Virginia Board of Education Agenda Item

Agenda Item: D **Date:** February 28, 2013

Title	Final Review of Proposal from Richmond County Public Schools to Establish the Northern Neck Technical Center Governor's STEM Academy for Agriculture and Maritime Studies		
Presenter	Ms. Lolita B. Hall, Director, Office of Career and Technical Education Services Dr. James Gregory Smith, Superintendent, Richmond County Public Schools		
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Purpose of Presentation:
Other initiative or requirement. Specify below:
Final review and acceptance of the Proposal from Richmond County Public Schools to Establish the Northern Neck Technical Center Governor's STEM Academy for Agriculture and Maritime Studies

Previous Review or Action:
Previous review and action. Specify date and action taken below:
Date: January 10, 2013
Action: First Review

Action Requested:
Final review: Action requested at this meeting.

Alignment with Board of Education Goals: Please indicate (X) all that apply:

x	Goal 1: Accountability for Student Learning
	Goal 2: Rigorous Standards to Promote College and Career Readiness
x	Goal 3: Expanded Opportunities to Learn
	Goal 4: Nurturing Young Learners
	Goal 5: Highly Qualified and Effective Educators
	Goal 6: Sound Policies for Student Success
	Goal 7: Safe and Secure Schools
	Other Priority or Initiative. Specify:

Background Information and Statutory Authority:
Goal 1: The Academy must meet rigorous criteria established by the Board of Education. Students progress in academic and technical knowledge and skills; and their employability knowledge and skills are monitored and measured annually to ensure successful transition to college and career.

Goal 3: The Governor's STEM Academy is designed to expand opportunities for the general student population to acquire STEM literacy and other critical skills, knowledge, and credentials that will prepare them for high-demand, high-wage and high-skill careers.

Partnerships establishing academies must include at least one public school division, business and industry, and postsecondary education. On November 29, 2007, the Board of Education approved the criteria to establish a Governor's STEM Academy. Subsequently, on March 19, 2008, the Board approved the standards for the Governor's Career and Technical Education Exemplary Standards Awards Program, which all Career and Technical Academies must implement.

As required by the Board of Education, the State Council of Higher Education for Virginia (SCHEV) has reviewed the attached proposal and recommends that the Board approve the proposal. Staff members of the Virginia Department of Education (DOE) have also reviewed the proposal in the context of the Board's criteria. An executive summary of the proposal is in Attachment A. Attachments B and C are the reports from the reviews by SCHEV and the DOE. Attachment D is the complete proposal.

Currently, there are 17 Governor's STEM Academies in Virginia. They are located in Arlington County, Carroll County, Chesapeake City, Chesterfield County, Fairfax County, Halifax County, Hampton City, Loudoun County, Lynchburg City, New Kent County, Newport News City, Richmond City, Roanoke County, Russell County, Stafford County, Suffolk City, and Virginia Beach City.

Summary of Important Issues:

The proposal for the Northern Neck Technical Center Governor's STEM Academy for Agriculture and Maritime Studies consists of partnerships with the Northern Neck Technical Center *(Academy Lead Agency),* Town of Colonial Beach Public Schools, Essex County Public Schools, Lancaster County Public Schools, Northumberland County Public Schools, Richmond County Public Schools, Westmoreland County Public Schools, Rappahannock Community College, The College of William and Mary, Rappahannock Educational Consortium, National Science Foundation Southeast Maritime and Transportation Center (NSF SMART Center), STEM Education Alliance, Friends of the Rappahannock, Richmond County Extension Service, Bay Consortium Workforce Investment Board, Inc., Historyland Nursery, Montague Farms, Inc., Northern Neck Nursery, Northern Neck Vegetable Growers Association, Inc., Whelan's Marina, and White Point Marina, Inc.

The Academy will focus on the following three career pathways within three career clusters:

CAREER CLUSTER	CAREER PATHWAY
Agriculture, Food, and Natural Resources	**Plant Systems**
Transportation, Distribution, and Logistics	**Facility and Mobile Equipment Maintenance (Maritime)**
Science, Technology, Engineering, and Mathematics (STEM)	**Engineering and Technology**

Agriculture has long been a major industry on the Northern Neck, particularly in certain specialized, emerging areas. Graduates of these focus career pathways will help to meet the demand for agricultural and maritime industries in the local area as well as nearby areas of Virginia.

Students trained in the **Plant Systems** Career Pathway will contribute to regional economic growth on the Northern Neck through the rebirth of traditional agricultural career opportunities in combination with twenty-first century careers. The 2007 Virginia Census of Agriculture reported that there were 3,114 farms in the Northeast District, with 634,909 acres of farmland under cultivation. An area of growth in the agricultural industry on the Northern Neck is the emergence of nontraditional farms, such as organic vegetable farms, wineries and vineyards, and turf-management industries. Significant agricultural areas of

focus include landscape design, landscape maintenance, and landscape chemical treatment. All these occupational areas require twenty-first century knowledge and skill sets that the Academy will provide. Within this pathway, students will have the opportunity to engage in internships, mentorships, and other work-based experiences at placement sites, such as the Northern Neck Nursery and Historyland Nursery.

Careers in the **Facility and Mobile Equipment Maintenance (Maritime)** Career Pathway are integral to the Northern Neck because of the myriad of crafts that traverse the area's extensive waterways for business and pleasure. The maritime maintenance industry has evolved from making basic mechanical repairs to encompassing jobs requiring expert technicians with creative problem-solving, mathematical, technical reading, and analytical thinking skills. The projected employment number for 2018 for jobs in the Facility and Mobile Equipment Maintenance pathway in the Northern Neck is 12,773, which is 6.37 percent higher than the 2008 figure (VELMA). Students graduating from the Academy with a concentration in Marine Service Technology will be equipped for job opportunities in the shipyards and boatyards stretching from Norfolk-Newport News to Baltimore. Additionally, internships, mentorships, and other work-based learning experiences in this pathway will be available through local and regional placement sites such as Whelan's Marina, one of the Academy's regional partners.

Students educated in the **Engineering and Technology** Career Pathway will fill the jobs in the growing architecture and engineering occupational fields. By 2018, engineering and architecture jobs are predicted to increase by 16.3 percent in the Commonwealth, and on the Northern Neck, this figure is 17.54 percent, putting careers in the STEM Career Cluster among the fastest growing in the region: for example, civil engineering jobs on the Northern Neck are predicted to experience growth of 33.44 percent by 2018.

The Academy's instructional program will include virtual classes that feature blended learning - consisting of traditional face-to-face classroom settings with a computer-mediated environment. The virtual classes will be enhanced by in-person, project-based learning experiences.

In response to the Board of Education first review of the proposal, the partnership has taken the following actions:

The curriculum design for the Engineering and Technology career pathway has been strengthened by entering an agreement with Project Lead The Way (PLTW), Inc. The PLTW curriculum design includes a coherent sequence of secondary school engineering courses: (1) Introduction to Engineering Design, (2) Principles of Engineering, and (3) Civil Engineering and Architecture. Additionally, the curriculum design for the Plant Systems career pathway will include the PLTW Biotechnical Engineering course.

Project Lead The Way is the leading provider of rigorous and innovative Science, Technology, Engineering, and Mathematics (STEM) education curricular programs used in middle and high schools across the U.S. The program engages students in activities-, projects-, and problem-based learning, which provides hands-on classroom experiences. Students create, design, build, discover, collaborate and solve problems while applying what they learn in mathematics and science.

More than 4,200 schools in all 50 states and the District of Columbia offered PLTW courses to their students in the 2011-12 school year. In addition, PLTW has trained more than 10,500 teachers to instruct its engaging, rigorous STEM education curriculum.

PLTW's comprehensive curriculum for engineering and biomedical sciences has been collaboratively designed by PLTW teachers, university educators, engineering and biomedical professionals and school

administrators to promote critical thinking, creativity, innovation and real-world problem-solving skills in students.

PLTW Professional Development is a three-phase program designed to teach the content and pedagogical skills needed to instruct each PLTW course. It is focused on proper preparation, in-depth training, and continuing education. The three phases of professional development include: Phase 1 Readiness Training, Phase 2 Core Training, and Phase 3 Ongoing Training.

Readiness Training: Readiness Training is delivered online and represents the first phase of the PLTW Professional Development program. It is designed to prepare teachers for Core Training by assessing and developing a baseline relative to course tools, content and concepts necessary for success. A teacher must successfully complete Readiness Training prior to registering for Core Training.

Core Training: Core Training is the second phase of the PLTW Professional Development program. These two-week sessions, held year round at PLTW University Affiliates, are designed to provide an in-depth overview and hands-on, course-specific training of the curriculum with a strong focus on pedagogy and professional networking. A teacher must successfully complete Core Training for each PLTW course they plan on teaching. In Virginia, Old Dominion University, School of Engineering, serves as the PLTW University Affiliate.

Ongoing Training: Ongoing training is the third phase of the PLTW Professional Development program and is largely administered through the Virtual Academy. It is designed to provide PLTW teachers with opportunities for continuous professional development to further their understanding of course tools, content and concepts after they have successfully completed Core Training.

A clear strength of the PLTW program is the intensive teacher professional development program. The data indicate that this organized and focused strategy to educating future PLTW teachers about the curriculum, equipment, and approach to education of PLTW courses plays an essential role in the success of the PLTW students.

In November 2012, Dr. Robert Tai, Associate Professor at the University of Virginia, collected and analyzed over 30 studies and reports on Project Lead The Way. His findings on the success of PLTW are compelling. Key research findings include:

- 92% of high school seniors who are taking PLTW courses intend to pursue a four-year degree or higher, 51% intend to pursue a graduate degree, and 70% intend to study engineering, technology, or computer science. By comparison, 67% of all beginning postsecondary students intended to pursue a bachelor's degree or higher as reported by the National Center for Education Statistics. (True Outcomes – 2009)
- About 90% of students who take PLTW courses and were surveyed at the end of their senior year said they had a clear and confident sense of the types of college majors and jobs they intended to pursue. Those students also said that their PLTW experiences were very significant in developing this self-knowledge and their PLTW experiences significantly increased their ability to succeed in postsecondary education. (True Outcomes – 2009)
- College students, who took PLTW courses in high school, study engineering and technology at 5 to 10 times the rate of those students who did not take PLTW courses in high school and also have higher retention rates in their fields of study.

A national analysis of 200 college transcripts of PLTW students found that:

- Analysis of college transcripts of PLTW students who graduated in 2007 or 2008 showed 31% of PLTW students studied engineering and engineering technology in their first year of college compared with 8% of all first-time freshmen in baccalaureate institutions or 5% of all postsecondary students. PLTW students are four times more likely to study engineering or engineering technology in college compared to first-time freshmen at four-year institutions. (True Outcome – 2009)

The Governor's STEM Academy PLTW teachers will possess, at a minimum, a Bachelor's Degree, and be in compliance with Virginia Department of Education teacher licensure requirements.

Research studies have found that student performance in mathematics as well as conceptual and applied knowledge significantly increases when the curriculum is well designed and implemented. On an ongoing basis, the Academy staff will participate in rigorous and relevant project-based learning professional development. The partnership believes that implementation of project-based learning strategies will contribute significantly toward closing the student achievement gap. As a result, students graduating with a 2.5 cumulative GPA or higher will satisfy the requirements for admission into Rappahannock Community College to pursue an associate in applied science degree. Further, these students will be eligible to transfer to Old Dominion University and take all advanced level courses required to earn a bachelor's degree in the targeted career pathways.

The Academy partnership updated the employment projections for the region based on the new 2010-2020, Virginia Employment Commission, Virginia Occupational Employment Projections.

As the Virginia Longitudinal Data System (VLDS) evolves, the Academy will utilize the VLDS data to determine students' successful transition to college and employment in their chosen career field. Also, the Academy will participate annually in the University of Virginia, Weldon Cooper Center, follow-up survey of career and technical education graduates.

In summary, the Academy will provide an instructional environment that significantly increases student access to rigorous and relevant college and career readiness programs of study.

Impact on Fiscal and Human Resources:
Funding must be provided at the local level.

Timetable for Further Review/Action:
The proposed beginning date for the Northern Neck Technical Center Governor's STEM Academy for Agriculture and Maritime Studies, Richmond County Public Schools, is school year 2013-14.

Superintendent's Recommendation:
The Superintendent of Public Instruction recommends that the Board of Education approve the proposal to establish the Northern Neck Technical Center Governor's STEM Academy for Agriculture and Maritime Studies, Richmond County Public Schools.

Attachment A

Northern Neck Technical Center
Governor's STEM Academy for Agriculture and Maritime Studies

Executive Summary

Partnership Members:	Northern Neck Technical Center; Town of Colonial Beach Public Schools; Essex County Public Schools; Lancaster County Public Schools; Northumberland County Public Schools; Richmond County Public Schools (Academy Fiscal Agent); Westmoreland County Public Schools; Rappahannock Community College; The College of William and Mary; Rappahannock Educational Consortium; National Science Foundation Southeast Maritime and Transportation Center (NSF SMART Center); STEM Education Alliance; Friends of the Rappahannock; Richmond County Extension Service; Bay Consortium Workforce Investment Board, Inc.; Historyland Nursery; Montague Farms, Inc.; Northern Neck Nursery; Northern Neck Vegetable Growers Association, Inc.; Whelan's Marina; White Point Marina, Inc.
Lead Agency:	Northern Neck Technical Center
Fiscal Agent:	Richmond County Public Schools
Contact Person:	Todd H. Davis Academy Project Director Assistant Principal, Northern Neck Technical Center 804-333-4940 tdavis@northernnecktech.org
Academy Location:	Northern Neck Technical Center P.O. Box 787 Warsaw, VA 22572
Number of Students:	The Governor's STEM Academy for Agriculture and Maritime Studies will enroll a minimum of 144 students in grades nine through twelve during the initial school year (2013-14).
Career Pathways:	Engineering and Technology Plant Systems Facility and Mobile Equipment Maintenance (Maritime)
Overview	Agricultural and maritime industries prevail on the Northern Neck. Graduates from the six Northern Neck school divisions compete for jobs in these industries. The Governor's STEM Academy for Agriculture and Maritime Studies, centered at the Northern Neck Technical Center, will prepare students for college and for careers in high-paying technical positions in the twenty-first century work force serving these industries. The Academy will inspire, recruit, motivate, and engage K–12 students in the direction of agricultural, maritime, and STEM careers. The program objectives and performance measures support academic achievement, dual-enrollment courses, on-time graduation rates, and reduced dropout rates, while facilitating work-based experiences. The six school divisions will provide core instruction in mathematics and science. Staff development for mathematics and science teachers will be coordinated through the Northern Neck Technical Center in partnership with The College of William and Mary. The enriched staff development for mathematics and science teachers will positively impact all K–12 students on the Northern Neck. Many of the Academy's CTE courses will be provided as virtual classes asynchronously,

Executive Summary

allowing students to easily fit STEM classes into their schedules without leaving their home schools. These virtual classes will reduce travel expenses, save time, and increase instructional time. Dual-enrollment classes will also be taught online, either from the Northern Neck Technical Center or Rappahannock Community College. A work-based experience will be provided to each student in the summer between the junior and senior years.

Goals and Objectives: The overall goals of the Governor's STEM Academy for Agriculture and Maritime Studies include the following:

- Maximize opportunities in preparing Northern Neck public school students for targeted careers in agricultural and maritime engineering and technology.
- Increase students' knowledge of and interest in careers in engineering and technology.
- Increase student enrollment in science, mathematics, engineering, and technology courses.
- Provide highly-skilled workers to support the work force needs of maritime and agricultural businesses and industries on the Northern Neck and greater Eastern and Central Virginia.
- Ensure that students graduate with college- and career-readiness knowledge and skills.
- Increase the number of students who qualify for the Advanced Studies Diploma.
- Expose all K–12 students on the Northern Neck to higher mathematics and science to prepare them for possible participation in the Academy.

Specific objectives include the following:

- Academy students will maintain a 2.5 Grade Point Average (GPA) and improve their academic achievement.
- Academy students will earn between 9 and 12 transferable credits from dual-enrollment and/or Advanced Placement (AP) courses.
- Academy work-based learning internships will be coordinated with businesses and completed in the summer between eleventh and twelfth grades.
- The Academy program will increase on-time graduation rates and reduce dropout rates.
- The Academy will assist in increasing enrollment and retention in postsecondary education, while reducing the number of students requiring remediation in college.
- The Academy will increase the number of students completing the Virginia Workplace Readiness Skills for Commonwealth assessment, and industry certification and credentialing tests including a college-readiness skills curriculum.
- The Academy will increase the number of graduates employed in high-wage, high-demand, and high-skill careers related to agriculture and maritime industries.

Attachment B

The State Council of Higher Education for Virginia

Review of Governor's STEM Academy Proposal

Name of Lead Entity on Proposal: *Northern Neck Technical Center*

Date of Review: January 8, 2013

The State Council of Higher Education for Virginia recommends approval of: *Governor's STEM Academy for Agriculture and Maritime Studies*

Peter Blake
Director

1/8/13
Date

Attachment C

Virginia Department of Education
Governor's STEM Academy
Proposal Review Checklist

Title of Proposal: Northern Neck Technical Center Governor's STEM Academy for Agriculture and Maritime Studies

Lead Entity for Proposal:
Academy Coordinator

Date of Review: September 25, 2012

Virginia Department of Education
Governor's STEM Academy
Proposal Review Checklist

I. Partnership Capacity

Partnerships desiring to implement a Governor's STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. An active, ongoing planning committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity. At a minimum, members must represent K-12 education (superintendent or designee), higher education, and business and industry. All partners must be represented on the committee.	X			
B. An advisory committee, including a list of members and signed certifications from each that they are willing and able to serve in that capacity.	X			
C. A written memorandum of agreement among school divisions, local businesses, postsecondary institutions, and any other partners that outlines ways in which community resources will contribute to the Governor's STEM Academy to broaden the scope of students' educational experiences.	X			
D. A statement of assurances that the Governor's STEM Academy Planning Committee has reviewed provisions of *Administrative Procedures Guide for the Establishment of Governor's STEM Academies* and agrees to follow the guidelines set forth in the document (see appendix).	X			

Criteria	Documentation			Comments
	Full	Partial	None	
E. A statement of assurances that, if applicable, an ongoing Governing Board will be established to reflect current Board of Education regulations relative to jointly operated schools and programs (see appendix).	X			
Comments:				

II. Need/Rationale for the Academy

Partnerships desiring to implement a Governor's STEM Academy shall provide the Department of Education with evidence of the following:

Criteria	Documentation			Comments
	Full	Partial	None	
A. Demonstration of the need/rationale for the Academy. This statement should be concise and state the major reasons to have a Governor's STEM Academy, including need at the state, local and/or regional levels.	X			
B. A description of the enhanced or additional offerings in science, technology, engineering, and/or mathematics (STEM) that will meet the need described above.	X			
C. A fiscal agent that is a public entity, including a certification that the entity is willing and able to serve in that capacity.	X			
Comments:				

III. Program Description

Each Governor's STEM Academy planning committee shall develop cooperatively with local school divisions, business, community, and higher education partners and have available for review and dissemination, a program description that includes:

A. A statement of program goals addressing the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Rigorous academic content in career and technical instruction;	X			
2. An emphasis on STEM career pathways;	X			
3. Individualized high school plans to ensure course selections that are aligned with students' transition and career goals after high school;	X			
4. Evidence that graduates will complete a college and work readiness curriculum, minimally at the level specified for Commonwealth Scholars Course of Study (State Scholars Core) with the possibility of pre-approved substitution of equivalent courses where there may be more relevant course selections for a particular career pathway;	X			
5. Incorporation of Virginia's Workplace Readiness Skills.	X			
Comments:				

B. A statement of program objectives and performance measures to:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Improve academic achievement of Academy students;	X			
2. Increase completion of dual enrollment courses;	X			
3. Provide workplace readiness experiences for students through strong partnerships with businesses;	X			
4. Increase high school graduation rates;	X			
5. Reduce dropout rates;	X			
6. Increase enrollment and retention in postsecondary education;	X			
7. Increase the proportion of students completing a college and workplace ready curriculum in high school;	X			
8. Reduce the proportion of students requiring remediation in college;	X			
9. Increase the number of industry certifications awarded to high school students; and	X			
10. Increase the number of graduates employed in high-wage, high-demand and high-skill careers.	X			
Comments:				

C. A brief description of the proposed program, including:

Criteria	Documentation			Comments
	Full	Partial	None	
1. Site location;	X			
2. Number of students to be served;	X			
3. Grade levels;	X			
4. General curriculum design;	X			
5. List of courses to be delivered;	X			.
6. Description of how/where the courses will be delivered. Courses may be delivered on a high school, technical center or community college campus, online, or in other innovative ways; and	X			
7. Designation of full-day or part-day, academic-year program.	X			
Comments:				

D. Evidence of participation in the Governor's Exemplary Standards Award Program for Career and Technical Education

	Documentation			Comments
	Full	Partial	None	
	X			.
Comments:				

E. Program and course descriptions

E.1. At least two well-articulated career pathways must be included that meet the following criteria:

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #1				
a. Must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology **or**	X			
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. At least one pathway must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or state.	X			

Criteria	Documentation			Comments
	Full	Partial	None	
Comments:				

Criteria	Documentation			Comments
	Full	Partial	None	
Pathway #2				
a. Each career pathway must include opportunities to earn industry credentials, postsecondary certificates, diplomas or associate degrees while in high school and pursue additional industry credentials and academic degrees at the associate, bachelor's and graduate levels. These pathways may be in the same or different career clusters.	X			
b. Must be in a field identified by a statewide authority or organization, such as the Virginia Economic Development Partnership or the Virginia Research and Technology Advisory Commission, as a strategic growth area for Virginia. Examples include biosciences, information technology, automotive technology and motor sports, as well as modeling and simulation and nanotechnology, or	X			
c. Must address regional and local work force demand in a high-wage, high-skill field as identified by employers and work force officials.	X			
d. Of the two pathways described, at least one must be in a STEM-related field. This career pathway should drive the innovative capacity of the region and/or the state.	X			

e. Additional career pathways may address one of the areas described above, or an area identified by the partnership as an area of interest, growth, or expansion for students in the service area of the Academy.	X			
Comments:				

E.2 List of all requirements for successful program completion.

	Documentation			Comments
	Full	**Partial**	**None**	
	X			
Comments:				

E.3 Academy graduates must achieve one or more of the following benchmarks:

Criteria	Documentation			Comments
	Full	**Partial**	**None**	
a. Earn one or more industry certifications or state occupational licenses, and/or demonstrate competencies on an assessment instrument recognized by postsecondary institutions such as CLEP examinations, collaboratively designed or mutually approved end-of-course tests, college placement tests, or student portfolios reviewed by a team of college and high school faculty; **or**	X			
b. Earn at least 9 transferable college credits as defined in the Early College Scholars program (includes dual enrollment, AP and other options); **or**	X			

Criteria	Documentation			Comments
	Full	Partial	None	
c. Earn an Associate Degree.				
Comments:				

E.4 Significant work-based experience must be included representing additional instruction or training beyond the classroom such as:

Criteria	Documentation			Comments
	Full	Partial	None	
a. Cooperative Education; or				
b. Internships; or	X			
c. Job Shadowing; or	X			
d. Mentorships; or	X			
e. Project-based learning; or	X			
f. Service learning; or	X			
g. A combination of the above.				
Comments:				

F. Length of program and daily schedule: Governor's STEM Academies are defined by program content, not by the location or delivery system of courses. Evidence of the following must be submitted:

Criteria	Documentation			Comments
	Full	Partial	None	
Designation of full-day or part-day, academic-year program.	X			
Comments:				

G. Assurance from the fiscal agent that operating funds and facilities are available to support the Governor's STEM Academy and are adequate to meet the needs of the program

	Documentation			Comments
	Full	**Partial**	**None**	
	X			
Comments: .				

H. Materials and equipment to be provided to accomplish program goals and objectives.

	Documentation			Comments
	Full	**Partial**	**None**	
	X			
Comments: .				

I. Evidence of an internal evaluation process to effect program improvement, including:

Criteria	Documentation			Comments
	Full	**Partial**	**None**	
1. A review of the Academy's policies, procedures, and outcomes;	X			
2. A review of the program design and instructional delivery;	X			
3. Consideration of feedback from students, staff, parents, the community, and partnership members; and	X			
4. Annual collection and reporting of data to the Department of Education related to student achievement, goal achievement, and other indicators.	X			
Comments:				

IV. Administrative Procedures

Each Governor's STEM Academy must develop and maintain procedures developed cooperatively with participating partners. There should be evidence of procedures in the four areas that follow.

A. Partnerships - The role of business and industry, public school divisions, and postsecondary institutions in the partnership. The role of work force and economic development entities should also be included if they are among the partners.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

B. Student recruitment, selection criteria, and admissions.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

C. Code of student conduct and attendance.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

D. Transportation provided by the school division or consortium that is in compliance with all applicable federal and state regulations.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

E. Staff recruitment, selection, and assignment - The Governor's STEM Academy shall hire staff members who meet the Virginia teacher licensure requirements and/or postsecondary faculty qualifications. Where applicable, they must have industry-specific education with training and experience, including industry certification.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

F. Staff development - The program will provide appropriate staff training in addition to staff planning time.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

G. Staff evaluation – Staff will be evaluated according to the human resources policies of the agency or institution employing Academy personnel.

	Documentation			Comments
	Full	Partial	None	
	X			
Comments:				

H. Parent, student and community involvement

Criteria	Documentation			Comments
	Full	Partial	None	
1. Preparation for entering the Academies should begin by eighth grade.	X			
2. Students, parents, teachers, and counselors should work collaboratively to: a. Complete career interest inventories;	X			
b. Prepare academic and career plans outlining an intended course of study in high school;	X			
c. Review multiple postsecondary pathways and the steps required to pursue them;	X			
d. Participate in career assessments to identify areas students should strengthen to qualify for their selected pathways; and	X			
e. Discuss available diplomas, seals, and other recognitions including admission to specialized programs such as Governor's Academies.	X			

I. Documentation of insurance, budget, and other fiscal information

	Documentation			**Comments**
	Full	**Partial**	**None**	
Insurance	X			
Budget (from appendix)	X			
Budget Narrative	X			
Other				
Comments:				

Attachment D

Proposal to Establish the

Northern Neck Technical Center
Governor's STEM Academy
For Agriculture and Maritime Studies

Submitted
to the
Virginia Board of Education

January 10, 2013

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Introduction

Agricultural and maritime industries constitute a major part of the economic base of the Northern Neck area of the Commonwealth. Strength in these industries is crucial to the economic recovery and well-being not only of the Northern Neck, but also of the Commonwealth. Such strength depends on a supply of new workers who are highly trained in a broad spectrum of science, technology, engineering, and mathematics (STEM) knowledge and skills, as well as critical-thinking and problem-solving skills that are needed in the twenty-first century workplace. The Northern Neck Technical Center Governor's STEM Academy for Agriculture and Maritime Studies (hereinafter referred to as the "Academy") will expand opportunities for the secondary school population of the Northern Neck to prepare for careers in these vital, high-wage, high-skill local industries.

Partnership

Today's careers in the agricultural and maritime industries demand rigorous academic education and technical training. In order to provide secondary students in the Northern Neck with the opportunity to receive this training, the following entities will form a partnership to develop the Academy:

- The Northern Neck Technical Center *(Academy Lead Agency)*
- The six Northern Neck school divisions (enrollment: 7,942)
  - Town of Colonial Beach Public Schools (enrollment: 616)
  - Essex County Public Schools (enrollment: 1,627)
  - Lancaster County Public Schools (enrollment: 1,300)
  - Northumberland County Public Schools (enrollment: 1,494)
  - Richmond County Public Schools (enrollment: 1,177) *(Academy Fiscal Agent)*
  - Westmoreland County Public Schools (enrollment: 1,728)
- Rappahannock Community College
- The College of William and Mary
- Rappahannock Educational Consortium

- National Science Foundation Southeast Maritime and Transportation Center (NSF SMART Center)
- STEM Education Alliance
- Friends of the Rappahannock
- Richmond County Extension Service
- Bay Consortium Workforce Investment Board, Inc.
- Historyland Nursery
- Montague Farms, Inc.
- Northern Neck Nursery
- Northern Neck Vegetable Growers Association, Inc.
- Whelan's Marina
- White Point Marina, Inc.

These partnership participants will enable the Academy to leverage local and regional resources and services to prepare students for careers in these important industries. The roles of the Academy partners are outlined in the Memorandum of Agreement (MOA), which has been signed by each partner (see Appendix A). The partners will collaborate through regularly scheduled meetings of the Academy's planning committee and advisory committee, both of which will be tasked to promote the collaboration and commitment of all stakeholders and to develop a program of excellence that promotes rigor and relevance so Academy graduates will be college- and career-ready.

Rationale and Focus

The Academy's planning committee has identified three career pathways within three career clusters for the focus of the Academy:

CAREER CLUSTER	CAREER PATHWAY
Agriculture, Food, and Natural Resources	**Plant Systems**
Transportation, Distribution, and Logistics	**Facility and Mobile Equipment Maintenance (Maritime)**
Science, Technology, Engineering, and Mathematics (STEM)	**Engineering and Technology**

Graduates of courses in these focus career pathways will help to meet the demand for agricultural and maritime industry workers in the local area as well as nearby areas of Virginia. Agriculture has long been and will continue to be a major industry on the Northern Neck, particularly in certain specialized, emerging areas. Appendix B provides details on employment projections from the Virginia Electronic Labor Market Analysis (VELMA) for Northern Neck counties. These data delineate architecture and engineering occupations as high-growth career pathways for the long-term future. They further indicate transportation and material-moving occupations as related growth industries.

Agriculture, Food, and Natural Resources Career Cluster

Students trained in the **Plant Systems** Career Pathway will contribute to regional economic growth on the Northern Neck through the rebirth of traditional agricultural career opportunities in combination with twenty-first century careers. The 2007 Virginia Census of Agriculture reported that there were 3,114 farms in the Northeast District, with 634,909 acres of farmland under cultivation. An area of growth in the agricultural industry on the Northern Neck is the emergence of nontraditional farms, such as organic vegetable farms, wineries and vineyards, and turf-management industries. Significant agricultural areas of focus include landscape design, landscape maintenance, and landscape chemical treatment. All these occupational areas require twenty-first century knowledge and skill sets that the Academy will provide. Within this pathway, students will have the opportunity to engage in internships, mentorships, and other work-based experiences at placement sites, such as the Northern Neck Nursery and Historyland Nursery.

Transportation, Distribution, and Logistics Career Cluster

Careers in the **Facility and Mobile Equipment Maintenance (Maritime)** Career Pathway are integral to the Northern Neck because of the myriad of crafts that traverse the area's extensive waterways for business and pleasure. There is always a need for significant numbers of boatyard workers, and highly-skilled mechanics and technicians trained in the repair of boats and ships are in high demand. The maritime maintenance industry has evolved from making basic mechanical repairs to encompassing jobs requiring expert technicians with creative problem-solving, mathematical, technical reading, and analytical thinking skills. The projected employment number for 2018 for jobs in the Facility and Mobile Equipment Maintenance pathway in the Northern Neck is 12,773, which is 6.37 percent higher than the 2008 figure (VELMA). Students graduating from the Academy with a concentration in Marine Service Technology will be equipped for job opportunities in the shipyards and boatyards stretching from Norfolk-Newport News to Baltimore. Additionally, internships, mentorships, and other work-based learning experiences in this pathway will be available through local and regional placement sites such as Whelan's Marina, one of the Academy's regional partners.

Science, Technology, Engineering, and Mathematics Career Cluster

Students educated in the **Engineering and Technology** Career Pathway will fill the jobs in the growing architecture and engineering occupational fields. By 2018, engineering and architecture jobs are predicted to increase by 16.3 percent in the Commonwealth, and on the Northern Neck, this figure is 17.54 percent, putting careers in the STEM Career Cluster among the fastest growing in the region: for example, civil engineering jobs on the Northern Neck are predicted to experience growth of 33.44 percent by 2018.

Program Description

Goals

A major goal of the Academy will be to ensure that students graduate with college- and career-readiness knowledge and skills. Emphasis will be placed on increasing the number of students who qualify for the Advanced Studies Diploma. Another goal will be to have all K–12 students on the Northern Neck exposed to higher mathematics and science to prepare them for possible participation in the Academy.

Articulated goals include the following:

1. In order to maximize opportunities in preparing Northern Neck public school students for targeted careers in agricultural and maritime engineering and technology,
    a. 100 percent of Academy students will complete Algebra II plus other advanced mathematics courses by their senior year in high school;
    b. 100 percent of Academy students will take four years of science; and
    c. Increase the number of students who pursue career preparation in nontraditional fields.
2. To increase students' knowledge of and interest in careers in engineering and technology and increase student enrollment in science, engineering, technology, and mathematics courses,
    a. 100 percent of Academy students will engage in career planning, project-based learning, and field trips and will report that the Academy's activities assisted in increasing their awareness of STEM jobs in maritime and agriculture career pathways;

   b. 100 percent of Academy students will earn between 9 and 12 transferable credits from dual-enrollment and/or AP courses; and
   c. 75 percent of Academy students will enroll in engineering and technology postsecondary-related courses, programs, or related fields.
3. To provide highly-skilled workers to support the work force needs of maritime and agricultural businesses and industries on the Northern Neck and greater Eastern and Central Virginia,
   a. 100 percent of Academy students completing a career pathway plan of study will earn credentials approved by the Virginia Board of Education;
   b. 100 percent of Academy students will complete the Virginia Workplace Readiness Skills in the Commonwealth assessment; and
   c. 75 percent of Academy students will obtain employment in agriculture and maritime careers or related occupations following completion of postsecondary education and/or training.

Objectives and Performance Measures

Program objectives and performance measures include the following:

1. Academy students will maintain at least a 2.5 GPA and improve their academic achievement. This will be documented by review of student transcripts.
2. Academy students will earn between 9 and 12 transferable credits from dual-enrollment and/or AP courses, as evidenced on student transcripts.
3. Academy work-based learning internships will be completed and coordinated with businesses in the summer between eleventh and twelfth grades and documented by

timesheets, by written summaries of the experience by the students, and by evaluation forms completed by the employers.

4. The Academy program will increase on-time graduation rates and reduce dropout rates, as evidenced on the school report cards for each of the six school divisions.
5. The Academy will assist in increasing enrollment and retention in postsecondary education, while reducing the number of students requiring remediation in college. This will be documented by review of data from postsecondary education reports.
6. The Academy will increase the number of students completing the Workplace Readiness Skills for the Commonwealth examination, a college-readiness skills curriculum, industry certification and credentialing tests. This will be documented by the number of Academy students earning an Advanced Studies Diploma; results of the Workplace Readiness Skills assessment and industry certification tests, the number of students earning credentials, and review of data from postsecondary education reports.
7. The Academy will increase the number of graduates employed in high-wage, high-demand, and high-skill careers. This will be documented by the Completer Survey taken through the Career and Technical Annual Performance Report.

During the 2012-13 school year, each school division will collect and report baseline data relative to the Academy goals (see Appendix C). The advisory committee will review the baseline data and provide analyses of articulated goals and performance measures and make adjustments as required.

Primary and Middle School Initiatives

- **K–5 Initiatives**
  - The Academy will provide staff development for teachers to enable them to integrate engineering concepts into the regular science and mathematics curricula.
  - The Academy will provide online mathematics and science pre-engineering activities for teachers to use with their students.
  - The Academy will promote elementary science camps and engineering-related field trips (e.g., to local boatyards, agricultural businesses, museums).
  - The Academy will provide opportunities for creative problem solving, such as Odyssey of the Mind competitions.
- **Middle School Initiatives**
  - Grade 6: The Academy will provide science teachers with complex, problem-solving student challenges based on simple machines, structures, and design projects focused on maritime activities. The Academy will encourage teachers to relate science and agriculture through plant identification and care, exploration of elements that affect plant growth, and investigation of natural resources.
  - Grade 7: The Academy will assist Life Science teachers to develop pre-engineering activities that support learning about agricultural engineering and marine life. The Academy will facilitate student exploration of career opportunities in engineering fields through schools' counseling services, the Northern Neck Technical Center, and business and industry.
  - Grade 8: The Academy will assist Physical Science teachers to develop pre-engineering activities.

- The Academy will encourage participation in creative problem-solving activities of student organizations.

Program Details

During the planning year 2012-13, the infrastructure for the delivery of courses via the Internet will be developed, and teachers will be trained in the methods of delivery of online instruction. The Academy will promote its program to school counselors, instructional leaders, students, and parents through a variety of means, including multimedia communication.

The Academy and its partners will coordinate enrichment activities to recruit, inspire, motivate, and engage students in the three focus career clusters. These activities will include career-awareness presentations to assist students and parents in understanding careers in the specified pathways, work force demand, required coursework, and academic credentials and degrees. Enrichment activities will include experiential and problem-based learning activities to be developed in partnership with the Academy's business and industry and postsecondary education partners.

The Academy will begin operating in the 2013-14 school year. It is projected that a minimum of 144 students in grades nine through twelve will be served during that year. The six school divisions will provide the core instruction in mathematics and science, while the Northern Neck Technical Center will provide the relevant Career and Technical Education (CTE) courses. A plan of study for each proposed Academy program is provided in Appendix C.

Students planning to enroll in the Academy will take the following core mathematics and science courses at their home schools, leading to academic competence in the focus career pathways of their choice:

- Grade 7: Mathematics 7 or Algebra I; Life Science
- Grade 8: Algebra I or Algebra II or Geometry; Physical Science

- Grade 9: Algebra I or Algebra II or Geometry; Earth Science or Biology
- Grade 10: Algebra II; Biology or Chemistry
- Grade 11: Mathematics Analysis, Trigonometry, or Statistics; Chemistry or Physics
- Grade 12: Calculus or Advanced senior mathematics class; AP Sciences, Biology, Chemistry, Physics, or Environmental Science

Academy students will be able to choose CTE courses from among the following within their chosen career pathways:

- **Plant Systems**
  - Horticulture Sciences 8034
  - Greenhouse Plant Production and Management 8035
  - Landscaping I 8036
  - Landscaping II 8039

- **Facility and Mobile Equipment Maintenance (Maritime)**
  - Introduction to Engineering Design PLTW 8439
  - Principals of Engineering PLTW 8441
  - Marine Service Technology I 8750
  - Marine Service Technology II 8751

- **Engineering and Technology**
  - Introduction to Engineering Design PLTW 8439
  - Principals of Engineering PLTW 8441
  - Civil Engineering and Architecture PLTW 8430
  - Engineering Design and Development PLTW 8443

Completion of an approved sequence of these dual-enrollment courses will earn the student 12 transferable credits from Rappahannock Community College. (In some instances, students may obtain an associate degree by completing additional college courses.) Upon completion of the courses, each student will participate in industry-certification testing for his/her program area, and success will earn the student corresponding industry certification and credentialing for the specified career pathway.

Between each student's junior and senior years, the Academy will provide him/her with a rigorous work-based learning experience (i.e., a summer internship, mentorship, service-learning

project, or job-shadowing experience) at an agricultural, maritime, or engineering business. These experiences will center around the employment demands of the regional work force. The student must complete at least 40 hours in one of these experiences, or in a combination of these experiences, to successfully complete the Academy program.

In addition to the CTE courses offered at the Northern Neck Technical Center, the Academy will provide virtual classes that feature blended learning. Blended learning (often described as "integrative learning," "hybrid learning," or "multi-method learning") refers to a mixing of different learning environments—in this case, the traditional face-to-face classroom setting with a computer-mediated environment. The Academy's blended learning will take place through virtual classes delivered to students via the Internet from the Northern Neck Technical Center. Learning in these virtual classes will be asynchronous, or self-paced: students will complete their daily lessons and assignments independently at their own pace, using the computer system. Asynchronous classes have deadlines just as synchronous classes do, but each student moves at his/her own pace, while synchronous classes require all students to progress at the virtual classroom's pace. The virtual classes will be enhanced by in-person, project-based experiences scheduled bi-weekly on Fridays at the Northern Neck Technical Center.

Length of Program and Daily Schedule

The Academy will operate on the same full-day, academic-year schedule as the public school divisions it serves. The Academy's virtual classes will be available in students' home schools throughout the entire school day. This will enable students to take their virtual classes asynchronously at times that fit within the master schedule of the schools, while allowing for a program that does not require frequent transportation of the students. Students will be scheduled for project-based experiences at the Northern Neck Technical Center on a bi-weekly basis on

Fridays to provide real-life, in-person activities to support their online distance learning. Students will also participate in a variety of additional learning activities such as camps and field trips. Summer work internships to be completed between the eleventh and twelfth grades will include significant work-based learning opportunities at local businesses and other facilities.

Statement of Assurances

See Appendix A.

Materials and Equipment

Materials and equipment for the Academy will be provided by the six school divisions and the Northern Neck Technical Center to meet program goals, in accordance with the school divisions' policies concerning appropriation of materials and equipment. Each school division receives federal Carl D. Perkins Act grant funding for implementation of CTE programs and state equipment allocation that can be used in the procurement of equipment for the Academy.

Each school division will be responsible for providing each of its Academy students with a laptop, maintenance of the laptop, Internet access that allows for the satisfactory delivery of the curriculum, and a classroom space with a monitor while students take the virtual classes. The Academy, through the Northern Neck Technical Center, will be responsible for the infrastructure equipment and materials to support the teaching and dissemination of the virtual classes. The Autodesk software will be supplied by the Northern Neck Technical Center; it may be used by the school divisions only for the Academy courses in which the student is enrolled. The Academy will utilize the Northern Neck Technical Center for hands-on laboratory experiences (see Appendix D).

Internal Program Evaluation

Evaluation of the Academy's program will be ongoing. Data on student achievement and the Career and Technical Exemplary Standards will be the measures of success in meeting the Academy's goals and objectives. Data from surveys of students, staff, parents, the community, and partnership members will be collected and analyzed to assure continued success of the Academy. Performance indicators will be measured in three areas: program quality, educational significance, and evidence of effectiveness and success. A summative evaluation conducted in 2015-16 will determine changes that may be needed.

Information technology and administrative personnel in all six school divisions will assist with and coordinate data collection and reporting. The focus of the data will be on CTE course sequence completion, dual-enrollment course completion, academic achievement, workplace internship and other work-based experience completion, and diploma achievement. School divisions will be assisted by the Virginia Community College System and the Virginia Department of Education in collecting student pathway data. Examples would include the Student Enrollment Demographics Report, the Completer Demographics Report, and the End-of-Year records collection required by the Virginia Department of Education.

The Academy will be well positioned to institute measures of post-graduation outcomes through the partnerships established with postsecondary institutions, and follow-ups will be conducted through the college system after completion of the Academy. The Academy will be included in the evaluation model implemented by the Southern Association of Colleges and Schools, which is utilized by the partnering school divisions in their accreditation process.

Administrative Procedures

Partnerships

The roles of the Academy partners are outlined in the Memorandum of Agreement (MOA), which has been signed by each partner (see Appendix A).

Planning Committee and Advisory Committee

The planning committee and the advisory committee will follow the "Administrative Procedures Guide for the Establishment of a Governor's Science, Technology, Engineering and Mathematics Academy." The planning committee will coordinate the development of the courses to be delivered by the Northern Neck Technical Center. The advisory committee will assist with curriculum, program planning, and work-based experiences for students. During the 2012-13 school year, each school division will collect and report baseline data related to the Academy's goals (see Appendix C). The advisory committee will review and analyze this data and provide recommendations concerning adjustments to the Academy's articulated goals and performance measures. Both committees will develop a tentative schedule for additional learning activities for Academy students, such as camps and field trips. They will also help to secure internship sponsors. Regularly scheduled meetings of the planning committee and the advisory committee to promote collaboration and commitment of all stakeholders will be an integral part of the Academy's planning, operation, and evaluation.

Student Preparation, Recruitment, Application, and Selection

The Academy will provide creative problem-solving activities as well as project-based learning experiences and field-trip opportunities for students in the sixth, seventh, and eighth grades. It will also provide support for rigorous coursework and career planning beginning in the

seventh grade. Career-interest inventories and skills assessments will be provided to seventh-grade students, and students will use these to complete an Academic and Career Plan collaboratively with their parents, teachers, and counselors by the end of seventh grade. Students interested in entering the Academy may begin taking the necessary classes during the eighth grade, in accordance with their planning documents. The Academic and Career Plan is a working document that may be revised throughout a student's academic career, based upon evolving interests and skills.

Recruitment of highly qualified and motivated students will be a critical component of the successful placement of students in the Academy's focus career pathways. High school guidance counselors will provide comprehensive information and guidance to interested students and parents as they engage in the process of selecting coursework appropriate for the Academy's career pathways.

Entering ninth-grade students may begin the process of applying for admission to the Academy. Enrollment in the Academy will be via an open application process and counselors' recommendations (see Appendix E). After a student completes the application and has it signed by a parent and counselor, it and the student's transcript will be sent to the Academy placement coordinator. Academy applicants may also be required to take placement tests for Rappahannock Community College. Once application packets are complete, the selection committee will consider the following for admission: (1) application, (2) high school transcript, (3) attendance record, (4) standardized test scores, (5) counselor recommendation, (6) personal career and postsecondary plans, and (7) Rappahannock Community College placement tests scores, if applicable.

Student Assessment

Each grading period, each student will meet individually, face-to-face with his/her lead teacher at the Northern Neck Technical Center for a progress review. As a means of validating that the delivery of instruction is successful, each student will be required to take the Autodesk/Certiport Certified User Exam that directly relates to his/her course. These exams have been approved by the Virginia Board of Education. Participating students will also complete the Workplace Readiness Skills for the Commonwealth examination.

Requirements for Completion of the Academy

Academy graduates will meet all requirements of the Virginia Department of Education for completion of a CTE program as well as the requirements of the Virginia Community College System or the four-year institution in which they are enrolled for dual-credit classes. This will include

- successful completion of all academic coursework
- mastery of 100 percent of the student competencies required by CTE curricula
- successful completion of the program's work-based experience
- successful attainment of one or more industry certifications or state occupational licenses, or demonstration of competencies on an assessment instrument, such as a CLEP exam, recognized by postsecondary institutions
- successful attainment of at least nine transferable credits from dual-enrollment and/or AP courses
- fulfillment of the requirements of the college-level course material as outlined in the college syllabus.

Additionally, Academy students will meet all requirements for graduation from their home schools.

Code of Student Conduct and Attendance

The Northern Neck Technical Center's student-conduct policy and attendance requirements will be aligned with those of each of the six participating school divisions. Student schedules will be coordinated with the students' home schools.

Transportation

Necessary transportation to and from the Northern Neck Technical Center will be provided by the students' home school divisions, in accordance with all applicable federal and state regulations.

Staff Qualifications, Recruitment, and Selection

All school division instructional staff who participate in the Academy will meet the requirements for teacher licensure as outlined in the *Code of Virginia* 8VAC 20-22-10 et. seq. They will also have industry-specific education and certifications or endorsements within the relevant career pathways. Instructional staff of the Academy's postsecondary partners will meet the requirements set forth by the Virginia Community College System or the university at which they teach. The staff recruiting process will be networked among the six school divisions to attract specialists in each field of specialized study. Selection of teachers will be based upon each candidate's demonstrated expertise in the content area, licensure requirements, and criteria for acceptance by the Rappahannock Community College and Southern Association of Colleges and Schools.

Staff Development

The Academy will provide staff development for Academy mathematics and science teachers through partnerships with The College of William and Mary and the Rappahannock

Educational Consortium. These teachers will participate in local, state, and national professional development activities as well as staff enrichment activities, such as Virginia's Children Engineering Convention seminars, to enhance STEM education and promote rigor and relevance in the classroom. Time for collaborative curriculum development between secondary and postsecondary instructional staff will also be provided.

In partnership with The College of William and Mary, Academy teachers of CTE content courses will be given the opportunity to take classes to meet the teaching requirements for dual-enrollment courses, learn how to teach online courses, and develop curriculum and project-based activities.

Planning time for instructional staff will be incorporated during the work day in accordance with 8VAC 20-131-240 *Regulations Establishing the Standards for Accrediting Public Schools in Virginia.*

Staff Evaluation

Academy instructional staff will be evaluated at the secondary school level by administrative personnel with evaluation instruments designed in accordance with the *2011 Guidelines for Uniform Performance Standards and Evaluation Criteria for Teachers* provided by the Virginia Department of Education. The Academy will follow the timetable for teacher evaluations as set forth in the *Code of Virginia* 22.1-295. Additional evaluative standards will be considered based on postsecondary placement and achievement surveys.

Parent, Student, and Community Involvement

In the seventh grade, students will begin preparation to enter the Academy as they explore careers and evaluate their personal skills. Based on the results of these career-interest inventories and skills assessments, each student will complete an Academic and Career Plan

collaboratively with his/her parents, teachers, and counselor by the end of seventh grade. Students interested in entering the Academy may begin taking the necessary classes during the eighth grade, in accordance with their planning documents (which may be revised throughout students' academic careers, based upon evolving interest and skills). School counselors, as well as the guidance counselor at the Northern Neck Technical Center, will assure that students receive their proper diploma types, seals, and other recognitions. At the high school level, there will be many opportunities to re-evaluate and update academic and career choices to make sure students will be college- and career-ready in their chosen postsecondary pathways. Students will also be made aware of both the academic and CTE dual-credit opportunities that will provide them with a head start in their postsecondary education options.

Fiscal Information and Documentation of Insurance

The Richmond County Public School System will serve as the fiscal agent for the Academy. A statement of assurance signed by the Chairman of the Richmond County School Board is provided in Appendix G.

All partnering school systems will be committed to sustaining the Academy in both spirit and practice. Each partner has signed an MOA to assure that resources that have or will be agreed upon for the implementation of the Academy will include, but not be limited to, personnel, instruction, facility, staff, technology, equipment, supplies, and transportation. In addition to in-kind contributions from Academy partners, constituent school divisions, with approval from the fiscal governing body, will contribute local funding and will be willing to designate portions of Perkins and state equipment funds for this purpose.

The Academy will also actively pursue grant funding. If additional funding is made available through the Governor's Office, the Academy will pursue such funding as well.

Northern Neck Technical Center insurance will be provided by the Virginia School Boards Association. Each of the six participating school divisions also carries its own insurance.

Budget Narrative for Planning Year 2012-2013

DIRECT COSTS

- Personnel-1000
  - Project Manager: Grant funds $3,500.00
  - In-Kind: CAD instructor for two periods a day; Secretarial support

- Employee Benefits-2000
  - $268.00: FICA and SS
  - In-kind: CAD instructor

- Purchased/Contractual Services-3000
  - In-kind: Subscription fees for software used with programs, server hosting, technical support, and classroom space with a class monitor at the home school for virtual classes for six school divisions
  - In-kind: Summer component activities for summer camps and fields trips, job shadowing, and mentorships

- Internal Services-4000
  - In-kind: Bus transportation costs for students to and from work-based projects

- Staff Development-5000
  - In-kind: Training for CAD instructor, maritime instructor, and agriculture instructor
  - In-kind: Training for K-12 mathematics and science teachers

- Travel-5000
  - $616.00: Grant funds for travel to professional development, planning meetings, and conferences

- Contractual Services-5000
  - In-kind: Funds for industry-certification testing
  - In-kind: Subscription fees for software training and software for virtual classes

- Materials and Supplies-6000
  - $616.00: Marketing materials (e.g., brochures, printer cartridges, posters, paper, instructional materials, flash drives)
  - In-kind: File server space and software for online teaching
  - In-kind: Classroom and lab materials, and textbooks

- Equipment-8000
  - None

- Facilities-8000
  - In-kind: Classroom space in each school for virtual classes

INDIRECT COSTS

- None

TOTAL: $5,000.00

Appendix A

Planning and Advisory Committees and Assurance Signatures

Northern Neck Technical Center
Governor's STEM Academy for Agriculture and Maritime Studies

Planning Committee

Dr. Gregory Smith, Superintendent, Richmond County and Executive Superintendent for NNTC

Todd Davis, Project Director

Randy Long, Principal, NNTC

Don McCann, Chairman of Joint Board of Control for NNTC and School Board Member, Lancaster County

Dr. Daniel Lukich, Superintendent, Lancaster County

Dr. Rebecca Lowery, Superintendent, Westmoreland County

Dr. Rebecca Gates, Superintendent, Northumberland County

Dr. Donna Power, Former Superintendent, Colonial Beach

Dr. Joseph Melvin, Former Superintendent, Essex County

Dr. Marilyn Barr, Retired Superintendent of Richmond County Public Schools

Walter Norris, Dual Enrollment Coordinator, Rappahannock Community College

Barbara R. Murray, Director, Southeast Maritime and Transportation Center

Dr. Gail B. Hardinge, Project Director, STEM Educational Alliance, College of William and Mary

Robert Redfern, Boatyard Owner at White Point in Kinsale

Keith Whelan, Whelan's Marina

Kelly Liddington, Richmond County Extension Agent

Gary Allensworth, Northern Neck Vegetable Growers Association

Michael Jenkins, Executive Director of Bay WIB, Inc.

Northern Neck Technical Center
Governor's STEM Academy for Agriculture and Maritime Studies

Advisory Committee

Dr. Gregory Smith, Superintendent, Richmond County and Executive Superintendent for NNTC

Todd Davis, Project Director

Randy Long, Principal, NNTC

Don McCann, Chairman of Joint Board of Control for NNTC and School Board Member, Lancaster County

Dr. Daniel Lukich, Superintendent, Lancaster County

Dr. Rebecca Lowery, Superintendent, Westmoreland County

Dr. Rebecca Gates, Superintendent, Northumberland County

Dr. Donna Power, Former Superintendent, Colonial Beach

Dr. Joseph Melvin, Former Superintendent, Essex County

Walter Norris, Dual Enrollment Coordinator, Rappahannock Community College

Barbara R. Murray, Director, Southeast Maritime and Transportation Center

Dr. Gail B. Hardinge, Project Director, STEM Educational Alliance, College of William and Mary

Robert Redfern, Boatyard Owner at White Point in Kinsale

Keith Whelan, Whelan's Marina

Lowery Pemberton, Friends of the Rappahannock

Gary Allensworth, Northern Neck Vegetable Growers Association

Dr. Marilyn Barr, Retired Superintendent of Richmond County Public Schools

Bryan Taliaferro, Montague Farms, Inc.

Michael Jenkins, Executive Director of Bay WIB, Inc.

Northern Neck Technical Center
Governor's STEM Academy for Agriculture and Maritime Studies
Planning/Advisory Committee

Name	Affiliation	Address	Telephone	Email
Dr. Gregory Smith	Superintendent for Richmond Co. Public Schools, Exec. Superintendent for NNTC	P. O. Box 1507, Warsaw, VA 22572	804-333-3681	jgsmith@richmond-county.k12.va.us
Harold R. Long	Principal, NNTC	P. O. Box 787, Warsaw, VA 22572	804-333-4940	rlong@northernnecktech.org
Todd H. Davis	Asst. Principal, NNTC	P. O. Box 787, Warsaw, VA 22572	804-333-4940	tdavis@northernnecktech.org
Don McCann	Chairman of Joint Board of Control for NNTC and School Board Member of Lancaster Co.	5570 Windmill Point Rd., White Stone, VA 22578	804-435-6942	tranqwlw@crosslink.net
Dr. Daniel Lukich	Superintendent for Lancaster County	P. O. Box 2000, Kilmarnock, VA 22482	804-435-3183	dlukich@LCS.k12.va.us
Dr. Rebecca Lowry	Superintendent for Westmoreland County	141 Opal Lane, Montross, VA 22520	804-493-8018	lowryrs@wmlcps.org
Dr. Rebecca Gates	Superintendent for Northumberland County	2172 Northumberland Hwy., Lottsburg, VA 22511	804-529-6134	rgates@nucps.net
Dr. Donna Power	Superintendent for Colonial Beach	16 N. Irving Avenue, Colonial Beach, VA 22443	804-224-0906	dpower@cbschools.net
Dr. Joseph Melvin	Superintendent for Essex County	P. O. Box 756, Tappahannock, VA 22560	804-443-4366	JMelvin@essex.k12.va.us
Walter Norris	Dual Enrollment Coordinator, Rappahannock Community College	52 Campus Dr., Warsaw, VA 22572	804-333-6700	wnorris@rappahannock.edu

Northern Neck Technical Center
Governor's STEM Academy for Agriculture and Maritime Studies
Planning/Advisory Committee

Barbara R. Murray	Director, Southeast Maritime and Transportation Center	Tidewater Comm. College, Advanced Technology Center, 1800 College Crescent, Suite 104, Va Beach, VA 23453	757-822-7485	bmurray@tcc.edu
Dr. Gail B. Hardinge	Project Director, STEM Education Alliance College of William and Mary	P. O. Box 8795, Williamsburg, VA 23187	757-221-2361	gbhard@wm.edu
Robert Redfern	Boat Yard Owner at White Point in Kinsale	175 Marina Drive, Kinsale, VA 22488	804-472-2977	whitepointmarina.com
Keith Whelan	Whelan's Marina	3993 Hales Point Rd., Farnham, VA 22460	804-394-9500	wheelman64@rivnet.net
Kelly Liddington	Richmond County Extension Agent	P. O. Box 152, Warsaw, VA 22572	804-333-3420	klidding@vt.edu
Lowery Pemberton	Friends of the Rappahannock	P. O. Box 97, Sharps, VA 22548	804-313-5080	lowery.pemberton@riverfriends.org
Gary Allensworth	Northern Neck Vegetable Growers Association	3241 Horners Mill Road Montross, VA 22520	804-450-4427	Allensworth@wildblue.net
Michael Jenkins	Executive Director, Bay WIB Inc.	P. O. Box 1117, Warsaw, VA 22572	1-800-582-7292	mjenkins@baywib.org
O. Bryan Taliaferro, Jr.	Montague Farms	Montague Farms, 35212 Tidewater Trail, Center Cross, VA 22437	804-443-3536	bryan@montaguefarms.com
Dr. Marilyn Barr	Retired Superintendent for Richmond County Public Schools	1307 Dare Road, Yorktown, VA 23692	757-870-4127	mjb.aces@gmail.com

NORTHERN NECK TECHNICAL CENTER
P.O. BOX 787
13946 HISTORYLAND HWY.
WARSAW, VIRGINIA 22572
PHONE: (804) 333-4940
FAX: (804) 333-0538

Colonial Beach • Essex • Lancaster • Northumberland • Richmond • Westmoreland

Harold R. Long
Principal

Todd H. Davis
Administrative Assistant

January 4, 2012

Dear Planning Committee Member:

I am delighted that you have agreed to serve on the Northern Neck Technical Center STEM Academy Planning Committee.

I am enclosing the Administrative Procedures Guide for The Establishment of a Governor's Science, Technology, Engineering and Mathematics Academy, and the Memorandum of Agreement for you to peruse. Please sign the ***Statement of Assurances*** and return to me in the enclosed self-addressed envelope.

If you have any questions, please feel free to give me a call.

Sincerely,

Harold R. Long,
Principal

HRL/agd
Enclosures

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

STATEMENT OF ASSURANCES

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4. A public, government entity will serve as the grant fiscal agent.

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The applicant certifies that to the best of his/her knowledge the information in this application is correct, that the filing of this application is duly authorized by the partners participating in this process to establish a Governor's STEM Academy, and that the applicant will comply with the statements of assurances.

James C. Smith — Superintendent

Typed or Printed Name of Authorized Official — Title

Signature of Authorized Official — 9/10/12

Date

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Randy Long	Principal
Typed or Printed Name of Authorized Official	Title
[signature]	1/20/12
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Todd H. Davis	Assistant Principal
Typed or Printed Name of Authorized Official	Title
Todd H. Davis	1-24-12
Signature of Authorized Official	Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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DONALD McCAHH — Chairman of NNTC Board

Typed or Printed Name of Authorized Official — Title

Signature of Authorized Official — Date 1/27/12

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Dr. Daniel Lukid — Supt.

Typed or Printed Name of Authorized Official — Title

Signature of Authorized Official — Date 1/24/12

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Rebecca S. LOWRY — Superintendent
Typed or Printed Name of Authorized Official — Title

Rebecca S. Lowry — 1-10-12
Signature of Authorized Official — Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Dr. Rebecca Gates
Typed or Printed Name of Authorized Official

Superintendent
Title

Dr. Rebecca Gates
Signature of Authorized Official

Sept. 19, 2012
Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Dr. Donna M. Power — Superintendent
Typed or Printed Name of Authorized Official — Title

Dr. Donna M. Power — Jan 13, 2012
Signature of Authorized Official — Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Joseph C. Melvin Typed or Printed Name of Authorized Official	Superintendent Title
Signature of Authorized Official	1/13/2012 Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Marilyn F. Barr — Superintendent
Typed or Printed Name of Authorized Official — Title

Marilyn F. Barr — 1-20-2012
Signature of Authorized Official — Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Walter Norris
Typed or Printed Name of Authorized Official

Dual Enrollment Coordinator
Title

Walter Norris
Signature of Authorized Official

1/25/12
Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Barbara Murray — Director, P.I.
Typed or Printed Name of Authorized Official — Title

Barbara Murray — 1/13/12
Signature of Authorized Official — Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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GAIL B. HARDINGE
Typed or Printed Name of Authorized Official

CLINICAL ASSOC. PROFESSOR
Title

GB Hardinge
Signature of Authorized Official

6/18/12
Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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ROBERT H. REDFEARN JR.
Typed or Printed Name of Authorized Official

PRESIDENT
Title WHITE POINT MARINA INC

Robert H. Redfearn Jr.
Signature of Authorized Official

1/15/2012
Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Keith Whelan — General Manager

Typed or Printed Name of Authorized Official — Title

Signature of Authorized Official — 1-26-12

Date

Governor's Science, Technology, Engineering and Mathematics (STEM) Academy

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Kelly J. Liddington — Typed or Printed Name of Authorized Official

Extension Agent — Title

Kelly J. Liddington — Signature of Authorized Official

1-24-12 — Date

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WILLIAM GARY ALLENSWORTH — NORTHERN NECK VEGETABLE GROWERS ASS.
Typed or Printed Name of Authorized Official — Title

Gary Allensworth — JUNE 15, 2012
Signature of Authorized Official — Date

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MICHAEL D. JENKINS — EXECUTIVE DIRECTOR
Typed or Printed Name of Authorized Official — Title

Signature of Authorized Official — 9/13/2012
Date

Received Time Sep. 13. 2012 11:00AM No. 3991

Appendix B

Virginia Electronic Labor Market Analysis (VELMA)

Employment and Projections

	Industry - Long Term	Employment			Percent	
		Estimated 2008	Projected 2018	Change	Total	Annual
State of VA	Transportation and Warehousing Industry	107,608	115,784	8,176	7.60%	0.74%
Northern Neck Counties	Transportation and Warehousing Industry	3,118	3,340	222	7.12%	0.69%

	Industry - ShortTerm	Employment			Percent	
		Estimated 2010	Projected 2012	Change	Total	Annual
State of VA	Transportation and Warehousing Industry	104,691	108,165	3,474	3.32%	1.65%
Northern Neck Counties	Transportation and Warehousing Industry	104,691	108,165	3,474	3.32%	1.65%

	Occupations - Long Term	Employment			Openings		
		Estimated 2008	Projected 2018	Percent Change	Replacements	Growth	Total
State of VA	Architecture and Engineering Occupations	87,968	102,308	16.30%	1,860	1,463	3,323
State of VA	Building & Grounds Cleaning & Maintenance Occupations	151,043	168,976	11.87%	2,491	1,793	4,284
State of VA	Farming Fishing & Forestry Occupations	40,399	37,126	-8.10%	1,079	18	1,097
State of VA	Transportation & Material Moving Occupations	236,885	249,032	5.13%	5,652	1,458	7,110
Northern Neck Counties	Architecture and Engineering Occupations	4,053	4,764	17.54%	89	71	160
Northern Neck Counties	Building & Grounds Cleaning & Maintenance Occupations	5,401	5,991	10.92%	88	59	147
Northern Neck Counties	Farming Fishing & Forestry Occupations	1,403	1,395	-0.57%	36	5	41
Northern Neck Counties	Transportation & Material Moving Occupations	12,008	12,773	6.37%	276	84	360

	Occupations - Short Term	Employment			Openings		
		Estimated 2010	Projected 2012	Percent Change	Replacements	Growth	Total
State of VA	Architecture and Engineering Occupations *(Short Term)*	86,454	87,582	1.30%	1,699	661	2,360
State of VA	Building & Grounds Cleaning & Maintenance Occupations	143,017	145,735	1.90%	2,164	1,359	3,523
State of VA	Farming Fishing & Forestry Occupations	7,035	6,921	-1.62%	190	3	193
State of VA	Transportation & Material Moving Occupations	224,232	227,491	1.45%	5,214	1,747	6,961
Northern Neck Counties	Architecture and Engineering Occupations *(Short Term)*	86,454	87,582	1.30%	1,699	661	2,360
Northern Neck Counties	Building & Grounds Cleaning & Maintenance Occupations	143,017	145,735	1.90%	2,164	1,359	3,523
Northern Neck Counties	Farming Fishing & Forestry Occupations	7,035	6,921	-1.62%	190	3	193
Northern Neck Counties	Transportation & Material Moving Occupations	224,232	227,491	1.45%	5,214	1,747	6,961

	Growth Occupations	Employment			Openings			Average Annual Salary
		Estimated 2008	Projected 2018	Percent Change	Replacements	Growth	Total	
State of VA	Industrial Engineers	5,852	8,156	39.37%	149	230	379	$ 79,413
Northern Neck Counties	Civil Engineers	299	399	33.44%	5	10	15	$ 77,746

Appendix C

Plans of Study

Rev: 5/18/11

Northern Neck Technical Center Plan of Study

Student Name: _____
School: Northern Neck Technical Center
Date: _____

Cluster: Agriculture, Food & Natural Resources **Pathway:** Plant Systems

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/apg/	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml								
MIDDLE	7	English 1110	Pre-Algebra 3112	Life Science 4115	Social Studies 2355	Health/PE	Agriscience and Technology 8004	
MIDDLE	8	English 1120	Algebra I 3130	Life Science 4125	Civics and Economics 2357	Health/PE	Keyboarding 6150	
Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school: VA Wizard ☒ or other assessment (please indicate): _____								
SECONDARY	9	English 1130	Geometry 3143	Earth Sciences 4210	World History/ Geography 2215	Economics & Personal Finance 6120 Health & PE (2 years) Foreign Language (3 years) Other Electives to Complement Pathway (Core Academic and CTE):	Introduction to Engineering and Design-PTWL 8439	Wildlife Manager Forest Technicians Water Monitoring Technician Ecologist Agricultural Educator Park Manager Pulp and Paper Manager
SECONDARY	10	English 1140	Algebra II 3135	Biology 4310	World History/ Geography 2216		Principles of Engineering PTWL-8441	
SECONDARY	11	English 1150	Advanced Math 3160	Chemistry 4410	US/VA History 2360		Horticultural Sciences 8034 Greenhouse Plant Production and Management 8035	
SECONDARY	12	English 1160	Trigonometry/ Advanced Algebra 3137	Physics 4510 (or Principles of Technology I and II 9811/9812)	US/VA Government 2440		Landscape I 8036 Landscape II 8039	

High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

List related certifications/credentials approved by VDOE and offered locally:
http://www.cteresource.org/apg (Go to Certification – License Section)

Forestry Products and Processing(NOCTI)
Commercial Pesticide Applicator
Private Pesticide Applicator
Workplace Readiness Skills for the Commonwealth (CTECS)

Additional Learning Opportunities:
CTSO Organization(s): ☐ DECA ☐ FBLA ☐ FCCLA ☒ FFA ☐ FEA ☐ HOSA ☐ SkillsUSA ☐ TSA

Work-Based Learning:
☒ Career Research ☒ Cooperative Education ☐ Internship ☐ Mentorship
☒ Job Shadowing ☒ Service Learning Project ☐ Student Apprenticeship

Postsecondary: Placement Assessments such as COMPASS & SAT II

College Entrance Exams such as ACT & SAT

POSTSECONDARY

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)

Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
Plant Systems	Greenhouse Manager and Landscape Design	(Determined Locally)	(Determined Locally – Optional)

College: Rappahannock Community College – Tidewater Community College **School Division(s):** NNTC

Postsecondary: Placement Assessments such as COMPASS & SAT II

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.								
Year 1 1st Semester	English 111 College Composition	Tech Math 115	SDV 100 College Success Skills	Approved Transfer History	AC/DC Fundamentals I ETR 113	HRT 100 Intro to Greenhouse Management HRT 121 Greenhouse Management	HPE	
Year 1 2nd Semester	English 112 College Composition I II	Tech Math 116	Approved Humanities Elective		AC/DC Fundamentals II ETR 114	HRT 122 Greenhouse II HRT 150 Landscape Management	Electronic Devices I ETR 203	
Year 2 1st Semester		Tech Physics 111	Approved Humanities Elective	Approved Transfer History	Micro Computer Electronics I ETR 271	HRT 201 Landscape Plants I HRT 226 Greenhouse Management		
Year 2 2nd Semester		Tech Physics 112	Approved Social Science Elective			HRT 202 Landscape Plants II HRT 227 Professional Landscape Mgt.		

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

Related Industry Certifications Available:

Greenhouse Management and Greenhouse Design

Additional Suggested Learning Opportunities:
Work-Based Learning:
☐ Cooperative Education ☒ Internship ☐ Mentorship
☐ Job Shadowing ☐ Service Learning Project ☐ Registered Apprenticeship

UNIVERSITY

University/College:
Degree or Major:
Number of Articulated CC Credits:

Notes:

Rev: 5/18/11

Northern Neck Technical Center
Plan of Study

School: Northern Neck Technical Center_____
Date: _____

Cluster: Science, Technology, Engineering & Mathematics **Pathway: Engineering and Technology**

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/apg/	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml								System Engineers Mechanical Engineer Architectural Engineer CAD Technician Drafter Electrical Electronic Engineering Technician Manufacturing Technician Industrial Engineer Technician Systems Engineer
MIDDLE	7	English 1110	Pre-Algebra 3112	Life Science 4115	Social Studies 2355	Health/PE	**NOTE: Use state course titles** Keyboarding 6150	
MIDDLE	8	English 1120	Algebra I 3130	Physical Science 4125	Civics and Economics 2357	Health/PE		
Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school: VA Wizard ☒ or other assessment (please indicate): _____								
SECONDARY	9	English 1130	Geometry 3143	Earth Sciences 4210	World History/ Geography2215	Economics & Personal Finance 6120 Health & PE (2 years) Foreign Language (3 years) Other Electives to Complement Pathway (Core Academic and CTE):	Introduction to Engineering and Design PLTW 8439	
SECONDARY	10	English 1140	Algebra II 3135	Biology 4310	World History/ Geography 2216		Principles of Engineering PLTW 8441	
SECONDARY	11	English 1150	Advanced Math 3160 Mathematical Analysis/Pre-Calculus 3162	Chemistry 4410	US/VA History 2360		Civil Engineering and Architecture PLTW 8430	
SECONDARY	12	English 1160	Mathematical Analysis/Pre-Calculus 3162 AP Calculus 3177	Physics 4510 (or Principles of Technology I and II 9811/9812) AP Physics 4570	US/VA Government 2440		Engineering Design and Development PLTW 8443	

High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

List related certifications/credentials approved by VDOE and offered locally:
http://www.cteresource.org/apg (Go to Certification – License Section)

Architectural Drafting (NOCTI)
Engineering Technology Examination (SkillsUSA)
Workplace Readiness Skills for the Commonwealth (CTECS)

Additional Learning Opportunities:
CTSO Organization(s): ☐ DECA ☐ FBLA ☐ FCCLA ☐ FFA ☐ FEA ☐ HOSA ☐ SkillsUSA ☒ TSA

Work-Based Learning:
☐ Career Research ☐ Cooperative Education ☒ Internship ☒ Mentorship
☒ Job Shadowing ☒ Service Learning Project ☐ Student Apprenticeship

Postsecondary: Placement Assessments such as COMPASS & SAT II

College Entrance Exams such as ACT & SAT

POSTSECONDARY

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)

Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
Engineering and Technology	General Engineering Technology A.A.S.	Engineering	

College: Rappahannock Community College – Tidewater Community College **School Division(s):** Northern Neck Technical Center

Postsecondary: Placement Assessments such as COMPASS & SAT II

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.								
Year 1 1st Semester	English 111 College Composition	Pre Calculus I MTH 163	SDV 100 Success Skills	CAD 151 Engineering	AC/DC Fundamentals I ETR 113	Approved Transfer History I	HPE	
Year 1 2nd Semester	English 112 College Composition II	Pre Calculus II MTH 164	Approved Social Science elective	Cad 211 Advanced Technical Drafting I	AC/DC Fundamentals II ETR 114	Approved Transfer History II		
Year 2 1st Semester		General College Physics with Lab 1 PHY 201	Approved Humanities Elective	CAD 241 3D Modeling	Micro Computer Electronics I ETR 271			
Year 2 2nd Semester	Elective	General College Physics with Lab II PHY 202	Approved social Science elective	CAD 247 Ship Design Drafting				

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

Related Industry Certifications Available:

9 Transferable Credits College Composition 111&112 Math 115 and 116, Science Physics 111 and 112

Additional Suggested Learning Opportunities:

Work-Based Learning:

☐ Cooperative Education x Internship ☐ Mentorship
☐ Job Shadowing ☐ Service Learning Project ☒ Registered Apprenticeship

UNIVERSITY

University/College:
Degree or Major:
Number of Articulated CC Credits:

Notes:

Rev: 5/18/11

Northern Neck Technical Center Plan of Study

Student Name: _____
School: Northern Neck Technical Center
Date: _____

Cluster: Transportation, Distribution & Logistics **Pathway:** Facility and Mobile Equipment Maintenance

This Career Pathway Plan of Study can serve as a guide, along with other career planning materials, as learners continue on a career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. This Plan of Study, used for learners at an educational institution, should be customized with course titles and appropriate high school graduation requirements as well as college entrance requirements.

EDUCATION LEVELS	GRADE	English/ Language Arts	Mathematics	Science	Social Studies/ Science	Other Required Courses Recommended Electives Learner Activities	Recommended Career and Technical Courses Source: Administrative Planning Guide http://www.cteresource.org/apg/	SAMPLE – Occupations Relating to This Pathway: http://www.doe.virginia.gov/instruction/career_technical/career_clusters/sample_plans_study/index.shtml http://www.careerclusters.org http://www.cteresource.org/cpg/
Graduation Requirements: http://www.doe.virginia.gov/instruction/graduation/index.shtml								
MIDDLE	7	English 1110	Pre-Algebra 3112	Life Science 4115	Social Studies 2355	Health/PE	**NOTE: Use state course titles** Keyboarding 6150	-Motorboat Mechanic -Industrial Equipment Mechanic -Engineer -Diesel Engine Specialist -Diesel Service Technician Mechanic -Industrial Electrician -Facility Maintenance Manager/Engineer
	8	English 1120	Algebra I 3130	Physical Science 4125	Civics and Economics 2357	Health/PE		
Career Assessment: Identify an appropriate career assessment instrument at the middle school level used to help students and their parents plan for high school: VA Wizard ☒ or other assessment (please indicate): _____								
SECONDARY	9	English 1130	Geometry 3143	Earth Sciences 4210	World History/ Geography 2215	Economics & Personal Finance 6120 Health & PE (2 years) Foreign Language (3 years) Other Electives to Complement Pathway (Core Academic and CTE): Power and Transportation 8448 Energy and Power 8448	Introduction to Engineering Design PLTW 8439	
	10	English 1140	Algebra II 3135	Biology 4310	World History/ Geography 2216		Principles of Engineering PLTW 8441	
	11	English 1150	Advanced Math 3160 Mathematical Analysis/Pre-Calculus 3162	Chemistry 4410	US/VA History 2355		Marine Service Technology I 8750 (DE)	
	12	English1160 DE ENG 111/112 College Composition I & II	AP Calculus 3177 DE MATH 163/164 Pre-Calculus I & II	Physics 4520 DE PHY 201/202 General College Physics I & II	US/VA Government 2440		Marine Service Technology II 8751 (DE)	
High school courses in the pathway offered locally for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)								

List related certifications/credentials approved by VDOE and offered locally:
http://www.cteresource.org/apg (Go to Certification – License Section)

ABYC
Workplace Readiness Skills for the Commonwealth (CTECS)

Additional Learning Opportunities:
CTSO Organization(s): ☐ DECA ☐ FBLA ☐ FCCLA ☐ FFA ☐ FEA ☐ HOSA ☒ SkillsUSA ☐ TSA

Work-Based Learning:
☐ Career Research ☐ Cooperative Education ☒ Internship ☒ Mentorship
☒ Job Shadowing ☒ Service Learning Project ☐ Student Apprenticeship

Postsecondary: Placement Assessments such as COMPASS & SAT II

College Entrance Exams such as ACT & SAT

POSTSECONDARY

SAMPLE POSTSECONDARY PROGRAMS RELATED TO THIS CAREER PATHWAY
Individual plans must include locally agreed upon courses at the postsecondary level (See page 2)

Pathway	Associate Degree, College Certificate, or Apprenticeship	Bachelors Degree	Postgraduate Degree
Facility and Mobile Equipment Maintenance	A.A.S. General Engineering Technology ABYC Certification		

College: Rappahannock Community College – Tidewater Community College **School Division(s):** Northern Neck Technical Center

Postsecondary: Placement Assessments such as COMPASS & SAT II

POSTSECONDARY - COMMUNITY COLLEGE or APPRENTICESHIP - Determined Locally

Semester	English	Mathematics	Science	Social Studies	Required Courses or Recommended Electives			
POSTSECONDARY PLAN OF STUDIES MUST INCLUDE POSTSECONDARY ACADEMIC, CTE, AND OTHER ELECTIVE COURSES APPROPRIATE FOR AN ASSOCIATE DEGREE.								
Year 1 1st Semester	English 111 College Composition	Pre Calculus I MTH 163		Approved Social Science Elective	ETR 113	Approved Transfer History	SDV 100 Success Skills	HLT/PED Elective
Year 1 2nd Semester	English 112 College Composition II	Pre Calculus II MTH 164			ETR 114	Approved Transfer History	ETR 203	
Year 2 1st Semester	Elective				Approved Career Elective 4 cr. Approved Career Elective 4cr. DE CAD 151 Engineering Drawing DE MAR 25 Ship Design DE MAR 26 Ship Systems DE MAR 130 Maintenance Mechanics DE CAD 241 Parametric Solid Modeling I DE MAR 131 Internal Combustion Engines & Auxiliary Equipment I	Approved Humanities Elective	ETR 271	
Year 2 2nd Semester								

College courses offered locally in the high school for college credit should be coded: DE (Dual Enrollment) and/or VC (Validated Credit)

Related Industry Certifications Available:
ABYC Certification - 9 Transferable Credits College Composition ENG 111-112, Pre-Calculus 163-164, Physics 201-202
Ship Design
Ship Systems+

Additional Suggested Learning Opportunities:
Work-Based Learning:
☐ Cooperative Education ☐ Internship ☐ Mentorship
☐ Job Shadowing ☐ Service Learning Project ☐ Registered Apprenticeship

UNIVERSITY

University/College:
Degree or Major:
Number of Articulated CC Credits:

Notes:

Program Completion Information

A Virginia high school diploma tells potential employers that the graduate possesses the skills and knowledge required for success in the workplace. It tells colleges, universities, and career and technical schools that the bearer is ready for the rigors of post-secondary education. This table provides program completion information for the three most recent years.

School - Program Completion Information

	Count / Percentage		
Credential type	2008-2009	2009-2010	2010-2011
Advanced Diploma	64 / 48.12%	51 / 40.16%	65 / 50.78%
GED	<	<	<
GED/ISAEP	<	<	-
Modified Standard Diploma	<	<	<
Special Diploma	<	<	<
Standard Diploma	49 / 36.84%	63 / 49.61%	51 / 39.84%

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Career and Technical Education

Secondary schools report the number of credentials earned by students for passing occupational competency assessments recognized by the National Occupational Competency Testing Institute (NOCTI), state licensure examinations, industry certification examinations, and workplace readiness skills assessments. Prior to 2010-2011, workplace readiness skills assessments were included in the Industry Certification category, but now are reported separately.

Career and Technical Education

		Count		
	Type	2008-2009	2009-2010	2010-2011
NOCTI Assessments	School	4	0	8
	Division	4	0	8
	State	3376	4254	4664
State Licensures	School	2	2	4
	Division	2	2	4
	State	593	739	880
Industry Certification	School	11	7	5
	Division	11	7	5
	State	15873	24064	28586
Workplace Readiness	School	-	-	0
	Division	-	-	0
	State	-	-	2589
Total Credentials Earned	School	17	9	17
	Division	17	9	17
	State	19842	29057	36719
Students Earning One or More Credentials	School	14	9	16
	Division	14	9	16
	State	16981	24255	30613
CTE Completers	School	31	75	97
	Division	31	75	97
	State	38334	39708	41329

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Dropout Information

Schools report annually on the number of students in grade 7-12 who drop out. Dropout percentages represent the number of dropouts for a given school year divided by the membership on September 30th of that school year.

School - Dropout Information			
	Count / Percentage		
Student Subgroup	2008-2009	2009-2010	2010-2011
All Students	24 / 4.22%	29 / 5.29%	15 / 2.98%
Female	<	<	<
Male	14 / 4.88%	20 / 7.25%	12 / 4.82%
Black	11 / 3.48%	17 / 5.92%	<
Hispanic	<	<	<
White	12 / 5.94%	<	<
Asian	<	<	<
American Indian	<	<	-
Native Hawaiian	-	-	<
Race Unknown	<	<	-

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Program Completion Information

A Virginia high school diploma tells potential employers that the graduate possesses the skills and knowledge required for success in the workplace. It tells colleges, universities, and career and technical schools that the bearer is ready for the rigors of post-secondary education. This table provides program completion information for the three most recent years.

School - Program Completion Information

	Count / Percentage		
Credential type	2008-2009	2009-2010	2010-2011
Advanced Diploma	37 / 36.63%	41 / 44.09%	32 / 35.96%
GED	<	<	-
GED/ISAEP	<	<	<
Modified Standard Diploma	<	-	-
Special Diploma	<	<	<
Standard Diploma	50 / 49.5%	38 / 40.86%	42 / 47.19%

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Career and Technical Education

Secondary schools report the number of credentials earned by students for passing occupational competency assessments recognized by the National Occupational Competency Testing Institute (NOCTI), state licensure examinations, industry certification examinations, and workplace readiness skills assessments. Prior to 2010-2011, workplace readiness skills assessments were included in the Industry Certification category, but now are reported separately.

Career and Technical Education

		Count		
	Type	2008-2009	2009-2010	2010-2011
NOCTI Assessments	School	13	11	8
	Division	13	11	8
	State	3376	4254	4664
State Licensures	School	0	0	1
	Division	0	0	1
	State	593	739	880
Industry Certification	School	44	40	33
	Division	44	40	33
	State	15873	24064	28586
Workplace Readiness	School	-	-	43
	Division	-	-	43
	State	-	-	2589
Total Credentials Earned	School	57	51	85
	Division	57	51	85
	State	19842	29057	36719
Students Earning One or More Credentials	School	57	50	79
	Division	57	50	79
	State	16981	24255	30613
CTE Completers	School	62	49	53
	Division	62	49	53
	State	38334	39708	41329

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Dropout Information

Schools report annually on the number of students in grade 7-12 who drop out. Dropout percentages represent the number of dropouts for a given school year divided by the membership on September 30th of that school year.

School - Dropout Information			
	Count / Percentage		
Student Subgroup	2008-2009	2009-2010	2010-2011
All Students	<	<	12 / 3.24%
Female	<	<	<
Male	<	<	<
Black	<	<	<
Hispanic	<	<	<
White	<	<	<
Asian	<	<	<
American Indian	-	<	<
Native Hawaiian	-	-	-
Race Unknown	<	<	-

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Program Completion Information

A Virginia high school diploma tells potential employers that the graduate possesses the skills and knowledge required for success in the workplace. It tells colleges, universities, and career and technical schools that the bearer is ready for the rigors of post-secondary education. This table provides program completion information for the three most recent years.

School - Program Completion Information

Credential type	Count / Percentage 2008-2009	2009-2010	2010-2011
Advanced Diploma	50 / 46.3%	43 / 41.75%	39 / 47.56%
Certificate of Completion	-	-	<
GED	<	-	<
GED/ISAEP	<	<	-
Modified Standard Diploma	-	<	<
Special Diploma	<	-	<
Standard Diploma	49 / 45.37%	51 / 49.51%	37 / 45.12%

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Career and Technical Education

Secondary schools report the number of credentials earned by students for passing occupational competency assessments recognized by the National Occupational Competency Testing Institute (NOCTI), state licensure examinations, industry certification examinations, and workplace readiness skills assessments. Prior to 2010-2011, workplace readiness skills assessments were included in the Industry Certification category, but now are reported separately.

Career and Technical Education

	Type	Count 2008-2009	2009-2010	2010-2011
NOCTI Assessments	School	4	0	0
	Division	4	0	0
	State	3376	4254	4664
State Licensures	School	0	0	0
	Division	0	0	0
	State	593	739	880
Industry Certification	School	16	0	10
	Division	16	0	10
	State	15873	24064	28586
Workplace Readiness	School	-	-	0
	Division	-	-	0
	State	-	-	2589
Total Credentials Earned	School	20	0	10
	Division	20	0	10
	State	19842	29057	36719
Students Earning One or More Credentials	School	14	0	10
	Division	14	0	10
	State	16981	24255	30613
CTE Completers	School	49	46	40
	Division	49	46	40
	State	38334	39708	41329

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Dropout Information

Schools report annually on the number of students in grade 7-12 who drop out. Dropout percentages represent the number of dropouts for a given school year divided by the membership on September 30th of that school year.

School - Dropout Information			
	Count / Percentage		
Student Subgroup	2008-2009	2009-2010	2010-2011
All Students	30 / 6.93%	14 / 3.23%	13 / 3.02%
Female	<	<	<
Male	21 / 9.59%	<	<
Black	15 / 9.26%	11 / 6.25%	<
Hispanic	<	<	<
White	14 / 5.58%	<	<
Asian	<	<	<
American Indian	-	-	-
Native Hawaiian	-	-	-
Race Unknown	-	-	-

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Program Completion Information

A Virginia high school diploma tells potential employers that the graduate possesses the skills and knowledge required for success in the workplace. It tells colleges, universities, and career and technical schools that the bearer is ready for the rigors of post-secondary education. This table provides program completion information for the three most recent years.

School - Program Completion Information

	Count / Percentage		
Credential type	2008-2009	2009-2010	2010-2011
Advanced Diploma	54 / 48.65%	67 / 50.38%	53 / 53%
Certificate of Completion	-	<	-
GED	-	<	-
GED/ISAEP	<	<	<
Modified Standard Diploma	<	<	<
Special Diploma	<	<	<
Standard Diploma	44 / 39.64%	53 / 39.85%	37 / 37%

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Career and Technical Education

Secondary schools report the number of credentials earned by students for passing occupational competency assessments recognized by the National Occupational Competency Testing Institute (NOCTI), state licensure examinations, industry certification examinations, and workplace readiness skills assessments. Prior to 2010-2011, workplace readiness skills assessments were included in the Industry Certification category, but now are reported separately.

Career and Technical Education

		Count		
	Type	2008-2009	2009-2010	2010-2011
NOCTI Assessments	School	0	1	3
	Division	0	1	3
	State	3376	4254	4664
State Licensures	School	0	1	0
	Division	0	1	0
	State	593	739	880
Industry Certification	School	2	2	8
	Division	2	2	8
	State	15873	24064	28586
Workplace Readiness	School	-	-	0
	Division	-	-	0
	State	-	-	2589
Total Credentials Earned	School	2	4	11
	Division	2	4	11
	State	19842	29057	36719
Students Earning One or More Credentials	School	2	4	10
	Division	2	4	10
	State	16981	24255	30613
CTE Completers	School	41	61	28
	Division	41	61	28
	State	38334	39708	41329

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Dropout Information

Schools report annually on the number of students in grade 7-12 who drop out. Dropout percentages represent the number of dropouts for a given school year divided by the membership on September 30th of that school year.

School - Dropout Information			
		Count / Percentage	
Student Subgroup	2008-2009	2009-2010	2010-2011
All Students	<	12 / 2.67%	<
Female	<	<	<
Male	<	<	<
Black	<	<	<
Hispanic	<	-	<
White	<	<	<
Asian	<	<	<
American Indian	-	-	-
Native Hawaiian	-	-	-
Race Unknown	-	-	-

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Program Completion Information

A Virginia high school diploma tells potential employers that the graduate possesses the skills and knowledge required for success in the workplace. It tells colleges, universities, and career and technical schools that the bearer is ready for the rigors of post-secondary education. This table provides program completion information for the three most recent years.

School - Program Completion Information

	Count / Percentage		
Credential type	2008-2009	2009-2010	2010-2011
Advanced Diploma	62 / 47.69%	55 / 40.74%	55 / 39.57%
GED	<	<	<
GED/ISAEP	<	<	<
Modified Standard Diploma	<	<	-
Special Diploma	11 / 8.46%	<	<
Standard Diploma	48 / 36.92%	62 / 45.93%	67 / 48.2%

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Career and Technical Education

Secondary schools report the number of credentials earned by students for passing occupational competency assessments recognized by the National Occupational Competency Testing Institute (NOCTI), state licensure examinations, industry certification examinations, and workplace readiness skills assessments. Prior to 2010-2011, workplace readiness skills assessments were included in the Industry Certification category, but now are reported separately.

Career and Technical Education

		Count		
	Type	2008-2009	2009-2010	2010-2011
NOCTI Assessments	School	6	1	2
	Division	6	1	2
	State	3376	4254	4664
State Licensures	School	1	2	1
	Division	1	2	1
	State	593	739	880
Industry Certification	School	9	27	66
	Division	9	27	66
	State	15873	24064	28586
Workplace Readiness	School	-	-	9
	Division	-	-	9
	State	-	-	2589
Total Credentials Earned	School	16	30	78
	Division	16	30	78
	State	19842	29057	36719
Students Earning One or More Credentials	School	13	30	76
	Division	13	30	76
	State	16981	24255	30613
CTE Completers	School	74	66	82
	Division	74	66	82
	State	38334	39708	41329

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Dropout Information

Schools report annually on the number of students in grade 7-12 who drop out. Dropout percentages represent the number of dropouts for a given school year divided by the membership on September 30th of that school year.

School - Dropout Information

	Count / Percentage		
Student Subgroup	2008-2009	2009-2010	2010-2011
All Students	18 / 3.38%	13 / 2.52%	16 / 3.22%
Female	<	<	<
Male	11 / 3.99%	<	<
Black	14 / 4.73%	<	<
Hispanic	<	<	<
White	<	<	<
Asian	-	-	<
American Indian	<	<	<
Native Hawaiian	-	-	-
Race Unknown	<	-	-

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Program Completion Information

A Virginia high school diploma tells potential employers that the graduate possesses the skills and knowledge required for success in the workplace. It tells colleges, universities, and career and technical schools that the bearer is ready for the rigors of post-secondary education. This table provides program completion information for the three most recent years.

School - Program Completion Information

	Count / Percentage		
Credential type	2008-2009	2009-2010	2010-2011
Advanced Diploma	20 / 47.62%	17 / 44.74%	25 / 58.14%
GED	-	-	-
GED/ISAEP	<	<	<
Modified Standard Diploma	<	<	<
Special Diploma	<	<	<
Standard Diploma	14 / 33.33%	14 / 36.84%	14 / 32.56%

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Career and Technical Education

Secondary schools report the number of credentials earned by students for passing occupational competency assessments recognized by the National Occupational Competency Testing Institute (NOCTI), state licensure examinations, industry certification examinations, and workplace readiness skills assessments. Prior to 2010-2011, workplace readiness skills assessments were included in the Industry Certification category, but now are reported separately.

Career and Technical Education

		Count		
	Type	2008-2009	2009-2010	2010-2011
NOCTI Assessments	School	0	0	0
	Division	0	0	0
	State	3376	4254	4664
State Licensures	School	0	0	1
	Division	0	0	1
	State	593	739	880
Industry Certification	School	0	5	3
	Division	0	5	3
	State	15873	24064	28586
Workplace Readiness	School	-	-	0
	Division	-	-	0
	State	-	-	2589
Total Credentials Earned	School	0	5	4
	Division	0	5	4
	State	19842	29057	36719
Students Earning One or More Credentials	School	0	5	4
	Division	0	5	4
	State	16981	24255	30613
CTE Completers	School	22	17	23
	Division	22	17	23
	State	38334	39708	41329

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Dropout Information

Schools report annually on the number of students in grade 7-12 who drop out. Dropout percentages represent the number of dropouts for a given school year divided by the membership on September 30th of that school year.

School - Dropout Information			
	Count / Percentage		
Student Subgroup	2008-2009	2009-2010	2010-2011
All Students	<	<	<
Female	<	<	<
Male	<	<	<
Black	<	<	<
Hispanic	<	<	<
White	<	<	<
Asian	<	<	<
American Indian	-	<	<
Native Hawaiian	-	-	-
Race Unknown	<	<	-

Key: < = A group below state definition for personally identifiable results
- = No data for group
* = Data not yet available

Rob Williams
Regional Manager
Ronald A Williams Ltd
8100 Three Chopt Road Suite 134
Richmond, VA 23229
September 7, 2012

To Whom it May Concern:

Ronald A Williams Ltd is proud to be working with Randy Long, and the Northern Neck Regional Technical Center in their transformation into a STEM Academy. We are working with them in three specific areas to insure that as many students in the region as possible will have access to a STEM curriculum.

The first area that we are providing services is with computer aided design software for Technical Center students. Northern Neck Regional Technical Center has purchased an Autodesk Design Academy Suite with subscription services. These services will allow the Technical Center access to the newest versions of the software upon release as well as provide curriculum resources, and home student licenses at no charge. These services will be provided by two webpages http://www.curriculum.Autodesk.com and http://www.students.autodesk.com. The curriculum webpage will provide project based learning that students can access at the Technical Center, at their feeder school, or at home 24 hours a day. The student webpage will allow students to download for free the same software being used in their classes for home use. This will obviously facilitate a better opportunity for homework.

In accordance with the Autodesk End User License Agreement, Northern Neck Regional Technical Center can provide Autodesk software licenses to their students at the Technical Center and at their division schools based on the following criteria.

1. The student must be registered in a computer aided design course at the Technical Center.
2. The division school must not currently offer a computer aided design course.
3. The software must be deployed on a school owned computer.
4. The division school can only use the software for the students registered at the Technical Center, and then can only use the software for Technical Center related work.

It is our belief that this arrangement will expose more students in the region to computer aided design and engineering concepts.

The second area of services is centered around providing curriculum, reference, and certification preparation for registered students. This will be provided through a CADLearning webpage, http://www.rawl.cadlearning.com. Northern Neck Regional Technical Center has purchased a site license of this webpage. This will allow them to

provide each student with an individual account, and allow them to accomplish a variety of tasks.

1. CADLearning will provide short videos detailing the use of different aspects of Autodesk software. This will provide remote access to learning content for all of the students registered.
2. CADLearning has developed a curriculum specific to preparing students for the Autodesk Certified User Certification covering the standards and concepts outlined by Autodesk.
3. CADLearning will provide pre and post tests for students to determine learning gaps and progress made during the year. CADLearning will take information gathered from the pre test, and prescribe custom lesson plans for each student focusing on the areas that student needs to improve upon.
4. The instructor will be able to monitor each student's progress with the content. This will include assessment scores as well as time spent by the student with the curriculum.
5. All of this content is delivered online and can be accessed on any computer 24 hours a day.

The third area that Ronald A Williams Ltd is working with Northern Neck Regional Technical Center is in professional development. In the past we have provided training sessions for teachers at the Technical Center with Community College CAD instructors. This is a service that we will continue to provide as new software releases become available and as teacher needs change.

Northern Neck Regional Technical Center's transformation into a STEM center that will provide content to students without them having to leave their feeder school is an exciting proposition, and Ronald A Williams Ltd is proud to be a part of it.

Sincerely,

Rob Williams
Regional Manager

Appendix D

Memorandum of Agreement among Partners for the Northern Neck Technical Center Governor's STEM Academy for Agriculture and Maritime Studies

Memorandum of Agreement among Partners for the Northern Neck Technical Center Governor's STEM Academy for Agriculture and Maritime Studies

Partners for the Academy agree to enter into this Agreement to support the Governor's Academy to broaden the scope of K–12 science, technology, engineering, and mathematics (STEM) education. The Northern Neck Technical Center will serve as the lead partner for the Academy. Partner schools will facilitate the vision, planning, and implementation of the Academy.

Vision of the Northern Neck Technical Center Governor's STEM Academy for Agriculture and Maritime Studies

The Academy will provide and promote a dynamic learning environment, including virtual learning, project-based learning, and internships, to provide students with opportunities to acquire the knowledge and skills needed to be college- and career-ready to compete in a technical global economy. The goal is to provide such opportunities to students pursuing careers in engineering, maritime transportation engineering, and agricultural engineering.

Memorandum of Agreement Time frame

The Memorandum of Agreement period shall be July 1, 2012 through June 30, 2013 and will be extended annually unless modified or terminated by a partner.

Partners' Agreements

Northern Neck Technical Center (NNTC) agrees to:

- Serve as the governing body to reflect current Virginia Board of Education regulations relative to jointly operated school and programs as directed by the Virginia Department of Education and the Code of Virginia.
- Serve as the lead agency for the Northern Neck Technical Center Governor's STEM Academy for Agriculture and Maritime Studies (hereinafter referred to as the "Academy") to the Virginia Department of Education.
- Establish and facilitate an Academy Advisory Committee.
- Coordinate and report all grant revenue and expenditure with the Academy Advisory Committee.
- Provide leadership for developing and communicating the vision, goals, and implementation of the Academy.
- Assure that the Academy complies with all state standards for the Governor's Career and Technical Academy as established by the Virginia Department of Education and the State Council of Higher Education for Virginia.
- Assume responsibility for the Academy program evaluation to include data collection, analysis, and state reporting.
- Provide Academy documentation and information as requested by the Virginia Department of Education.
- Provide a STEM coordinator.
- Coordinate and monitor the implementation of courses and curriculum.
- Coordinate the implementation of staff development initiatives.
- Coordinate all Academy initiatives with the division superintendents, school principals, and guidance counselors.
- Provide updates to the school boards and superintendents.

Richmond County Public Schools agrees to:

- Serve as the fiscal agent for the Academy to the Virginia Department of Education.

School Division Partners (Town of Colonial Beach Public Schools, Essex County Public Schools, Lancaster County Public Schools, Northumberland County Public Schools, Richmond County Public Schools, and Westmoreland County Public Schools) agree to:

- Assure that resources are provided to implement Academy-approved programs.
- Designate a key contact person to serve as liaison and active participant on the Academy Advisory and Planning Committees.
- Provide school-based leadership for the communication and implementation of Academy-approved programs.
- Provide counseling and other services that promote STEM education, career pathways, educational advancement, and employment opportunities.
- Market, recruit, select, and enroll students for Academy-approved programs.
- Implement strategies to recruit nontraditional and minority representation into Academy initiatives.
- Assure that all school-division-approved Academy courses meet accreditation and Virginia Department of Education standards.

- Assure that all faculty teaching Academy courses meet Virginia Department of Education licensure requirements.
- Assure that all Academy dual-enrollment courses are aligned with content standards and faculty requirements as specified by the postsecondary institution.
- Assure that school division-approved Academy courses represent well-articulated career pathways that meet the requirements for the Governor's Exemplary Standards Award Program, Commonwealth Scholars Course of Study, Workplace Readiness Skills for the Commonwealth, and Virginia Technical or Advanced Technical Diploma.
- Provide or assure adequate staff development, support, and credentialing for faculty as required by Academy courses.
- Assure adequate IT hardware, software, and technical support and equipment to instruction for school division-approved Academy courses, laptops for students, Internet connection, aide to supervise students working online, and classroom space.
- Provide a contact for the collection and reporting of data required for the Academy assessment and evaluation.

<u>Postsecondary Education Partners (Rappahannock Community College, The College of William and Mary, and future partners) agree to:</u>

- Provide the resources, as agreed upon, to implement Academy courses or activities that meet enrollment requirements. The financial burden will be shared by the participating divisions and localities.
- Designate a key contact person to serve as liaison and active participant on the Academy Advisory Committee.
- Provide organizational leadership for the communication and implementation of agreed-upon Academy programs within the participating schools.
- Assure that all courses and faculty teaching Academy courses meet accrediting standards.
- Implement strategies to retain and provide successful experiences for nontraditional and minority students enrolled in the Academy.
- Assure that the agreement with school divisions and other postsecondary educational entities regarding the earning and transfer of college credits or coursework meets compliance requirements for all parties.
- Provide for the staff development and release time necessary to support training and credentialing for Academy faculty, within policies and budget.
- Provide IT hardware, software, and technical support to instruction as approved, whether that be classroom, video, or Internet-based learning.
- Provide a contact person for the submission of demographic and instructional data for assessment and evaluation of the Academy as appropriate, according to organizational policies.

<u>Business Partners (White Point Boat Yard, Whelan's Marina, Northern Neck Vegetable Growers' Association, Montague Farms, Inc., Northern Neck Nursery, Historyland Nursery) agree to:</u>

- Provide resources, as agreed upon, to assist in planning, delivering, and/or offering Academy programs.
- Designate a key contact person to serve as liaison and active participant on the Academy Advisory Committee.

- Provide technical expertise to assure that the Academy curricula and instruction reflect industry standards and prepare students for the target work force.
- Share Academy information with other business leaders and organizations to recruit additional partners and sponsors.
- Provide opportunities, as agreed upon, for Academy students to engage in real-world experiences through work-based learning experiences, such as internships, mentorships, service-learning projects, and/or job-shadowing experiences.
- Offer Academy graduates access to employment opportunities within each organization, as agreed upon.
- Provide or assist the Academy in procuring instructional and professional development resources.
- Partners have agreed to provide outcome information about graduates that they have employed.

Non-Profit Organization and Local Government Partners (Richmond County Extension Service, Friends of the Rappahannock, STEM Education Alliance College of William and Mary, Southeast Maritime and Transportation Center, Work Force Development Center)

- Provide resources, as agreed upon, to assist in planning, delivering, and/or offering Academy programs.
- Designate a key contact person to serve as liaison and active participant on the Academy Advisory Committee.
- Share Academy information with other business leaders and organizations to recruit additional partners and sponsors.
- Assist in developing and implementing strategies for the recruitment and enrollment of nontraditional and minority students, as agreed upon.
- Provide or assist in procuring instructional and professional development resources.
- Provide organizational leadership for the communication and implementation of agreed upon Academy Programs.

By signing this agreement, partners agree to participate actively in the Academy and abide by this agreement.

Organization: _____

Signature: _____

Title: _____

Date: _____

NORTHERN NECK TECHNICAL CENTER
13946 HISTORYLAND HWY.
WARSAW, VIRGINIA 22572
PHONE: (804) 333-4940
FAX: (804) 333-0538

Colonial Beach • Essex • Lancaster • Northumberland • Richmond • Westmoreland

Harold R. Long
Principal

Todd H. Davis
Assistant Principal

January 4, 2012

Dear Advisory Committee Member:

I am delighted that you have agreed to serve on the Northern Neck Technical Center Virtual Engineering Academy (NNTC VEA) Advisory Council.

I am enclosing a form that needs to be completed and signed by you certifying that you will be a member and active participant of the NNTC VEA, and returned to me. A self-addressed stamped envelope has been enclosed for your convenience.

If you have any questions, please feel free to give me a call.

Sincerely,

Harold R. Long,
Principal

HRL/agd
Enclosures

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization Richmond Co Public Schools

Signature

Title Superintendent

Date 9/10/12

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization NNTC

Signature [illegible] R. Lay

Title Principal

Date 1/24/12

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization NNTC

Signature Judith Davis

Title Assistant Principal

Date 1-24-12

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization NORTHERN NECK TECHNICAL CENTER

Signature

Title Board Chairman NNTC

Date 1/24/12

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization Lancaster County Schools

Signature [illegible]

Title Supt

Date 1/24/12

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization Northumberland County Schools

Signature Dr. Reben Gates

Title Superintendent

Date Sept. 10, 2012

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization: Essex County Public Schools

Signature _____

Title: Superintendent

Date: 6/15/2012

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization Richmond County Public Schools

Signature Marilyn T. Baw

Title Superintendent

Date 1-27-2012

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization Westmoreland Co. Public Schools

Signature Rebecca S. Lawry

Title Superintendent

Date 6-15-12

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization Colonial Beach PS

Signature [illegible]

Title Superintendent

Date 6/15/12

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization Rappahannock Community College

Signature Walter Norris Walter Norris

Title Dual Enrollment Coordinator

Date 1/25/12

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization WHITE POINT MARINA INC

Signature Robert H. Rehfeld Jr.

Title President

Date 1/15/2012

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization Whelans Marine

Signature Keith Whelan

Title General manager

Date 1-24-2012

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization Northern Neck Vegetable Growers Association INC.

Signature Gary Allensworth

Title President

Date 2-1-2012

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization Montague Farms, Inc.

Signature O. Byron Jaliaferro, Jr.

Title Vice-President

Date 6/15/12

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization Friends of the Rappahannock

Signature L Pemberton

Title Tidal Stewardship Coordinator

Date 19 January 202

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization STEM Education Alliance

Signature Gail B Hardinge

Title Project Director

Date 1/26/12

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization NSF SMART Ctr.

Signature Barbara Murray

Title Director, P.I.

Date 1/13/12

By signing this agreement partners agree to be active participants in the Academy and agree to abide by this agreement.

Organization BAY CONSORTIUM WORKFORCE INVESTMENT BOARD, INC.

Signature [illegible]

Title EXECUTIVE DIRECTOR

Date 9/13/2012

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 6/14/2012

PRODUCER (804)333-4013 FAX: (804)333-1213
BH Baird Insurance
5682 RICHMOND ROAD, P O BOX 10
WARSAW VA 22572

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED
Northern Neck Technical Center
c/o Mr. Randy Long, Principal
P. O. Box 787
Warsaw VA 22572

INSURERS AFFORDING COVERAGE	NAIC #
INSURER A: Cincinnati Insurance Company	10677
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS	
A		GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC	CPP0865172/CPA0865172	7/1/2011	7/1/2014	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 500,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
A		AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON-OWNED AUTOS	CPP0865172/CPA0865172	7/1/2011	7/1/2014	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
		GARAGE LIABILITY ANY AUTO				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EA ACC AGG	$ $ $
		EXCESS / UMBRELLA LIABILITY OCCUR CLAIMS MADE DEDUCTIBLE RETENTION $				EACH OCCURRENCE AGGREGATE	$ $ $ $ $
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N If yes, describe under SPECIAL PROVISIONS below				WC STATU-TORY LIMITS / OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ $
		OTHER					

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL _____ DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE
Teresa English/TERESA Teresa B. English

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Appendix E

Student Application and Agreement to Governor's STEM Academy

Date Sent to Technical Center: _____
Date Rcvd by Technical Center: _____

Northern Neck Technical Center
Governor's STEM Academy for Agriculture and Maritime Studies

APPLICATION FOR ADMISSION

Circle program choice: TRANSPORTATION: Facility and Mobile Equipment Maintenance (Maritime)
AGRICULTURE: Plant Systems
STEM: Engineering and Technology

Name: _____ Student number: _____

Address: _____

Home telephone: _____ Other telephone: _____

Date of birth: _____/_____/_____ Age: _____

Parent/Guardian's name: _____

High school that I attend: _____

Present grade level: _____ Special Education? Y / N Counselor: _____

GPA: _____ Grade for Algebra I: _____

Number of absences through first semester: ____ If number of days is greater than five, please explain:

_____

_____

What are your career goals?

_____

_____

_____

List any extra-curricular activities that you have participated in:

_____

_____

How do you feel that the STEM Academy can help you obtain your career goals?

_____

_____

Northern Neck Technical Center
Governor's STEM Academy for Agriculture and Maritime Studies

AGREEMENT

The responsibilities of each party are outlined herein, and the corresponding signatures assure acceptance of those responsibilities.

To participate in the Academy, the student agrees to:

- Earn an Advanced Studies Diploma.
- Earn at least 9 transferable or career and technical college credits while enrolled in high school.
- Complete dual-enrollment/dual-credit courses and earn a "C" or better in the courses.
- Maintain at least a 2.5 GPA.
- Earn a Board of Education approved industry certification or state licensure in the approved pathway, and also earn the Workplace Readiness Skills for the Commonwealth credential or Career Readiness certificate.

_____	_____	_____
Student name (printed)	Student signature	Date

The parent/guardian agrees to:

- Support and monitor student's academic work and progress in school, particularly as it relates to fulfillment of the requirements for the Academy.

_____	_____	_____
Parent or guardian name (printed)	Parent or guardian signature	Date

The participating high school agrees to:

- Ensure the student has met the requirements for admission into the Academy, including a review of the student's transcripts.
- Provide the student with opportunities to access college-level, dual-credit courses and career and technical courses needed to fulfill this agreement.
- Provide the counseling services needed to fulfill the requirements of the Academy Agreement, including assisting students in meeting the requirements of their individualized programs of study.
- Provide the Virginia Department of Education with data regarding participation and completion of the Academy program.

_____	_____
High school principal signature	Date
_____	_____
Guidance counselor signature	Date

Appendix F

Policies

The Northern Neck Technical Center Governor's STEM Academy
Richmond County Public Schools

STATE OF OPERATING FUNDS AND FACILITIES
ASSURANCE

The authorized signature on this page certifies to the Virginia Department of Education that the authorized official assures that:

1. Operating funds and facilities are available to support the Governor's STEM Academy.
2. Materials and equipment will be provided to adequately support the needs of The Northern Neck Governor's STEM Academy.

Certification by Authorized or Institutional Official:

The applicant certifies that to the best of our knowledge, the information in this application is correct, that the filing of this application is authorized by the partners participating in the process to establish a Governor's STEM Academy, and that the applicant will comply with the above statement of assurances.

Patricia Packett Pugh	Vice-Chairman
Printed Name of Authorized Official	Title
	5.30.12
Signature of Authorized Official	Date

NORTHERN NECK JOINT COMMITTEE FOR CONTROL
Proposed Regional Vocational Education Center
for the Northern Neck Area

A G R E E M E N T

THIS AGREEMENT, made this tenth day of December, 1976, by and among the SCHOOL BOARD OF THE COUNTY OF LANCASTER, THE SCHOOL BOARD OF THE COUNTY OF NORTHUMBERLAND, THE SCHOOL BOARD OF THE COUNTY OF RICHMOND, THE SCHOOL BOARD OF THE COUNTY OF WESTMORELAND and THE SCHOOL BOARD OF THE TOWN OF COLONIAL BEACH, COMMONWEALTH OF VIRGINIA.

W I T N E S S E T H

THAT WHEREAS, The School Board of the County of Lancaster, The School Board of the County of Northumberland, The School Board of the County of Richmond, The School Board of the County of Westmoreland and The School Board of the Town of Colonial Beach, Virginia, are bodies corporate and as such may contract and be contracted with, pursuant to Title 22 of the Code of Virginia, 1950, as amended; and,

WHEREAS, The School Board of the County of Lancaster, The School Board of the County of Northumberland, The School Board of the County of Richmond, The School Board of the County of Westmoreland and The School Board of the Town of Colonial Beach, Virginia, believe it to be in the best interest of their respective school divisions to make use of the opportunities afforded by a technical and vocational school, and that this endeavor may be most beneficially accomplished by the operation of a jointly owned and controlled Vocational Technical Education Center; and,

WHEREAS, the Board of Supervisors of the County of Lancaster, the Board of Supervisors of the County of Northumberland, the Board of Supervisors of the County of Richmond, the Board of Supervisors of the County of Westmoreland and the Council of the Town of Colonial Beach, Virginia, have

authorized their respective School Boards to enter into an agreement to accomplish this purpose:

N O W T H E R E F O R E,

For and in consideration of the joint contribution of services and monies toward the operation of the aforesaid Vocational Technical Education Center and program, The School Board of the County of Lancaster, The School Board of the County of Northumberland, The School Board of the County of Richmond, The School Board of the County of Westmoreland, and The School Board of the Town of Colonial Beach, Virginia, the parties hereto, do agree as follows:

1. The operation of the Vocational Technical Center shall be under the control of a Joint Committee for Control, which shall govern the School pursuant to Regulations of the State Board of Education. The membership of the Joint Committee for Control shall be composed of one designated member of each School Board which is a party to this agreement; and each School Board shall have equal representation on the Joint Committee for Control. The powers and duties of the Joint Committee for Control shall include the following:

A. To adopt such Rules and Regulations as are necessary for the efficient operation of the Vocational Technical Center.

B. To establish and manage the business, property and affairs of the School and to provide for the operation of the Vocational Technical Center.

C. To make all decisions of policy and employ all personnel necessary to carry out the purposes of the School.

D. To determine, with such professional advice as it deems necessary or advisable, the curriculum, eligibility of students, and all

other matters necessary to operate an efficient Vocational Technical Center.

E. To do all other things in the management of the business, property and affairs of the School necessary to carry out its purpose.

F. To have such authority as may be provided under the laws of the Commonwealth of Virginia and the Rules and Regulations promulgated by the State Board of Education.

II. All interests in all property, real or personal, which are acquired for the Vocational Technical Center purposes, shall be acquired and held in the same manner as such property is now acquired and held for the use of the parties hereto. The titleholders of such interests in such property as shall be acquired for the Vocational Technical Center purposes shall have an undivided fractional interest in said interests in such property equal to their pro rata contribution toward the acquisition of such property.

III. The School Boards which are members of the Vocational Technical Center shall provide each year, on a pro rata basis as herein set forth, such funds as are necessary to establish, operate and maintain the Vocational Technical Center, said pro rata basis to be determined as follows: Before and during the first fiscal year (beginning July 1 and ending June 30) of operation, or portion thereof, the pro rata share of the School Board of the County of Lancaster shall be twenty- four and fifteen hundredths per centum (24.15%) of such funds; The School Board of the County of Northumberland shall be twenty-two and seventy-one hundredths per centum (22.71%) of such funds; The School Board of the County of Richmond shall be eighteen and four hundredths per centum (18.04%) of such funds; The School Board of the County of Westmoreland shall be twenty-nine and twenty-two hundredths per centum (29.22%) of such funds; and the School Board of the Town of Colonial

Beach shall be five and eighty-eight hundredths per centum (5.88%). Thereafter the pro rata share of each member School Board shall be based upon the Average Daily Membership (ADM) of regular equated full-time day students attending the Vocational Technical Center from the respective political subdivisions represented by the parties to this agreement during the previous school year.

IV. The Joint Committee for Control shall have the right and power to accept and expend as it deems appropriate any funds which may become available to or for vocational or technical educational purposes from any source whatsoever; provided, however, the Joint Committee for Control shall not have the power to obligate the respective School Boards of the Counties of Lancaster, Northumberland, Richmond, Westmoreland and the Town of Colonial Beach, or any one of said political subdivisions, beyond the funds to be approved for the Joint Committee for Control in accordance with this agreement.

V. Any party to this agreement may withdraw from this agreement by giving notice of intent to do same, prior to February 15th of the year next preceding the fiscal year in which the party intends to withdraw, provided that prior to its withdrawal, it shall cause to be conveyed to the remaining titleholders the fractional shares in all interests in property, real or personal, acquired for use of the School and held by said withdrawing party or on its behalf. Upon withdrawal of a party, no contributions made by it or on its behalf to the School or in furtherance of the purposes of the School shall be withdrawn except as hereinafter provided, and any party withdrawing must, prior to withdrawal, complete its pro rata share of any funds obligated by the School or in the furtherance of the objectives of the School prior to the withdrawal. Upon the withdrawal of any party from this

agreement, pursuant to the terms and conditions of this paragraph, all further obligations and duties of said withdrawing party under this agreement shall cease. In the event of the withdrawal of any party, it shall be paid a consideration by the remaining parties to this agreement for its interests in the property conveyed to the said remaining titleholders as follows:

1. If such withdrawal occurs within seven years of the date of this agreement, then no consideration shall be paid for such property interest to be conveyed.

2. If such withdrawal occurs more than seven years from the date of this agreement, then the party withdrawing shall receive a consideration equal to the fair market value of the interest in said property to be conveyed as of the date of withdrawal. Such fair market value and payment to the withdrawing party shall not include any amount of value attributable to assets purchased with Federal and State funds, foundation or company grants, and gifts from citizens, paid or given directly to this Vocational Technical Center; such withdrawing party shall receive only a share of the value of assets purchased with funds originally contributed by its School Board or its local government. Said consideration may be paid by the remaining parties in yearly equal installments, without interest, over a period of not more than ten (10) years. The fair market value of the localities' interest shall be determined by the appraisers of the State of Virginia.

VI. Should the Vocational Technical Center terminate its operation by dissolution of the School, or by sale of its facilities, or in any other manner, then the assets held and owned by the School will be distributed among the then existing members of the School on a pro rata basis, according to the fractional interest owned by each party in said assets.

IN WITNESS WHEREOF, The School Board of the County of Lancaster, The School Board of the County of Northumberland, The School Board of the County of Richmond, The School Board of the County of Westmoreland and The School Board of the Town of Colonial Beach have caused this agreement to be signed in their names and on their behalf by their respective Chairmen and their seals to be affixed hereto and attested by their respective Clerks.

THE SCHOOL BOARD OF THE COUNTY OF LANCASTER

By: _____
Chairman of the School Board

Attest:

_____
Clerk of the School Board of the County of Lancaster

THE SCHOOL BOARD OF THE COUNTY OF NORTHUMBERLAND

By: _____
Chairman of the School Board

Attest:

_____
Clerk of the School Board of the County of Northumberland

THE SCHOOL BOARD OF THE COUNTY OF RICHMOND

By: _____
Chairman of the School Board

Attest:

_____
Clerk of the School Board of the County of Richmond

THE SCHOOL BOARD OF THE COUNTY OF
WESTMORELAND

By: Margaret W. Galano
Chairman of the School Board

Attest:

Christine P. Jessel
Clerk of the School Board of the
County of Westmoreland

THE SCHOOL BOARD OF THE TOWN OF
COLONIAL BEACH

By: [illegible]
Chairman of the School Board

Attest:

Margaret V. Johnston
Clerk of the School Board of the
Town of Colonial Beach

NORTHERN NECK JOINT COMMITTEE FOR CONTROL
Proposed Entry by Essex County Public Schools into the Northern Neck Technical Center

AGREEMENT

THIS AGREEMENT made this 11th day of January , 2005 by and among the Joint Committee of Control for the Northern Neck Technical Center and Essex County Public Schools, will become effective July 1, 2005.

WITNESSETH

THAT WHEREAS, The Joint Committee of Control of the Northern Neck Technical Center, and Essex County Public Schools, believe it to be in the best interest of their respective school divisions to make use of the opportunities afforded by the Northern Neck Technical Center, and that this endeavor may be most beneficially accomplished by the allowing Essex County Public Schools to become a full partner in the Northern Neck Technical Center.

NOW THEREFORE

For and in consideration of the joint contribution of services and monies toward the operation of the aforesaid Northern Neck Technical Center and Essex County Public Schools agrees as follows:

1. The operation of the Technical Center shall be under the control of the Joint Committee of Control which shall govern the School pursuant to Regulation of the State Board of Education. The membership of the Joint Committee of Control shall be composed of one designated member of each School Board which is a party to this agreement; and each School Board shall have equal representation on the Joint committee of control. The powers and duties of the Joint committee for control shall include the following.
   - A. To adopt Rules and regulations as are necessary for the efficient operation of the Vocational Technical Center.
   - B. To establish and manage the business, property, and affairs of the School and to provide for the operation of the center.
   - C. To make all decisions of policy and employ all personnel necessary to carry out the purposes of the school.
   - D. To determine , with such professional advice as it deems necessary or advisable , the curriculum, eligibility of students, and all other matters necessary to operate and efficient Career and Technical Center.
   - E. To do all other things in the management of the business, property and affairs of the School necessary to carry out its purpose.
   - F. To have such authority as may provided under the Commonwealth of Virginia and the Rules and Regulations promulgated by the Board of Education.

2. All interest in all property, real or personal, which are acquired for the Technical Center purposes, shall be acquired and held in the same manner as such property in now acquired and held for the use of the parties hereto. The titleholders of such interest in such property as shall be acquired for the Technical center purposes shall have an undivided fractional interest in such property equal to their pro rata contribution toward the acquisition of such property.
3. The school boards which are members of the Technical Center shall provide each year , on a pro rata basis as herein set forth, such funds as necessary to operate and maintain the Technical Center, said pro rata basis to be determined as follows: the average daily membership in grades nine through twelve for the previous five years will represent 50% of the formula. The remaining 50% will be determined by actual enrollment in the Technical Center for the previous five years. This number will be determined by the September enrollments each year.
4. Any equipment which is used for Career and Technical Education will become the Property of Northern Neck Technical Center.
5. The sum of $15,000 per year for 5 years will be required as a buy in for Essex County Public Schools. This money will be placed in the Capital Improvement Category each year.
6. The Joint Committee for Control shall have the right and power to accept and expend as it deems appropriate any funds which may become available to or for technical education purposes from any source whatsoever, provided, however the Joint Committee for Control shall not have the power to obligate the respective School boards of the counties of Lancaster, Northumberland, Richmond, Westmoreland, Essex, and the Town of Colonial Beach , or any one of said political subdivisions, beyond the funds to be approved for the Joint Committee of Control in accordance with this agreement.
7. Should the Northern Neck Technical Center terminate its operation by dissolution of the School , or by sale of its facilities, or in any other manner, then the assets held and owned by the School will be distributed among the then existing members of the School on a pro rata basis , according to the fractional interest owned by each party in said assets

8. Any party to this agreement may withdraw from this agreement by giving notice of intent to do same, prior to Feb 15th of the year next preceeding the fiscal year in which the party intends to withdraw, provided that prior to its withdrawal, it shall cause to be conveyed to the remaining titleholders the fractional shares in all interests in property, real or personal, acquired for use of the School and held by said withdrawing party or on its behalf. Upon withdrawal of a party, no contributions made by it or on its behalf to the School or in furtherance of the purposes of the School shall be withdrawn except as hereinafter provided, and any party withdrawing must, prior to withdrawal, complete its pro rata share of any funds obligated by the school or in the furtherance of the objectives of the School prior to the withdrawal. Upon the withdrawal of any party from this agreement, pursuant to the terms and conditions of this paragraph, all further obligations and duties of said withdrawing party , it shall be paid a consideration by the remaining parties to this agreement for its interest in the property conveyed to the said remaining titleholders as follows:

A. If such withdrawal occurs within seven years of the date of this agreement, then no consideration shall be paid for such property to be considered.

B . If such withdrawal occurs more than seven years from the date of this agreement, then the party withdrawing shall receive a consideration equal to the fair market value of the interest in said property to be conveyed as of the date of withdrawal. Such fair market value and payment to the withdrawing party shall not include any amount of value attributable to assets purchased with Federal and State funds, foundation or company grants, and gifts from citizens, paid or given directly to the Northern neck Technical Center; such withdrawing party shall receive only a share of the value of assets purchased with funds originally contributed by its School Board or its local government. Said consideration may be paid by the remaining parties in yearly installment, without interest, over a period of not more than ten (10) years. The fair market value of the localities' interest shall be determined by the appraisers of the State of Virginia.

IN WITNESS WHEREOF, The Board of Control of Northern Neck Technical Center, and the Essex County School Board have caused this agreement to be signed in their names and on their behalf by their respective chairman and their seals to be affixed hereto and attested by their respective Clerks.

Attest:

Clerk of the Northern Neck Technical Center

THE CHAIRMAN OF THE BOARD OF CONTROL NORTHERN NECK TECHNICAL CENTER

By:

Chairman of the Board of Control

Attest:

Clerk of the School Board of the County of Essex

THE SCHOOL BOARD OF THE COUNTY OF ESSEX

By:

Chairman of the School Board

Appendix G

Assurance from Richmond County Public Schools to be the Fiscal Agent for the Academy

Richmond County Public Schools

P. O. Box 1507 • 460 Main Street
Warsaw, Virginia 22572
804/333-3681 (fax) 804/333-5586
www.richmond-county.k12.va.us

SUPERINTENDENT
Marilyn F. Barr, Ph.D.

ASSISTANT SUPERINTENDENT
William P. Brann

SCHOOL BOARD MEMBERS
Stephen M. Teese, Chairman
John A. Brown, Vice-Chairman
Brenda Hinson Pemberton
Patricia P. Pugh
Vivian G. Wood

April 12, 2012

The Richmond County Public School Board at the School Board meeting on April 11, 2012 approved Richmond County Public Schools to act as the fiscal agent for the Northern Neck Land and Sea Virtual Governor's STEM Academy located at the Northern Neck Technical Center in Richmond County.

Respectfully,

Stephen M. Teese

Stephen M. Teese, Chairman

Appendix H

Certificate of Liability Insurance

ACORD®

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 6/14/2012

PRODUCER (804)333-4013 FAX: (804)333-1213
BH Baird Insurance
5682 RICHMOND ROAD, P O BOX 10
WARSAW VA 22572

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURED
Northern Neck Technical Center
c/o Mr. Randy Long, Principal
P. O. Box 787
Warsaw VA 22572

INSURERS AFFORDING COVERAGE	NAIC #
INSURER A: Cincinnati Insurance Company	10677
INSURER B:	
INSURER C:	
INSURER D:	
INSURER E:	

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	ADD'L INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YYYY)	POLICY EXPIRATION DATE (MM/DD/YYYY)	LIMITS	
A		GENERAL LIABILITY X COMMERCIAL GENERAL LIABILITY CLAIMS MADE X OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: X POLICY PRO-JECT LOC	CPP0865172/CPA0865172	7/1/2011	7/1/2014	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$ 1,000,000 $ 500,000 $ 5,000 $ 1,000,000 $ 2,000,000 $ 2,000,000
A		AUTOMOBILE LIABILITY X ANY AUTO ALL OWNED AUTOS SCHEDULED AUTOS HIRED AUTOS NON-OWNED AUTOS	CPP0865172/CPA0865172	7/1/2011	7/1/2014	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$ 1,000,000 $ $ $
		GARAGE LIABILITY ANY AUTO				AUTO ONLY - EA ACCIDENT OTHER THAN AUTO ONLY: EA ACC AGG	$ $ $
		EXCESS / UMBRELLA LIABILITY OCCUR CLAIMS MADE DEDUCTIBLE RETENTION $				EACH OCCURRENCE AGGREGATE	$ $ $ $ $
		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N If yes, describe under SPECIAL PROVISIONS below				WC STATU-TORY LIMITS / OTH-ER E.L. EACH ACCIDENT E.L. DISEASE - EA EMPLOYEE E.L. DISEASE - POLICY LIMIT	$ $ $
		OTHER					

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL _____ DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES.

AUTHORIZED REPRESENTATIVE
Teresa English/TERESA Teresa B. English

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