SOUTH CAROLINA
K-12 SCHOOL TECHNOLOGY INITIATIVE

2017-18 PROGRESS REPORT

Much has been accomplished in the effort to transition K-12 education in South Carolina into the digitally connected era, yet much remains to be done. Achieving this goal requires bold educational and technological initiatives as well as steadfast programmatic and budgetary support from our state's leadership.

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ABOUT THE INITIATIVE

What is the K-12 School Technology Initiative?

The South Carolina K-12 School Technology Initiative was founded in 1996, as part of the General Assembly's proactive approach to addressing technology infrastructure, connectivity and education in schools throughout the Palmetto State.

The Initiative – steered by a unique public/private partnership that includes the SC Department of Administration, SC Department of Education, SC Education Oversight Committee, SC Educational Television, SC State Library and private sector representatives AT&T and the SC Telecommunications and Broadband Association – guides the distribution of funds appropriated by the Governor and General Assembly. These funds collectively help to meet our schools' needs for software, hardware, connectivity, digital content, instructional technologies, cybersecurity protection and professional development opportunities.

The K-12 School Technology Initiative is extremely proud of its progress in the development and implementation of educational technology as well as the strides that have been made in providing infrastructure initiatives designed to produce more successful students in South Carolina.

It is our hope that South Carolina's leaders will continue their history of using the K-12 School Technology Initiative to guide the provisioning of high-quality, information-rich education for all students.

Who makes up the Initiative?

ABOUT THE INITIATIVE

Initiative Partners

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SC EDUCATION OVERSIGHT COMMITTEE
Melanie Barton, Executive Director

SC EDUCATIONAL TELEVISION
Anthony Padgett, President and Chief Executive Officer

SC STATE LIBRARY
Leesa Aiken, Director

AT&T
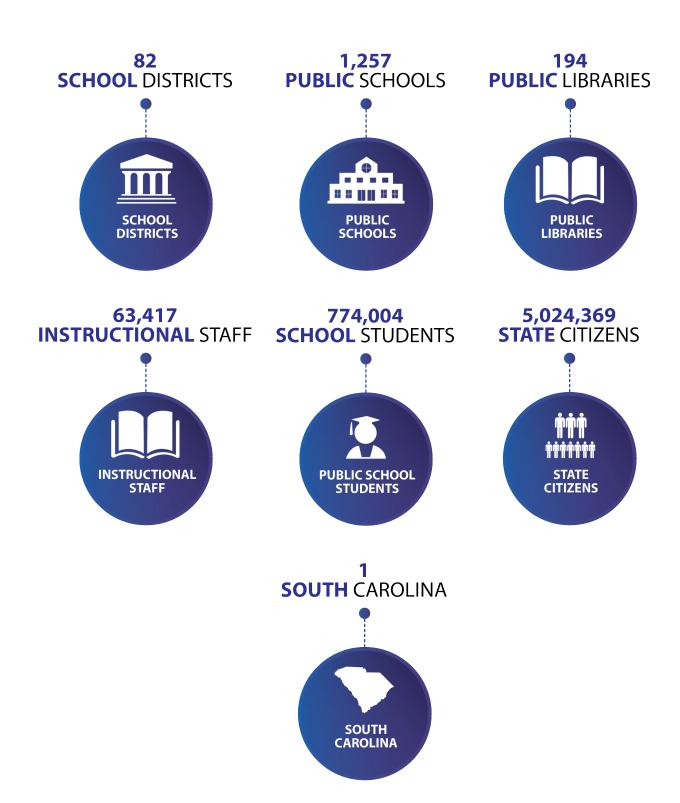*Jane Sosebee, Director of Legislative Affairs, AT&T South Carolina*

SC TELECOMMUNICATIONS AND BROADBAND ASSOCIATION
Nola Armstrong, Executive Director

COMMITTEE CHAIRPERSON
Keith Osman, Director, Division of Technology Operations

WHO DOES THE
K-12 SCHOOL TECHNOLOGY
INITIATIVE SERVE?

82
SCHOOL DISTRICTS

SCHOOL
DISTRICTS

1,257
PUBLIC SCHOOLS

PUBLIC
SCHOOLS

194
PUBLIC LIBRARIES

PUBLIC
LIBRARIES

63,417
INSTRUCTIONAL STAFF

INSTRUCTIONAL
STAFF

774,004
SCHOOL STUDENTS

PUBLIC SCHOOL
STUDENTS

5,024,369
STATE CITIZENS

STATE
CITIZENS

1
SOUTH CAROLINA

SOUTH
CAROLINA

1. EXECUTIVE SUMMARY

The South Carolina K-12 School Technology Initiative is a public-private partnership dedicated to ensuring that network and internet connectivity is a cost-effective reality for every teacher and student in every public-school classroom and for every public library in every county in South Carolina. Such technology infrastructure is critical for guaranteeing:

- All students have 24/7 access to high-quality digital and online resources;

- All students develop world-class technology skills as defined by the Profile of the South Carolina Graduate;

- All students can engage in blending learning incorporating both face-to-face and online learning opportunities; and

- All educators can access professional development, curriculum support and online educational resources.

The partners of the K-12 School Technology Initiative collaborate to provide network infrastructure, connectivity and security, high-quality digital learning content, professional development, and curriculum support. The Initiative also leverages state Education Improvement Act (EIA) appropriations to match federal E-Rate monies to improve and expand technology infrastructure.

This annual Progress Report documents the contributions and support provided by Initiative partners during FY 2017-18, as well as the progress made and challenges faced by our schools and libraries.

Examples of this support includes the advances of the South Carolina Department of Education (SCDE) to support public schools and districts as well as the provision of standards-based educational content from the South Carolina Educational Television (SCETV) and the South Carolina State Library.

> **"THESE RESOURCES MUST BE MADE AVAILABLE TO EVERY STUDENT AND TEACHER IN EVERY PUBLIC SCHOOL CLASSROOM AND EVERY PUBLIC LIBARY, REGARDLESS OF LOCATION OR BACKGROUND, TO FULLY REALIZE OUR STATED EDUCATIONAL GOALS."**

Other highlights included in this report illustrate the accomplishments made in supporting these institutions, such as:

- Public school districts accounted for 138.6 Gbps of internet bandwidth capacity in

2017-18, a 22 percent increase from the previous year.

- The number of public school districts with 1,000 Mbps or more bandwidth has grown from six in 2013 to 46 in 2017-18.

- Over 17 million items were retrieved from Discus, the State Library's virtual library.

- Almost 5 million on-demand SCETV resources were used in 2017-18, a 524 percent increase from 2016-17.

- The state's virtual school program, VirtualSC, served over 42,000 student enrollments in 2017-18 (including students from 348 schools in 82 public school districts) an increase of 41 percent from 2016-17.

- Technology was implemented to combat the ever-increasing number and complexity of malware, ransomware and other advanced security threats received by schools and libraries.

- Educators participated in a variety of professional development offerings provided by SCDE, SCETV and the State Library.

While the progress made by the Initiative's partners is noteworthy, there are also a variety of challenges our schools and libraries face. Examples of such challenges include:

- SCDE's VirtualSC program, an invaluable resource for students, was forced to turn away over 2,000 enrollments in FY 2017-18 due to a lack of funding.

- The infrastructure that supports classroom technology requires significant investments to keep up with the increasing use of online resources.

Technology has and will continue to transform learning in classrooms throughout South Carolina as students and educators are just beginning to realize the potential online learning opportunities provide. This potential, especially in our most rural and isolated schools, is limited only by the external and internal infrastructure that supports such technology.

Ensuring such crucial resources are available for our students, educators and libraries is a challenge, but one that must be addressed. The partners of the South Carolina K-12 School Technology Initiative support this endeavour and will play a critical role in allowing the state to produce graduates with the ability to succeed and thrive in today's workplace.

2. STUDENT LEARNING & CLASSROOM TECHNOLOGY

South Carolina Technology Plan Goal:

All districts across the State of South Carolina are striving to improve student learning through technology.

Partner Efforts to Support the Goal:

The partners that make up the K-12 School Technology Initiative strive to ensure that every public school student in South Carolina – regardless of location or background – is afforded the technology, infrastructure and educational content necessary to be successful upon entering today's highly competitive, data-driven workplace.

Students graduating from our public education system are faced with challenges not encountered in previous generations, and as such, must be prepared to thrive in a very different and dynamic environment. The Initiative's partners work in conjunction with South Carolina's schools and libraries on a wide variety of efforts designed to advance student learning and classroom technology.

One-to-one computing initiatives, supported by the Initiative, are taking place in school districts throughout the state and are changing the educational landscape by placing tablets and laptops into the hands of students. Through the use of these devices, students work individually and in group settings to access internet-based content, study and complete assignments. Such work is conducted not only in the traditional classroom and library settings, but across the entire school campus, student transportation system, after-school learning centers, public libraries and at home.

INITIATIVE PARTNERS STRIVE TO ENSURE ALL STUDENTS – REGARDLESS OF LOCATION OR BACKGROUND – ARE AFFORDED THE TECHNOLOGY, INFRASTRUCTURE AND EDUCATIONAL CONTENT NECESSARY TO BE SUCCESSFUL.

Initiative partners also provide a wide array of invaluable, standards-based digital learning resources to educators and students. Such resources have helped change the ways in which educational content is provided in South Carolina, and include:

- The South Carolina Department of Education's (SCDE) free online public school program, VirtualSC.
- The South Carolina Educational Television's (SCETV) Knowitall.org, PBS LearningMedia,

PBSKids and LearningWhy collections.

- The South Carolina State Library's virtual library, Discus, and StudySC programs.

Together, these efforts, programs and collections – as well as many others detailed in this report – help provide the content, hardware and infrastructure necessary for our students to be successful in the 21st century.

Discus

Digital Information for South Carolina Users, more commonly known as Discus, is South Carolina's virtual library: a collection of over 50 subscription databases available to educators and students of all ages at school, home or on the go.

Administered by the South Carolina State Library (State Library) and supported by the K-12 School Technology Initiative, these vital electronic resources provide access to thousands of professional and scholarly journals, lesson plans, e-books, primary sources, current event topics, test preparation tools and much more on a 24/7 basis. The mobile friendly website is a safe place for students to learn and develop research skills without outside distractions such as advertisements and unreliable websites. These high-quality electronic resources are available to all state residents through schools, institutions of higher education and public libraries.

Discus utilizes leading edge technology, including Drupal 8 and EZproxy authentication software. EZproxy is a central authentication

solution that provides access without obstacles by ensuring South Carolinians are recognized as residents and are automatically granted access, reducing the need for a user name and password.

A second instance of EZproxy was implemented to separate the Discus and State Library electronic resources, helping ensure the appropriate authentication. In addition to these technical upgrades, the Discus website was updated with large, colorful photos and database logos to make navigation easier. The mobile design and the wide-ranging collection of resources prompt rave comments from national vendor partners and library communities.

Each database in Discus is carefully evaluated and chosen to align with the SC Curriculum Standards for all grade levels. The resources are monitored for usage and the collection is regularly evaluated by the State Library to examine redundancy or potential gaps and the necessity of each resource in relation to the State Library's mission. In 2017 the State Library made two significant content changes to Discus. The statewide subscription for Ferguson's Career Guidance Center was canceled and a new statewide subscription agreement was signed with TumbleBooks.

TumbleBooks Library is a collection of over 1,400 read-aloud storybooks, chapter books, graphic novels, songs and National Geographic videos, targeting kindergarten through grade six. All storybooks are read-aloud with words

highlighted for assistance. Some books are available in Chinese, French, German and Spanish. TumbleBooks features a book report organizer, puzzles and games, pre-selected playlists and TumbleTracker, a tool for teachers to track their students' reading progress. This very popular resource is used in schools, public libraries and academic education programs. In the third quarter of 2017-2018 approximately 412,000 items were accessed in TumbleBooks making South Carolina the largest user of TumbleBooks Library. Over 1 million items in total were accessed in TumbleBooks during the year.

TumbleBooks is also integrated in each day of the DayByDaySC Family Literacy Calendar; a perpetual activity calendar launched by the State Library to develop early literacy skills and help prepare young children for school. The calendar has a monthly theme that encompasses books, songs, activities, and other information and is designed to be a tool that can used at home and in the classroom. The DayByDay calendar has been adopted by several other state libraries, demonstrating the importance of literacy and providing another avenue to encourage young learners to read.

Credo Reference, a database of 895 reference books includes two collections of eBooks that are popular with school media centers– DK Eyewitness and ABC-CLIO. These two unique e-book collections are prominently displayed on Discus for easier access. Many media centers rely on the DK Eyewitness collection for middle school research and rich images. This collection

of 62 eBooks covers animals, places, the human body, history and science. ABC-CLIO is a collection of 62 history and cultural studies eBooks designed for high school students. This collection covers a variety of subjects, issues and histories. With the eBooks easier to locate, the usage of these two collections has increased dramatically compared to the same period last year.

During FY 2017-18 the State Library conducted a Discus content survey to understand library needs and whether the current collection of resources is adequate. The survey received 780 submissions and every database surveyed received extremely high marks. The overwhelming response was positive and appreciative of Discus. The content areas most frequently requested were educational videos and eBooks along with additional teacher resources. The State Library has analyzed the results and researched resources that may fill these needs.

17,537,209

Discus items retrieved in FY 2017-18 by South Carolinians.

In FY 2017-18, South Carolinians retrieved 17,537,209 items through Discus, of which the K-12 community has historically been responsible for the majority of these retrievals.

The Discus usage decreased from the previous year primarily due to a calculation error on the part of EBSCO, the largest Discus database vendor. The error was discovered and corrected in May 2017 which caused the usage to drop dramatically going forward. Comparing the current EBSCO usage with previous usage shows an 87 percent decrease due to this error.

Usage for BrainPOP Jr., Britannica, and the Gale Cengage suite of resources all reported an increase in usage and continue to be popular databases. Gale Cengage worked with the State Library to create customizable webpage templates for elementary, middle, and high schools to provide an easy way for students to access age appropriate Discus resources through their school website.

$52m

**Discus Cost Avoidance
(If each library purchased
access separately).**

In addition to EBSCO, Credo Reference, LearningExpress Library, and ProQuest each reported a slight decrease in usage through the third quarter while Bloom's Literature remained stable, compared to previous year's numbers. The consensus among electronic resource managers is that usage is declining due to algorithm refinement related to COUNTER reports and implementation of discovery

services. Although the usage is down slightly each of these databases are very important to student success. In January, Jayne Suchy, a Marion School District guidance counselor shared a LearningExpress story. She started an ASVAB club for the many students interested in joining the military and mainly uses Discus and LearningExpress Library. One student who previously did poorly on the test studied with the club and became the top of his class. Clearly Discus is making a difference in many lives.

The return on investment for Discus is excellent from both a learning perspective and from a cost efficiency standpoint, as indicated through the following information:

- Discus database license costs budgeted for FY 2017-18 were $2,396,012

- If each library purchased access separately, the total cost would be over $57 million.

- Administration of this statewide program provides cost avoidance of over $52 million (Discus license renewal costs were over $2 million).

- All state funding for Discus goes directly to database acquisition.

The State Library negotiates with the vendor partners when purchasing statewide subscriptions to get the best rate possible. These purchases save schools and libraries millions of dollars each year by bundling packages of resources that are beneficial to all grade levels including academic libraries. The licensing agreements are studied to ensure

the best price along with ample technical and marketing support. Monthly vendor led webinars supplement the workshops conducted by Discus throughout the year during educator professional days and at statewide conferences.

The Discus collection helps ensure a level playing field for all South Carolina students by providing access to high-quality scholarly information needed for their success. The collection includes a wide range of subjects that is essential to the Profile of a South Carolina Graduate and their success. Subjects found in Discus include science, math, reading, literary studies, health and technology. Social issues are covered as are the many cultures of the world.

To learn more about the State Library's Discus, please visit www.scdiscus.org.

SCETV Education Services

South Carolina Educational Television's (SCETV) Education Services delivers a wide range of high-quality digital learning content for students and educators, as well as professional development and curriculum support, and communications and collaboration opportunities designed to link learners. SCETV collaborates with the K-12 School Technology Initiative to provide such resources used extensively by pre-K-12 children throughout the state.

As part of this effort, SCETV creates, organizes and distributes educational content to support pre-K-12 student needs, as identified within the Profile of the South Carolina Graduate, while also providing a variety of online and face-to-face professional development opportunities for teachers, staff and administrators.

Over the past 19 years, K-12 School Technology Initiative funding has helped support SCETV's on-demand multimedia curriculum resource sites. These highly regarded sites: Knowitall. org; SCETV's PBS LearningMedia; the new LearningWhy; and the new SCETV PBS Kids 24/7 channel accounted for 4,972,075 on-demand pre-K-12 resource uses in 2017-18. The usage in 2016-17 was 797,362. The substantial increase of 524 percent is due to the expanded use of PBS LearningMedia, the new LearningWhy, and the new SCETV PBS Kids 24/7 Channel/stream usage.

Knowitall.org, a long-standing service offered by SCETV, is a free online collection of original and engaging educational resources designed specifically for classroom use. In 2015, SCETV began an extensive overhaul of the site in an effort to make it more mobile friendly.

Due to these efforts, and the transition of services funded by the K-12 School Technology Initiative, Knowitall.org Media was launched in the summer of 2015. After completing an upgrade in 2017-18, Knowitall.org now contains 8,218 multimedia resources, including 4,448 mobile friendly videos, 1,267 audio resources, 1,757 photos, 278 photo galleries, 334 documents, 134 interactives, and the content continues to grow.

Over 14 years ago, SCETV, in partnership with the South Carolina Department of Education (SCDE), created StreamlineSC in an effort to help improve and manage learning resources in the state's schools. StreamlineSC, a standards-based video-on-demand service, delivered the curriculum-based content of Discovery and more recently, Learn360 coupled with its local pre-K-12 content, professional development and partner resources.

However, subscription services become extremely costly while the use of StreamlineSC has trended downward. In August 2017, the Learn360 contract ended and was replaced by two new pre-K-12 resource sites. The new sites include ETV StreamlineSC Collections in Knowitall.org, and SCETV's LearningWhy, which includes pre-K-12 lesson plans for 1:1 environments.

Web resources have increased tremendously in recent years, and Public Broadcasting Service (PBS) is now supporting this focus with its research-proven PBS LearningMedia. In 2017-18, South Carolina PBS's LearningMedia library included more than 100,000 multimedia resources for pre-K-12 educators. In August 2017, SCETV launched a new SCETV PBS Kids broadcast channel that also streams on a 24/7 basis.

SCETV PBS KIDS will also be available on select cable services as ETVK, and as part of various mobile-friendly applications and services, including the SCETV app, PBSkids.org, the PBS KIDS video app, Roku and Apple TV. According to Nielsen, PBS KIDS is the leader in desktop streaming video, with pbskids.org placing first in the kids' category for total video views and minutes spent. Nielsen also says live TV is by far the most popular way to view content for children ages 2-11.

4,972,075

SCETV Education Services Used:
(Combines LearningWhy,
PBS Kids, Knowitall and
PBS LearningMedia service
usage in 2017-18)

To better address current curriculum needs, SCETV created a new website, LearningWhy, to house innovative lessons for tomorrow's graduate. The new site, launched in August 2017, specifically addresses the instructional needs of schools initiating 1:1 technology environments. The project-based and one-on-one lessons are produced by SCETV and qualified partners, including the College of Charleston's School of Education, the National Parks Service and local school districts. LearningWhy lessons are searchable by state curriculum standards and taxonomies, and include step-by-step progressions, assessments and all the media and content links needed for teaching to standards.

For many years, SCETV's statewide distribution to schools was conducted through an instructional television fixed service (ITFS) closed-circuit educational broadcast system.

To make spectrum more digitally compliant, the Federal Communications Commission enforced new regulations in 2005 for ITFS systems, creating the Educational Broadband Service (EBS). This development gave SCETV the opportunity to lease the state's EBS channels through a state contract with Sprint.

The resulting contract has allowed SCETV to issue over 200 free Wi-Fi devices to education facilities within Sprint's coverage areas throughout the state. These gateways to broadband internet are issued to applicable early childhood educators and other educational organizations, including after-school programs. SCETV bundles Wi-Fi access with its quality professional development and content funded by the K-12 School Technology Initiative. The project helps close the digital divide in South Carolina while preparing early learning students for reading and STEM skills before and after school.

SCETV is one of the many educational institutions taking part in supporting the state's goal of the Profile of the South Carolina Graduate. To assist in these efforts, SCETV surveys teachers, staff and administrators to help identify needs and gauge the use of educational services and technology use in schools. This year, 654 respondents participated in the survey, representing public schools, private schools, charter schools, home schools, childcare centers, adult education centers and higher education institutions.

Over 84 percent of respondents represented

public schools. The balance of users include home-schools, higher education and state agencies. Participants found that SCETV's Education Services (Knowitall.org, PBS LearningMedia and LearningWhy), helped better facilitate learning to improve student performance and engagement, and met the goals of the Profile of the South Carolina Graduate. Respondents ranked ETV curriculum content as SCETV's top service with 75.2 percent identifying Knowitall. org and PBS LearningMedia as the most useful in performing their daily duties. The survey also confirmed that the LearningWhy features built by ETV will be of value to teachers.

While digital delivery is becoming increasingly important, traditional means of transmitting content remains the public's first choice of access. In August 2017, SCETV added a fourth 24/7 television broadcast channel and online streaming channel called SCETV PBS Kids.

Results from the fall 2017 South Carolina Market Study, conducted by Marshall Marketing, illustrates the importance of ETV content. The study found that 44 percent of South Carolina households watch ETV television stations (ETV/ South Carolina Channel/ETV World/ETV KIDS) and/or listen to South Carolina Public Radio in an average week (totaling 864,500 households). Ten percent of South Carolina households watch educational children's programs like Daniel Tiger's Neighborhood, Dinosaur Train, and Nature Cat, but 70 percent of South Carolina households with children 11 years or younger watch in the average week – that's 7

times the average.

In addition, this is the first study to measure viewership of our new station, ETV KIDS: 14 percent of South Carolina households watched ETV KIDS in the past 7 days, but a third of South Carolina households with children age 11 and younger watched – more than 105,800 households. Fifty-five percent of those viewing households with children earn less than $50,000, and 36 percent earn less than $30,000, which means ETV is providing children's programming in underserved families.

StudySC

In 2010, the State Library created StudySC, an educational resource to provide online content in support of state-specific curriculum standards. The concept for StudySC emerged from feedback indicating the need for a comprehensive portal to assist in locating age-appropriate state information. StudySC was created to meet this need and support third and eighth grade social studies curriculum standards by becoming a useful and popular resource for students and educators.

StudySC is organized by grade level and subject area and provides South Carolina-related electronic and web resources for homework and project assistance. Each accessing link to high-quality websites, multimedia content, and Discus articles is researched and vetted before being added to the site.

This student-friendly resource includes such subjects as government, culture, history,

environment and geography. In addition, there is a section on famous South Carolinians, a glossary, county information, and South Carolina Book Award nominees from the South Carolina Association of School Librarians. ETV's Knowitall has partnered with StudySC to integrate into their website historical information ranging from South Carolina's role in the Revolutionary War to the Civil Rights Movement. This partnership provides multiple avenues for students to access this information.

While information on StudySC is reviewed regularly, the State Library is pleased to announce that significant upgrades were made to the website in 2017 including a new interface and new content. The new site is image and content rich, making it more engaging for students. All of the 120 grade level pages were updated with fresh links and images featuring

StudySC Sessions
Source: South Carolina State Library

14-15	15-16	16-17	17-18
51,472	34,841	29,881	42,198

South Carolina throughout history. Individual county pages were also created for each of the 46 counties and includes a brief history, links to the official county website, an encyclopedia article from Discus, and a list of towns and cities.

StudySC usage for 2017-18 was 42,198 sessions, a 41 percent increase over the past year. With these improvements, the visits indicate that StudySC continues to be a valuable tool for education.

To learn more about the State Library's StudySC, please visit studysc.org.

VirtualSC

In 2007, the South Carolina Department of Education's (SCDE) developed VirtualSC, the state's virtual school program. Since that time, VirtualSC has become an invaluable resource to students throughout the state by offering online courses for credit, free- of-charge to all South Carolina students.

The K-12 School Technology Initiative Committee provided substantial funding to develop and expand the state's virtual school program; however, during this reporting year no funding from the Committee was budgeted for this program.

The virtual school program has become increasingly popular since its inception and has now grown to the fifth largest state virtual school program in the nation based on the number of student enrollments according to the latest Keeping Pace with K-12 Online

Learning Report. VirtualSC courses, available to any public, private, home schooled or adult education student in the state, are provided via an online learning management system, Moodle.

Registration for these courses takes place in the program's customized student information system, OpenSIS. Teachers remain in contact with their students through a variety of methods, such as by telephone, web conferencing and instant messaging systems like Skype. Live lessons are conducted for some courses, such as World Language courses utilizing BlackBoard Collaborate and Jigsaw virtual classrooms.

To help ensure course offerings meet quality, design and academic standards, SCDE's Office of Virtual Education developed a curriculum team. The curriculum team, which consists of several instructional designers, a media team, a curriculum coordinator and a program coordinator, is responsible for new course design and development, course reviews and revision, and media development for interactive learning objects within new and existing courses.

VirtualSC has also begun to align all new and current courses to the Quality Matters framework to ensure courses meet accessibility guidelines and follow the guidelines of an external review framework. Future plans include having all courses reviewed by an external review committee using the Quality Matters framework to make sure all courses

meet national guidelines and standards, as well as state academic standards. The curriculum team also supports several other virtual academic resources for students, including test preparation for AP, SAT, ACT, Elementary Keyboarding and EdReady Skills Recovery resources.

Courses offered through this program are taught by state-certified teachers who have demonstrated expertise in their individual subject areas. All VirtualSC full-time teachers hold a rating of "highly qualified" in their subject area by the SCDE. In addition to their outstanding credentials, all full-time and part-time teachers must undergo in-service online professional development training to teach with the program.

VirtualSC consisted of 33 full-time teachers for the academic year, in addition to 101 part-time teachers, to teach the courses offered through the program. The number of full time and part-time teachers has consistently grown over the past year due to the increased student demand for courses.

In 2017-18, VirtualSC was able to serve 42,411 student enrollments from 348 schools in 82 public school districts, 33 home school associations, 73 private schools and 30 adult education centers located throughout South Carolina. An additional 2,227 students requested online courses with VirtualSC, but were turned away due to a lack of funding available to hire additional part-time teachers to meet the demand.

Of the students who completed their course, the program had a successful course completion rate of 84 percent for the school year.

In addition to the 42,411 student enrollments served in high school level courses taught by VirtualSC teachers, the program also served an additional 81,598 elementary school students in grades K-6 through its free blended elementary keyboarding course offered in 43 school districts across the state. In total, VirtualSC served 130,748 enrollments across all virtual courses and resources, which totals 109,564 individual students from across South Carolina.

VirtualSC offered courses in 10 subject areas including career and technology education, English and language arts, fine arts, health/ physical education, mathematics, science,

VirtualSC Enrollment
Source: South Carolina Department of Education

14-15	15-16	16-17	17-18
32,779	39,645	41,579	44,638

social studies, world languages, skills recovery and test preparation. The program also offered 81 diverse courses of varying levels, including advanced placement, honors, college preparatory and credit recovery classes. In addition to courses in the core content areas of English, mathematics, science and social studies, VirtualSC offered courses in four languages – Spanish, Latin, German and French – as well as a variety of electives in such popular career majors as health occupations, family and consumer science and business education.

During the 2017-18 school year, VirtualSC added several new course options for students and continued to seek feedback from stakeholders on additional course needs. Some of the new high school credit courses released include: AP Capstone Seminar, French 1, German 2, Astronomy Honors and English 2 Honors. In addition to the high school credit courses added this school year, VirtualSC developed and began to offer the first complete middle school course called Exploring World Languages in South Carolina.

As in previous years, VirtualSC has continued to partner directly with schools to offer its Virtual Learning Labs in an effort to help schools fulfill several needs resulting from budget cuts, reduced funding and teaching vacancies at smaller schools across the state. Through these learning labs, schools are provided a standards-based virtual course as well as a highly qualified state certified teacher who meets virtually, utilizing a robot, with students during a set period of the school day to provide instruction. In the 2017-18 school year, the program served 469 students through offering Virtual Learning Labs to nine different schools.

VirtualSC also continued to expand its flexible Franchise Program to schools and districts across the state. This program allows schools to use VirtualSC developed course content, the program's learning management system, Moodle and its student information system.

VirtualSC developed and began offering the Franchise Program to districts during the 2014-15 school year with one pilot district, Aiken County Public School District. In the 2017-18 school year, the Franchise Program expanded from nine districts to 12 franchises, serving 6,739 students with an overall success rate of 77 percent. Participating school districts included Aiken County Public Schools, Berkeley County School District, Colleton County School District, Dorchester School District Four, Greenville School District, Greenwood School District 50, Jasper County School District, Laurens School District 55, Lexington School District 1, Pickens County School District, Spartanburg School District 1 and Williamsburg County School District.

Each of the 12 districts use its VirtualSC franchise in a slightly different way to fit its own unique needs and meet a unique district purpose. As an example, Greenville County School District utilizes the Franchise Program to offer content recovery options to their students while several other districts utilize the program

to offer options to their Alternative Schools.

As part of the program's strategic planning, the program conducted an independent survey of school districts across the state to determine program needs, course needs, overall program assessment, and areas of potential improvement for the program.

The survey garnered 410 responses with the majority being from public school administrators and Counselors from public schools across South Carolina. Of the responses, 94 percent said that they allow students within their district to take courses online to meet their graduation requirements. Out of the 94 percent that allow their students to take courses online for credit, 85 percent utilize VirtualSC as the primary provider of online courses or utilize VirtualSC in conjunction with local options provided through their school district.

The responses, also, indicated that their primary three reasons for offering online courses to their students included: Offering makeup opportunities, strengthening their local course catalog, and increasing their overall school and district graduation rates.

The conducted survey, also, gathered feedback

specifically about strengths and weaknesses of the VirtualSC program to help program administrative staff focus on specific areas to enhance to better meet the needs of schools and districts across the state. Survey respondents indicated that the top five strengths of the VirtualSC program are: flexibility, high quality teaching staff, costs of the program (free to districts and schools in South Carolina), strength of the course catalog, and rigor.

Survey respondents, also, indicated five potential areas for improvement and growth of the current program. Those areas included: additional options for enrollment flexibility, improved communication with schools, increased seat caps to allow more students to enroll into the program each semester, and offering more courses from the program course catalog each semester.

As part of the survey, the respondents were also asked about options for middle school students. Out of the responses 61 percent thought that the best option for middle school students were courses offered in a blended format, while 18 percent thought that the best method was completely online in an asynchronous format.

In addition, 22 percent of the responses indicated that the main need for middle school students were computer science related courses, 18 percent suggested World Language course offerings for middle school students, and 15 percent responded that there was a need for all core 6, 7 and 8 grade courses. VirtualSC has been researching the feasibility in offering online courses for middle school students and will continue to do research through focus groups with selected respondents from the survey.

Utilizing the suggestions from the survey, in the fall 2018 semester, the program will continue to add flexible enrollment options by piloting a "Flex Pacing" option, which will allow the students to start at the beginning of the fall semester, but choose their own end date based upon their personal needs. During the pilot in selected courses, students will have the option of choosing a pacing option that best fits their needs.

Upon registering for a pilot course in the fall, students will be allowed to complete the course on a semester schedule (12-14 weeks), or if a student or teacher determines that a student needs more time, they can shift their pacing to the yearlong pacing, which will give them approximately another 14 weeks to complete the course. As always, if a student finishes their coursework and the teacher has determined that a student has gained the required competencies, they can complete the course earlier than the scheduled end-date.

This new flexible enrollment option should ensure that students are learning at a pace that is appropriate for their lifestyle and abilities. For students that are learning at a faster pace, this may give them an opportunity to take another course or focus on other areas of interest, rather than being required to remain in the course for a longer duration than they need. Contrary, those students that need more time to master a required component of the course can take the time that they need to learn at a pace that is appropriate for them and not feel rushed by an impending course end-date.

Lastly, in the fall 2018 semester VirtualSC will implement a new student information system, Genius SIS. The program's current student information system, OpenSIS, has met the program needs well over the past five years; however, in an effort to be able to offer more flexible enrollment options for students, the program has explored options that provide additional flexibilities.

Additionally, a majority of other state virtual school programs utilizes Genius SIS, so by utilizing the same system, the program has options for data comparisons, shared system development and sharing training resources. The new student information system will be set up and ready for use by fall for all students, School Counselors, parents and program staff.

VirtualSC will be expanding and implementing a plethora of ways to ensure that students obtain world class knowledge, world class skills, and life and career characteristics

needed to be academically successful in the a 21st century while supporting the Profile of the South Carolina Graduate.

Additional Funding Needs

The VirtualSC program continues to expand in multiple directions and is poised to assist the state with issues in educational equity to ensure all students have equal educational options and opportunities, regardless of where in the state they live. The program was featured in the report "Digital Learning Strategies for Rural America" that discussed the programs continued growth to serve students in rural areas of South Carolina.

Approximately 29 percent of the program's enrollments come from small rural schools throughout the state, which provides an option for students in those districts to be able to keep pace and have similar options as students in larger school districts across the state. Additionally, the report examines how the program is providing equitable options to students statewide in response to the Abbeville County School District v. State of South Carolina.

In the 2017-18 school year, the program was forced to turn away students for the second year in a row due to continued positive program growth, but no additional funds to serve the additional students seeking out online course options with the program. Approximately 2,227 student enrollments were turned away due to a lack of funding for certified adjunct teachers. While the program

was able to continue the pace of growth with other surrounding states that rapid growth has caused funds for additional adjunct teachers to become depleted.

A request for additional funding was made based upon the program's continued growth; however, additional funding for adjunct teachers was not approved by the General Assembly in the 2019 budget year.

To learn more about SCDE's VirtualSC, please visit virtualsc.org.

3. INFRASTRUCTURE AND SECURITY

South Carolina Technology Plan Goal:

Provide a robust, secure and cost effective technical infrastructure that improves equitable access to appropriate technologies for all schools in South Carolina.

Partner Efforts to Support the Goal:

The goal of ensuring South Carolina's public school students have the ability to be successful in today's rapidly evolving, data-driven workplace is exceedingly difficult to achieve without continuing to expand, strengthen and secure the networks and internet connections that serve the students, teachers and administrators throughout the state.

The networks that connect us – whether in our school, libraries or home – are arguably the most mission-critical infrastructure in today's public education system. As such, the partners of the South Carolina K-12 School Technology Initiative assist the state's public schools and libraries in providing the necessary technology tools and resources to help ensure a robust, secure and cost-effective infrastructure.

As part of this effort, Initiative partners are committed to assisting our public schools and libraries with the economic and technical resources needed to keep pace with the rising demand for increased bandwidth. Such

demand is due, in part, to the burdens placed on network infrastructure by the continued implementation of one-to-one computer initiatives, as well as the requirements of districtwide online testing.

The support provided by the federal E-Rate program continues to be critically important in helping address the connectivity needs of the state's schools and libraries, while helping further develop the network infrastructure necessary to support K-12 education and administration.

> **"THE GOAL OF ENSURING STUDENT SUCCESS IS EXCEEDINGLY DIFFICULT TO ACHIEVE WITHOUT CONTINUING TO EXPAND, STRENGTHEN AND SECURE THE NETWORKS AND INTERNET CONNECTIONS THAT SERVE OUR STUDENTS, TEACHERS AND ADMINISTRATORS."**

While the importance of connectivity can not be understated, the need for enhanced information security is increasing on a seemingly endless basis. Cyber security threats are continually evolving and affect the internet, public and private networks and individual

computing devices. Initiative partners are helping address this area through a variety of efforts including contracted distributed denial of service (DDoS) protection and the provision of Cisco Umbrella annual security licenses for all E-Rate Consortium members.

Initiative partners have also increased efforts to track and report school district expenditures of state funding for technology and support staffing, as well as technology readiness. These efforts include the South Carolina Department of Education's (SCDE) South Carolina Technology Readiness Study and the South Carolina Education Oversight Committee's (EOC) Report on Expenditures of K-12 Technology Initiative Funds.

The initiatives, programs and efforts described in this section help provide South Carolina's public schools and libraries with the robust, secure and cost effective infrastructure necessary for our students to thrive in the classroom as well as in today's highly competitive workplace.

Expansion of High-Speed Broadband Infrastructure

Since 2010, the South Carolina Department of Administration's Division of Technology Operations (DTO) has strived to expand the network connectivity of the state's K-12 public schools and libraries. The primary focus of this effort is designed to provide a stronger technology foundation for K-12 students, teachers and library patrons as they acquire the skills needed to prepare for 21st century

emerging educational technologies and job opportunities. As a direct outcome of this focus, fiber-based high-capacity broadband connectivity continues to be expanded on a statewide basis among school and library entities.

Internet connectivity for South Carolina's public schools has indeed seen tremendous growth over this time. As evidence of this fact, since June 2013 the number of districts with 1,000 Mbps or more bandwidth has grown from six to 46.

As of FY 2017-18, school districts accounted for 138.6 Gbps of internet bandwidth capacity, 4.92 Gbps to library systems and 5.23 Gbps to charter schools. While the average library system and charter school had roughly 65 Mbps of internet bandwidth capacity, the average

Bandwidth Demand
Growth in Demand in School Districts

14-15	15-16	16-17	17-18
63.99 GB	87.85 GB	112.90 GB	138.60 GB

school district in South Carolina had 1,411 Mbps of internet bandwidth capacity.

A complete listing of this information can be found in the Internet Bandwidth by District (2012-13 and 2017-18) table located in the By the Numbers section of this report.

As we witness charter schools continuing to grow and evolve, their internet capacity is expected to rise, mimicking the exponential growth in internet bandwidth capacity experienced by school districts. Since FY 2016-17, the total internet capacity for charter schools has increased 59 percent from 3.3 Gbps to 5.26 Gbps.

In last year's Progress Report, the K-12 School Technology Initiative stated that it must consider increasing the internet bandwidth capacity in the state's library systems. Internet bandwidth in South Carolina's library systems has remained relatively flat since 2010. In the past year, internet bandwidth capacity among South Carolina's library systems has increased 61 percent from 3.04 Gbps to 4.92 Gbps. Today, the average internet bandwidth capacity at South Carolina's library systems is 114.4 Mbps, exceeding the Initiative's FY 2019-20 goal of 110 Mbps per library system as indicated in the FY 2016-17 Progress Report.

It was also mentioned in the FY 2016-17 Progress Report that when the average internet capacity among the library systems reached 110 Mbps, many library systems would require new, additional network infrastructure to accommodate the increased internet

bandwidth capacity. Over the past year, the South Carolina E-Rate Consortium has made it a priority to provide assistance and training opportunities on the Schools and Libraries Category 2 E-Rate program for the library systems.

In FY 2017-18, DTO received funding from the K-12 Schools Technology Initiative to create a Category 2 E-Rate Match Program. The program reimbursed school districts, library systems and charter schools for the non-discounted share of their FY 2017-18 Category 2 E-Rate applications. The reimbursed funds were reinvested by the beneficiary to continue to upgrade network infrastructure. The program provided funding to seven library systems, six charter schools, 22 plaintiff school districts and 24 non-plaintiff school districts.

Below are two examples of how these funds were reinvested into network infrastructure.

Edgefield County School District experienced somewhat regular power outages, which disrupted its network. The district used the funds to procure two propane generators which will provide power to the network data center in the event of an outage.

The School District of Pickens County used the funds to purchase a new firewall, border gateway protocol routers and other network electronics.

School and Library E-Rate Program

Since 1998, the Schools and Libraries E-Rate Program has proved to be transformational

for education technology in public schools and libraries across South Carolina. Today the support provided by this program is being utilized by the Division of Technology Operations (DTO) to acquire broadband services for the state's public K-12 school and library network participants.

DTO is also responsible for the administration of the South Carolina E-Rate Consortium (Consortium) which includes 82 school districts, 46 charter and special schools, and 44 library systems. The Consortium prepares and files annual applications for network connectivity on behalf of the majority of the State's public schools and libraries, removing the administrative burden on those organizations.

In addition, the Consortium staff assists school districts and libraries with navigating the complex process of filing their own E-Rate applications. Such assistance is provided through the K-12 School Technology Initiative website with current program news, resources and deadlines. Assistance is also provided through a series of live training sessions held in multiple locations throughout the state.

To support the Consortium, DTO manages funding from the K-12 School

Technology Initiative that is used to pay service providers who supply internet access to connect public schools and libraries with wide area network (WAN) services. These high-speed networks are being built to meet the ever-expanding needs of students, teachers and library patrons for enriching content.

The funding support offered by the Schools and Libraries E-Rate program is essential to the continued expansion of education technology in districts and library throughout the state.

E-Rate Program Trends

Despite significant challenges to the Schools and Libraries E-Rate Program – such as the troubled roll out of the E-Rate Productivity Center (EPC) and the phasedown eligibility of voice services – schools and libraries in South Carolina have been able to fund drastic improvements to network infrastructure. Such improvements have been possible due in part to the Schools and Libraries E-Rate Program's Category Two funding mechanism.

In FY 2017-18, South Carolina school districts and library systems requested over $14.1 million in reimbursements for Category Two products and services such as routers, switches and other internal connections.
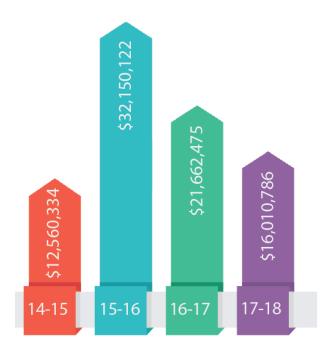
Of the $14.1 million requested,

$10.3 million has been approved for funding. As of June 2018, those school districts and library systems were disbursed $6.65 million in reimbursements from the E-Rate program. The amount of reimbursements disbursed to school districts and library systems for FY 2017-18 will continue to rise well into 2019 as school districts and library systems continue to submit invoices to the E-Rate program for payment. If all $10.3 million in requested funds are ultimately disbursed to school districts and library systems, the value of the products and services would exceed $13.6 million, which includes the reimbursed funds and the cost share funds from school districts.

In reality, even though E-Rate funding requests are approved for reimbursement, school districts and library systems may be denied funding based on noncompliance of

E-Rate Disbursements
Source: Division of Technology Operations

14-15	15-16	16-17	17-18
$12,560,334	$32,150,122	$21,662,475	$16,010,786

program rules. Also, they may decide not to seek reimbursement for other reasons, such as if a new school or library hasn't completed construction as planned.

From a statewide perspective, the Consortium has observed changes in how districts and libraries participate in the Schools and Libraries E-Rate Program, along with a significant variance in the money actually reimbursed from the E-Rate Program. In FY 2015-16, school districts and library systems invoiced over $32 million in Category One and Category Two E-rate funds. Just two years earlier, in FY 2013-14, $11 million in E-Rate funding was invoiced.

Another developing E-Rate Program trend can be found in the Request to Commitment to Disbursement ratio. As stated, applicants must request funds, receive commitment from USAC, and then invoice for the disbursement of funds. In the ideal scenario, the Request to Commitment ratio would be equal and the Commitment to Disbursement ratio would be as close to 100 percent as possible. However, in South Carolina this is not the case, and as such, an opportunity for significant improvement is apparent.

In FY 2014-15, South Carolina applicants requested over $58 million in Category One and Category Two E-Rate funding, the largest amount in the past five years. However, many applicant's requests were denied due to non-compliance issues with program rules, resulting in a mere $15.6 million committed to applicants. In addition, applicants invoiced for

only $12.5 million of the $15.6 million available to them. The ratio between these two figures should be as close to 1:1 as possible, however ratios less than 1:1 are acceptable because it is widely understood that applicants may overestimate the amount of E-Rate funding needed for certain products and services.

For example, a school district building a new school would like to use E-Rate funding for internal connections in the new building. The school district applies for the funding needed to complete the work; however, construction of the school is delayed. In this example, the school would not need the funding for the connections despite the application being funded by USAC.

For FY 2014-15, applicants received only 21 percent of the requested Category One and Category Two E-Rate funds. In contrast, FY 2015-16 represented the best year for the state's request to commitment to disbursement ratio as applicants received over 71 percent of the requested funds.

For FY 2017-18, 140 South Carolina applicants created 976 category 1 and category 2 Funding Request Numbers (FRN) valued at over $20 million. Of the $20 million in requested funds, approximately $16 million was approved. Nationwide, the amount of requested funds is falling, which is to be expected. The Schools and Libraries E-Rate program has phased out funding for voice services and applicants have used the last of their Category 2 Budget funds.

In South Carolina, school and library

applications requested 41.6 percent less funds than the previous year and 65.5 percent less than that of FY 2014-15. By contrast, South Carolina schools and libraries drove the Requested : Committed ratio, or the measure of E-Rate efficiency, upward in FY 2017-18. Compared to the historical low of FY 2014-15, when applicants were granted only 26.8 percent of requested funds, FY 2017-18 observed a three-year high of 79.7 percent requested to committed ratio.

There is still room for improvement. Our counterparts in Georgia and North Carolina accounted for requested-to-committed ratios of 81.9 and 91.5 percent respectively. With the goal to reach 100 percent requested to commitment to disbursement ratio, the Consortium and the K-12 School Technology Initiative must provide additional opportunities for E-Rate training for school districts and library systems that apply for E-Rate funding but are consistently denied for non-compliance of program rules. Additionally, the Consortium must also assist applicants during the invoicing process.

Value of State Master Contracts

In fall 2016, the Division of Technology Operations (DTO) awarded Spirit Communications a seven-year internet State Master Contract valued at a projected $32 million. The new State Master Contract is expected to save the South Carolina E-Rate Consortium approximately $79 million over the life of the contract.

The new State Master Contract initiated an aggressive eight-month migration of services for approximately 95 South Carolina E-Rate Consortium customers that took place between November 2016 and July 2017. During this time, internet service rates were incrementally reduced with normalized rates taking effect July 1, 2017.

$79 Million

Expected Savings of the New Internet State Master Contract Over the Life of the Contract.

In FY 2017-18, DTO worked with network services state contract vendor, AT&T, to provide the Consortium an 18.75% rate reduction for services to schools and libraries. The rate reduction took effect on July 1, 2017 and is expected to yield savings of nearly $270,414 per month.

The cost savings from state master contracts continues to fuel the ability to increase internet and WAN bandwidth capacity and in many cases lowers the cost shares for Consortium members.

Internet Security Protection

In an effort to help South Carolina's schools and libraries combat the increased number and complexity of malware, ransomware and other advanced security threats, the K-12 School Technology Initiative provided Cisco Umbrella to school districts, library systems and charter schools.

Cisco Umbrella is an industry leading, cloud-based, internet security product which complements the school or library's current internet security measures. Specifically, Cisco Umbrella leverages its constantly updated list of known domain named server (DNS) security threats with internet security policies providing drastically improved defense and user-friendly experience.

In total, 141 school districts, library systems and charter schools are currently using Cisco Umbrella. On average, Cisco Umbrella processes 143 million DNS queries, blocks nearly 3 million queries, prevents over 137,000 Malware attacks, and manages over 166,000 security events each day. Additionally, South Carolina schools and libraries have over 39,000 roaming clients, such as laptops, smartphones and other devices, which use the school or library's network using Cisco Umbrella's internet security features. South Carolina is the only state which provides Cisco Umbrella internet security services to all public school districts, library systems, and charter schools through a coordinated state-wide effort.

Report on Expenditures of K-12 Technology Initiative Funds

Since Fiscal Year (FY) 2014-15, the General Assembly has appropriated lottery revenues and EIA revenues of approximately $100 million

to improve technology infrastructure in public schools. A breakdown of the yearly amounts are included below.

On June 11, 2018, the Education Oversight Committee (EOC) provided to the K-12 School Technology Initiative Committee a report documenting how school districts expended Fiscal Year 2017-18 Education Improvement Act (EIA) funds appropriated by the General Assembly for technology infrastructure. These funds, previously known as the K-12 Technology Initiative, are to improve external and internal technology infrastructure and to increase one-to-one computing initiatives in schools. Over the past four fiscal years, the General Assembly has appropriated approximately $100 million to school districts for technology.

- FY 2014-15 – $29,288,976 (Lottery)
- FY 2015-16 – $29,288,976 (Lottery)
- FY 2016-17 – $29,288,976 (Lottery)
- FY 2017-18 – $12,000,000 (EIA)
- Total – $99,866,928

The EOC staff surveyed school districts between March 20, 2018, and April 30, 2018. All 82 school districts, including the South Carolina Public School Charter District, responded to the K-12 Technology Initiative survey. The self-reported responses were analyzed by the EOC staff and documented as reported by the districts.

In Fiscal Year 2017-18, the General Assembly appropriated in EIA revenues $12.0 million to districts for technology. Of this amount, $350,000 was retained by the South Carolina

Department of Education (SCDE) pursuant to Proviso 1.73 of the 2017-18 General Appropriation Act to "provide technology technical assistance to school districts." Approximately $11.6 was allocated to 82 school districts and $44,765 to special schools including the Wil Lou Gray Opportunity School, the SC School for the Deaf and Blind, the Department of Juvenile Justice and Palmetto Unified School District.

In FY 2017-18 school districts reported having a total of $22.0 million in funds for technology - $11.6 million in EIA funds allocated during the current fiscal year and $10.4 million in funds carried forward from the prior fiscal year, 2016-17, to the current fiscal year, 2017-18. This funding can be viewed in the Fiscal Year 2017-18 K-12 Technology Initiative Available Funds table included in the By the Numbers section of this report.

Of these available funds, school districts reported that they will expend 81 percent or $17.8 million and will carry forward 19 percent or $4.2 million into FY 2018-19. Of the funds to be expended in FY 2017-18, districts reported that they will spend $17.8 million accordingly:

- 54 percent on expanding and developing 1:1 computing initiatives through the replacement of existing devices and the purchasing of new devices;
- 22 percent on improving internal connections;
- 22 percent on other non-approved expenditures as reported by 12 school

districts who did not receive waivers from the K-12 School Technology Initiative Committee;

- 2 percent spent on improving external connections; and

- Less than 1 percent on waivers approved for Richland 2 and York 1 school districts.

This funding summary can be viewed in the K-12 Technology Initiative Funds Summary FY 2017-18 Expenditures and Carry Forwards table included in the By the Numbers section of this report.

Twelve districts did not receive waivers from the K-12 School Technology Initiative Committee but reported spending funds in areas not permitted under the program guidelines published in the 2017-2018 Funding Manual, which is published by the South Carolina Department of Education and which is based upon Proviso 1A.84 of the 2017-18 General Appropriation Act. This funding can be viewed in the FY 2017-18 Funds Spent in Other Areas without Waivers Approved table included in the By the Numbers section of this report.

These districts reported spending $3.5 million of their technology funds for Other purposes including:

- Classroom equipment;

- Payments to charter schools;

- Digital content;

- Digital instructional materials;

- Computer tables;

- Interactive boards;

- Server and storage hardware;

- Kajeet Wireless Hotspots;

- License for specific online learning tools (Istation, DreamBox, Apex Learning); and

- Computer lab modifications.

For comparison purposes, the EOC documented that between 7 and 25 percent of total expenditures in Fiscal Year 2016-17 were for other technology uses that were not approved by the K-12 Technology Committee.

And, of the funds to be carried forward to Fiscal Year 2018-19, districts reported that they will carry forward $4.2 million and expend these funds accordingly:
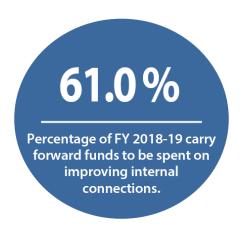
- 61 percent on improving internal connections;

- 33 percent on expanding and developing 1:1 computing initiatives through the replacement of existing devices and the purchasing of new devices;

- 4 percent on improving external connections; and

- 2 percent on other expenditures.

This funding can be viewed in the Projected Expenditures for Funds Carried Forward to FY 2018-19 table included in the By the Numbers section of this report.

Finally, regarding the E-rate program, 77 districts reported filing for E-rate reimbursements. Three districts reported that they do not file for E-Rate reimbursements while two districts did not respond to the question. Of these 77 districts, 61 indicated

that they used an outside vendor/consultant to assist in filing E-rate reimbursements. Among districts who reported using an outside vendor/consultant to assist in filing E-rate reimbursements, 62 percent indicated that 5% or less of these funds went to an outside vendor/consultant, and 91 percent of districts indicate that 10% or less of E-rate funds went to an outside vendor/consultant. Only one district reported more than 20% of E-rate funds went to an outside vendor/consultant.

61.0%

Percentage of FY 2018-19 carry forward funds to be spent on improving internal connections.

SC Technology Assistance Initiative

The South Carolina Technology Assistance Initiative, a program of State Superintendent of Education Molly Spearman and funded by the General Assembly, provides technology technical assistance, readiness assessments and technology planning services to South Carolina's public school districts.

The SC Technology Assistance's Readiness Analysis began in 2015–16 as an evaluation of each participating district's ability to organize and conduct districtwide online testing for their students in grades 3–8. These analyses included a needs assessment, recommendations to

bridge the gap to readiness, and a blueprint for completing those recommended steps. Follow up studies, related technical assistance, and facilitated collaboration meetings continued through the 2017–18 school year.

Readiness Study Participation

With the first year's funding (2015–16) assessments were completed in 38 of the 82 school districts, beginning with Abbeville and high poverty-rural districts. In Fiscal Year 2016–17, the SCDE expanded the voluntary assessments to the remaining districts.

Thirty districts and special schools accepted this invitation and 21 successfully completed the analysis process. In addition, a workbook and webinar on proper data collection and completion of self assessments are available to districts on the SCDE's South Carolina Technology Assistance Initiative webpage.

Overview of Rating Scale

A five-tiered rating scale was created to evaluate the online testing readiness of districts in facilities, infrastructure, hardware, teacher readiness, student readiness, funding mechanisms, strategic planning and the IT support model. This scale is summarized below.

- Rating 1: The district did not provide evidence it can successfully complete online testing in the current year.

- Rating 2: The district could feasibly conduct testing in the current year; however, there are multiple areas to be

improved to make this happen. If these improvements are not completed, testing will more than likely be unsuccessful.

- Rating 3: The district will be able to meet the current year's online testing requirements. The district will not be able to handle additional subjects or grade levels without significant improvement in multiple areas.

- Rating 4: The district will be able to meet the online testing requirements and it can meet a few extra subjects or grades, but not all future needs.

- Rating 5: The district is prepared. It does not have any measurable risks associated with online testing, and can handle online testing for all grades and subjects.

Please note that readiness at any point in time fluctuates as the testing and IT environments change.

Needs Analysis

Participating districts received a report of the team's findings with a list of specific needs tied directly to increasing computer-based testing readiness. Examples of such needs include additional space, bandwidth, routers, access points, computers, monitors, desks, chairs, and professional development. The team also assisted districts in identifying sources of funds that could be used to meet these needs.

Summary of Findings

The average score for Abbeville plaintiff districts was 2.6 for all areas being assessed. The average

score for non-plaintiff districts was 3.9. Overall, the scores were significantly lower for plaintiff districts and the level of available technology support was severely limited.

2.6 avg.

Overall average score for plaintiff districts in the Technology Readiness Study.

Districts indicated that they faced challenges in attracting and retaining appropriately skilled staff and lacked the ability to fund these positions in a sustainable manner.

These scores can be viewed in the Plaintiff versus Non-Plaintiff Districts Average Readiness Score table included in the By the Numbers section of this report.

Health Checks

Follow-up studies began during the 2016–17 school year and continued into 2017–18 to evaluate the progress made by the districts with completed assessments. A summary of areas in which these districts indicated additional progress was needed can be viewed in the Plaintiff District Areas Needing Improvements table included in the By the Numbers section of this report.

During Fiscal Year 2016–17 the General Assembly provided nonrecurring funding to

assist districts with planning for hardware and infrastructure improvements needed to provide computer-based testing environments. A chart contains a summary of how plaintiff districts reported using these funds in an effort to address various identified technology needs is included in the Plaintiff Districts Reported Use of FY 2016-17 Proviso 1.88 Funding table included in the By the Numbers section of this report.

Despite the areas indicated as needing improvement, more than half of districts reported readiness to administer state assessments online during the 2017–18 school year, as illustrated in the Districts Online Testing Preparedness table contained in the By the Numbers section of this report.

Resource Challenges

One of the common denominators of many participating districts is a lack of recurring resources associated with ongoing technology support and maintenance-replacement of equipment.

Many districts lack sufficient IT staff support. Specifically, districts lack the following types of support: (1) technology coaches or high-quality embedded professional development, (2) hands-on qualified IT support personnel, and (3) technology professional development.

Many districts increased their existing IT staff by promoting non-IT staff to manage technology platforms. In some instances, these staff members were not trained for the more

technical duties or the technology support activities currently needed. Examples include the following:

- Lack of appropriate networking expertise.
- Staff skilled in one specific operating system may struggle to support other or newer operating system-based products.
- Lack of time and expertise to manage sites.
- Lack of skills needed for complex IT security.
- Districts need staff skilled in areas such as: routers; firewalls and switching; networking-servers; disaster recovery; internet-IT security- infrastructure- database virtualization; professional development-training; and classroom- instructional technology.

Funding IT salaries at competitive rates is necessary to retain high-quality and skilled staff. Currently, IT salary structures among South Carolina school districts vary widely. Sometimes districts lose talent to their better-funded neighbors.

Additionally, rapidly changing requirements also mean that today's staff must continually participate in professional development to keep their skills up to date. Successful 1:1 initiatives require continual refreshing IT equipment. Due to limited life spans, district plans to fund replacement infrastructure should accompany installation of the existing technology. In addition, as devices age, they may no longer meet the vendors' technical requirements for computer-based testing.

District Collaboration

As part of the initiative, districts met to share best practices, discuss lessons learned, and proactively seek areas in which they could collaborate. Collaboration opportunities are being discussed in existing consortia such as the Pee Dee, Salkehatchie, Old English and Western Piedmont. In some cases, districts that have spare resource capacity are sharing outside geographic consortia. The data collected from the readiness assessments has been shared with districts to help facilitate these conversations. The agency has offered to facilitate and explore innovative ways for districts to share fixed costs and deliver better service to students and employees.

SCDE reinstated the District Technology Advisory Groups, who have provided insight into the most needed technology technical assistance. Plans are underway to focus the 2018–19 school year on continuing to support readiness for online testing and IT security.

For more information, please visit SCDE's South Carolina Technology Assistance Initiative webpage.

4. PROFESSIONAL DEVELOPMENT

South Carolina Technology Plan Goal:

Improve teacher and administrator integration technology in the classroom, administration, and overall learning process.

Partner Efforts to Support the Goal:

The partners that make up the South Carolina K-12 School Technology Initiative are committed to providing the tools and resources necessary to help the state's teachers and administrators better integrate technology in the classroom.

As our public education system continues to transform from the traditional model we participated in as students to a more technology-focused approach, teachers must serve as both educators and classroom technology facilitators. In this role, teachers are not only a primary source of instruction, but also technology facilitators, assisting students in identifying and making the best use of the myriad of resources at their disposal.

As educational models have changed, so must the professional development opportunities offered to our teachers and administrators. Initiative partners have recognized this shift, and in response, have assisted our schools and libraries in providing innovative methods designed to further develop and enhance the

technology skills necessary to keep pace with today's rapidly evolving educational landscape.

The South Carolina Department of Education (SCDE), South Carolina Educational Television (SCETV) and the South Carolina State Library, continue to provide powerful, effective, cost-efficient, flexibly scheduled professional development opportunities for thousands of teachers annually.

> **"IN TODAY`S EDUCATIONAL SYSTEM, TEACHERS MUST SERVE AS EDUCATORS AS WELL AS CLASSROOM TECHNOLOGY FACILITATORS. AS THESE ROLES HAVE CHANGED, SO MUST THE PROFESSIONAL DEVELOPMENT OPPORTUNITIES OFFERED."**

The initiatives, programs and efforts described in this section help provide South Carolina's public schools and libraries with the professional development opportunities necessary to efficiently and effectively integrate technology resources in the classroom.

SCETV Training and Recertification

South Carolina Educational Television (SCETV) has historically committed to serving South

Carolina's districts, schools and educators by providing quality face-to-face professional development and online teacher recertification. These efforts play a key role in helping to meet the needs of teaching professionals, who affect learning each day in classrooms across the state. SCETV provides the support needed to assure the success of such K-12 School Technology Initiative funded projects as Knowitall.org, SCETV's PBS LearningMedia and LearningWhy.

SCETV contributes to developing and maintaining the professional capacity of South Carolina's teachers, staff and administrators. Over 90 percent of respondents to SCETV's 2017-18 annual survey indicated they use the internet daily, often or extensively. To assist in this ongoing transformation, SCETV conducts hands-on training on how to use SCETV web content and technology in the classroom.

Teachers' preferred method of receiving training are through SCETV's online courses. South Carolina's educators can save valuable time and effort in finding certificate renewal and graduate level courses using the searchable SCETV Teacher Courses website. This website contains all courses offered by SCETV Teacher Recertification, TeacherLine Southeast and TeacherStep. Through this site, educators cannot only search by curriculum interest, professional development and credit needed, but can also readily find out if courses qualify for technology credit.

To learn more about SCETV Teacher Courses, please visit SCETV's scetv.org/teachercourses.

SCETV also provides free face-to-face and blended training for public, private and home-school teachers, staff and administrators. Hands-on training services offered through SCETV include assessment of training needs, conducting school, districtwide and regional training for educators on how to use the educational content, and technology for personalized and project-based learning.

Online Professional Development for Certified Staff

The South Carolina Department of Education's (SCDE) Office of Virtual Education recognizes the importance of improving teacher technology proficiency to help ensure students are receiving the appropriate instruction to become productive citizens in the 21st century.

The Office of Virtual Education has continued to offer online professional development courses for South Carolina certified staff. The courses that are offered are all technology integration courses and courses that help to lead to the Online Teaching Endorsement, as well as other endorsements, for certified teachers and administrators.

Courses are offered for both renewal credits and graduate credits to assist teachers in renewing their teaching license. Courses are taught by current classroom or former classroom teachers that had exemplary skills in integrating technology into their daily lessons.

The main purpose of taking courses through

the program is to ensure that teachers have the skills to enhance their daily instruction by including technology in every way possible for the benefit of the students. Through taking these courses, we are more assured that teachers are preparing their students for becoming good digital citizens and are prepared with 21st century skills.

In 2017-18, the program saw continued growth by serving 11,429 educators. This year, the program is further supporting the Read to Succeed legislation by offering a guide to literacy for parents titled "Supporting Early Literacy at Home: A Parent's Guide".

Currently, the program is an approved provider of the full suite of courses required to complete the Read to Succeed endorsement, as well as, the online teaching endorsement. Popularity has been growing for both of these endorsements.

The program will continue to expand and explore online professional development opportunities for educators that are needed to ensure that teachers can best serve their students in their classrooms.

Discus Professional Development

Discus Professional Development offers online and on-site presentations and training opportunities for educators, public and academic librarians, and homeschool families. Each presentation and training session is developed with the target audience in mind to ensure information relevance. Two well attended training sessions were conducted at the State Library this year. One session was led by vendor partners and attended by public librarians, media specialists and homeschool parents. The second on-site session was hosted by the Discus Training and Outreach Coordinator and was aimed at homeschool parents and students.

In addition to the on-site sessions at the State Library, Discus presented at statewide conferences, school district professional development days, public library staff development days, adult education centers, homeschool conferences and technology fairs. Presentations were made to the South Carolina Independent School Association (SCISA), the South Carolina Association

for School Librarians (SCASL), South Carolina Public Charter Schools, South Carolina Council on Social Studies (SCCSS), South Carolina EdTech, South Carolina Association of Middle Level Education (SCAMLE), Library Resource Information Sharing Conference (LIBRIS) and the Lowcountry Homeschool Convention.

This variety of venues provides the opportunity to introduce parents, students, and new educators to the electronic resources available in Discus while reminding veteran educators of the new technology in Discus. Educators had access to 49 online Discus training webinars and 69 live presentations, with 2,066 participants. In addition, exhibit booths at 11 local conferences and 11 major statewide conferences further extended the Discus message to 3,236 booth visitors, which is an increase from the previous year.

5. COLLABORATION OPPORTUNITIES

South Carolina Technology Plan Goal:
Identify innovative ways for state agencies, local school districts, schools, families, and local businesses to collaborate to enhance the learning experiences for the students of South Carolina.

Partner Efforts to Support the Goal:
The South Carolina K-12 School Technology Initiative's partners are committed to finding unique and innovative ways to collaborate with the state's public schools and libraries, families, agencies and businesses to further develop the educational opportunities provided to students.

At the core level, the Initiative leverages information technology and connectivity to enhance collaboration among schools, districts, the South Carolina Department of Education (SCDE) and the surrounding communities.

Equipping public schools with the latest educational technology and ensuring access to a secure and robust infrastructure is essential in helping achieve the goals set forth in the Profile of the South Carolina Graduate. However, another important factor is the public awareness and support for the ambitious educational goals set by our state.

Initiative partners work to raise awareness of the successes of our education system as well as the challenges facing it, and seek to enlist the support of all citizens in the effort to provide students with an education that will make them competitive and productive in today's workplace. Such success benefits the entire state and produces graduates who will share and lead in our economic growth for decades.

> **"THE INITIATIVE WORKS TO RAISE AWARENESS OF THE SUCCESSES OF OUR EDUCATION SYSTEM, AS WELL AS THE CHALLENGES FACING IT, AND SEEKS THE SUPPORT OF ALL CITIZENS IN THE EFFORT TO PROVIDE STUDENTS WITH AN EDUCATION THAT WILL MAKE THEM COMPETITIVE AND PRODUCTIVE IN TODAY`S WORKPLACE."**

With this in mind, the partners of the K-12 School Technology Initiative leverage the powerful and influential medium of the South Carolina Educational Television's (SCETV) public broadcasting platforms to share this story and help develop the awareness and collaborative opportunities necessary to enhance the education received by our public school students.

SCETV Public Awareness Efforts

In an effort to help inform citizens about the availability of educational programs, services and technologies, South Carolina Educational Television (SCETV) and South Carolina Public Radio share stories of projects that serve to address the needs of teachers and students throughout the state. A number of national and statewide television series and educational specials – including SCETV's Palmetto Scene and Carolina Classrooms – are broadcast and streamed for use in schools and classrooms, providing significant reach to both SCETV's television and radio audiences.

Content broadcast through these mediums provide case studies and best practices for use throughout the state. Promotion of these programs and services were provided through a variety of platforms, including SCETV communications, educational websites and broadcast interstitials, as well as community education outreach efforts through K-12 conferences, presentations and awards.

SCETV's Carolina Classrooms, a school-year series designed for teachers, educators and parents, features educational initiatives in

South Carolina schools including those geared toward equity in education, assessments and literacy. State and local educators, as well as policy and business leaders, participated in this effort. Radio broadcasts of educational content included Walter Edgar's Journal, South Carolina A-Z and Science Friday.

To learn more about Carolina Classrooms, please visit scetv.org/carolinaclassrooms.

Throughout the year, SCETV provides education-related newsletter blogs and collaborates with the South Carolina Education Oversight Committee (EOC) and the South Carolina Department of Education for the promotion of SCETV education features. SCETV Education, working with the EOC, provides a monthly newsletter for pre-K-12 administrators, teachers and staff, to assist in informing teachers of timely resources and services. SCETV also uses social media including Facebook and Twitter to engage the education community.

To learn more about SCETV's Education Blog, please visit the website at https://www.scetv.org/stories/education.

6. REPORT CONCLUSION

The partners that make up the South Carolina K-12 School Technology Initiative are dedicated to ensuring the state's public school students, teachers, administrators and libraries are provided with the information technology tools, resources, infrastructure and educational content necessary to produce graduates with the ability to thrive in today's data-driven workplace.

It is important to note, these resources must be made available to every student and teacher in every public school classroom and every public library – regardless of physical location or background – in order to fully realize the goals set forth in the Profile of the South Carolina Graduate.

> **"AS THE NEEDS AND EXPECTATIONS ASSOCIATED WITH SCHOOLS AND LIBRARIES CONTINUE TO EVOLVE, THE INITIATIVE ENERGETICALLY ACCEPTS THESE CHALLENGES AND WILL CONTINUE TO PROVIDE THE NECESSARY TOOLS AND RESOURCES."**

The efforts of the Initiative's partners, working in conjunction with our schools and libraries, are essential to the success of the state's public education system. Such success benefits not only our students, but also every citizen as the graduates produced through this system will help shape South Carolina's fortunes for decades.

While much has been accomplished to support these goals since the K-12 School Technology Initiative was founded in 1996, the continual evolution of educational technology creates new and more complicated challenges to address and overcome.

Technology is not a one-time expense but rather a financial investment that requires purchases and updates annually. The infrastructure that supports technology and the devices, software and training that support teachers and students requires significant investments. And, to expand technology to all districts and counties in our state requires additional resources.

As evidenced in this report, our public education system is not a static environment. As the needs and expectations associated with schools and libraries continue to evolve, the South Carolina K-12 School Technology Initiative willingly and energetically accepts these challenges and will continue to assist in providing the tools and resources necessary to ensure our students success.

APPENDIX A: INITIATIVE BUDGET

Principals Summary
FY 2018-19 K-12 Technology Initiative Budget Plan

Base Appropriation: School Technology		$12,271,826
Total Appropriations :		**$12,271,826**
Carry Forward:		
State Library		$0
SCETV		$0
SCDE		$0
Department of Administration		$0
Total Carry Forward :		**$0**
Total Available Funds:		**$12,271,826**
E-Rate Funds (Estimated)		$20,789,258
Total Funds Anticipated:		**$33,061,084**
Total Budget Requested:		**$33,061,084**
Net Remaining Funds:		**-**

Priority	Principals Budget Requests	Budget Requests	School Technology Appropriation	E-Rate Funds (Estimated)	Proposed Budgets
	Non Discretionary				
	DEPARTMENT of ADMINISTRATION				
1	Network Connectivity Costs	$28,472,756	$7,683,498	$20,789,258	$28,472,756
2	E-Rate Field Training and Outreach	$8,100	$8,100		$8,100
3	DNS-based Internet Security License Renewal	$1,085,672	$1,085,672		$1,085,672
4	Infrastructure Upgrades Schools & Libraries*	$2,600,000	$2,600,000		$2,600,000
5	Proviso 1A.86 - SDE-EIA: Digital Learning Plan	$50,000	$50,000		$50,000
	Total:	**$32,216,528**	**$11,427,270**	**$20,789,258**	**$32,216,528**
	Total Non Discretionary:	**$32,216,528**	**$11,427,270**	**$20,789,258**	**$32,216,528**
	Total Available Budget	**$844,556**	**$844,556**		**$ 844,556**
	Discretionary				
	DEPARTMENT of ADMINISTRATION				
1	Non-E-Rate Network Infrastructure Match	$333,374	$333,374		$333,374
2		$0	$0		$0
	Total:	**$333,374**	**$333,374**		**$333,374**
	STATE LIBRARY				
1	Learn360	$198,500	$198,500		$198,500
2		$0	$0		$0
	Total:	**$198,500**	**$198,500**		**$198,500**
	SCDE				
1	District Backup-Recovery Services Infrastructure	$174,132	$174,132		$174,132
2		$0	$0		$0
	Total:	**$174,132**	**$174,132**		**$174,132**
	SCETV				
1	Knowitall.org content upgrade	$138,550	$138,550		$138,550
	Total:	**$138,550**	**$138,550**		**$138,550**
	Total before Carry forward	**$33,061,084**	**$12,271,826**	**$20,789,258**	**$33,061,084**
	Total Carry Forward From Previous year:	**$0**	**$0**		**$0**
	Grand Total for a Balanced Budget:	**$33,061,084**	**$12,271,826**	**$20,789,258**	**$33,061,084**

	$0	**Balanced**

* Committee funding will be leveraged with the Category 2 federal share, FY 2018-19 financial impact will be $16 million.

APPENDIX B:
BY THE NUMBERS

Discus Items Retrieved
Source: South Carolina State Library

- 14-15: 42,717,361
- 15-16: 41,649,818
- 16-17: 31,516,126
- 17-18: 17,537,209

StudySC Sessions
Source: South Carolina State Library

- 14-15: 51,472
- 15-16: 34,841
- 16-17: 29,881
- 17-18: 42,198

VirtualSC Enrollment
Source: South Carolina Department of Education

- 14-15: 32,779
- 15-16: 39,645
- 16-17: 41,579
- 17-18: 44,638

Bandwidth Demand
Growth in Demand in School Districts

- 14-15: 63.99 GB
- 15-16: 87.85 GB
- 16-17: 112.90 GB
- 17-18: 138.60 GB

E-Rate Disbursements

Source: Division of Technology Operations

14-15 — $12,560,334
15-16 — $32,150,122
16-17 — $21,662,475
17-18 — $16,010,786

4,972,075

SCETV Education Services Used:
(Combines LearningWhy,
PBS Kids, Knowitall and
PBS LearningMedia service
usage in 2017-18)

61.0 %

Percentage of FY 2018-19 carry
forward funds to be spent on
improving internal
connections.

$79 Million

Expected Savings of the New
Internet State Master Contract
Over the Life of the
Contract.

2.6 avg.

Overall average score for
plaintiff districts in the
Technology Readiness
Study.

Fiscal Year 2017-18 K-12 Technology Initiative Available Funds

	Total	Percent of Available Funds
Funds Carried Forward from FY2016-17	$10,444,276	47.4
FY 2017-18 Allocations	$11,598,498	52.6
Total Available Funds	$22,042,774	100.0

K-12 Technology Initiative Funds Summary
FY 2017-18 Expenditures and Carry Forwards

Available Funds:	$	%
Funds Carried Forward from FY2016-17	$10,444,276	
FY 2017-18 Allocations	$11,598,498	
Total Available Funds:	**$22,042,774**	
Expenditures:		*80.9%*
Improve External Connections	$346,581	1.9%
Improve Internal Connections	$3,901,846	21.9%
Refresh/Replace Existing 1:1 Devices	$5,357,124	30.1%
Purchase new 1:1 Devices	$4,272,508	24.0%
Approved Waivers	$47,333	0.3%
Other Non-Approved Purposes	$3,897,416	21.9%
Total Expenditures:	**$17,822,814**	

Fiscal Year 2017-18 Funds Spent in Other Areas without Waivers Approved
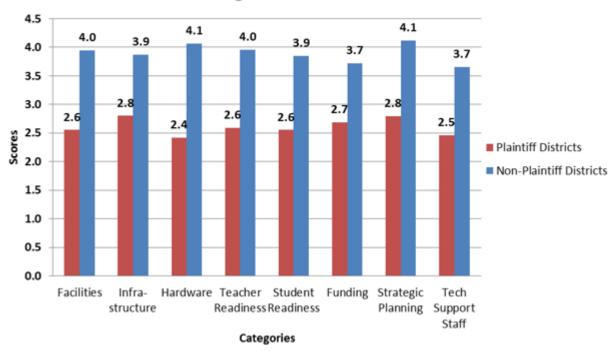
	Total	Percent of Total Expenditures in 2017-18
Improve Security	$137,768	0.8
Professional Development for Classroom Teachers	$188,271	1.1
Professional Development for Other Educators	$7,675	0.0
Technical Assistance for District Technology Staff	$52,345	0.3
Other	$3,511,358	19.7
TOTAL:	$3,897,417	21.9

Projected Expenditures for Funds Carried Forward to Fiscal Year 2018-19
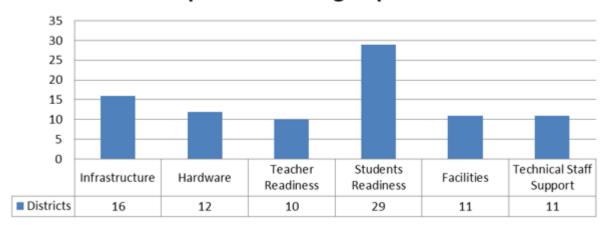
	Total	Percent of Carry Forward Funds
Improve External Connections	$182,229	4.3
Improve Internal Connections	$2,578,688	61.1
Refresh/Replace Existing 1:1 Devices	$533,807	12.6
Purchase new 1:1 Devices	$857,147	20.3
Other	$68,107	1.8
TOTAL *:	$4,219,977	

* For one district, the total amount of projected carry forward expenditures exceeded by $16 the itemized list of projected expenditures for these funds.
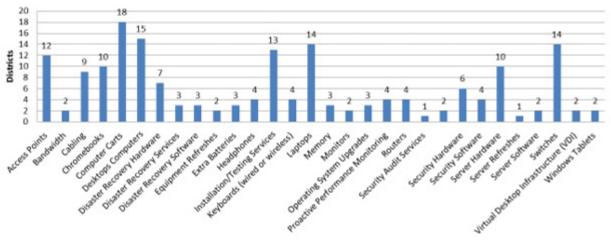
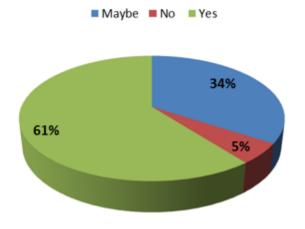## Plaintiff vs. Non-Plaintiff Districts
Average Readiness Scores
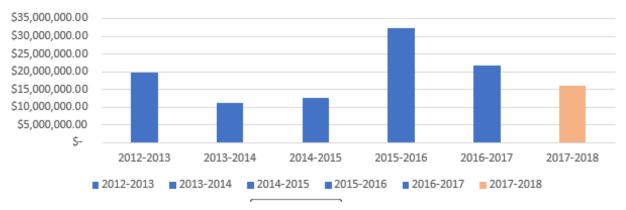
Plaintiff Districts
Areas Reported Needing Improvements

Districts	Infrastructure	Hardware	Teacher Readiness	Students Readiness	Facilities	Technical Staff Support
	16	12	10	29	11	11

Plaintiff Districts
Reported Use of FY2016-17 Proviso 1.88 Funding

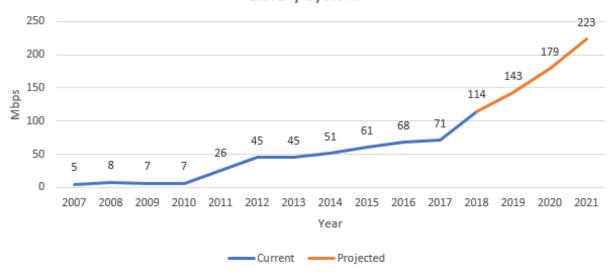## Plaintiff Districts
Online Testing 2017-18 Prepardness

■ Maybe ■ No ■ Yes

34%

5%

61%

Annual E-Rate Disbursements to SC Applicants

Legend: 2012-2013 2013-2014 2014-2015 2015-2016 2016-2017 2017-2018

Annual Changes in the Ratio of E-Rate Funds "Requested, Committed, and Disbursed"

Legend: Requested Committed Disbursements

Current and Projected Averge Internet Bandwidth Capacity per Library System

Legend: Current Projected
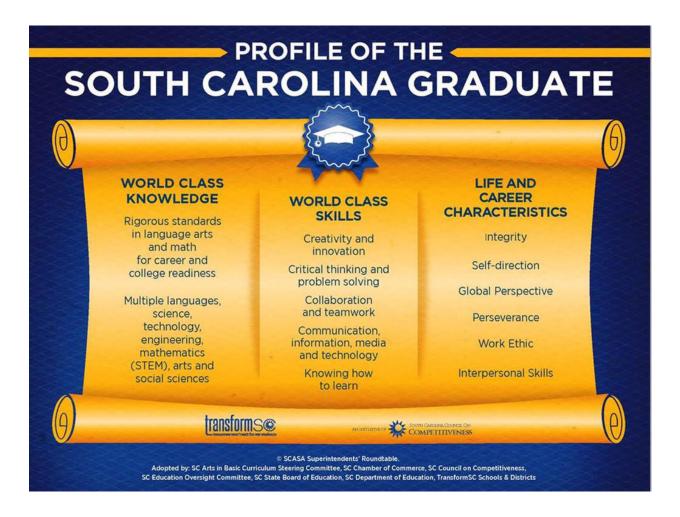
Internet Bandwidth by District (2012-13 to 2017-18)

Bandwidth	Districts
0	0
10	0
30 to 90	0
100 to 150	0
200 to 250	7
300 to 350	3
400 to 450	1
500 to 550	11
600 to 900	11
1000	15
1500	4
2000	9
2500	4
3000	5
3500	0
4000	3
5000	5
6000	1
7500	2

APPENDIX C:
PROFILE OF THE SC GRADUATE

The Profile of the South Carolina Graduate has been adopted and approved by the South Carolina Association of School Administrators, the South Carolina Chamber of Commerce, the South Carolina Council on Competitiveness, the South Carolina Education Oversight Committee, the State Board of Education, and the South Carolina Department of Education to identify the knowledge, skills and characteristics high school graduates should possess in order to be prepared for success as they enter college or pursue a career. The profile is intended to guide all that is done in support of college- and career-readiness.

APPENDIX D: INITIATIVE MILESTONES

1996-97

- The South Carolina General Assembly created the K–12 School Technology Initiative.
- The K–12 School Technology Initiative began funding two-way video projects across South Carolina.

1997-98

- The K–12 School Technology Initiative distributed over $12 million to state districts for local technology implementation.
- South Carolina Educational Television (SCETV) began digitizing its video resources for use in schools.
- South Carolina was recognized by the Educational Testing Service as one of five states to provide telecommunications access in all schools.

1998-99

- South Carolina received over $26 million in E-Rate funding.
- South Carolina encouraged the state's school districts to adopt the International Society for Technology in Education's National Educational Technology Standards for Students (ISTE NETS-S) and National Educational Technology Standards for Teachers (ISTE NETS-T).
- By 1998, South Carolina invested more than $84 million in hardware, software and professional development opportunities or schools and districts.
- The K-12 School Technology Initiative began distributing funding for professional development in technology as well as technology implementation to districts, sending over $16 million in total funding to districts statewide.
- 86 percent of South Carolina's schools were equipped with satellite dishes in order to receive education programming, compared to a national average of 29 percent.
- 67 percent of South Carolina classrooms were connected to local-area computer networks (LANs), compared to 53 percent nationwide.
- Technology Counts '98 reported that South Carolina was one of only five states in the nation to provide Internet access to 100 percent of its schools.

1999-00

- South Carolina, an E-Rate leader, received over $42 million in funding.
- The South Carolina State Library's (State Library) Discus website was launched.
- The new student-information collection system, Schools Administrative Student Information (ASIxp), was provided free to all districts.
- 100 percent of all state K-12 schools have digital satellite reception.

2000-01

- South Carolina E-Rate funding continued to climb to over $52 million.
- State K–12 appropriations for educational technology funding increased to over $40 million.

2001-02

- The South Carolina General Assembly passed the Teacher Technology Proficiency Proviso, requiring districts to verify that teachers demonstrate technology proficiency during each recertification cycle.

- South Carolina received $44,280,175 in E-Rate funding.

- The K-12 Partnership provided $400,000 of funding, for technical training for district's technology support personnel.

- SCETV's Knowitall.org Web portal was officially launched.

- SCETV's Distance Education Learning Centers were operational in all school districts.

- The K-12 School Technology Initiative provided over $18 million in flow-through funding to districts for local technology and training.

- The South Carolina Education Oversight Committee (EOC) issued its long-range planning document, citing technology use as necessary for South Carolina to reach its 2010 goal of being ranked in the top half of states nationwide with regard to student achievement.

- ETV American Graduate, a public media initiative funded by the Corporation for Public Broadcasting (CPB) helped South Carolina's communities find solutions to address the dropout crisis.

2002-03

- K–12 School Technology Initiative funding decreased from a high of $40 million in 2001, to a five-year low of $19 million.

- South Carolina encouraged its school districts to adopt the International Society for Technology in Educations (ISTE) National Educational Technology Standards for Administrators (NETS-A).

2003-04

- The student-information collection system SASIxp was fully implemented in all state school districts.

- The Division of State Information Technology (DSIT) filed the calculations for all schools and districts for the E-Rate Discount Program, resulting in over $49 million for the state and school districts in discount payments.

- K–12 School Technology Initiative funding provided the Intel Teach program to educators across the state.

- The South Carolina Department of Education (SCDE) released its State Educational Technology Plan, 2003-08: Realizing the Dream, to all South Carolina stakeholders.

- K–12 School Technology Initiative funding supported 30 Technology Coaches.

- SCDE released a new SASIxp template and the Data Collections Manual, initiated quarterly collections and bean to rely on the new South Carolina Educational Data System (SCEDS).

- SCDE's South Carolina Online Professional Development (SCOPD) program, now known as eLearningSC, was officially launched.

- A new Training Teachers in Technology (T3) professional development CD-ROM entitled "The Nature and Needs of Gifted and Talented Students" was offered to districts.

2004-05

- SCDE's ePortolio project pilot was launched to assess teacher technology proficiency and to provide information on professional development offerings.

- SCETV's Internet video-on-demand service, StreamlineSC, was officially launched.

2005-06

- The South Carolina Legislature called for a feasibility study to investigate computer-based assessment in the state.

- SCETV's StreamlineSC reached 100 percent of the state's K–12 schools and had 1.3 million views within its first full year of operation.

2006-07

- The South Carolina Virtual School pilot was officially launched by the SCDE.

- SCETV's Knowitall.org celebrated its 10 millionth hit.

- SCETV's Knowitall.org launched two new sites, Knowitall Healthy! and Road Trip.

2007-08

- The State Library's Discus program launched its new website featuring Web 2.0 technology.

- The State Library began the implementation of SchoolRooms, an online multimedia discovery place for the K-12 community.

- The K-12 School Technology Initiative approved the implementation of a service offered by DSIT to provide security and monitoring of K-12 Internet bandwidth usage.

- SCETV procured a $1.94 million grant that began SCETV's transition from analog video over microwave delivery of educational content to a streaming media delivery in 33 of 85 school districts.

2008-09

- SCETV launched OnePlaceSC, its newest K-12 education Web portal.

- SCETV launched Digital Education Services (DES), an upgraded service of the Distance Learning Education Centers (DLEC), designed to transition existing analog and digital broadcasts to live and video streaming on-demand systems.

- SCETV live-streamed both SCETV radio stations, enabling the stations to be added to the OnePlaceSC programming lineup and for the general public to listen to SCETV Radio on the Internet.

2009-10

- SCDE released its State Educational Technology Plan for 2009-13.

- The State Library's Discus program launched

SmartSearch, enabling the retrieval of information from multiple sources through a single "Google-like" search.

- The State Library's Discus program implemented IP geolocation technology through SmartSearch, allowing students to be recognized as being in South Carolina and automatically granted access without the need for usernames or passwords.

- The State Library added a number of career and workforce development products to Discus including Ferguson's Career Guidance Center, LearningExpress Library and the NetLibrary Career eBook collection

- The State Library launched the StudySC.org website, a resource designed to provide online links and multimedia content for homework help, project assistance and classroom use.

- The State Library received a Presidential Citation Award from the South Carolina Library Association in recognition of ten years of Discus, South Carolina's Virtual Library.

- SCETV's StreamlineSC video-on-demand service had 3.16 million views during the 2009-10 school year, and the highest per-teacher video-on-demand usage of any such service in the nation.

- SCETV's Knowitall.org portal had 6.01 million views in FY 2009-2010.

- SCETV's Web of Water site, part of Knowitall.org, was awarded a Corporation or Public Broadcasting MySource Education Innovation Award in March of 2010.

- SCETV's Digital Education Services (DES) systems were implemented in 44 of 85 state K-12 school districts.

- SCETV added new content to several of its most popular Knowitall.org Web sites, including Artopia, RiverVenture, Generations of Heroes, GullahNet, Educator+ and Career Aisle.

- DSIT filed E-Rate applications for network connectivity costs of $22.7 million in eligible services in 2009-10, and received federal E-Rate

reimbursements of $13.8 million.

- The K-12 School Technology Initiative, in conjunction with DSIT, developed version four of the Internet policy, designed to ensure the equitable use of available funds to supply sufficient Internet bandwidth to all districts.

- SCETV procured a $1.4 million American Recovery and Reinvestment Act grant through an agreement with SCDE. The funds were used to add an additional 26 school districts to districts viewing all media via SCETV's IP Media server technologies.

- Through SCETV, 73 of the state's 81 school districts received all district televised media via streaming Media Server constellation.

2010-11

- SCETV's website "Web of Water," received the nationally prestigious Corporation for Public Broadcasting (CPB) Innovation in Education Award.

- The State Library implemented five new products in its Discus program. The products included Biography In Context, Opposing Viewpoints In Context, Science In Context, U.S. History In Context and World History In Context.

- The State Library's Discus program added Ferguson's Career Guidance Center, LearningExpress Library and the EBSCO Career eBook Collection to its Discus Job and Career Resources component.

2011-12

- SCETV began offering the PBS Learning Media service.

- SCETV finalized the Educational Broadband System (EBS) transition from 67 four-channel groups to a streamed down single channel per group (EBS mid-band) dedicated to transmitting ITV programming for all school districts in the state.

- SCETV developed and instituted an agreement to migrate all StreamlineSC content to the

constellation of IP Media servers, allowing districts to have a Streamline server on their internal Ethernet network. The higher capacity storage also enabled the districts to access the entire StreamlineSC asset library.

- Through a CPB American Archive Content Inventory Project grant, SCETV inventoried over 100,000 physical and electronic assets and compiled a database of metadata that can be accessed for educational and documentary projects.

- The State Library's Discus program conducted an extensive evaluation project during FY 2011-12, resulting in a new collection for FY 2012-13 that will retain many of the most heavily used products while adding much needed content in other areas.

- The State Library forged a partnership with the Partnership Among South Carolina Academic Libraries (PASCAL) which has helped to provide a richer array of resources utilizing combined funding efforts.

2012-13

- K-12 School Technology Initiative partners participated in the TransformSC initiative.

- SCETV partnered with Lexington School District Four to provide literacy resources to its pre-K and K-3 students to include scholarships for facilitators of the PBS "Raising Readers: Preparing Preschoolers for Success" initiative. This initiative addressed reading proficiencies and works directly with classrooms and the afterschool alliances in the district.

- SCETV secured and hosted a second grant from CPB for a new SCETV American Graduate Youth Media Summit and Civil Rights Forum in the spring of 2013. Students interviewed civil rights veterans, which were archived as part of SCETV Civil Rights History inventory.

- SCETV added a new K-12 service, PBS LearningMedia, a media-on-demand service that features PBS award winning content.

- SCETV added a new social media site to

support the Common Core State Standards Initiative. The site uses the Edmodo platform for teachers to share activities, best practices and useful websites.

- South Carolina Virtual School Program (SCVSP) legislation was amended to lift the credit limitations placed on students using the SCDE program.

- SCVSP piloted 8th-grade English and Math Intervention courses with approximately 150 students in two districts. As a result of this success, 6th and 7th-grade English and Math Intervention courses were developed and offered in the summer of 2013.

- SCVSP partnered directly with schools to offer blended learning opportunities to help fulfill several needs resulting from budget cuts, reduced funding and unfilled teaching vacancies at smaller schools across the state.

2013-14

- The South Carolina Virtual School Program was officially rebranded and renamed VirtualSC by SCDE.

- SCETV conducted a statewide Teacher Survey designed to assess ways educators use K-12 resources, as well as professional development areas of need. The survey included responses from over 2,000 participants.

- SCETV Education, in conjunction with the EOC, began a new monthly newsletter desinged to increase teacher awareness of available resources and services. The newsletter was subscribed to by over 73,000 teachers and staff.

- SCETV launched ETV Teacher Courses, a new website designed to provide teachers the ability to easily search and find relevant recertification credit informtion from such sources as SCETV's Teacherline Southeast, Teacher Recertification and TeacherStep.

- SCETV began offering week-long recertification courses using a blended hands-on, Web-based curriculum called "Using Video in the Classroom."

- SCETV added a similar course titled "iBloom: Using the Internet and iPads to Support Bloom's Taxonomy," which covered the use of free Web tools and applications in the classroom, in conjunction with Project Based Learning and Flipping the Classroom instructional strategies.

- SCETV introduced a simplified and improved OnePlaceSC website, which no longer required a teacher to log-in and locate or record the resources needed to facilitate learning.

- SCETV was awarded an 18-month $200,000 grant from the CPB for "American Graduate: Let's Make It Happen." SCETV, one of 33 hub stations nationwide, convened groups from across the state in an effort to improve outcomes for students from cradle to career. Reports on these efforts were broadcast on television, radio and online.

2014-15

- The State Library's Discus program implemented IP geolocation technology for its individual databases, thereby allowing all South Carolinians to be recognized as being a resident and automatically granted access to Discus without the need for user credentials.

- Discus implemented the EBSCO Discovery Service, which provides a streamlined search tool incorporating high-end indexing, subject indexing, and relevance ranking. This "Google-like" search provides a way to retrieve multi-media, reference resources, academic journals, newspaper articles and primary sources through one search box.

- The implementation of SCETV's Digital Asset Management System provided a process to tag and catalog digital assets with the successful inventory of 104,787 assets under the American Archive grant. As a result, approximately 3,000 hours were preserved and digitized. These assets reside on servers located at SCETV and the WGBD/Library of Congress.

- SCETV and the production team at the National Black Programming Consortium completed

a two-hour documentary titled "180 Days: Hartsville," that aired in March 2015, on PBS. The documentary, a part of CPB's American Graduate: Let's Make It Happen initiative, captures the unflinching determination of teachers and principals, backed by a committed business community, that sets a high standard for excellence in Hartsville, South Carolina.

- SCETV began an extensive redesign of Knowitall.org. The service, rebranded as Knowitall.org Media, offers a wide variety of new mobile-friendly videos and a sleek efficient design.

- SCETV's online series "Original SC" and the documentary "Zip Code: Your Neighbor, Your Health" both won a 2015 Telly Award. K-12 sites across the state access the programs via StreamlineSC.

- The Bandwidth Monitoring Program, administrered by the Division of Technology, has monitoring sensors deployed in each of South Carolina's 81 public school districts, as well as six charter schools and 42 public library systems. The program ensures that connectivity and Internet bandwidth are best being used to serve the state's educational needs.

- The K-12 School Technology Initiative began a Distributed Denial of Service (DDoS) Protection Service designed to help the state's schools and libraries detect and mitigate the risks associated with this form of cyber attack. The service is offered through an agreement between the Division of Technology, Spirit Communications and AT&T.

- The K-12 School Technology Initiative, through the Division of Technology, began a Security Training Voucher Program designed to enhance cyber and information security defense proficiencies among the state's public school districts.

2015-16

- The South Carolina State Library's Discus program implemented the EZproxy hosted service. This advanced technology solution adds a higher degree of seamless authentication for South Carolina's citizens and reduces the number of obstacles and passwords users need to remember for access to the electronic resources.

- SCETV offered a new Wi-Fi service to support reading and STEAM in pre-K-12 communities, increasing access to SCETV content to students before and after schools through Wi-Fi facility hotspots and quality professional development.

- SCETV and the K-12 School Technology Initiative began the development of a new curriculum resource site, LearningWhy, to host educational lessons for schools implementing 1:1 environments.

- SCETV has launched its first station-branded public media app. The SCETV App features local, education and national content, giving patrons mobile content at their fingertips.

2016-17

- The K-12 School Technology Initiative's 2014-15 Progress Report received a 2016 Notable Document Award from the South Carolina State Library.

- SCETV began its new ETV StreamlineSC Collections within Knowiall.org, featuring local, partner and subscription content.

- SCETV launched LearningWhy, a new innovative lessons website intended for 1:1 and project-based learning environments.

2017-18

- The K-12 School Technology Initiative's goal to increase external connections to schools to 100 kbps per student by 2017 is met with average internet service capacity among all schools totaling 226 kbps.

- South Carolina becomes the first state to implement Cisco Umbrella, an industry leading, DNS-based internet security service to all school districts, library systems, and charter schools free of charge.

- SCETV launched a new 24/7 channel for children. It also launched online at SCETV.org/kids.

- SCETV won a Gold AVA International Competition award for its web-based interactive production Let's Go!, part of SCETV's Knowitall.org classroom site.

- SCETV provided live national and state coverage for the August 21, 2017, total solar eclipse. The segments are archived in Knowitall.org. The program won an Emmy.

- SCETV received a National Endowment for the Humanities digital projects grant for Reconstruction 360 that uses virtual reality to explore the legacy of Reconstruction in South Carolina. The project is available as a K-12 resource.

- ETV offered three new Teacher recertification courses for South Carolina K-12 educators: Connecting with Literacy Through Storytelling; Teaching and Learning in Carolina Classrooms, Series I; and Between the Waters: History Across the Curriculum and Hobcaw Barnoy, Series I.

- Carolina Classrooms program added online education stories to feature students involved in science, technology, engineering, math, writing nutrition and education policies.

APPENDIX E:
WHAT OTHERS ARE SAYING

Discus

- "Reliable, specifically for students; diverse collection of resources that we cannot afford at the school and district level"
  Lori June, High Hills Elementary School

- "We love the ease of use and that it's available for everyone. "
  Jennifer Traeger, Ashley Ridge High School

- "Discus is a trustworthy location to send students to do online research at their level."
  Brittany Harte, M.C. Riley Elementary School

- "Research and reading resources at our fingertips! We are using Discus for collaborative research units with 4th and 5th grades and independent reading in TumbleBooks."
  Pam Owens, Chesnee Elementary School

- "Students can find everything they need in one spot; student friendly."
  Nicole Landy, Mossy Creek Elementary School

- "Discus has easy access at school or at home."
  Sean Muzzy, Murray-LeSane Elementary School

- "We like being able to do safe research with reliable sources. Discus is our 1st go to!"
  Susan DuBose, Lexington Elementary School

- "I teach a research project each year and my students use Kids Infobits. We love how it narrows down the topics and offers so many resources on their level."
  Mandy Mitchell, York Intermediate School

- "Discus is used in every research lesson and we instruct students to start the process in Discus."
  Kaye McKinney, Beaufort High School

SCETV

- "I had never taken a course (SC Chronicles) presented in this format. I found the content to be in depth, informative and well organized. I liked that I could work at my own pace. These classes fit nicely into anyone's schedule and are very affordable."
  Andrew Bowers, South Carolina Chronicles (April 2018)

- "Rudy Mancke is a SC treasure and his passion for nature inspiring! I would definitely recommend his courses. The theme of making connections is a helpful concept for any classroom AND you get to learn so much more about our beautiful state and its inhabitants."
  Taylor Rider, Making Connections with Natural History Featuring Rudy Mancke (May 2018)

- In order for students to really grasp the meaning and intent of Natural History, they need to experience it in the context of authentic learning situations as an integral part of their school experience. NatureScene, Knowitall, Project Discovery, Carolina Stories, and Environmental Ed align with core instructional standards and have the potential to help teachers of various subjects and grade levels organize, structure and enhance their lesson/unit planning.
  L. List, Art Teacher, ETV Teacher Recertification Participant

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