| Additional Cost | 25 |
| Summary | 28 |
| Recommendations and Rationale | 29 |

| | |
|----------------------------------|-----------|
| Appendix | 31 |
| Appendix A: Proposed Budget..... | 31 |
| End Notes | 32 |

Tables

| | |
|---|----|
| Table 1: Number of Environmental Studies Program Survey Respondents by Group and Response Rates | 8 |
| Table 2: Timeline of the Environmental Studies Program With Status..... | 9 |
| Table 3: Demographic Characteristics of Environmental Studies Program Students and Grade 11 Students Across the Division on September 30, 2020 | 11 |
| Table 4: Courses of Environmental Studies Program..... | 15 |
| Table 5: Perceptions of What is Gained From Enrollment in the Environment Studies Program | 24 |
| Table 6: One-Time Start-Up Costs for the Environmental Studies Program..... | 27 |
| Table 7: Annual Operating Costs for the Environmental Studies Year-One Implementation | 28 |

Figures

| | |
|---|----|
| Figure 1: Home High Schools of Environmental Studies Program Grade 11 Students | 12 |
| Figure 2: Student and Parent Perceptions of the Environmental Studies Program Application Process | 13 |
| Figure 3: Grade Distribution Percentages of Students in Program Specific Courses | 16 |
| Figure 4: Grade Distribution Percentages of Students in AP Environmental Science..... | 17 |
| Figure 5: Distribution of Student AP Exam Scores | 17 |
| Figure 6: Perceptions That the Environmental Studies Program Broadened Understanding of Sustainability... | 18 |
| Figure 7: Perceptions That the Environmental Studies Program Provided Place-Based Learning Opportunities | 19 |
| Figure 8: Perceptions That the Environmental Studies Program Provided Interdisciplinary Instruction | 19 |
| Figure 9: Perceptions That the Environmental Studies Program Provided Rigorous and Challenging Learning Opportunities | 20 |
| Figure 10: Perceptions That the Environmental Studies Program Provided Opportunities for Collaboration.... | 20 |
| Figure 11: Overall Satisfaction With the Environmental Studies Program | 22 |
| Figure 12: Parent and Student Perceptions of Components of Environmental Studies Program | 22 |
| Figure 13: Parent and Student Perceptions for Recommending the Environmental Studies Program..... | 23 |
| Figure 14: Parent and Student Perceptions of the Environmental Studies Program Meeting Students' Learning Needs | 23 |

Introduction

Background

On November 13, 2018, the School Board approved the Environmental Studies Program to be opened at the Chesapeake Bay Foundation's Brock Environmental Center in September 2020. The program offers a unique opportunity for students to expand their understanding of sustainable economics and business innovation, social sustainability, and environmental sustainability and natural resource stewardship. Through experiential learning and community partnerships, students learn about sustainability and participate in hands-on Science, Technology, Engineering, and Math (STEM) experiences. Local environmental issues are used to contextualize students' challenge-based, collaborative, and design-thinking learning experiences. Integrated interdisciplinary instruction and service-learning projects broaden student knowledge of local and world issues pertaining to sustainability.

The implementation of the program began in 2020-2021 with grade 11 students. Full implementation will be achieved in 2021-2022 and will include students in grades 11-12. The program is expected to serve approximately 100 students at full implementation. As part of the program, students take courses at their home school as well as at the Brock Environmental Center.

Purpose of Program Evaluation

This evaluation provides the School Board, the Superintendent, and the program leadership with information on the year-one implementation of the Environmental Studies Program. Because the Environmental Studies Program initiative is a new initiative and operated with local resources, evaluation of the Environmental Studies Program by the Department of Planning, Innovation, and Accountability is required for a minimum of two years by School Policy 6-26. The School Board approved the Environmental Studies Program for an initial implementation evaluation on September 9, 2020 as part of the 2020-2021 program evaluation schedule. The Environmental Studies Program will be evaluated again when it reaches full implementation in 2021-2022.

In accordance with School Board Regulation 6-24.2, this year-one evaluation is focused on the implementation of the program, especially in relation to the School Board approved proposal for the program. This evaluation discusses if the program is being implemented as designed, as well as how participants perceived its first year of operation. In addition, the evaluation report provides information about student characteristics, progress toward meeting goals and objectives, and the additional cost to the division compared with the proposed program budget.

Program Overview

According to the proposal approved by the School Board, the program was established to offer a comprehensive curriculum to students who are interested in environmental science and sustainability. As part of the program, students take courses at their home school as well as at the Brock Environmental Center. However, due to the COVID-19 pandemic, school began virtually in the fall for most students. Students did not begin consistently taking classes at the Brock Environmental Center until February 2021. The program prepares students for post-secondary education and provides opportunities to investigate careers related to the environment and sustainability. The program equips students with the skills to be globally competitive and to be successful in pathways after high school to become future scientists, politicians, and business leaders within the community and larger world. Through a personalized learning approach coupled with advanced placement courses, graduates of the program will secure a high school diploma while benefiting from a variety of partnerships including the Chesapeake Bay Foundation and Virginia Wesleyan University. The Environmental

Studies Program offers students the opportunity to pursue three curriculum strands within the program of study: Sustainable Economics and Business Innovation, Social Sustainability, and Environmental Sustainability and Natural Resource Stewardship. Through studies within the three strands, students are provided opportunities to be immersed in experiential and meaningful coursework that prepares them for the world of ecological, equitable, and economic sustainability.

Program Goals and Objectives

According to the program proposal, the goal of the Environmental Studies Program is to empower students in the program to broaden their understanding of sustainability through the following:

- Utilizing the natural community as a context for learning about environmental and sustainability issues.
- Implementing environmental service-learning projects.
- Integrating interdisciplinary instruction.
- Incorporating challenge-based, collaborative, and design-thinking learning.
- Earning the Seal of Excellence in Science and the Environment.

In addition, another goal of the program is to establish collaborative agreements with institutions of higher education that will result in on-going program development and assessment. The specific goals, as well as data assessing progress toward meeting these goals, are outlined in this report.

Evaluation Design and Methodology

Evaluation Design and Data Collection

This year-one evaluation focuses on the implementation of the Environmental Studies Program during the 2020-2021 school year, as well as progress toward meeting the program goals and objectives. The evaluation utilized multiple instruments and data sources. Quantitative data were gathered from the school division's data warehouse and through closed-ended survey items. Qualitative data were collected through document reviews, interviews, and open-ended survey questions. The Office of Research and Evaluation program evaluators employed the following data collection methods:

- Examined the Environmental Studies Program Proposal (November 2018) and program documentation.
- Collected student data from the VBCPS data warehouse for analyzing participant characteristics.
- Collected data on students' academic performance in courses and scores on the Advanced Placement (AP) Environmental Studies exam.
- Administered a perception survey to grade 11 students in the Environmental Studies Program.
- Administered a perception survey to parents of students in the Environmental Studies Program.
- Conducted three interviews over the course of the year with the executive director of secondary teaching and learning, secondary science coordinator, and/or the Environmental Studies Program teaching coordinator.
- Collected cost information for the Environmental Studies Program from the Department of Teaching and Learning, the Department of Human Resources, the Office of Business Services, and the Office of Transportation Services and Fleet Management.

VBCPS Data Warehouse

Student data analyzed as part of the year-one evaluation were extracted from the VBCPS data warehouse. These data included enrollment records, demographic characteristics of participants, and academic outcomes including course grades and scores on the AP Environmental Studies exam. The data for participating program students were analyzed along with data from grade 11 students across the division for the purpose of providing interpretive context.

Surveys

Environmental Studies Program students and parents were invited to complete an anonymous survey regarding their perceptions of and experiences with the Environmental Studies Program. A survey was developed for each participant group. The participant surveys consisted mainly of Likert-type items that focused on program operations and program outcomes. In almost all cases, these selected-response items were constructed on a four-point scale: (1) Strongly Disagree/Very Dissatisfied, (2) Disagree/Dissatisfied, (3) Agree/Satisfied, and (4) Strongly Agree/Very Satisfied. Whenever possible, comparable versions of survey items were included on both survey versions. Further, all surveys included open-ended questions regarding what students gained from the program, possible improvements for the program, and the impact the COVID-19 pandemic had on the program. For all surveys, agreement percentages reported in the evaluation were based on those who answered the survey item (i.e., missing responses were excluded from the percentages). Agreement percentages for survey items that included a not applicable response option excluded those who responded with not applicable. Responses to open-ended questions were analyzed for common themes.

The student survey was administered online by the Office of Research and Evaluation to grade 11 students in the Environmental Studies Program from June 1 to June 18. A link to the online student survey was provided to the program coordinator who distributed the survey link to the students. The Office of Research and Evaluation emailed survey invitations to all parents of students in the program, and the online parent survey was administered from June 4 to June 18. Response rates are shown in Table 1.

Table 1: Number of Environmental Studies Program Survey Respondents by Group and Response Rates

| Group | # of Respondents | Response Rate |
|----------|------------------|---------------|
| Students | 38 | 92.7% |
| Parents | 25 | 38.5% |

Evaluation Questions

Program evaluation questions were based on a review of School Board policy related to year-one evaluations, the Environmental Studies Program proposal to the School Board, and feedback from Department of Teaching and Learning program managers, including the executive director of secondary teaching and learning, the secondary science coordinator, and the Environmental Studies Program teaching coordinator.

- 1. Was the approved timeline followed?**
- 2. Was the student application and selection process followed?**
- 3. Was the staff selection process followed?**
- 4. What professional learning opportunities did the program staff receive?¹**
- 5. Did the implemented program of studies and courses offered mirror the School Board approved plan?**
- 6. What progress was made toward meeting the program goal and objectives?**

7. What are the perceptions of the students, parents, and staff of the effectiveness of the Environmental Studies Program in meeting student needs?
8. How did the actual costs of the program compare with the projected costs specified in the budget section of the program proposal?

Evaluation Results and Discussion

This section of the year-one evaluation describes the implementation of the Environmental Studies Program including information about the program’s timeline, the student application process and student characteristics, staffing, professional learning, and the program of study. Additionally, stakeholders’ perceptions of the program and progress made toward meeting the program’s goals and objectives during the first year will be discussed. Finally, information about the program’s cost will be compared with the proposed budget.

Implementation Timeline

A timeline for the Environmental Studies Program implementation was included in the School Board approved proposal. The timeline included planning year activities beginning in fall 2018 through the full implementation of the program in 2022. Those activities and milestone dates are reproduced in Table 2. An additional column has been added to indicate the status of each activity.

Table 2: Timeline of the Environmental Studies Program With Status

| Activity | Date | Status |
|--|------------------|--|
| Formal Board Request | November 2018 | ✓ |
| Engage Student Interest | Fall - Dec. 2019 | ✓ |
| Accept Applicants for Cohort 1 | March 2020 | ✓ |
| Year 1: 50 students (juniors from the class of 2022) | 2020-2021 | 42 students |
| Program Courses Held at Brock Environmental Center | September 2020 | February 2021 due to impact of COVID-19 pandemic |
| Year 2: 50 juniors, 50 seniors | 2021-2022 | 83 as of September 2021 |

To attain the milestones displayed in Table 2, several interim tasks were accomplished. The program proposal was prepared and then submitted to appropriate VBCPS division personnel and the School Board for approval in November 2018. A marketing plan was designed and implemented, and curriculum and instructional resources were designed and developed. The Environmental Studies Program teaching coordinator, a position that is instrumental to the operations and teaching of the program, was hired on March 10, 2020 (effective July 1, 2020). According to the proposal, this individual is tasked with recruiting students and publicizing the program. However, because the teaching coordinator was not hired until March, recruiting for the year-one cohort was led by the secondary science coordinator. She garnered interest in the program by visiting all high schools in the division from November 2019 through January 2020. While the timeline indicated in the initial proposal that engaging student interest in the program was to be completed in December 2019, in order to increase the number of students enrolled in the program, high school visits extended into January 2020. Students were selected from a pool of applicants to enroll in the program either during a morning session or an afternoon session based on the student’s home school location. A transportation plan was developed, which included a transfer hub at Bayside High School where some program students were dropped off with other academy students at that site and transported on another bus to the Brock Environmental Center. All necessary tasks were completed with sufficient speed and success to enable the program to begin on time in September 2020.

Two milestones set forth in the proposal were not met precisely. First, the goal was for the year-one cohort to consist of 50 students, but the program began with 42 students. As a preview, next year's junior cohort (2021-2022) currently has 45 students enrolled and 38 seniors² are enrolled in courses as of September 2021.

Second, the program's primary location was designated to be at the Chesapeake Bay Foundation's Brock Environmental Center. Based on the implementation plan, students were to take courses at their home school as well as at the Brock Environmental Center. Due to challenges associated with the COVID-19 pandemic, students were unable to fully take advantage of the Brock Environmental Center until February 2021. When school started in September, most students were learning virtually based on the COVID-19 health metrics and the pandemic plan. Beginning in mid-November, secondary students began phasing back to face-to-face learning, but this only lasted a few days before the school division returned to virtual instruction for most students due to rising COVID-19 cases in the area. Students did not begin to consistently attend the Brock Environmental Center until Tuesday, February 23, 2021, according to the teaching coordinator. At that point, students who chose to attend school face-to-face were attending on a Tuesday-Friday schedule. The Tuesday-Friday schedule was established by VBCPS.

Student Application and Selection Process

Beginning in tenth grade, students can apply for admission to the Environmental Studies Program using the standard VBCPS academy program application process, which is submitted online for current VBCPS students and directly to the coordinator for non-VBCPS students. Applications for the Environmental Studies Program application are due February 1 each year. An essay formulated around the topics of Sustainable Economics and Business Innovation, Social Sustainability, and Environmental Sustainability and Natural Resource Stewardship were included in the application and used to identify candidates who showed a passion for and interest in the fields of study. Students who met the following criteria were entered into a lottery system:

- All course pre-requisites are met (Algebra II, English 10, two Social Studies credits, Biology, Economics and Personal Finance).
- Positive teacher recommendations.
- Student essay displays an ability to rationalize and think creatively and critically to solve or describe a problem pertaining to sustainability.

A committee of school administrators, teachers, and other professionals reviewed the applications and determined if each application met the above criteria. The science pre-requisite course in the initial program proposal was chemistry, but it was changed to biology. According to the teaching coordinator, this change was made to be more inclusive of students and to align with the College Board pre-requisite for AP Environmental Science. Applicants who met the above criteria were entered into a spreadsheet and a random number generator selected students for morning and afternoon sessions based on transportation zones. Selected students were then notified of admission. Alternates were identified using the same process to fill any openings based on students declining. According to the proposal, the goal for the 2020-2021 school year was to include 50 juniors. The program received 67 applications, which were entered into the lottery. Forty-eight students were offered admission. Two seats were reserved for potential military-connected students or students who enrolled in VBCPS later in the school year and were interested in the program. Once school opened, the program began with 42 students. According to the teaching coordinator, additional students were not offered a seat due to social distancing requirements related to the COVID-19 pandemic. At the end of the school year, 41 students remained enrolled in the program.

Student Characteristics

On September 30, 2020, a total of 4,866 students were enrolled in eleventh grade across the division. Of these students, 41 (1%) were enrolled in the Environmental Studies Program.

Student Demographics

Table 3 displays the demographic characteristics of both the students enrolled in the Environmental Studies Program and all grade 11 students across the division. The majority of the students in the program were female (61%), and the majority of students in the program were Caucasian (83%). The student enrollment mirrored the characteristics of the applicants. For example, the percent of applicants who were female was 61 percent which was the same percentage of those enrolled through the lottery. Similarly, the percent of applicants who were Caucasian was 81 percent, which was very close to the percentage of those enrolled. Compared to the grade 11 students in the division, the Environmental Studies Program had a higher percentage of female and Caucasian students (i.e., more than a 5 percentage point difference). Conversely, the Environmental Studies Program had markedly lower percentages of male, African American, Hispanic, or economically disadvantaged students.

Table 3: Demographic Characteristics of Environmental Studies Program Students and Grade 11 Students Across the Division on September 30, 2020

| Characteristic | Environmental Studies Program (N= 41) | | Division Grade 11 (N = 4,866) | |
|---|--|-----|-------------------------------------|-----|
| | N | % | N | % |
| Gender | | | | |
| Female | 25 | 61% | 2,389 | 49% |
| Male | 16 | 39% | 2,477 | 51% |
| Ethnicity | | | | |
| African American | 3 | 7% | 1,192 | 24% |
| American Indian | 0 | 0% | 8 | <1% |
| Asian/Native Hawaiian/Pacific Islander | 2 | 5% | 346 | 7% |
| Caucasian | 34 | 83% | 2,400 | 49% |
| Hispanic | 0 | 0% | 479 | 10% |
| Multiracial | 2 | 5% | 441 | 9% |
| Economically Disadvantaged | | | | |
| Yes (Free/Reduced Lunch) | 4 | 10% | 1,631 | 34% |
| Identified Limited English Proficiency | | | | |
| Yes | 0 | 0% | 96 | 2% |
| Identified Gifted* | | | | |
| Yes | 8 | 20% | 906 | 19% |
| Identified Military Connected | | | | |
| Yes | 4 | 10% | 713 | 15% |

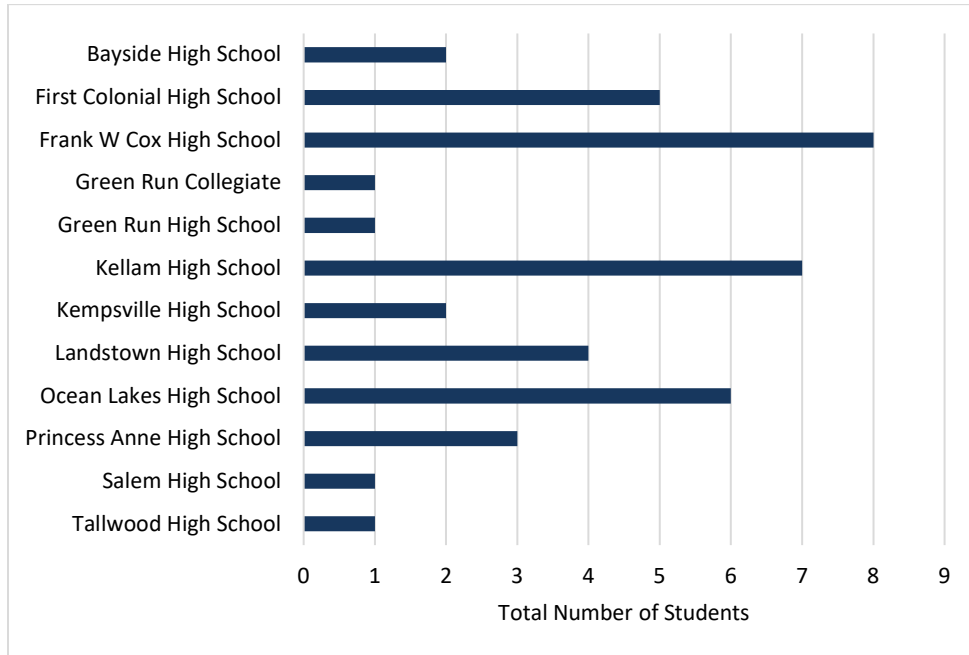
Note: Percentages may not add up to 100 percent due to rounding.

*Includes artistically and intellectually gifted students.

Student Geographics

The 41 students in the 2020-2021 student cohort represented 12 home high schools. The largest number of students were from Frank W. Cox High School with a total of 8 students (20%), followed by Kellam High School with 7 students (17%), Ocean Lakes High School with 6 students (15%), First Colonial High School with 5 students (12%), and Landstown High School with 4 students (10%). Figure 1 displays the home schools of the remaining 11 students.

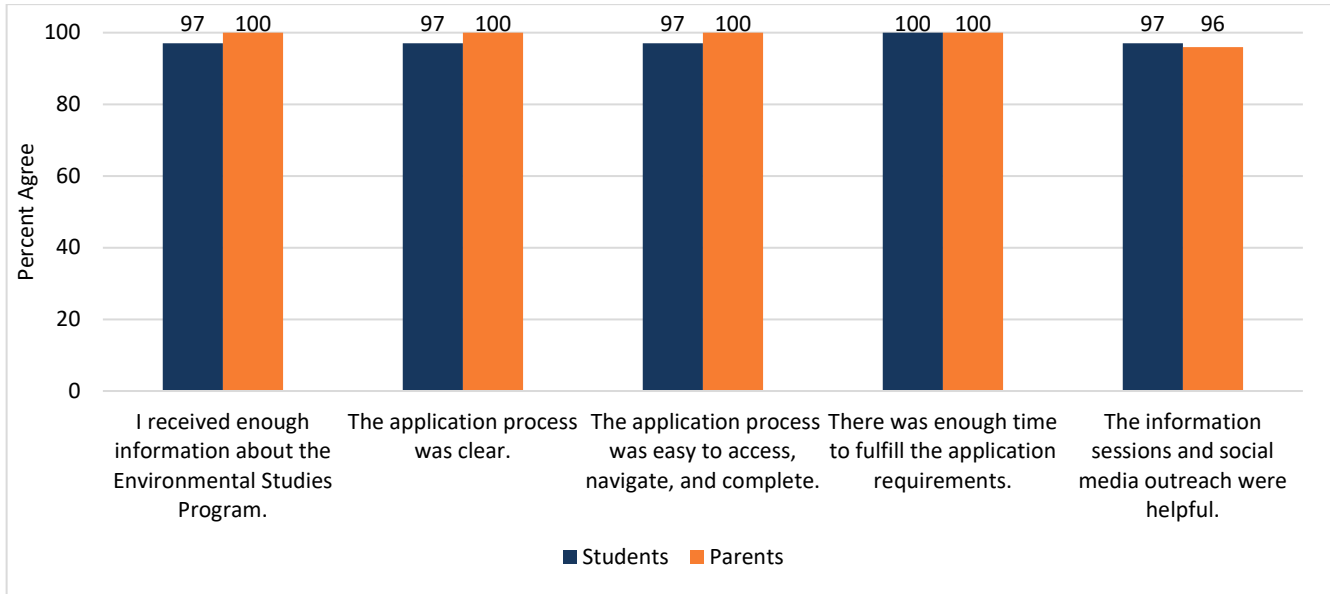
Figure 1: Home High Schools of Environmental Studies Program Grade 11 Students



Perceptions of Application and Selection Process

Students and parents from the Environmental Studies Program’s first cohort of students were asked about their perceptions of the application and selection process on the end-of-year survey. Figure 2 displays the agreement percentages of students and parents with several statements regarding the application process. Overall, students and parents had positive perceptions of the Environmental Studies Program application process with nearly all respondents agreeing with the survey items. All students and parents indicated that they had enough time to fulfill the application requirements.

Figure 2: Student and Parent Perceptions of the Environmental Studies Program Application Process



Reasons for Enrolling

An open-ended survey item asked students and parents to provide their reasons for enrolling in the Environmental Studies Program. In general, students and parents had similar responses. Among the 39 students who responded to the item, the most common reason for enrolling in the program involved being interested in, having passion for, or enjoying the overall topic of the program including the environment, sustainability, and aquatic wildlife. More than half of students (62%) cited such a reason. Eleven students (28%) indicated they were interested in the program because the program was a unique and new opportunity that provided an alternative to a traditional high school learning environment including hands-on learning. The third most common reason involved the program aligning with their future aspirations – mainly, students expressed wanting a future job or career in the environmental field. This was cited by 9 student respondents (23%). Of the 23 parent responses to a similarly worded open-ended survey item, 18 parents (78%) explained that they had enrolled their child in the Environmental Studies Program because of their child’s overall interest in the program. Another 4 parents (17%) explained that the program afforded their child with a unique educational opportunity. Four parents (17%) also explained that they enrolled their students in the program because they planned to have a future job or career in the environmental field.

Staff Selection Process

According to the Environmental Studies Program proposal, the staff for the program was to include two staff members: a teaching coordinator hired for the program’s first year and an additional teacher hired for the program’s second year. Candidates applied using the division’s standard application process, followed by a full interview process with the executive director of secondary teaching and learning and secondary science coordinator. The staff selection was based on the following qualifications:

- Experience teaching environmental-based courses.
- Excellence in teaching and delivery of instruction.
- Endorsements in the fields of study.
- Varied professional work experiences in the field.
- Strong technology skills.
- The ability to work flexibly with instruction of higher learning and community business leaders.

- Teaching coordinator must have a master’s Degree and a Virginia license in Administration and Supervision PreK-12.

The teaching coordinator was hired in March 2020 and was previously a high school AP Environmental Studies teacher. According to the Environmental Studies program proposal, the teaching coordinator position has multiple and varied responsibilities. This position oversees the overall program and is responsible for specific activities noted below.

- Recruiting students and publicizing the program.
- Writing and completing curriculum development.
- Reviewing and selecting materials for the proposed courses.
- Purchasing state-of-the-art technology equipment.
- Assisting with staffing and interviewing teachers for available positions.
- Overseeing the selection of students and creating a waiting list.
- Planning staff development activities.
- Collaborating with Transportation Services.

In confirming the teaching coordinator’s responsibilities in an interview, the teaching coordinator expanded on his duties and explained that he also serves in the roles of the program’s administrator, custodian, technology support, bookkeeper, and nurse.

In the summer of 2021, a second teacher was hired for the program’s second year. According to the teaching coordinator, the new teacher will be teaching grade 11 students and the teaching coordinator will loop with the program’s first cohort of students and teach grade 12.

Professional Learning Opportunities

According to the approved proposal, staff development will be based on the needs of the selected staff. Teachers who teach the sustainability-based courses will attend professional learning opportunities either on-site or at arranged sites for their particular course area. Teachers will also have an opportunity to gain professional learning through national conferences and training with national consultants. Professional learning will include a special emphasis on Sustainability Economics and Business Innovation, Social Sustainability, and Environmental Sustainability and Natural Resource Stewardship.

According to the executive director of secondary teaching and learning, the teaching coordinator’s training for the program’s first year was categorized as more informal to include coaching and mentoring to transition from his role as a teacher to the roles and responsibilities of a program coordinator. In addition to the coaching and mentoring, the teaching coordinator participated in safety training and received a wilderness first aid certification. This training will be required every other year because the Environmental Studies Program does not have a registered nurse on staff.³ The teaching coordinator also attended bookkeeping training in summer 2021 because the program does not have a designated bookkeeper on staff. During summer 2021, the teaching coordinator also began to develop a partnership with the Teton Science Schools to learn about the program including cross connections between what they offer compared to what the Environmental Studies Program offers. In August 2021, the teaching coordinator attended the Climate Action and Regional Resiliency speaker series with several students.

In addition to participating in professional learning, the teaching coordinator also shared information about the program by presenting at two different webinars and shared his expertise in the field by serving on various local committees noted below:

- Green Schools National Network and Shaw Contract: The School Campus as a 3-D Textbook for Sustainability Education on October 20, 2020

- Center for Green Schools at the U.S. Green Building Council and the Aspen Institute: Getting Schools to Zero Carbon on May 12, 2021. Back Bay National Refuge Society
- City appointee for city’s Green Ribbon Committee
- Mayoral Commission for Wind and Renewable Energy

Program of Studies and Courses Offered

The Environmental Studies Program is comprised of three major strands: Sustainable Economics and Business Innovation, Social Sustainability, and Environmental Sustainability and Natural Resource Stewardship. According to the program proposal, the Environmental Studies Program is designed with the personalized learning approach in mind. Through partnerships with postsecondary institutions and local/national business organizations, students will be exposed to a variety of learning opportunities to meet their individual needs. Table 4 displays an outline of the expected courses throughout the life of the program, although this evaluation focuses on the grade 11 course of study.

Table 4: Courses of Environmental Studies Program

| Pre-Requisites* | Grade 11 | Grade 12 |
|--------------------------------|---|-------------------------------------|
| Algebra II | Math Analysis or AP Statistics* | Elective* |
| English 10 | English 11* | English* |
| 2 Social Studies Credits | Government or AP Government* | VA and US History or AP US History* |
| Biology | Elective* | Elective* |
| Economics and Personal Finance | AP Environmental Science** | Topical Research** |
| | Sustainability: Core Concepts and Environmental Systems** | Senior Independent Study** |
| | Natural Resource Management** | |
| | Watershed Hydrology** | |

*Indicates general courses taken at home school.

**Indicates courses taken at the Brock Center.

During their junior year of the program, all students take AP Environmental Science, Sustainability: Core Concepts and Environmental Systems, Natural Resource Management, and Watershed Hydrology. These courses are an introduction to the content of the three strands of study offered to Environmental Studies Program students. Initially as written in the Environmental Studies Program proposal, the plan was for students to select one curriculum strand for in-depth study, but according to the teaching coordinator, the three strands cannot be viewed distinctly, but instead as three interconnected components of sustainability. Considering the interconnectedness of the three strands, students can choose one or multiple strands of study as a lens to guide their Senior Independent study in the second year of the program. The courses within the strand(s) are immersive, experiential opportunities that will provide students their own course of study based on interests and career goals they have set for themselves.

A foundational component of the Environmental Studies Program includes experiential learning through hands-on scientific field work. As part of the curriculum, students are fully immersed in the environment, interacting with the elements designed to help students think critically and creatively. As stated in the proposal, “The Chesapeake Bay is one of the many important natural resources found in Virginia Beach that will serve the Environmental Studies Program as a local resource, utilized to prove a personalized, globally competitive hands-on curriculum.” Student safety is paramount to any program, but particularly important to programs like the Environmental Studies Program that include field investigations along and in the Bay. As examples of supervision standards, the Chesapeake Bay Foundation uses two trained field educational staff plus the teacher of the student group for supervising 25 students.⁴ In another example, the Teton Science School has a minimum of two trained staff for supervising 25 students.⁵ By a similar comparison, the VBCPS

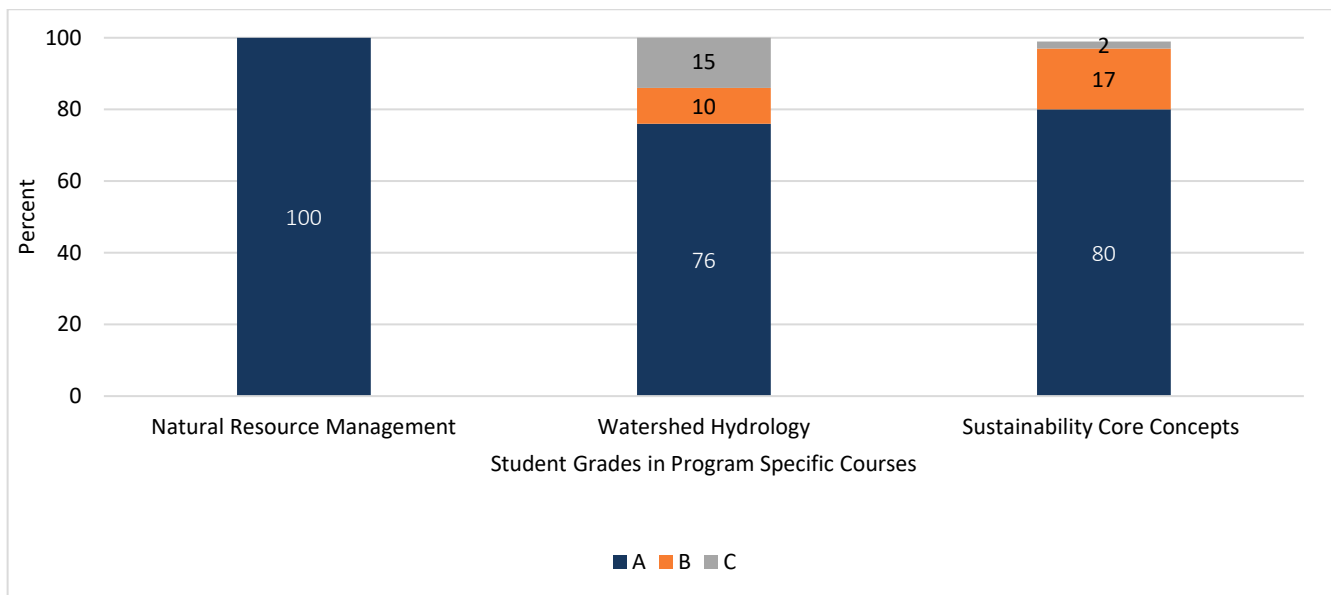
field trip policy includes 1 adult per 10 students. 6 Given the current level of staffing and student enrollment in the Environmental Studies Program, the program currently has one trained staff member supervising 20 students.

Course Enrollment and Performance

All 41 students enrolled in the four courses taken at the Brock Environmental Center: AP Environmental Science, Sustainability: Core Concepts and Environmental Systems, Natural Resource Management, and Watershed Hydrology. Students' course grades specific to the Environmental Studies Program were examined, including performance in AP Environmental Science (i.e., course grades and AP exam scores). Then to provide a point of reference, course grades and AP exam scores for all division grade 11 students were analyzed.

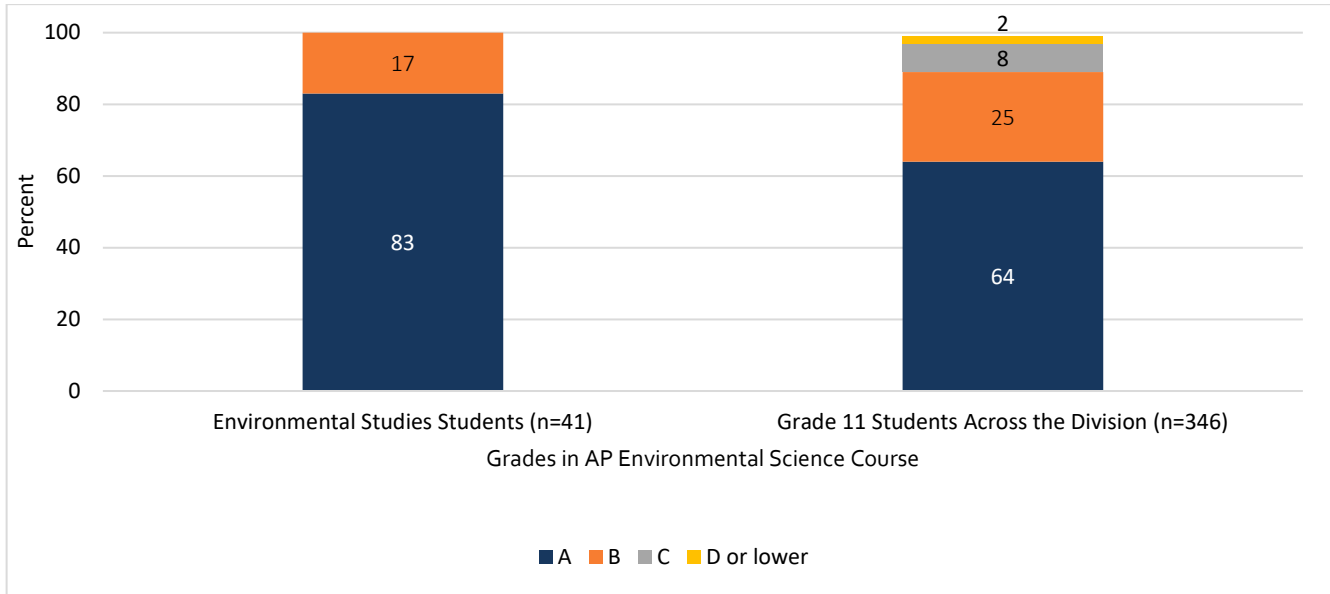
In grade 11, students in the Environmental Studies Program take three program-specific courses. These courses include Natural Resource Management, Watershed Hydrology, and Sustainability Core Concepts. Student grade distributions are displayed in Figure 3. Overall, students performed academically well across the three courses with students having the highest performance in the Natural Resource Management course, with 100 percent of students earning some form of an A. The Watershed Hydrology course had more variation in course performance.

Figure 3: Grade Distribution Percentages of Students in Program Specific Courses



Eighty-three percent (83%) of students in the Environmental Studies Program earned some form of an A in AP Environmental Science, and 17 percent earned some form of a B. Grades in AP Environmental Science for all grade 11 students across the division are shown in Figure 4 for reference. Relative to all grade 11 students, a higher percentage of students in the Environmental Studies program earned an A in the course.

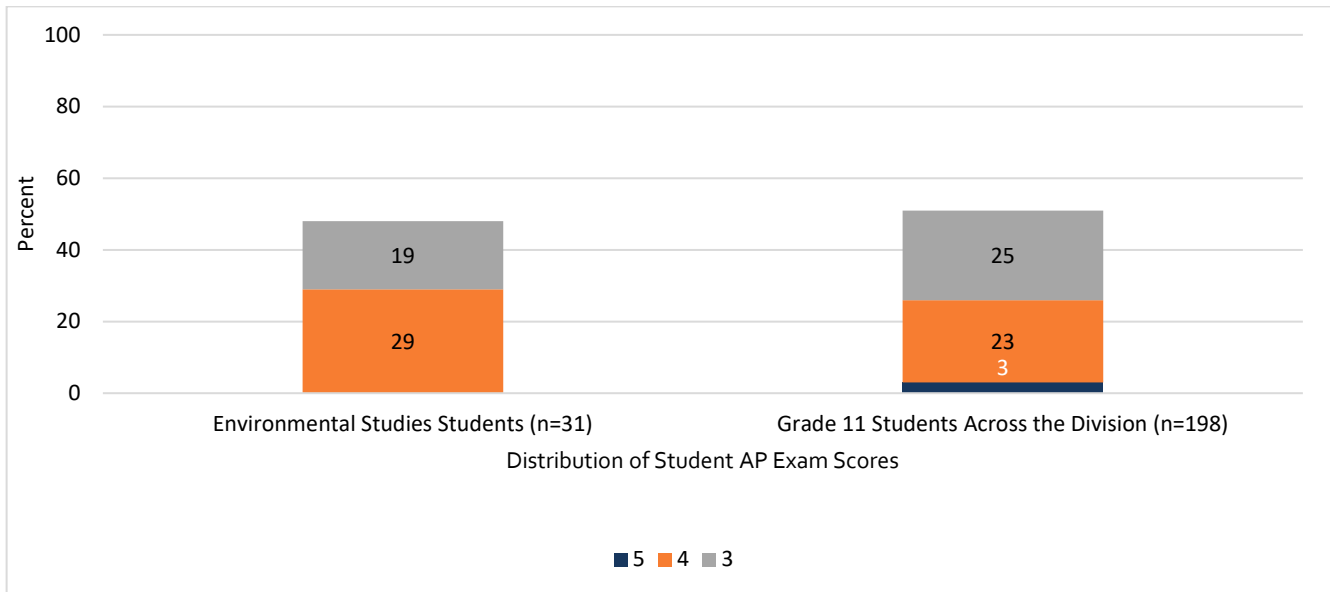
Figure 4: Grade Distribution Percentages of Students in AP Environmental Science



AP Exam Scores

All students who take AP Environmental Science have the option to earn college credit by taking the corresponding AP exam and earning a qualifying score (e.g., scores of 3 or higher). Of the 41 students enrolled in the Environmental Studies Program, 31 students (76%) took the AP Exam. Twenty-nine percent (29%) of the students scored a 4 on the exam and 19 percent scored a 3 on the exam. Of the 346 grade 11 students enrolled in AP Environmental Science course across the division, 57 percent took the AP Exam. Three percent (3%) of the students scored a 5, 23 percent scored a 4, and 25 percent scored a 3 on the Exam.

Figure 5: Distribution of Student AP Exam Scores



Progress Toward Meeting the Program Goal and Objectives

This section of the report examines progress that has been made toward meeting the following program goals and objectives. The Environmental Studies Program consists of one overarching goal of broadening students' understanding of sustainability which it aims to do through five objectives:

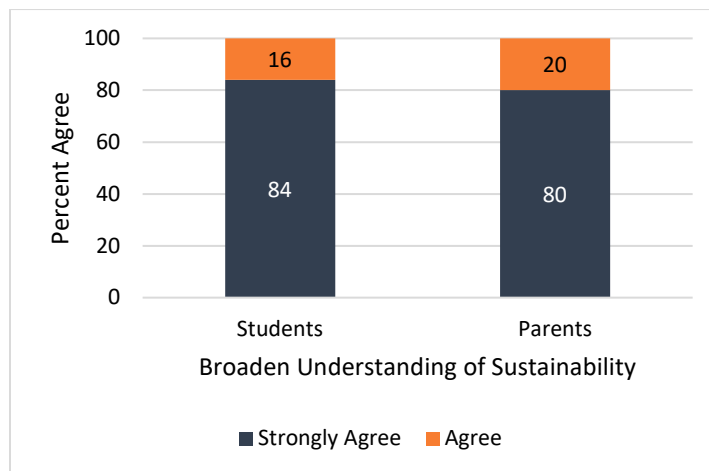
- Utilizing the natural community as a context for learning about environmental and sustainability issues.
- Implementing environmental service-learning projects.
- Integrating interdisciplinary instruction.
- Incorporating challenge-based, collaborative, and design-thinking learning.
- Earning the Seal of Excellence in Science and the Environment.

In addition, another goal of the program is to establish collaborative agreements with institutions of higher education that will result in on-going program development and assessment.

Broaden Understanding of Sustainability

When asked about the overall goal of the program, students and parents unanimously agreed that the program has broadened understanding of sustainability. Figure 6 displays students' agreement levels indicating that both students and parents strongly agreed (80% to 84%) that the program broadened their understanding or their child's understanding of sustainability. This is particularly important because the knowledge and understanding of sustainability is a hallmark of the program.

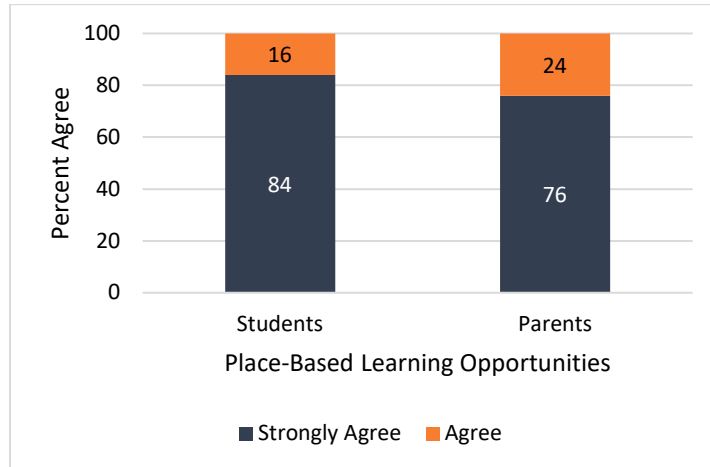
Figure 6: Perceptions That the Environmental Studies Program Broadened Understanding of Sustainability



Utilize the Natural Community

One objective of the program was to utilize the natural community as a context for learning about environmental and sustainability issues. Students and parents also unanimously agreed that the Environmental Studies Program provided place-based learning opportunities (see Figure 7). These place-based learning opportunities are best provided at the Brock Learning Center where students had the opportunity to participate in field work in close proximity to the Chesapeake Bay.

Figure 7: Perceptions That the Environmental Studies Program Provided Place-Based Learning Opportunities



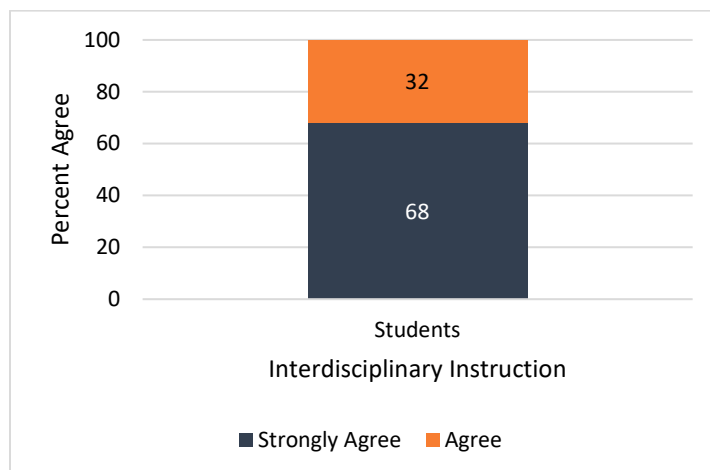
Implement Service-Learning Projects

The program objective focused on implementing environmental service-learning projects was not assessed during the year-one evaluation because service learning is intended to be part of students' senior year independent research projects. The senior year placements for service learning are being coordinated by the teaching coordinator for the program's first cohort that will be seniors in 2021-2022. According to the teaching coordinator, it was decided that the service-learning project will not have an hourly requirement but will be focused on the depth of experience. Currently, it is planned that all seniors in 2021-2022 will partner with a fourth-grade classroom and help prepare students for the Standards of Learning with a meaningful watershed experience.

Integrate Interdisciplinary Instruction

A third program objective is integrating interdisciplinary instruction. Students unanimously agreed that the "Environmental Studies Program integrated learning across subject areas including policy, science, contemporary social issues, environmental issues, and economic issues." Sixty eight percent of students strongly agreed with this statement and 32 percent agreed.

Figure 8: Perceptions That the Environmental Studies Program Provided Interdisciplinary Instruction



Incorporate Challenge-Based, Collaborative, and Design-Thinking Learning

The fourth objective of the Environmental Studies Program was to incorporate challenge-based, collaborative, and design-thinking learning. To gauge whether this goal was met, students were asked two questions on the end-of-year survey and parents were asked one. Because this goal is specific to experiences that students might have had within the program, students and parents were not asked the same questions. Ninety-seven percent (97%) of students and 100 percent of parents agreed that the program provided them or their child with rigorous and challenging learning experiences (Figure 9). One hundred percent of students agreed that the program provided them opportunities to be collaborative (Figure 10).

Figure 9: Perceptions That the Environmental Studies Program Provided Rigorous and Challenging Learning Opportunities

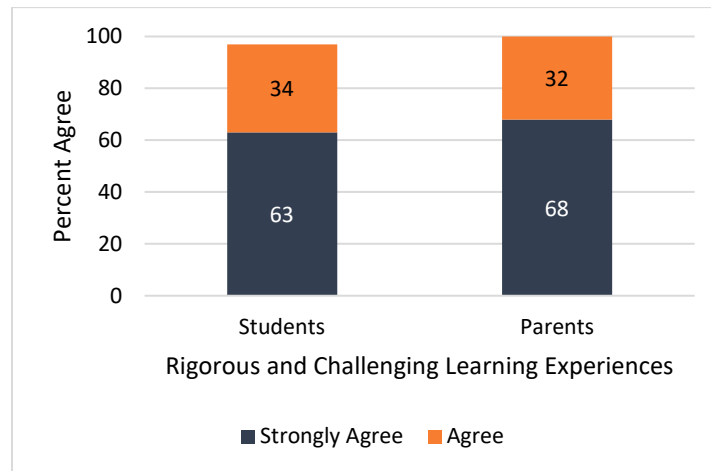
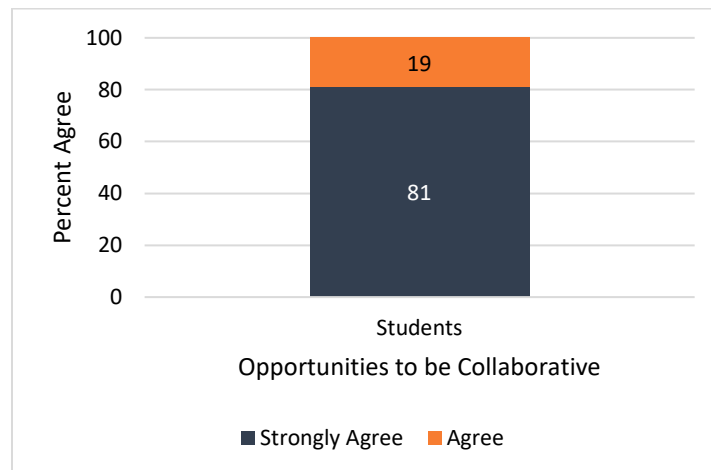


Figure 10: Perceptions That the Environmental Studies Program Provided Opportunities for Collaboration



Earn the Seal of Excellence in Science and the Environment

According to the program proposal, one of the program's objectives is for students to earn the Seal of Excellence in Science and the Environment. This is a long-term goal that will be assessed during the comprehensive program evaluation upon students' graduation from high school.

Establish Collaborative Agreements

A final goal of the Environmental Studies Program is to establish collaborative agreements with institutions of higher education that result in ongoing program development and assessment. According to the teaching coordinator, this has proven to be a challenge due to the COVID-19 pandemic and delays in the opening of the Brock Environmental Center for use by the program. Although challenging, the program has made progress on this goal and has been able to partner with James Madison University as part of the Kid Wind Challenge through the Center for Advancement of Sustainable Energy, Virginia Wesleyan University, Old Dominion University, and the Virginia Tech Agricultural Extension. Additional partnerships include:

- Back Bay National Wildlife Refuge
- Back Bay National Wildlife Refuge Friends nonprofit organization
- Virginia Aquarium
- Norfolk Botanical Gardens
- Chesapeake Bay Foundation
- Lynnhaven River NOW
- RRMM Architecture & Interior Design Firm
- Dills Architects
- Virginia Beach City Parks and Recreation
- Nature Matters LLC
- Channel 13 News
- Operation Smile
- City Council Green Ribbon Committee
- Dominion Energy
- Virginia Department of Wildlife Resources
- Parks and Recreation
- Capstone Mushroom Farm
- First Landing State Park

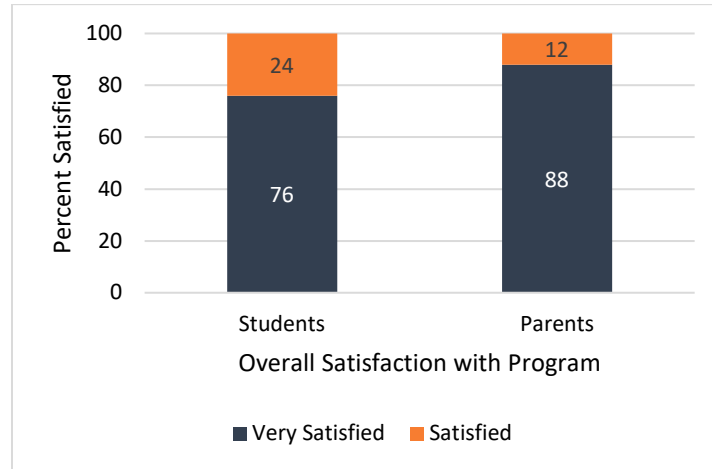
Stakeholder Perceptions

Students and parents were asked several survey items to assess their general perceptions of the Environmental Studies Program.

Satisfaction

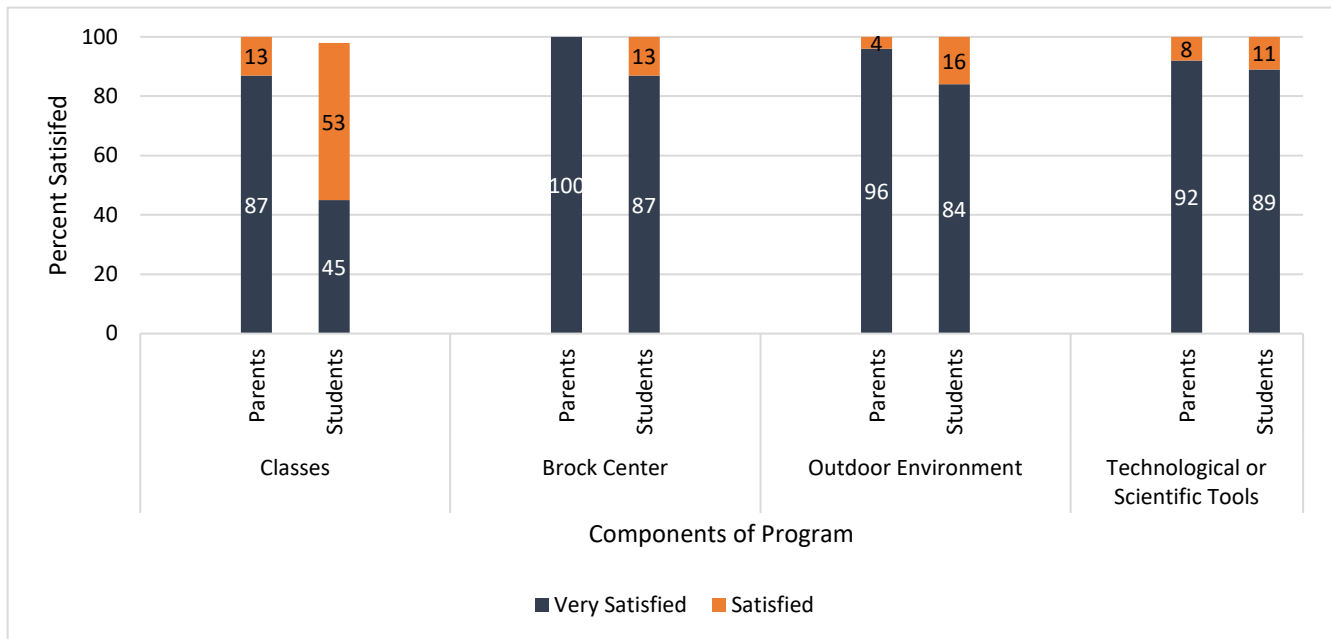
Stakeholders were asked to indicate their overall satisfaction with the program. As shown in Figure 11, strong positive results were found for both respondent groups with satisfaction levels at 100 percent. Eighty-eight percent (88%) of parents were “Very Satisfied” and 76 percent of students were “Very Satisfied.”

Figure 11: Overall Satisfaction With the Environmental Studies Program



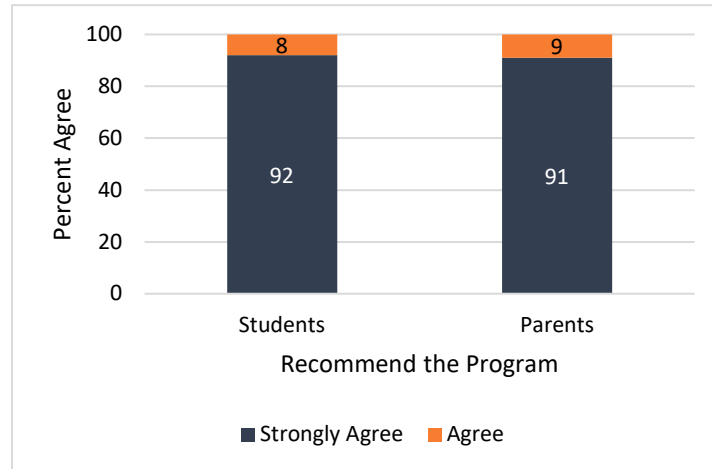
In addition, stakeholders were asked their satisfaction with components of the program including classes, the Brock Learning Center, the outdoor learning environment, and technological or scientific tools. Overall, the components were viewed positively by both students and parents (see Figure 12). There was 100 percent satisfaction among respondents regarding the Brock Learning Center, the outdoor learning environment, and scientific or technological tools. One hundred percent (100%) of parents were satisfied with the classes, while 98 percent of students were satisfied with classes.

Figure 12: Parent and Student Perceptions of Components of Environmental Studies Program



Students were also asked if they would recommend the Environmental Studies Program to other students. Similarly, parents were asked if they would recommend the Environmental Studies Program to the parents of other students. As displayed in Figure 13, 100 percent of both parents and students agreed they would recommend the program to others, with over 90 percent strongly agreeing.

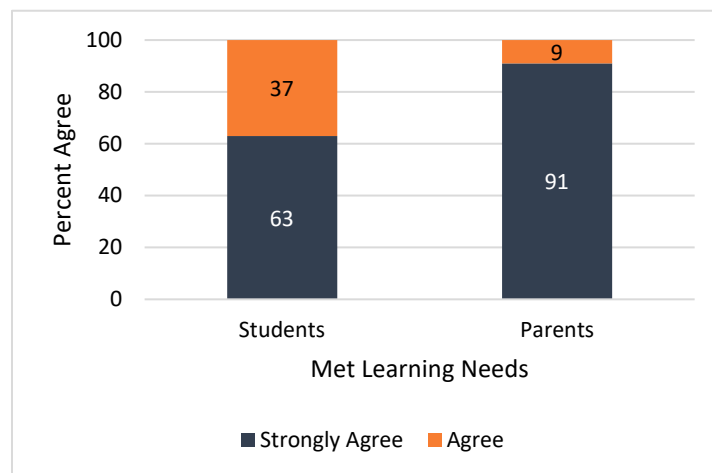
Figure 13: Parent and Student Perceptions for Recommending the Environmental Studies Program



Meeting Students' Needs

Students and parents were asked to what extent the Environmental Studies Program was meeting students' learning needs. Both students and parents agreed (100%) that the program met the students' learning needs (see Figure 14).

Figure 14: Parent and Student Perceptions of the Environmental Studies Program Meeting Students' Learning Needs



Students were provided an opportunity to explain why they felt as though the program met their learning needs. Of the 36 students who offered their explanation, three reasons emerged. The most common response was related to the content of the program—this was mentioned by 16 students (44%). Students expressed that the program met their learning needs because they expected to learn or expand upon their knowledge of the environment and/or sustainability and the program delivered on this promise. One student wrote, *“I joined the program to better understand the environment and how to better sustain it for the future. This program had provided that and also gone beyond what I had imagined.”* Another student commented, *“It provided me with new knowledge of subjects I had not been taught before.”* The second reason students felt the program met their needs was credited to the learning environment. Students discussed how their learning was hands-on and outdoors doing field research. One student wrote, *“I felt that the ESP had a great curriculum didn't involve*

just sitting in a standard classroom and listening to a teacher lecture us for an hour and a half like in our regular schools.” The final reason the students felt as though the program met their needs was credited to their teacher. The students commented positively about their teacher and described him as being “*engaging,*” “*flexible,*” “*a great teacher,*” and “*adaptive.*” One student wrote, “*The learning environment was perfect, [the teacher] always makes learning engaging and enjoyable and it makes me excited to go to school.*”

Continued Participation

Students were asked if they intended to continue their enrollment in the Environmental Studies Program during the 2021-2022 school year. Among the Environmental Studies Program students, 35 of the 38 respondents (92%) indicated “Yes.” One of the three students who indicated “No” commented that he/she was going to take more classes to boost his/her GPA. The other two students indicated that they wanted to pursue other interests and/or opportunities. Of the 24 parents who responded to the survey item, 23 (96%) indicated that their child intended to return to the program. The one parent who indicated “No” stated that due to the challenges related to COVID-19 restrictions, their child wanted to return to his/her home high school for senior year.

Participant Comments

The student and parent surveys contained open-ended questions about what was gained from being enrolled in the Environmental Studies Program during 2020-2021; what improvements to the Environmental Studies Program, if any, would the survey respondent suggest; and how the program was impacted by the pandemic. As mentioned previously, open-ended survey responses were coded into thematic categories for qualitative analysis. Note that some individual responses included more than one theme, and the responses could contribute to two or more category percentages. As a consequence, percentages often sum to more than 100 percent.

What is Gained From Being Enrolled

One open-ended survey question asked, “What do you think students gain from enrollment in the Environmental Studies Program?” Table 5 displays a summary of the themes by respondent group.

Table 5: Perceptions of What is Gained From Enrollment in the Environment Studies Program

| Item | Students (N=38) | Parents (N=20) |
|---|-----------------|----------------|
| Knowledge of the environment and/or sustainability | 74% | 40% |
| Innovative learning experience (e.g., place-based education; field research experience, non-traditional classroom experience) | 32% | 45% |
| Sense of community; friendships | 26% | 5% |
| Exposure to knowledge, skills, and/or experience toward future college/career | 16% | 25% |
| Soft skills involving collaboration and communication | 0% | 5% |

The most common student response was knowledge of the environment and/or sustainability. Students identified knowledge gained from the courses to be a large benefit. By comparison, the most common response among parents was the innovative learning experience followed by knowledge. Students identified the sense of community that the program fostered and the friendships that they gained to be an important benefit of the program. This was mentioned by 10 students (26%) and by comparison, included by only 1 parent (5%).

Suggested Improvements

Students and parents were also asked to suggest ways that the Environmental Studies Program could be improved. Thirty-eight students and 16 parents responded to this question on the survey. Of the students who responded to the question, 29 (76%) provided suggestions for improvement and 9 students (24%) did not provide suggestions and gave responses like “None or N/A.” Of the parents who responded, 10 parents (63%) provided suggestions for improvements and 6 parents (38%) did not provide suggestions for improvement and responded with answers like “None or N/A.” Of those who provided suggestions for improvement, transportation was the most frequently mentioned topic by both students (14%) and parents (40%) as needing improvement. While neither parents nor students were particularly descriptive in their explanation on the survey, an interview with program staff suggested there were challenges in communication regarding transportation between the home schools and the program and inconsistent transportation due to staffing issues. Although issues did improve as the school year progressed, transportation challenges did take time for the teaching coordinator to resolve when they arose given that he was the only program staff member.

Some students also expressed wanting more from the program including more field trips, more hands-on activities, more speakers, and more opportunities to learn outside the Hamptons Roads area. A few parents expressed similar sentiments about wanting more from the program including more classes, more opportunities to learn outside the Hampton Roads area, and to expand the program so more students can have the opportunity to benefit from the experience.

Impact of the Pandemic

An open-ended survey question asked, “How was your/your child’s experience in the program impacted by the pandemic?” A total of 38 students and 21 parents responded to this question. Students and parents both expressed disappointment that the program was virtual for about half the year because the program was grounded in hands-on, field-based learning that was difficult to attain in an online environment. As one parent described it, *“It’s very hard to understand a program that is supposed to be hands-on, in a virtual environment. The difference between virtual and being in person is unexplainable. The benefit they have from being together, outside could never be experienced online.”* In describing their experience one student stated, *“It was incredibly different than I had imagined, not getting to come in until February was quite upsetting; however, we eventually got to come in and experience this beautiful learning environment.”* However, many students (29%) agreed that the teacher was engaging in the virtual environment and provided hands-on activities in which the students could participate at home.

Additional Cost

The final evaluation question focused on the extent to which the proposed budget was an accurate prediction of needs by comparing the actual costs to the projected costs in the budget section of the program proposal that was approved by the School Board. Costs included both (a) the one-time purchase and start-up costs and (b) the operating costs for the program’s first year. The program’s budget from the original program proposal is included in Appendix A for reference.

Information about actual expenditures was provided by the Department of Teaching and Learning⁷, the Office of Transportation and Fleet Management Services, the Office of Budget Development within the Department of Budget and Finance, and the Department of Human Resources. Two types of program costs in 2019-2020 and 2020-2021 were included in this section: one-time, start-up costs and annual recurring operating costs.

For the purposes of this evaluation, start-up costs were one-time purchases. In general, start-up costs are defined as costs associated with physical or tangible assets that have a useful life of more than one year and that were incurred in the year prior to the initial implementation of the program's first grade level – grade 11 in the case of the Environmental Studies Program. In addition, some expenses during the first two years of implementation are defined as start-up costs because they are one-time purchases required to fully implement the program across each of the proposed grade levels (grades 11 and 12). Start-up expenses included costs for items in the following cost categories: curriculum development, instructional materials/equipment for student research, furniture, technology, additional buses needed for program transportation, and improvements to the facilities. Because this program was implemented at a new location offsite, some office supplies that were required were also considered start-up costs.

In addition to start-up costs, annual recurring operating costs are also incurred. Operating costs were defined as annual, recurring expenses for program operation. Operating expenses include costs for items in the following cost categories: consumable instructional materials, field trip expenses, professional learning, communication/marketing, consumable office and computer supplies, personnel, transportation, and facility use fees. These are costs that would be expected each year after the program reaches full implementation across grades 11 and 12.

Following the methodology of the June 2005 academy cost analysis report, the operating costs reported in the tables are in excess of school-generated funds and the per pupil allocations that travel with the students that would have been expended on the students in any setting. To answer the evaluation question, the actual start-up and year-one operating costs were compared to the overall costs in various cost categories specified in the proposal. Costs are rounded to the nearest dollar figure. The one-time start-up costs are shown in Table 6 and the ongoing operating expenses are shown in Table 7.

As shown in Table 6, the total start-up cost for the program from the last two fiscal years (2019-2020 and 2020-2021) was \$136,686. This was higher than the projected start-up cost of \$105,000. The largest cost included instructional materials and equipment for student research such as life vests, cameras, and microscopes. The next largest cost included furniture which was not allocated for in the proposed start-up budget. According to the coordinator for secondary science, once it was realized that furniture would need to be purchased, it was decided that savings in other areas of the proposed budget such as curriculum development and technology could be used to offset the costs of furniture. A little over \$13,000 was spent on technology and this included a desktop computer and 3-D printer for the Brock Environmental Center. Office supplies for the offsite location cost approximately \$2,000 and included nonconsumable materials such as a white board. In addition, a little over \$2,000 was spent in developing the program's curriculum. Finally, the Brock Environmental Center facility, including the classroom, was made possible due to a donation to the Chesapeake Bay Foundation.

Table 6: One-Time Start-Up Costs for the Environmental Studies Program

| Cost Category | Proposed Budget* | Actual Cost 2019-20 Fiscal Year | Actual Cost 2020-21 Fiscal Year | Start-Up Total |
|---|---|---------------------------------------|---------------------------------------|------------------|
| Curriculum Development | \$15,000 | \$1,525 | \$750 | \$2,275 |
| Instructional Materials/Equipment for Student Research | \$65,000 (\$15,000 Instructional Materials, \$50,000 Equipment) | \$66,051 | \$12,575 | \$78,626 |
| Furniture | \$0 | \$0 | \$40,261 | \$40,261 |
| Technology | \$25,000 | \$0 | \$13,458 | \$13,458 |
| Office Supplies | \$0 | \$0 | \$2,066 | \$2,066 |
| Transportation - Buses | \$0 | \$0 | \$0 | \$0 |
| Facilities – Brock Environmental Center Classroom | \$0 (Donation to the Chesapeake Bay Foundation) | \$0 | \$0 | \$0 |
| Total One-Time or Start-Up Cost | \$105,000 | \$67,576 | \$69,110 | \$136,686 |

* Includes proposed amounts from 2019-2020 and 2020-2021 where applicable

Table 7 displays the annual operating costs for the program which totaled \$147,557. This was under the total projected annual operating costs of \$196,591. The largest operating cost included program-specific personnel, which included the teaching coordinator’s salary. The second largest cost is attributed to transportation. The transportation cost for the program’s first year was \$28,597, which was under the projected amount of \$78,430. Of the 41 students attending the program, 21 students required transportation services.⁸ This cost includes the use of 6 buses and 4 vans. Please note that the cost of transportation services during the 2020-2021 school year is not reflective of a typical school year because the pandemic led to students learning in a virtual setting for a little over half of the school year and students did not require transportation. According to the Office of Transportation Services, if the school year had not been truncated due to the pandemic, the estimated cost for transportation would have totaled around \$98,417, which is greater than the \$78,430 in the proposed budget. The next largest cost is attributed to building use, which was not allocated for in the budget. VBCPS and the Chesapeake Bay Foundation (CBF) have a formal agreement related to the use of the classroom in the Brock Environment Center which is owned by the CBF. As part of this agreement, VBCPS must agree to the terms of use and pay a “Use Fee” of quarterly installments of \$3,904. About \$500 was spent on communication/marketing which included postcards to market the program and general office supplies. Instructional materials included items such as water testing solutions that will need to be purchased annually. The budget included \$7,500 allocated for professional learning that was not used during year-one. As previously mentioned, much of the professional learning for the teaching coordinator during year-one was informal. When the teaching coordinator traveled to the Teton Science School, the trip was funded through a credit that the school division had accrued from an unused fund.⁹

Table 7: Annual Operating Costs for the Environmental Studies Year-One Implementation

| Cost Category | Proposed Budget | Actual Cost 2019-20 Fiscal Year | Actual Cost 2020-21 Fiscal Year | Operating Cost Total |
|--|------------------|---------------------------------|---------------------------------|----------------------|
| Instructional Materials | \$0 | \$0 | \$57 | \$57 |
| Field Trips/Site Visits | \$0 | \$0 | \$0 | \$0 |
| Professional Learning | \$7,500 | \$0 | \$0 | \$0 |
| Communication/Marketing | \$0 | \$215 | \$0 | \$215 |
| Office Supplies | \$0 | \$117 | \$107 | \$224 |
| Program-Specific Personnel* | \$110,661 | \$0 | \$114,560 | \$114,560 |
| Transportation | \$78,430 | \$0 | \$28,597 | \$28,597 |
| Use of Brock Environmental Center Building** | \$0 | \$0 | \$3,904 | \$3,904 |
| Total Annual Operating/Recurring Cost | \$196,591 | \$332 | \$147,225 | \$147,557 |

*Based on average salaries for academy coordinators across the division, including fringe benefits and health insurance.

**There was a \$10,000 deposit submitted by VBCPS that would be expected to be returned when the contract expires with the Chesapeake Bay Foundation in 2030 if it is not renewed. This deposit is not included as a cost.

Based on actual cost data from 2019-2020 and 2020-2021 fiscal years, the total annual operating cost for year one was \$147,557, which was \$49,034 lower than the proposed budget. Much of the decrease was attributed to students attending part of the school year virtually leading to a reduction in transportation costs. In addition, the \$7,500 allocated to professional learning was not utilized.

Overall, the proposed budget for one-time start-up and year-one operating costs was \$301,591 over a two-year period spanning 2019-2020 and 2020-2021. When actual costs were analyzed, the one-time start-up and year-one operating costs totaled \$284,243 over the two years. Thus, the actual costs were \$17,348 less than the proposed budget.

Summary

The Environmental Studies Program year-one evaluation focused on the program’s first year of implementation for grade 11 students during the 2020-2021 school year. The Environmental Studies Program at the Chesapeake Bay Foundation’s Brock Environmental Center offers students the unique opportunity to learn beyond the classroom and to study, understand, and explore the intersection of business, culture, and natural resources. The experiential and place-based nature of this program links students with community partners to broaden personal pathways. The program provides a comprehensive program of study for students interested in a sustainability perspective with hands-on, scientific field work, and challenge-based investigative learning opportunities.

The program was led and taught by one staff member, the teaching coordinator, but an additional staff member was hired in the summer of 2021 in preparation for the program’s second year of implementation for grade 12 students in 2021-2022. A total of 41 grade 11 students were enrolled in the Environmental Studies Program at the end of the school year, representing every high school across the division. The majority of the students in the program were female (61%), and the majority of the students in the program were Caucasian (83%). All 41 students enrolled in the four courses taken at the Brock Environmental Center: AP Environmental Science, Sustainability: Core Concepts and Environmental Systems, Natural Resource Management, and Watershed Hydrology. Overall, students performed academically well across the four courses with students having the highest performance in the Natural Resource Management course, with 100 percent of students earning an A. Approximately three-quarters of the students in the program took the Environmental Science AP Exam. Twenty-nine percent (29%) of the students scored a 4 on the exam and 19 percent of the students scored a 3 on the exam.

The Environmental Studies Program consists of one overarching goal of broadening students' understanding of sustainability which it aims to do through five objectives: utilizing the natural community as a context for learning about environmental and sustainability issues; implementing environmental service learning projects; integrating interdisciplinary instruction; incorporating challenge-based, collaborative, and design-thinking learning; and earning the Seal of Excellence in Science and the Environment upon high school graduation. Although the first year of implementation for the program occurred during the COVID-19 pandemic and associated challenges for face-to-face learning, based on year one data, the Environmental Studies Program has made strong, promising progress toward meeting its goals. Students and parents both unanimously agreed that the Environmental Studies Program broadened their or their child's understanding of sustainability. In addition, when asked how students benefited from enrolling in the program, the most common response was related to knowledge about the environment and/or sustainability. Students and parents unanimously agreed that the program provided place-based learning opportunities or the natural community as a context for learning about environmental and sustainability issues. Students unanimously agreed that the program integrated learning across subject areas including policy, science, contemporary social issues, environmental issues, and economic issues. Ninety-seven percent (97%) of students reported the program provided rigorous and challenging learning experiences along with 100 percent of parents. One hundred percent (100%) of students reported that the program provided them with opportunities to be collaborative.

Another goal of the program is to establish collaborative agreements with institutions of higher education that results in ongoing program development and assessment. Currently, the program has partnerships with four institutions of higher learning, and 18 additional organizations including non-profits.

Overall, the program was perceived very positively by both students and parents who responded to the surveys. Students and parents had positive perceptions of the application process with 100 percent of parents and at least 97 percent of students agreeing that the application process was clear, enough information about the program was provided, there was enough time to complete the application, and the information sessions and social media outreach were helpful. All students and parents were satisfied with the overall program, and student retention in the program appears strong with 92 percent of students indicating they would be enrolling again next year. In addition, 100 percent of students and parents reported that the Environmental Studies Program was meeting their or their child's learning needs. Programmatic components including the Brock Environmental Learning Center, the outdoor learning environment, and science or technological tools were viewed positively with 100 percent satisfaction. Nearly all (98%) students were satisfied with the program's classes, and 96 percent of parents were satisfied with the classes.

The Environmental Studies Program's one-time start-up costs were slightly more than proposed. This was mainly attributed to a lack of allocation for furniture. However, the year-one annual operating costs were less than proposed. This can be attributed to a decrease in transportation costs due to virtual learning during the COVID-19 pandemic and utilizing division credits and informal professional learning opportunities. Overall, the total cost to prepare and implement the first year of the program was \$284,243 which was approximately \$17,000 less than the proposed budget.

Recommendations and Rationale

Recommendation #1: Continue the Environmental Studies Program with modifications noted in Recommendation 2. *(Responsible Group: Department of Teaching and Learning)*

Rationale: The first recommendation is to continue the Environmental Studies Program with modifications noted in the recommendation below. Based on School Board Policy 6-26, following an evaluation, a

recommendation must be made to continue the program without modifications, continue the program with modifications, expand the program, or discontinue the program. The recommendation to continue the Environmental Studies Program with modifications is focused on enabling the program to operate with sufficient staff to ensure adequate supervision of students during field-based study and to minimize potential disruptions to the instructional program.

Recommendation #2: Provide an additional staff member to support instruction and assist the program coordinator with logistics related to safety when working in the field, transportation concerns, and other duties as needed. *(Responsible Group: Department of Teaching and Learning).*

Rationale: The second recommendation is to provide an additional staff member for the program to ensure adequate supervision of students when they are working in the field, assist with other instructional support duties as needed, and assist with transportation logistics. Through the evaluation process, it became apparent that when any issue arose within the program, whether it was a student issue, a transportation issue, or a technology issue, the teaching coordinator had the responsibility for troubleshooting and solving the problem at the same time as instructing a class of 25 students. A primary concern is the staff-to-student ratio when students are conducting field work at the Chesapeake Bay site which is an integral component of the program. Currently, with just one staff member per class of up to 25 students, the ratio does not meet standards in operation with other programs or with VBCPS field trips. For example, the VBCPS field trip staff-to-student ratio is one adult for every 10 students. Additionally, the Chesapeake Bay Foundation uses two trained field educational staff plus the teacher of the student group for supervising 25 students. In another example, the Teton Science School has a minimum of two trained staff for supervising 25 students. In addition, to the supervision and safety concerns while conducting field work in and around the Chesapeake Bay, when students and parents were asked what could be improved with the program, challenges related to transportation elicited the most frequent responses. Again, when challenges arose, the program's one staff member was responsible for addressing them while being responsible for instruction. While a second teacher was hired for the implementation of the second grade level of the program, this does not fully alleviate the concerns because the teacher will also be instructing up to 25 students in both the morning and the afternoon program sessions. Therefore, an additional support position is recommended to support the overall program.

Appendix

Appendix A: Proposed Budget

One-time purchase costs and recurring costs to develop and implement the Environmental Studies Program are listed in the table below.

| | | One-Time Purchase and Start-up Costs | Recurring Costs |
|----------------------------------|-----------------|---|---|
| Description | FY 19/20 | FY 20/21 | FY 21/22 |
| Transportation* | | \$78,430 | \$78,430 |
| Instructional Costs | | | |
| • Instructional materials | | \$15,000 | \$2,000 |
| • Equipment for student research | | \$50,000 | \$2,000 |
| • Field Trips and Site Visits | | | \$5,000 |
| • Curriculum development | \$10,000 | \$5,000 | \$1,000 |
| • Professional development | \$2,500 | \$5,000 | \$2,500 |
| Technology | | \$25,000 | \$2,000 |
| Teacher salaries | | \$110,661 (1 FTE Coordinator) | \$186,270 (1 FTE Coordinator and 1 FTE Teacher) |
| Total | \$12,500 | \$289,091 | \$279,200 |

End Notes

¹ The original evaluation question also included the extent to which the professional learning was effective; however, because only one program staff was involved in professional learning, this was not addressed. It will be reassessed in year-two when there is more than one staff member.

² Enrollment is based on the number of students enrolled in both Environmental Studies courses according to VBCPS data warehouse as of September 28, 2021; subject to change.

³ C. Freeman, personal communication, August 4, 2021.

⁴ Chesapeake Bay Foundation, Education Department, *Personnel Policy Manual*, 2019.

⁵ C. Freeman, personal communication, August 4, 2021.

⁶ Donald E. Robertson, Jr., "Updated Field Trip Guidelines for 2019-2020," memorandum, October 3, 2019.

⁷ Department of Teaching and Learning provided their BuySpeed documentation by searching for the keyword "ESP."

⁸ C. Blair, personal communication, August 2, 2021.

⁹ C. Freeman, personal communication, August 4, 2021.

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Notice of Non-Discrimination Policy

Virginia Beach City Public Schools does not discriminate on the basis of race, color, religion, national origin, sex, sexual orientation/gender identity, pregnancy, childbirth or related medical condition, disability, marital status, age, genetic information or veteran status in its programs, activities, employment, or enrollment, and provides equal access to the Boy Scouts and other designated youth groups. School Board policies and regulations (including, but not limited to, Policies 2-33, 4-4, 5-7, 5-19, 5-20, 5-44, 6-33, 6-7, 7-48, 7-49, 7-57 and Regulations 4-4.1, 4-4.2, 5-44.1, 7-11.1, 7-17.1 and 7-57.1) provide equal access to courses, programs, enrollment, counseling services, physical education and athletic, vocational education, instructional materials, extracurricular activities and employment.

Title IX Notice: Complaints or concerns regarding discrimination on the basis of sex or sexual harassment should be addressed to the Title IX Coordinator, at the VBCPS Office of Student Leadership, 641 Carriage Hill Road, Suite 200, Virginia Beach, 23452, (757) 263-2020, Mary.Dees@vbschools.com (student complaints) or the VBCPS Department of School Leadership, 2512 George Mason Drive, Municipal Center, Building 6, Virginia Beach, Virginia, 23456 (757) 263-1088, Elizabeth.Bryant@vbschools.com (employee complaints). Additional information regarding Virginia Beach City Public Schools' policies regarding discrimination on the basis of sex and sexual harassment, as well as the procedures for filing a formal complaint and related grievance processes, can be found in School Board Policy 5-44 and School Board Regulations 5-44.1 (students), School Board Policy 4-4 and School Board Regulation 4-4.3 (employees), and on the School Division's website at [Diversity, Equity and Inclusion/Title IX](#). Concerns about the application of Section 504 of the Rehabilitation Act should be addressed to the Section 504 Coordinator/Executive Director of Student Support Services at (757) 263-1980, 2512 George Mason Drive, Virginia Beach, Virginia, 23456 or the Section 504 Coordinator at the student's school. For students who are eligible or suspected of being eligible for special education or related services under IDEA, please contact the Office of Programs for Exceptional Children at (757) 263-2400, Plaza Annex/Family and Community Engagement Center, 641 Carriage Hill Road, Suite 200, Virginia Beach, VA 23452.

The School Division is committed to providing educational environments that are free of discrimination, harassment, and bullying. Students, staff, parents/guardians who have concerns about discrimination, harassment, or bullying should contact the school administration at their school. Promptly reporting concerns will allow the school to take appropriate actions to investigate and resolve issues. School Board Policy 5-7 addresses non-discrimination and anti-harassment, Policy 5-44 addresses sexual harassment and discrimination based on sex or gender. Policy 5-36 and its supporting regulations address other forms of harassment.

Alternative formats of this publication which may include taped, Braille, or large print materials are available upon request for individuals with disabilities. Call or write Nikki Garmer, Virginia Beach City Public Schools, 2512 George Mason Drive, P.O. Box 6038, Virginia Beach, VA 23456-0038. Telephone 263-1199 (voice); fax 263-1131; 263-1240 (TDD) or email her at anna.garmer@vbschools.com.

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October 2021