

**A CASE STUDY  
OF  
CHARLES CITY COUNTY (VA) MIDDLE SCHOOL  
AND ITS ROLE AS A PARTNER IN THE NSF-SUPPORTED  
COASTAL RURAL SYSTEMIC INITIATIVE**

**Prepared for the  
NSF Rural Systemic Initiatives Evaluation Study**

**Submitted by  
The Evaluation Center  
Western Michigan University  
Kalamazoo, MI 49008-5237**

**January 2003**

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**by**

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## **Foreword**

On behalf of The Evaluation Center at Western Michigan University and the site visit team, I want to express my sincere appreciation to the administrators of the Charles City County Schools for their willingness to include their school as part of the Rural Systemic Initiatives evaluation study for the National Science Foundation. Ms. Mechelle Blunt was involved in all phases of the visits and helped arrange meetings with faculty, staff, students, and members of the community. Faculty members generously allowed us access to their classrooms and willingly gave of their time to visit with us. The regional facilitator, Tim Cotman, was extremely helpful and served as a valuable resource person. His knowledge of Charles City provided insights regarding the school and the county. Finally, we thank each person who met with us and shared perspectives on the Charles City County Schools and the county it serves.

Our entire site visit team enjoyed the trips to Charles City and found them very enlightening. We believe this report provides a fair and accurate description of the community, school, and efforts to provide a quality education for the students of the county. Many challenges exist. We acknowledge the many dedicated professionals who are investing the time and effort necessary to address these challenges and meet students' needs.

I thank the study team members, Jerry Horn and E. Robert Stephens, for their professional expertise and the considerable contributions they made in developing this report. Finally, my thanks to The Evaluation Center staff for their assistance in editing and preparing the final version of this case study.

Brian Lotven  
Project Consultant

## **A Case Study of the Charles City County (VA) Middle School and Its Role as a Partner in the NSF-Supported Coastal Rural Systemic Initiative**

The Evaluation Center at Western Michigan University (WMU) is engaged in a study of the Rural Systemic Initiative (RSI) with support from the National Science Foundation (NSF). The RSI program is intended to improve science, mathematics, and technology education in rural and economically disadvantaged regions through collaborative efforts involving K-12 school districts, four-year colleges and universities, community colleges, community organizations, and other stakeholders.

The project began in 1999 and was designed around a plan to examine selected RSI collaboratives: the Appalachian, Delta, and UCAN. Evaluation Center staff decided to conduct case studies in two communities in each of the three chosen collaboratives as the core of the project. Because these collaboratives had been operational for two or more years, a “post hole” type (one that was unique, not a preconceived model) case study was conducted. A site visit team of two to four professionals conducted on-site visits with interviews and focus group meetings with teachers, administrators, students, and selected members of the community. The team also reviewed documents and observed classrooms and facilities over a period of three to five days. As available, RSI project personnel were included in the interview process in an effort to gain their perspectives of the collaborative’s work as well as the implementation process at the local level. The team “lived” in the community during the time of the visits in an attempt to more fully understand the context of the school and the environment/community in which the RSI was engaged. The case study reports were completed, reviewed at the local level for accuracy, and submitted to NSF. Summaries of the evaluative procedures and the findings and reports were also disseminated at meetings of professional groups of science, math, and rural educators as well as to other researchers as requested and deemed appropriate.

In 2000, NSF personnel asked The Evaluation Center staff to expand the study to include three new RSI collaboratives and to extend the project through May 2003. The new collaboratives included the Texas RSI, the Michigan RSI, and the Coastal RSI. The same overall objectives for the evaluative study were applicable to the new RSIs, with four additional questions introduced. The additional questions related to new or alternative forms of student assessment, the contextual factors of the communities that support educational reform, the processes and conditions that facilitate effective operation, and the use and value of technology.

The Texas RSI became operational in 1999 and later divided into southern and northern groups with additional funding from NSF in 2001. The Coastal and Michigan RSIs became operational in 2001. The post hole type case study approach, as a part of the overall study in the initial WMU study with the more mature collaboratives, was judged as inappropriate and unfair for those in their early stages of development and operation. Instead, the evaluation team decided to employ a longitudinal case study approach consisting of three visits over a two-year period to three sites in each of the new collaboratives. Even then, the time frame is relatively short, which is a limitation of the overall study and particularly the study of individual collaboratives.

Site visit teams were formed and began gathering data during the 2001-2002 school year. A final visit to each case study community was conducted in Fall 2002.

Each case study team was composed of at least one project staff member and at least one member of the Research Advisory Team (RAT). The RAT member was selected on the basis of his/her special expertise or experience with an issue or condition determined to be a relevant factor in the case study. In the case of the Charles City County Middle School, Dr. E. Robert Stephens, a longtime leader in rural school research and a member of the Research Advisory

Team, served as a member of the study site team. A case study visitors guidebook was used to provide direction and format for the interviews in addition to specific and general questions to be addressed.

The case studies were designed to reflect an understanding of the variables within a school community that either support or serve as a barrier to education reform. The role of the RSI in the reform effort was the primary focus. The RSI may be one of several independent initiatives for school improvement, but should be a major source of input with regard to math and science education. Clear evidence of impact, including consideration of different types of evidence reflecting student learning, is important. Sources of positive effects of the RSI included traditional forms of student assessment; enrollment in advanced science, math, or technology courses; pursuit of careers requiring strong science, math, or technology backgrounds; and student work samples from independent investigation.

A plethora of social, economic, geographic, cultural, and other factors make comparisons of rural schools with suburban and urban schools problematic. These case studies focused upon the communities involved without preconceptions related to consolidation; depth/breadth of science, math, and technology offerings; qualifications of teachers; or other site-situational factors. Rather, the focus was on the schools as an integral part of the community and the effects of the community values of education and schooling. Social research speaks to the significance of the community power structure with regard to schools and schooling. Decision making, power brokering, written and unwritten understandings are all part of “doing business” in rural communities. Clearly, the RSI project was an external intervention and one reason for making the study longitudinal was to allow more opportunities for interaction between the school and the community.

Although all of the case study sites are rural and poor (by definition and as criteria for participation), each is quite unique in terms of history, racial and ethnic makeup, property values, governmental jurisdiction, and site situation. All of these factors play a part in the lineage of public education in each community. Significant events that contributed to the shaping of public education in these areas were identified. In essence, what evolves is a story about the community from the eyes and ears of outsiders, but with a strong sense of understanding about rural schools and communities.

The Coastal RSI case studies focused on school districts in Charles City, Virginia (Charles City County Middle School); Elizabeth City, North Carolina (Pasquatank High School); and Marion, South Carolina (Marion Intermediate School). In Michigan the evaluation project looked at two traditional public school communities—Baldwin and Whittemore-Prescott—and one state-approved and -funded charter school that serves a Native American community—Nah Tah Wahsh Public School Academy. The case study school communities in the Texas RSI collaborative were Carrizo Springs, Clarendon, and Pittsburg.

### **Charles City County History**

The history of the county, one of the oldest in the United States, dates to 1634 when the colonial General Assembly met at Jamestown and divided the Virginia colony into eight shires, similar to those in England: Accomack, Charles River, Henrico, Elizabeth City, James City, Warwick River, Warosquyoake, and Charles City. The Charles City shire was named for the English king’s son, who later became King Charles I. When first established, Charles City comprised a large area on both sides of the James River, but gradually it lost land area to the formation of other counties. Today, Charles City County encompasses a peninsula between the James and Chickahominy Rivers, with a land area of 181 square miles and 20 square miles of water. The

county seat is located at Charles City Courthouse, which is one of only a very few buildings located near an intersection of two state roads.

Settlement in Charles City County began as early as 1613. Many of the famous estates were patented in these early years. Berkeley, possibly the most famous of the James River plantations, was the site of the first official Thanksgiving in 1619. Belle Air, built about 1670, is considered one of the oldest frame dwellings in America. Benjamin Harrison IV built the Berkeley mansion in 1726; it was the birthplace of Benjamin Harrison V, a signer of the Declaration of Independence and governor of Virginia. Berkeley was also the home of William Henry Harrison, ninth president of the United States. William Byrd II, a notable Virginia planter, author, and colonial official, constructed Westover, which was the residence of the Byrd family, about 1730. Also of historic interest is Westover Parish Church. Erected in 1737, Westover Church counted among its membership the family of William Byrd II and Presidents William Henry Harrison and John Tyler. The Shirley plantation was built about 1769 by Charles Carter on land patented in 1660 by his great grandfather, Edward Hill. Robert E. Lee, whose mother was Anne Hill Carter, visited the plantation frequently. Shirley is believed to be the first Virginia plantation. Sherwood Forest was the home of John Tyler, tenth president of the United States. Originally known as Creek Plantation, Sherwood Forest was the name given the estate by President Tyler, who compared himself to Robin Hood.

Charles City County is not only the parent of several counties and cities and the site of historic plantations, but also is the birthplace of statesmen and leaders. Besides Presidents Harrison and Tyler, Charles City County claims three Virginia governors as well as many other notable statesmen.

The county is also historically linked to Native-American and African-American history and tradition. Chief Powhatan, head of the largest Indian confederation in America, located his capitol at Sandy Point. His daughter, Pocahontas, saved the life of Captain John Smith, who wrote the county's first history. Lott Cary, the first black American missionary to Africa and founding father of Liberia, was born in the county. One of the first free black communities in America was established in the 1660s and was located in Charles City, as was the third oldest organized free black church.

### **Charles City County Current Status**

The Charles City County of today is far different from the historically significant birthplace of plantations and presidents. Although it is steeped in history and the genteel image of the south, the reality of Charles City County is far less grand than its origins. Overall, the county is rural, poor, and undereducated. Today, the population of Charles City County is approximately 6,900. Recent trends indicate that the county is gaining residents at a slower rate than the rest of the state. The racial composition of the population is roughly two-thirds black and one-third white with a small number of American Indians. There are slightly more females than males in the county.

The population of Charles City County is totally rural. The nearest population centers are Richmond, 45 minutes west, or Williamsburg, 40 minutes east. The poverty level is estimated to be at slightly more than 12 percent, with a child poverty level at more than 19 percent. The county's primary source of revenue is a landfill, which is quite large, modern, and far different in appearance than stereotypes would paint. Otherwise, the county is virtually devoid of shopping, businesses, or any other source of revenue. There are no grocery stores, convenience stores, or gasoline stations near the schools. Although the county is home to some outstanding historic plantations, tourism has not been widely developed and the amount of tax revenue the

plantations contribute to the county is unknown. The magazine *Virginia Business* makes the following statements regarding Charles City County on its Web site:

*Charles City County, located midway between Richmond and Hampton Roads, offers a pro-growth environment, no business taxes and access to a state-of-the-art solid-waste landfill. It is ideal for distribution facilities and light manufacturing operations. In addition, the county is an attainment area, which means that companies have fewer regulatory hoops to jump through to meet air-quality standards.*

**Taxes:** *Through careful planning, county officials have kept taxes low in Charles City County. The county budget has decreased substantially.*

The low tax, low budget, loose air-quality standards “advantages” cited on the Web site might not be seen as being in the best interest of the children and the schools of Charles City County.

Selected demographic information pertinent to Charles City County illustrates the social, economic, and demographic realities that confront the county today:

**Population of County**

Number of persons	6,969
Number of households	2,670

**Geographic Factors**

Land area	183 square miles
Persons per square mile	2.59

**Age Breakdown of County Population**

0-19 years	18%
20-44	40%
45-64	29%
65 and over	13%
Median age	39.9

**Racial Composition of County Population**

White	2,470	35.7%
African American	3,799	54.9%
American Indian	543	7.8%
All other	121	1.6%

**Social and Education Demographics**

Foreign-born	1.3%
Language other than English spoken in the home	2.6%
High school graduates (age 25+)	65.7%
Bachelor’s degree or higher (age 25+)	10.5%
Persons with a disability (age 5+)	1,651 (out of total population of 6,969)

**Economic Factors**

Median value of owner-occupied housing	\$86,700
Median household income	\$42,745
Per capita income	\$19,182

**Poverty Status**

Families	159 (8.0%)
With related children under 18	116 (12.2%)
With related children under 5	28 (9.7%)
Families with female householder	
No husband present	80 (21.0%)
With related children under 18	80 (33.9%)
With related children under 5	19 (24.1%)
Individuals	735 (10.6%)

**Business Factors**

Private nonfarm establishments	121
Private nonfarm employment	1,462
Nonemployer establishments	340
Minority-owned firms - % of total	27.5%
Women-owned firms	(fewer than 100)
Federal funds and grants (\$1,000)	27,847
Local government employment (FTE)	253
Housing units authorized by building permits	44
Manufacturers' shipments (\$1,000)	62,231
Retail sales per capita	\$482

**Statistics Related to Child Well-Being — Charles City**  
**(As reported in *Kids Count in Virginia, 2001*)**

The following data are cited by the *Kids Count* census data as being the key indicators of child well-being:

	<u>Number</u>	<u>Percent</u>
Population under 18 below poverty	200	13.3
Population under age 18 below 50% of poverty	60	4.0
Population under age 18 below 200% of poverty	529	35.2
Population ages 16-19 who are high school dropouts	35	9.9
Population ages 16-19 who are not in school and not working	14	4.4
Own children in single-parent households	357	23.3
Children ages 5-15 with one or more disabilities	55	5.8

Source: Population Reference Bureau, analysis of data from the U.S. Census Bureau, for The Annie E. Casey Foundation

**Charles City County Middle School**

Charles City County Middle School (CCCMS), the focus of this study, is located in Charles City, Virginia. The county consists of roughly 203 square miles and is rural. The middle school is located near the county courthouse that is located in a small village. There are no towns in the county, and it is about a 45-minute drive to Richmond, the state capital, and Williamsburg.

### ***The School District***

Charles City County School District consists of an elementary school (grades K-5), a middle school (grades 6-8), and a high school (grades 9-12). The schools occupy a common campus. The buildings, built in 1993, are functional and attractive. As in many rural areas, the schools are seen as the center of the community and a home away from home for students and teachers. It was reported by many faculty members that there is at least one person in every school who knows every child and the family members of the child.

A challenge facing the district is private and home schooling. Faculty reported that some parents evidence a “lack of confidence in the public schools.” It was also stated that the children of the “bluebloods” who own and live in the plantations and wealthier areas traditionally attend private schools in Richmond, Williamsburg, or Hopewell.

The local schools, although situated in a rural area, strive to broaden educational opportunities for students by providing free transportation to the Governor’s School in Richmond and the area technical schools. There is also bus transportation offered free of charge for students who take part in school activities.

### ***Charles City County Middle School***

CCCMS has an enrollment of nearly 200. The climate of the school is relaxed and friendly. The principal, currently in her third year in the district, is an energetic, upbeat person who sets a positive tone. Although, morale at the school appeared to be high, and salaries were competitive with other area schools, one reported problem was the faculty turnover rate. Suggested reasons for the high turnover rate were: (1) problems attracting and keeping teachers at a small rural school when opportunities existed in nearby larger districts, and (2) geography. The school has two math and two science teachers. One science teacher is in her third year, and the other is in her second. One of the math teachers is a lifelong resident of the county and has taught at the school for many years. The other is a first year teacher.

A lack of parental support was mentioned as an ongoing challenge by a number of faculty members. Efforts to increase involvement have included increasing PTA activities. A parent reported that PTA involvement is good at the elementary level, but dropped off sharply at middle and high school levels. Another effort to increase parental involvement involved the interim student report to parents that requires a parental response. Area church members (there are 37 churches in Charles City County) cooperate with local schools and routinely read school announcements.

### ***Special Programs and Activities to Increase Student Involvement***

The following programs and activities, while not specifically CRSI-sponsored programs, are significant in that they are aimed at helping increase students’ affiliation with school. The CRSI goals are much more likely to be met in an environment where students display a positive attitude toward acceptable behavior and the school environment and where the community is supportive of the school.

***PAWS.*** The PAWS (Positive Attitudes With Style) program, previously employed only in elementary schools, is aimed at cutting discipline referrals by 50 percent. The thrust of the program is positive behavioral support. The program is funded by state grant money (Charles City is one of 5 Virginia schools to qualify for the grants) and is being developed by a 10-

member team from the middle school with assistance from Virginia Commonwealth University. The program will be instituted over a 3-year period with the first year dedicated to promoting program understanding and students' goals. The second year will focus on smaller student groups, and the third year will involve plans for individual students. The PAWS team members have been conducting workshops with other staff members during in-services and workdays.

**Field trips.** Students in grades 6 and 7 participate in a field trip each year to the Math and Science Center in Richmond. Students are also involved in "The Mind Games Competition" and "The Odyssey-of-the-Mind Competition."

**Community involvement.** The Charles City County Ministers Alliance has been directly involved in promoting community involvement in the school. The Alliance offers Saturday tutorial sessions for students in need of additional academic assistance.

The School Rally, an annual fall charity event, also run by the Alliance, provides an opportunity for students and parents to obtain needed schools supplies and materials.

**Science and math competition.** All students at the middle school are encouraged to participate in the annual science and math competitions. Community involvement in the event is secured through local citizens serving as judges for the events.

**Mentoring.** Law students at the College of William and Mary serve as mentors in a program designed to provide guidance and friendship to the CCCMS students.

### **The Coastal Rural Systemic Initiative**

The Coastal Rural Systemic Initiative (CRSI) is a collaborative effort among 35 impoverished counties along the Interstate 95 corridor of North Carolina, South Carolina, and Virginia. Its goal is to stimulate sustainable systemic improvements in science and mathematics education for K-14 students in a region noted for its persistent poverty and isolation from opportunities. The CRSI plans to achieve this goal in the 47 school districts that exist in the counties by creating effective teaching and learning environments, strategically linking schools with other partners in an enhanced community infrastructure, and creating the local capacity and commitment to engage in an ongoing process of renewal. The long-term goal is improved student performance in mathematics and science, better preparation of a competitive work force, community commitment to sustain reform efforts, and enhanced capacity for economic development.

The CRSI implementation plan reflects broad stakeholder participation and strong commitments from both the state and local levels. The outcomes of the development period include a shared vision of science and mathematics education, initial collection of baseline data, strengthened statewide and regional partnerships, identification of standards-based practices for dissemination, and identification of critical opportunities and strategies to include in the implementation plan.

The CRSI plan contains four primary strands: (1) near-term strategies to create the local readiness and commitment to implement standards-based mathematics and science; (2) long-term strategies to build local leadership vision and capacity to engage in "renewal," an ongoing process of program review and improvement; (3) community-based strategies to consolidate support for high-quality mathematics and science, principally through establishment of local community education foundations; and (4) state/regional-level strategies to maximize CRSI influence by embedding it within the broad context of mathematics and science reform. These

four strands function together to create the conditions necessary for participating local systems to achieve and sustain their long-term goal: improved student performance in mathematics and science.

Through an articulated system of regional institutes, on-site support, and ongoing access to technical assistance, the CRSI supports development of a local vision for mathematics and science reform; builds capacities for local leadership, planning, and implementation; and facilitates access to resources critical to achieving the vision. Working as an advocate on behalf of its participating districts, the CRSI will create collaborations that align vital processes and resources; develop partnerships between schools and other agencies and groups in the community, state, and region; and provide linkages to existing science, mathematics, and technology initiatives, leveraging their efforts in support of systemic improvements throughout the region. As a result, students will experience high-quality science and mathematics in classes with teachers who use research-based strategies, and whose efforts are supported by an aligned local system engaged in a continual process of renewal.

### ***Goals of the Coastal Rural Systemic Initiative***

The principal long-term outcome of the Coastal Rural Systemic Initiative is accelerated performance in science and mathematics for all students in its participating counties. Achieving this outcome entails reaching two long-term goals in its participating counties:

1. All teachers of science and mathematics create effective learning environments in which all students learn mathematics and science and use technology.
2. Local schools and school districts have an appropriate infrastructure to support and sustain implementation of standards-based mathematics and science in all classrooms.

Because these goals are long-term, extending beyond the five years of NSF support, the CRSI has identified intermediate, strategic goals that lay critical groundwork for achieving the long-term results. The CRSI uses the following strategic goals as its basis for evaluating its progress and performance during the funding period.

#### **Strategic Goal 1**

Develop a “critical mass” of mathematics and science teachers with the knowledge and skills to implement high-quality, standards-based instruction in their classrooms.

#### **Strategic Goal 2**

Institutionalize an ongoing cycle of mathematics and science program review and improvement in participating schools as the basis for sustaining reform.

#### **Strategic Goal 3**

Enhance existing school district and community infrastructures to provide increased articulation and support for school-based reforms in mathematics and science.

The CRSI regional coordinator for the Charles City County Schools is Mr. Tim Cotman, and the project director is Dr. Chuck Blanton. Members of the evaluation team who participated in site visits to the district included Drs. Jerry Horn, E. Robert Stephens, and Brian Lotven.

Activity to initiate the longitudinal case studies in the Coastal Rural Systemic Initiative (CRSI) began in November 2000. Representatives from The Evaluation Center at Western Michigan

University (contractor with the National Science Foundation) and the CRSI met in Fayetteville, North Carolina. The following people attended the meeting:

CRSI Representatives

Dr. Chuck Blanton, Principal Investigator  
Mr. Manley Midgett, Associate Director for District Programs  
Ms. Kimberly Smith, Associate Director for Regional Programs

Evaluation Center Representatives

Dr. Jerry Horn, Principal Research Associate  
Dr. Brian Lotven, Project Consultant and CRSI Project Manager

In January 2001, Dr. Blanton suggested three sites for CRSI case studies:

Marion Intermediate School, Marion, South Carolina  
Charles City County Middle School, Charles City, Virginia  
Pasquotank County High School, Elizabeth City, North Carolina

In April 2001, Brian Lotven visited each of the aforementioned schools to explain the nature and purpose of the longitudinal study. School district involvement in terms of personnel time, information, and resources was discussed prior to receiving district commitment. After receiving the district commitment, it was agreed that the first site visit would occur on an agreed-upon date during the fall of 2001. Visits to Charles City County Middle School occurred in September 2001, April 2002, and October 2002. Additional contacts were conducted via e-mail.

The high stakes testing associated with the Virginia Standards of Learning is having a very strong impact on schools across Virginia, and the Charles City County Middle School is certainly no exception. The Standards of Learning (SOL) began in June 1995 when the Virginia Board of Education adopted new student academic standards in the four core content areas of English, mathematics, science, and history/social science. The SOL outlines what a student is expected to know and be able to do at each grade level and in certain high school courses. The content of the SOL forms the basis for the tests, which are administered in grades 3, 5, 8, and in high school. Consequences of low performance on the tests are indicative of what a high stakes testing program would suggest:

1. Graduation from high school is contingent upon results of a graduation examination.
2. The state publishes annual school or district report cards.
3. The state identifies low performing schools according to whether they meet state standards or improve each year.
4. The state has the authority to close or reconstitute a school, revoke a school's accreditation, or take over low performing schools.

The CRSI initiative has been focused on helping the Charles City County Schools in the areas of curriculum and pedagogy that will enable success for their students on the SOL tests.

Statewide Virginia Standards of Learning (SOL) scores as reported by the Virginia Department of Education, Division of Assessment and Reporting, October 2002, are as follows:

<b>SOL Test</b>	<b>1998 Pass Rate (%)</b>	<b>1999 Pass Rate (%)</b>	<b>2000 Pass Rate (%)</b>	<b>2001 Pass Rate (%)</b>	<b>2002 Pass Rate (%)</b>
<b>Grade 3</b>					
English	55	61	61	65	72
Mathematics	63	68	71	77	80
History/Social Science	49	62	65	72	76
Science	63	68	73	74	78
<b>Grade 5</b>					
English: Reading Literature & Research	68	69	68	73	78
English: Writing	65	81	81	84	84
Mathematics	47	51	63	67	71
History/Social Science	33	46	51	63	72
Science	59	67	64	75	76
Computer/Technology	72	81	85	82	86
<b>Grade 8</b>					
English: Reading Literature & Research	65	67	70	73	69
English: Writing	67	70	76	75	76
Mathematics	53	60	61	68	71
History & Social Sciences	35	40	50	56	78
Science	71	78	82	84	85
Computer/Technology	63	72	78	79	76

Statewide Standards of Learning (SOL) scores for the Charles City County Schools are as follows:

### Grade 3

	<b>1998 Pass Rate (%)</b>	<b>1999 Pass Rate (%)</b>	<b>2000 Pass Rate (%)</b>	<b>2001 Pass Rate (%)</b>	<b>2002 Pass Rate (%)</b>
<b>English</b>	28	51	49	44	62
<b>Math</b>	52	53	63	68	65
<b>History</b>	29	50	45	61	60
<b>Science</b>	49	61	68	86	66

### Grade 5

	<b>1998 Pass Rate (%)</b>	<b>1999 Pass Rate (%)</b>	<b>2000 Pass Rate (%)</b>	<b>2001 Pass Rate (%)</b>	<b>2002 Pass Rate (%)</b>
<b>English: Writing</b>	55	82	58	76	71
<b>English: Reading</b>	56	49	44	55	70
<b>Math</b>	27	30	26	53	45
<b>History</b>	6	38	59	65	78
<b>Science</b>	39	47	39	69	72

### Grade 8

	<b>1998 Pass Rate (%)</b>	<b>1999 Pass Rate (%)</b>	<b>2000 Pass Rate (%)</b>	<b>2001 Pass Rate (%)</b>	<b>2002 Pass Rate (%)</b>
<b>English: Writing</b>	42	46	56	57	63
<b>English: Reading</b>	39	34	49	48	39
<b>Math</b>	11	22	19	27	35
<b>History</b>	6	6	20	23	55
<b>Science</b>	37	39	61	70	77

Because these test results include years that precede the school district's involvement with the CRSI, it is probably inappropriate to assign responsibility for impact on the achievement test results to this project. However, it is important to understand the previous levels and pattern/trends of recognized achievement. In terms of the Virginia Accreditation Ratings, which are based on student achievement on SOL tests in English, mathematics, history/social science, and science, in 2000-01 and 2001-02 Charles City County Middle School was "Accredited With Warning." The Accredited With Warning designation indicates that pass rates were 20 or more points below the state benchmarks in one or more areas. In the 2002-03 period the school

received the designation of “Provisionally Accredited/Needs Improvement.” This rating indicates that the pass rate in one or more subject areas was below the state benchmark. The state benchmarks are listed below:

English	66% Pass Rate
Mathematics	65% Pass Rate
History/Social Science	50% Pass Rate
Science	66% Pass Rate

Although the Charles City County Middle School is not yet where its teachers and administrators want it to be in terms of test scores and accreditation ratings, it is important to note that progress has occurred. In comparison with statewide averages, the results indicate improvement. The following charts indicate test score trends at both the statewide and Charles City levels in the areas of math and science, the areas of primary focus for the CRSI initiative.

### Grade 3 Pass Rates

	1998 (%)	1999 (%)	2000 (%)	2001 (%)	2002 (%)	Change (%)
<b>Math (State)</b>	63	68	71	77	80	+17
<b>Math (Charles)</b>	52	53	63	68	65	+13
<b>Science (State)</b>	63	68	73	74	78	+15
<b>Science (Charles)</b>	49	61	68	86	66	+17

### Grade 5 Pass Rates

	1998 (%)	1999 (%)	2000 (%)	2001 (%)	2002 (%)	Change (%)
<b>Math (State)</b>	47	51	63	67	71	+24
<b>Math (Charles)</b>	27	30	26	53	45	+17
<b>Science (State)</b>	59	67	64	75	76	+17
<b>Science (Charles)</b>	39	47	39	69	72	+33

### Grade 8 Pass Rates

	<b>1998 (%)</b>	<b>1999 (%)</b>	<b>2000 (%)</b>	<b>2001 (%)</b>	<b>2002 (%)</b>	<b>Change (%)</b>
<b>Math (State)</b>	53	60	61	68	71	+18
<b>Math (Charles)</b>	11	22	19	27	35	+24
<b>Science (State)</b>	71	78	82	84	85	+14
<b>Science (Charles)</b>	37	39	61	70	77	+40

It is apparent that the Charles City County Middle School has enjoyed improved performance on the Standards of Learning (SOL) tests. The eighth grade test, the only one affecting current middle school students, evidences admirable growth in both math and science at rates that exceed (startlingly so in science) the overall state rate of increase. The improvement in science scores placed the school in compliance with the state benchmark in science. The science scores on the third and fifth grade tests also meet the state benchmarks. Although the math scores at the fifth and eighth grade levels are not up to the state benchmark, they are improving. The eighth grade math scores show improvement at a faster rate than the statewide figures.

Many factors might explain improvement in a standardized test score. With scores starting out at a lower level, it might be assumed that a faster rate of improvement should occur. The very factors that enabled Charles City to be involved in the CRSI project (poor, rural, remote), however, make it more difficult to achieve marked improvement.

Although the CRSI cannot be held accountable for all that occurs regarding student test scores, the project has certainly contributed to the progress. CRSI-sponsored activities that may be seen as helpful include these:

1. summer curriculum alignment workshops
2. in-service activities related to hands-on activities in science
3. direct help from the regional facilitator with the development of curriculum frameworks and pacing guides
4. a regularly scheduled weekly math workshop taught by a faculty member from Virginia State University
5. ongoing assistance from the regional facilitator, especially with the science teachers
6. in-service collaboration with teachers that focused on the SOL results

Teachers cited the aforementioned CRSI efforts as being extremely helpful. Integral to the success of the project has been the presence of Mr. Tim Cotman, the regional facilitator. His knowledge of the school, community, faculty, and curriculum and instruction issues related to SOL was cited by all members of the middle school as a critical to the success of the project.

## **Progress and/or Presence of the Drivers of Educational System Reform**

Evidence of the presence or progress toward fulfilling the intent of the Six Drivers for Educational System Reform, as disseminated by the National Science Foundation, was a major focal point of the site visit team's work. In the following section, these findings are summarized.

**Driver #1: Implementation of a comprehensive, standards-based curricula and/or instructional materials that are aligned with instruction and assessment available to every student served by the system and its partners.**

There is evidence that the Charles City County Schools staff are making efforts to adhere to a standards-based curriculum. Ongoing efforts are being made to provide professional development to math and science teachers by providing assistance in developing curriculum frameworks and pacing guides and instruction in how to implement hands-on experiences for students.

Teachers in math and science report that test results from the SOL indicate what objectives need reteaching, greater emphasis, or alternative strategies. This is evidence that the curriculum is being aligned with standards. Summaries from in-service activities that focused specifically on math and science indicate a priority on standards-based curriculum and alignment.

The Virginia Standards of Learning Program (SOL) is clearly a powerful force in pushing teachers toward a greater appreciation and understanding of standards and curriculum reform. The threat of high stakes testing in Virginia is a great motivator, and the teachers and administrators interviewed definitely understand the challenge.

The work of the curriculum consultants in math and science has been very well received. The teachers were very positive regarding the assistance being provided by the regional facilitator in science and the faculty member from Virginia State University in math. Their continuing presence has been a significant factor in the testing gains enjoyed by the Charles City County Schools. Although not yet at the level where they want to be, the administration and faculty are working in unison and striving to meet the challenge of Driver #1.

**Driver #2: Development of a coherent, consistent set of policies that supports provision of high-quality mathematics and science education for each student; excellent preparation, continuing education, and support for each mathematics and science teacher (including all elementary teachers); and administrative support for all persons who work to dramatically improve achievement among all students served by the system.**

The administration of the Charles City County Schools has been effective in engaging members of the academic community in working toward the intent of the driver. The bureaucratization that would likely exist in a larger school district does not exist. Thus, written policies and procedures do not exist. What does exist is a small rural district where everyone involved in the educational process has been involved in the improvement of curriculum and instruction for all students.

The CRSI has been helpful with regard to mathematics and science. By providing well-respected, effective consultants on a continuing basis, they have paved the way for improvements that have directly affected classroom procedures and, ultimately, test scores.

In addition to the CRSI role, the administrators at Charles City participated in an SOL workshop sponsored by the Governor's Regional Best Practice Center. Another valuable asset is the

principal of the middle school who, in addition to being an administrator, cheerleader for the school, and ambassador to the community, has been a resource and consultant for the science teachers. Discussions with teachers confirmed the servant leader philosophy that exists in the school and credited it with playing a major role in improving the morale of the faculty and students.

**Driver #3: Convergence of the usage of all resources that are designed for or that reasonably could be used to support science and mathematics education—fiscal, intellectual, materials, curricular, and extracurricular—into a focused and unitary program to constantly upgrade, renew, and improve the educational program in mathematics and science for all students.**

Personnel at the Charles City County schools have shown a commitment to and success in obtaining resources in math and science for their students. The CRSI has been beneficial. An Eisenhower grant enabled one middle school science teacher to attend workshops that focus on technology. Other activities have included site visits to other schools and workshops presented by faculty from higher education institutions.

The resources for technology are improving but are not yet at the level that most would prefer. Each math and science classroom has two computers as compared with only one in prior years. The math teachers indicated that they regularly download math quizzes and search the Internet for enrichment activities and materials. The technology coordinator for the district recently purchased a Web site directory for each campus in the district.

There were no specific budget figures to indicate that a greater percentage of the Charles City budget was being dedicated to math and science. There was no indication that teachers thought they were being slighted in comparison with the overall school.

It does not appear that there is a focused, unitary program with regard to math, science, and technology at this time. Based upon reports of workshops, activities, interactions with higher education institutions, and discussions with faculty and administrators, it appears that integration is a goal that, while a long-term process, is being actively pursued.

**Driver #4: Broad-based support from parents, policymakers, institutions of higher education, business and industry, foundations, and other segments of the community for the goals and collective value of the program, based on rich presentations of the ideas behind the program, the evidence gathered about its success and its failures, and critical discussions of its efforts.**

The site situation of the Charles City County Schools makes the broad-based support from stakeholders, which is a hallmark of many rural schools, much more difficult. The primary problem is that there is no community or population center in Charles City County. As a result, the natural support and affiliation that would be assumed in traditional small, rural communities does not exist. The school works hard to stimulate community involvement. Attempts to increase support and involvement have included the use of specialists from the area as judges for the annual math and science fair. The superintendent maintains a districtwide advisory committee.

The Charles City County Ministers Alliance has been heavily involved in working to stimulate school-community linkages. The alliance has sponsored Saturday tutorial sessions and the School Rally, which is an annual fall charity event where students and parents in need of school supplies receive needed materials. It was also reported that announcements regarding the

schools are routinely made at the area churches. It appears that this organization has filled the void created by the lack of a traditional critical mass of community support.

Interviews with faculty indicated that parental support is difficult to maintain. Attendance at school events and membership in parent organizations is good at the elementary school level. It declines rapidly, however, once students enter higher grades. Attendance at athletic events, which in many rural communities is the focus of the citizenry, is not great. The greatest parent participation is in conjunction with the annual science fair, parent orientation session, and the SOL Bowl (a dinner and break-out session held each fall to orient parents on the state testing program).

The Charles City County Schools have been aggressive in pursuing and successful in obtaining support from higher education institutions. Math and science faculty at the middle school indicated that they have participated in workshops in math, science, and technology at the College of William and Mary, Norfolk State University, and Virginia Commonwealth University. A faculty member from Virginia State University conducts a weekly workshop for math teachers.

The activity with the College of William and Mary is the result of an Eisenhower grant to that institution. It allowed one middle school science teacher to participate in a program that consists of a two-week workshop that was held in the summer of 2002, and three one-day sessions in August, October, and November. The primary focus was on the use of technology in the classroom.

**Driver #5: Accumulation of a broad and deep array of evidence that the program is enhancing student achievement through a set of indices that might include achievement test scores, higher level courses passed, college admission rates, college majors, Advanced Placement Tests taken, portfolio assessment, and ratings from summer employers, and that demonstrate that students are generally achieving at a higher level in science and mathematics.**

The high stakes testing program in Virginia is clearly the most visible factor for examining student achievement. The test scores as reported earlier in this report on the Virginia Standards of Learning Program (SOL) indicate that Charles City has enjoyed success. One indicator of the degree of success that has occurred is a comparison of the pass rates for eighth grade students. Between 1998 and 2002 the pass rate for math increased from 11 percent to 35 percent. For science, the rate increased from 37 percent to 77 percent. Clearly, progress is occurring.

There are a number of reasons for the improvements in SOL: (1) The work of the math consultants has been ongoing and has been cited by teachers as being extremely helpful; (2) The regional facilitator, Tim Cotman, and the middle school principal, Mechelle Blunt, have been actively involved is a strong factor in this area; (3) The SOL workshops have sensitized stakeholders and have enabled faculty and administrators to focus on what is required to succeed in the testing program; (4) Recent curriculum alignment activities enable greater agreement between what is taught and what is tested; and (5) There is greater continuity in math and science faculty. The two science teachers in the middle school, although not longtime teachers in the district, have worked together and have developed a level of comfort and understanding that is positive. One of the math teachers is a longtime teacher and resident of the community, and the newest math teacher brings a sound knowledge base and cooperative attitude to the position.

**Driver #6: Improvement in the achievement of all students, including those historically underserved.**

Most of the student population of the Charles City County Schools is underserved. As a result, all activities to help students refer to the historically underserved. In every encounter with teachers, students, parents, and administrators, the spirit of educating all students was obvious. There was never any negative statement regarding the student population.

The SOL does not report scores based on race, so it is not possible to provide analysis of racial differences in test results. It can be reported, however, that in three site visits the integration of all students was a reality. There were no separate groups based on race. All students were observed engaging in classroom, athletic and cocurricular activities.

In truth, this driver is not really significant with the possible exception of gender (there was no evidence of this). The middle school principal is an African-American female and is viewed by the math and science teachers as a positive mentor and role model.

**Rating of Educational System Reform Drivers**

<b>Driver</b>	<b>Rating</b>
1. Implementation of standards-based curriculum	2
2. Policies supportive of quality math and science programs	2
3. Convergence and usage of resources to support math and science programs	2
4. Broad-based support and involvement of parents and others	2
5. Accumulation of broad and deep array of evidence that the program is enhancing student achievement	3
6. Improvement in the achievement of all students, including the historically underserved	3

**Rating Scale**

0 = Not present/no evidence

1 = Weak evidence/beginning but sporadic

2 = Moderate evidence/developing but visible success

3 = Strong evidence/operationally consistent and widespread

**Concluding Statement**

Over the period of the longitudinal study, the Charles City County Middle School has made great strides. At the first visit, the science teachers were new to the district, apprehensive, not aware of some materials that were available, and not heavily involved in the use of the laboratories. Although there was one longtime mathematics teacher, another was new to the school and region and was clearly not happy to be there. It is heartening to see the growth that has occurred. The leadership of the principal, the assistance of the CRSI regional consultant, the hard work of the teachers involved, and the continuity within all of the aforementioned levels has enabled an observable and positive growth in the science and mathematics programs.

The Charles City County Middle School clearly matches the profile for schools targeted by the Rural Systemic Initiatives. It is rural and serves a population that, according to demographic statistics, is poor. It is a district that works to meet the needs of its students through a variety of

curricular initiatives, relationships with higher education institutions, and grants. The school staff has been active in attempting to enhance its ability to meet student needs, and the CRSI is an appropriate match. The leadership of the schools is cognizant of the high stakes testing program in Virginia and its consequences. As a result, it is committed to a standards-based approach to mathematics and science.

The CRSI program has been a well-received ally in efforts to improve student achievement in mathematics and science. The consultants have been active in helping teachers with both curriculum and instruction. Teachers are active in analyzing SOL results and working with the consultants to align curriculum while creating instructional packages that will most effectively meet student needs. The involvement of CRSI has been integral to the effort. The regional facilitator has been a key factor in the success of the project. As a long-time resident of the county and teacher in the schools, he is an individual who is known, respected, and trusted. His presence helped pave the way for math and science faculty participation in workshops and in-service programs in support of curricular and instructional reform.

As previously mentioned, the Virginia Standards of Learning Program has evidenced positive results for the Charles City County Middle School. All members of the faculty and administration are keenly aware of what is involved in high-stakes testing. Rather than complaining about the testing program or about the difficulty of working with their student population, the Charles City Middle County School staff have embraced the challenge and have enjoyed success. The CRSI project sponsored a number of activities that enabled the gains that have been enjoyed. The relationship between the Coastal Rural Systemic Initiative and the Charles City County Middle School has been a positive venture for all involved. As a result, the students are being well served.