



**Online Testing
Technology Readiness Analysis
Phase II
For
Anderson School District 3**

Overview of Anderson School District 3



Anderson School District 3 is located in the northwestern part of the state with the District Office located in Iva, SC. As of November 2016, the district is comprised of 5 schools, serving approximately 2,662 students. Test scores for students in grades 3-8 in the district were above the state average in all areas in 2016 for SC Ready and SCPASS.

Key Data Points

- Ms. Kathy Hipp has served as Superintendent for the past year.
- District Poverty Level is 73%
- Teacher Retention Rate is 88%
- Breakdown of schools:
 - Flat Rock Elementary, 10 years old, grades PK-5, 387 students
 - Iva Elementary, 42 years old, last renovation 2002, grades PK-5, 384 students
 - Starr Elementary, 58 years old, last renovation 2002, grades PK-5, 518 students
 - Starr-Iva Middle, 70 years old, last renovation 2002, grades 6-8, 557 students
 - Crescent High, 40 years old, last renovation 2002, grades 9-12, 745 students

Participating District Personnel

Name of District Staff Member	Roles/Responsibilities
Bruce Alverson	Director of Technology
Chad Sanders	Network Administrator

Purpose of This Analysis

The purpose of this analysis is to provide an independent evaluation of the ability of Anderson School District 3 to organize and conduct online testing for their students starting in the spring of 2017. Federal online testing guidelines will take effect in 2018 but South Carolina's legislature has implemented plans for all districts to begin formal online testing in March of 2017. This proactive technology analysis will benchmark a district and their schools in several key areas and provide a technology readiness score that will ultimately lead to a roadmap of detailed tasks and deliverables that are necessary to improve any of the deficient areas.

The four specific objectives of this analysis are:

1. Analyze the strengths and weaknesses of the school district and quantify their ability to carry out the online testing activities in 2017 and beyond while documenting any major gaps in "readiness."
2. Work with the district to identify recommendations to bridge the gap between where the district is and where they need to be in terms of technology readiness to carry out these activities.
3. Collaborate with the district to put in place a blueprint for completing any tasks (or procurements) necessary to achieve "technology readiness."
4. Identify opportunities for the district to collaborate with other state agencies and/or school districts to share fixed costs.

Analysis Background

During the 2015 budget planning period, Superintendent Molly Spearman championed the General Assembly to consider the request of reserving a portion of the K-12 Technology Initiative funds for the purpose of providing technology technical assistance to rural and less affluent districts of need. After funds were allocated through the Proviso, the Superintendent's office called together a small Advisory Task Force to begin exploration of a plan of action to implement the initiative. The Task Force included South Carolina Department of Education (SCDE) staff, representation from rural school districts, legislative representation, and private sector.

The Proviso states:

"1.94. (SCDE: Technology Technical Assistance) Of the funds appropriated for the K-12 Technology Initiative, the department is authorized to withhold up to \$350,000 in order to provide technology technical assistance to school districts."

The purpose and spirit of the Proviso is for the SCDE to provide technology-consulting services ("technology technical assistance") to school districts that would otherwise struggle in securing such services and resources. In particular, consulting services would initially focus on evaluating the state of technology, in participating districts, as it relates to readiness for standardized, online assessments beginning in 2017 and the capacities to offer quality computing based instruction, including Wi-Fi availability for support of instruction.

Proposed District Participants:

While there are a substantial number of rural-based districts in the South Carolina public school system, funds allocated for the first year's initiative were not adequate to offer high quality, and much needed, external, independent consulting services to all districts of need. Therefore, it was recommended that initial focus be placed on the plaintiff districts involved in the lawsuit between districts and the state (Abbeville vs. South Carolina.) and any other rural districts identified by the State Superintendent's office. There were initially at least 30 districts involved in the state suit and about 9 remained by the end of the suit. All of the original Abbeville Law Suit districts were given the opportunity to participate in the Online Testing Technology Readiness Analysis. In late 2016 the Legislature approved additional funding to provide this study to the remaining school districts in the state.

Proposed Consulting Resources/Partners:

The South Carolina Department of Education did not have adequate staffing to fully offer technology consulting services of this magnitude. Therefore, it was suggested that SCDE seek and secure external, independent contracted services to facilitate this initiative. The state interviewed several industry-consulting resources and opted to leverage a lead consultant who helped the state with the analysis and writing of the Educational Technology Plan for years 2014-2017. Robert Cardelli was contacted in late 2015 and the consultant team was finalized and officially began work the second week of November 2015.

Initial Outcomes:

As a result of the initiative, each participating district receives a personalized report detailing the consultants' findings and recommendations as to the district's technology readiness for state and other online assessments, 1:1 computing, and enhanced Internet connectivity (Wi-Fi) for the support of instruction in their schools. A blueprint outlining specific steps the district and their schools need to focus on is presented to the district's superintendent as part of the final report.

Evolution of Online Testing Requirements

No Child Left Behind legislation required states to measure students' progress in reading and mathematics annually in grades 3-8 and at least once in grades 10-12 by 2005-2006. The *Every Student Succeeds Act* (ESSA) maintains the requirement that each state implement "a set of high quality student academic assessments in mathematics, reading or language arts, and science" (114th Congress, 2015, p. S.1177-24) among its provisions. Further, mathematics and reading or language arts assessments will be administered in each of grades 3-8, and at least once in grades 9-12.

Beginning in the 2014-2015 school year, learners faced a new testing challenge in that their assessments of learning will be via online testing of the Common Core standards. Assessments are being developed by organizations such as PARCC, DRC, ACT and SBAC. Tests may take learners from 8-10 hours to complete and must be integrated into the school's daily and weekly calendar of events to complete the necessary activities. (Doorey, 2014; Gewertz, 2013). Online testing has posed concerns about required technology, sufficient bandwidth, computerized test security, learners' technology skills, and new forms of test anxiety.

States Must Become Familiar with Updated Legal Policies for Computerized Testing

Computerized testing raises new issues that require updating of test security laws and policies, as policies written for standardized testing administered via paper-and-pencil are no longer sufficient. ACT has a highly relevant report in this regard: [The End of Erasures: Updating Test Security Laws and Policies for Computerized Testing](#) by Michelle Croft (2014).

Croft (2014) outlined many concerns, noting that computerized testing does not eliminate cheating and test piracy. Such practices just take on different forms. Unique risks include such things as educators logging in to tests to view questions or change student responses, computer hacking, keystroke logging, printing, emailing, or storing test information in a computer outside the test delivery system. There is a greater risk of students accessing the Internet and other programs during testing. There is great concern about students using their own devices for testing and who has administrative privileges. Technology staff and teachers need to consider how testing workstations need to be positioned and secured so that students can't see what's on the monitors of others.

Croft (2014) recommended that states update their state statutes and regulations to reflect the shift to computer-administered assessments, concentrate efforts on controlling test access, and ensure that there is a single test security section within the updated manual that contains answers for any question that a test administrator has about test security. For example, policies should consider how student login information is secured. There should be rules on how tests are reactivated if disrupted. Additionally, these rules should emphasize having more than one proctor aid in the reactivation, and most importantly, proctors should maintain a log of all reactivations to provide documentation in the event of an investigation. Likewise, the technology should be secure and the testing window should be as short as possible to reduce the likelihood that items are compromised. Finally, states should implement steps to actively monitor test access issues through data reports to determine if there have been excessive logins or logins at times when testing should not occur (e.g., on the weekends), and have clear policies in place detailing how violations will be handled.

The test security section should also include an itemized list of what materials are secure (e.g., work folders, student authorization tickets with IDs and passwords, session rosters, scratch paper, reference sheets). "Information about who can access the test should be clearly articulated across the school and communicated to all proctors on the day of testing. In addition, there should be information on how to report test security concerns and possible violations, which can be applicable regardless of the testing format" (Croft, 2014, p. 4).

It is vital for states to adequately prepare districts and schools for the evolving testing requirements and to proactively ensure educators and students are familiar with any new policies regarding computerized test administration, including what they, test proctors, and students may and may not do. Having these policies and procedures in place is critical to the success of the testing process and the legal implications for violating any of these policies are potentially severe. Advance planning and communication is required to minimize the risks associated with testing. Any technological failures in the administration of the tests could spark an outcry to invalidate the results; especially considering that high-stakes test scores are factored into school grades, teacher salaries, and federal assistance to the state. The stakes are too high!



South Carolina's Testing Requirements

[ACCESS for ELLs® \(WIDA\)](#)

English language proficiency assessment for limited English proficient students. Complies with the requirements of the No Child Left Behind Act of 2001, 20 USC 6301 et seq. (2002).

Purpose: English language proficiency

Grades: K through 12

Testing Schedule: February 6–March 24, 2017

[ACT WorkKeys®, \(WorkKeys\)](#)

ACT WorkKeys is a job skills assessment. The South Carolina Code of Laws, section 59-18-325, requires that all eleventh grade students take ACT WorkKeys®.

Subjects: Reading, Applied Mathematics, and Locating Information.

Grade: 11th Grade

Testing Schedule: March 22-April 19, 2017

[End-of-Course Assessment Program, \(EOCEP\)](#)

End of Course Examination Program (EOCEP) is a statewide assessment program of end of course tests for gateway courses to meet federal accountability requirements.

Subjects: Algebra 1, English 1, Biology 1, and US History and the Constitution

Grade: 11th Grade

Testing Schedule: Dec 1, 2016 - Jan 27, 2017, May 1 - last day of School, June 19 - July 21, 2017

[South Carolina College and Career READY Assessments, \(SC READY\)](#)

Statewide assessments in English language arts (ELA) and mathematics that will meet all of the requirements of Acts 155 and 200, the Elementary and Secondary Education Act (ESEA).

Subjects: English Language Arts and Mathematics

Grades: 3 through 8

Testing Schedule: April 7 – June 5, 2017

[South Carolina Palmetto Assessment of State Standards, \(SCPASS\)](#)

SCPASS test items measure student performance on the South Carolina Academic Standards. The SCPASS test items are aligned to the standards for each subject and grade level.

Subjects: Science and Social Studies

Grades: 4 through 8

Testing Schedule: The last thirty (30) days of school

[The ACT®, \(ACT\)](#)

The ACT test scores provide information about progress toward college readiness and are widely used by colleges in making decisions about admission. This test is required by The South Carolina Code of Laws, section 59-18-325, which specifies The ACT® test must be administered to all eleventh grade students.

Subjects: English, Reading, Mathematics, and Science, and Writing test (essay).

Grade: 11th Grade

Testing Schedule: February 28-March 14, 2017

Overview of Technology Readiness Analysis Team

A team of independent consultants has been hired by the State of South Carolina to conduct all aspects of this assessment. The objectivity that outside resources bring to the table has helped reduce the perception that “big brother” is searching for negative data points on a district’s leadership team. The use of third party resources has helped foster open and honest dialogue and allowed the district staff and consultants to collaborate in all aspects of the process. The team is comprised of the following individuals:

☐ **Rob Cardelli**

- Project Manager overseeing all facets of the analysis
- More than 20 years of education and government consulting expertise
- Personally worked with over 100 education customers including helping the Department of Education in South Carolina gather requirements and write the State’s Educational Technology Plan for years 2014-2017

☐ **Brenda Bryant**

- Former school teacher in Richland 2 school district
- Focusing much of her attention on the readiness of students and teachers along with professional development concerns

☐ **Bob Jones**

- Local I/T and Management Consultant with over 30 years of experience
- Focusing much of his efforts on the infrastructure, hardware, security and funding concerns
- Expert in data analytics and reporting

Participating Districts

The school districts that the state has identified as potential candidates for these optional readiness analysis studies have been prioritized into the following three categories:

- ❑ **Wave 1-** Includes the nine school districts that were still involved with the Abbeville Lawsuit at the time of the verdict
- ❑ **Wave 2-** Complete list of all districts participating in the Abbeville Lawsuit at any point in time over the last 20 years
- ❑ **Wave 3-** Other districts categorized as impoverished
- ❑ **Wave 4-** Remaining districts currently participating in the study

Wave 1

Wave 2

Wave 3

Wave 4

<ul style="list-style-type: none"> • Allendale • Dillon 3 • Dillon 4 • Florence 4 • Hampton 2 • Jasper • Lee • Marion • Orangeburg 3 	<ul style="list-style-type: none"> • Abbeville • Bamberg 1 • Bamberg 2 • Barnwell 19 • Barnwell 29 • Barnwell 45 • Berkeley • Chesterfield • Clarendon 1 • Clarendon 2 • Clarendon 3 • Florence 1 • Florence 2 	<ul style="list-style-type: none"> • Florence 3 • Florence 5 • Hampton 1 • Laurens 55 • Laurens 56 • Lexington 4 • Marlboro • McCormick • Orangeburg 4 • Orangeburg 5 • Saluda • Williamsburg 	<ul style="list-style-type: none"> • Calhoun • Colleton • Darlington • Edgefield 	<ul style="list-style-type: none"> • Aiken • Anderson 1 • Anderson 3 • Beaufort • Charleston • Cherokee • Chester • Greenville • Greenwood 52 • Horry • Lancaster • Lexington 1 • Lexington 2 • Lexington/Richland 5 	<ul style="list-style-type: none"> • Newberry • Oconee • Pickens • Spartanburg 1 • Spartanburg 2 • Spartanburg 4 • York 2
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Plaintiff Districts

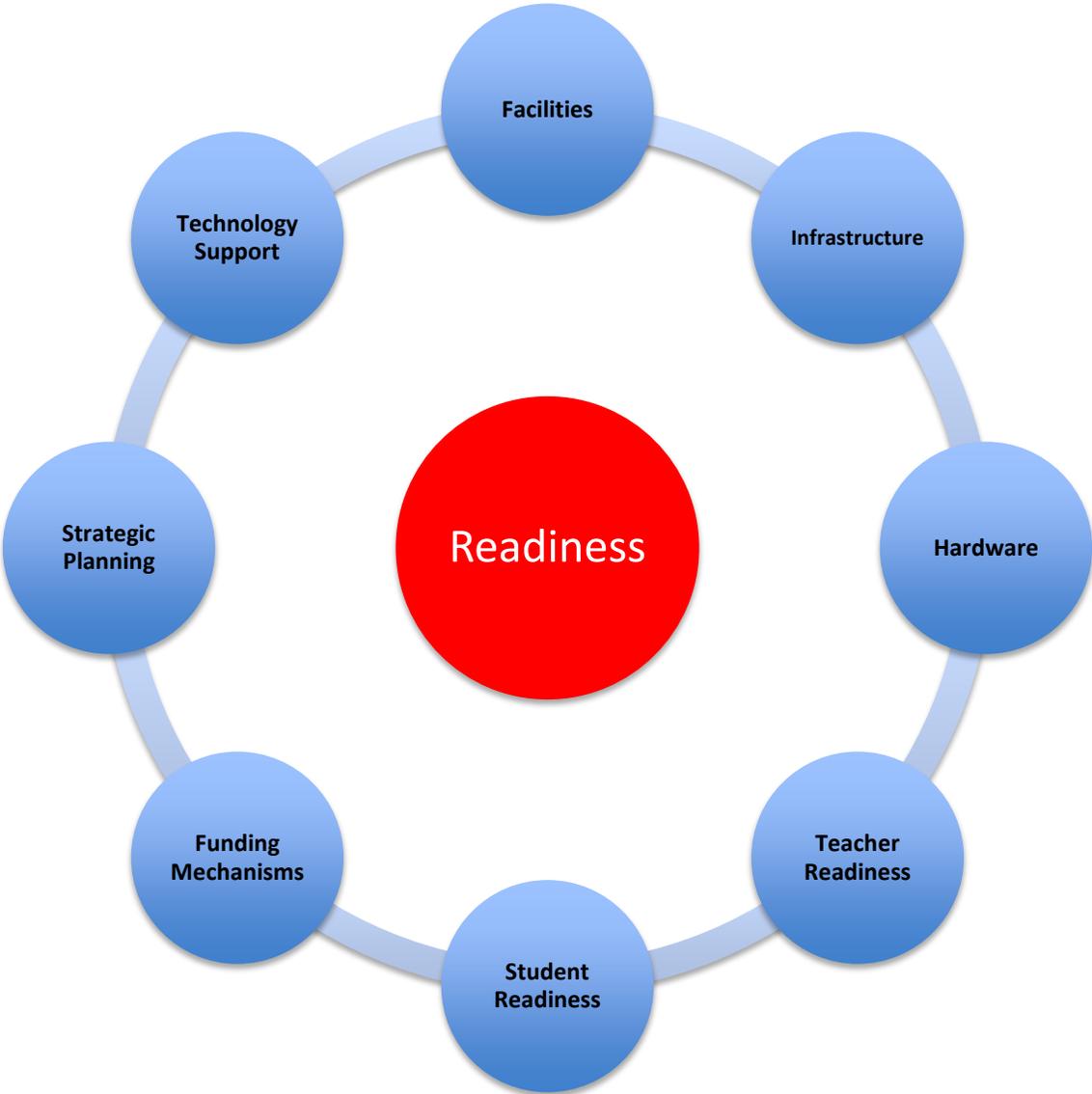
Analysis Methodology

The consultants worked with several of the districts, early in this process, to design and ultimately refine a methodology that allows for rapid data gathering with multiple collaboration opportunities for district staff to review the findings and edit the documentation to ensure the report accurately reflects the current state of the district. The consultants realize how busy the district staff are and created a methodology that is non-invasive in nature and flexible to allow the participants to work around their “day jobs” to reduce the impact on their daily operations.



Primary Areas of Focus

The technology analysis team identified several categories that are critical for a school district to achieve technical readiness for online testing. Within each category there are multiple variables that directly impact that category's degree of readiness. Accurately documenting these variables helps paint a picture of the overall level of readiness of the school district and also can be used to craft a blueprint for improving those deficient areas. The graphic shows the eight (8) categories currently being used to measure the degree of readiness. The following pages provide details surrounding the variables that are being analyzed during the analysis process.



Categories and Variables Being Measured

Note: These are generic categories and questions being asked are not specific to any one district. Each bullet point receives a score that is averaged for the overall section.

❑ Impact of Facilities

- How does the availability or lack of space impact the district's level of readiness?
- How does the age of the schools impact cabling, wireless, and ability to connect to the Internet?
- Does poor air conditioning or ventilation in server rooms, network closets, or computer rooms present a risk to the availability of the computers for testing?
- Are there situations where rodents chew through cables and bring down the district computer network? How long is the network down and what is the frequency of these events?
- Are there leaky ceilings, poor flooring, mold, or other environmental conditions that could impact the testing facility?

❑ Readiness of Infrastructure

- How does the amount of available network bandwidth impact the testing strategy?
- Are there any risks to testing due to the "up time" of the district (or school's) network?
- How many simultaneous testing machines can a district handle during any block of time?
- Does the district need additional wireless access points to conduct testing activities?
- Do the age and type of routers or switches impact the performance of the network and the ability of students to test in a given timeframe?
- Does the current wiring/cabling of the network impact the overall system performance? Is there anything that needs to be improved to enhance the testing experience?
- Is there any evidence that the security of the district's networks or computers could impact online testing?

❑ Readiness of Existing Hardware

- How does the number of available computers directly impact the district's ability to test?
- Is there a need to upgrade the available memory (RAM) in the testing computers? How much memory is currently in the testing machines and what (if any) performance issues have been witnessed?
- Are there any concerns over the size or quality of the testing monitors?
- Is there evidence that the different types of equipment being used for online testing directly impact the staff's ability to support the technology? Are there multiple products in use overcomplicating the support strategy and overall skills of the district staff?
- Do the current operating systems of the testing computers limit the ability to test? Are there any upgrades being planned and when will these take place?
- Are there adequate backup testing machines and/or accessories to ensure the necessary number of devices on the day of testing?
- Are there any procurements currently being contemplated and will they need to be amended to reflect changes to the testing strategy?

❑ Teacher Readiness

- Are the teachers adequately prepared for 2017 online testing requirements?
- Do the teachers require professional development training to educate them on how to better leverage technology?
- Do the teachers require assistance creating and conducting computer literacy classes for their students?
- Does the district have funding to offer computer literacy?
- What is the turnover rate of the teachers? How does the turnover rate impact the district's testing strategy?
- How do the teachers interact with the district technology staff?
- Are teachers aware of testing policies and are they properly prepared to manage testing cycles?
- Do the teachers need assistance in preparing their students for computer literacy?
- Are there any other concerns related to a teacher's knowledge or ability to assist with online testing?

❑ Student Readiness

- How does the level of computer proficiency of the student's impact online testing? Are there any concerns that students are not properly prepared to take a test on a computer?
- Does the district offer kindergarten through second grade computer classes?
- Is there any proactive analysis to identify disadvantaged students in a classroom with little to no computer literacy? What, if anything, is the district doing to help these potentially at risk students?
- Does the district allow students to check out computers to take home?
- How does a district manage situations where two different teachers leverage technology differently? Is there any analysis into the student's technology proficiency between these two scenarios?
- Does the district offer practice tests to allow the students to get familiar with the testing process and what is expected of them?
- Are students aware of testing policies and the implications?
- Is there any evidence from previous online testing cycles that students need assistance in specific areas? Examples might include: typing skills, knowledge of scrolling or potentially how to properly use a mouse.

❑ Technology Support

- How many resources are available at the district level and what are their roles and responsibilities?
- What are the main skills of the staff? Are there any skills missing in the support model?
- What functions are outsourced?
- What kind of help desk system is in place and how many ticket items are open?
- How many job duties does the staff have to perform?
- Does the district staff have any assistance from within the school?
- What would the impact be on the school's ability to test if a key resource were to call in sick or resign during the testing window?
- Are there any concerns about the availability of technology staff to support the testing process?
- Are policies and testing procedures documented and disseminated to all staff?
- Are students and their families made aware of the testing policies and schedule?
- Does the technology support team regularly communicate their needs to the administration and/or school board? What is the relationship between these parties?

□ **Funding Mechanisms**

- Does the district leverage all available e-Rate funds?
- How has the district utilized e-Rate funds in the recent past?
- Does the district have experienced grant writers?
- How have technology related grants been utilized in the recent past?
- Are there any funds from e-Rate or grants that have NOT been utilized but could be leveraged to help improve the overall readiness of the district for online testing?
- Who writes the e-Rate documentation and grants? Internal or external resources?
- Are there other sources of funds the technology staff has access to and for what are they used?
- How does the district determine how the funds will be utilized?
- Are there any situations where money earmarked for technology is denied and utilized for non-technical district needs?
- What is the role of the technology staff in setting budgets and preparing for online testing needs?
- Is there a formal mechanism for cross training multiple district staff in the rules, regulations and nuances of applying for e-Rate, grants or other funding sources?
- How are the district's funds allocated for student computer literacy being spent?

□ **Strategic Planning**

- Does the district have an up to date district wide strategic plan?
- Does the district have an up to date district technology strategic plan?
- Are the district's strategic plan and the TECHNOLOGY strategic plan properly aligned?
- What is the level of involvement of the local school board?
- Who is involved in strategic planning?
 - *Superintendent?*
 - *Teachers/Faculty?*
 - *I/T staff?*
 - *Local Vendors?*
- How does the district proactively plan for new technology acquisitions?
- How do the schools leverage district I/T staff?
- How are students or teachers leveraged?
- How are local technology vendors utilized?
- What is the level of involvement with the local "consortium"?
- How does the technology staff procure hardware or services?
- Is there a risk of "single point of failure" with the district staff member?
- Does the district need specific training in proper strategic planning?
- What is the role of the finance officer and their level of knowledge around I/T funding?
- What is the level of knowledge of your local state representatives in regard to your needs and funding challenges?
- What assistance is required from the state?

Overview of Readiness Rating Scale

To evaluate the readiness of a district in multiple areas the team created a rating scale to objectively measure how effectively (or ineffectively) a particular area rates compared to other districts. After each area has been given a score the analysis team compiles the statistics and averages them to derive a final readiness score for the district. To simplify the process the consultants used a scale of 1-5 that increases in increments of half a point. The following scale will be used to track future readiness decisions:

Rating	Description
1	The district is unable to prove they can successfully complete online testing in 2017.
2	The district could feasibly conduct testing in 2017 but there are multiple areas that need to be improved to make this happen and if they are not completed testing will more than likely be unsuccessful.
3	The district is able to meet the needs for online testing in 2017 but has several areas where they could improve and multiple risks exist that could significantly impact the overall health of the organization. If these issues are not addressed it's likely the district will deteriorate rapidly
4	The district is doing everything right within their power. There are some areas that are outside of their control that need to be addressed to help ensure the future stability of the district.
5	The district is prepared for 2017 and beyond. They do not have any measurable risks associated with Online Testing for 2017 or beyond. They can handle online testing for all grades and subjects.

Summary of Findings for Anderson 3

Overall Readiness Score	3.8
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Impact of Facilities

Readiness Score	3.9
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Area of Focus	Observations	Recommendations
Availability of Testing Labs	<ul style="list-style-type: none"> Anderson 3 does not have sufficient computer lab space to accommodate online testing. District has to use CATE and business labs for testing in the middle school and high school. 	<ul style="list-style-type: none"> Anderson 3 will need to utilize both labs and classrooms for online testing. District will need to use computer carts and iPads in classrooms to have a sufficient number of devices to complete online testing within the window.
Age of Buildings and Impact on Cabling and Wireless Connectivity	<ul style="list-style-type: none"> Flat Rock Elementary is 10 years old. Other schools are between 40 and 70 years old but have been renovated in the last 12 to 15 years. Cabling and wireless infrastructure are in good shape and current technology. 	<ul style="list-style-type: none"> Anderson 3 has done an outstanding job maintaining and renovating their facilities. No recommendations at this time.
Environmental Concerns (i.e. mold, air conditioning and ventilation concerns, excessive noise)	<ul style="list-style-type: none"> No problems reported with air conditioner noise in computer labs or classrooms. No HVAC problems reported in wiring and data closets. 	<ul style="list-style-type: none"> Proper HVAC must be installed in all data closets. Testing activities could be at risk if the servers are overheated and the testing computers are unavailable for the students to utilize. No recommendations at this time.
Condition of desks and chairs where students will be testing	<ul style="list-style-type: none"> No issues with desks or chairs were reported or observed. Tables and chairs are correctly sized for students being tested. 	<ul style="list-style-type: none"> District should not overlook the significance that the desk and chairs have on the overall testing experience. Be sure furniture is age appropriate for the students being tested. No recommendations at this time.
Other Comments or Concerns	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">

Infrastructure

Readiness Score	4.2
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Area of Focus	Observations	Recommendations
Available Bandwidth to the district	<ul style="list-style-type: none"> Anderson 3 has an incoming bandwidth of 300 mbps which is the maximum provided by state. District carefully monitors streaming and high bandwidth apps during testing and limits as required. 	<ul style="list-style-type: none"> As evolution of online testing grows, Anderson 3 will need to do a performance test to ensure 300 mbps will handle all of the district's needs. District should continue to collect technical data for DTO to substantiate the need for more bandwidth.
Disaster Recovery Solution	<ul style="list-style-type: none"> District uses AppAssure device as a backup solution. District does a full nightly backup with 30+ day's retention. District has a disaster recovery device with cloud storage of critical servers. Can bring up servers on device or in cloud in case of a disaster. 	<ul style="list-style-type: none"> The consultants recommend Anderson 3 collaborate with their peers in other districts to obtain a discounted vendor contract for DR. No further recommendations are needed.
Stability of Networks Within The Schools	<ul style="list-style-type: none"> Some schools have spotty power outages but District has UPS units in place at these schools. District IT has a backup generator on site. District has a 99%+ system uptime. 	<ul style="list-style-type: none"> No recommendations in this area other than to continue to refresh UPS units as required.
Available Bandwidth to the Schools	<ul style="list-style-type: none"> District has total of 2 GB from IT department to schools. Each school and district office has an incoming bandwidth of 250 mbps. District has not maxed out the bandwidth to the schools. 	<ul style="list-style-type: none"> Formal load testing should be conducted to ensure networks can adequately handle the demands of online testing and streaming educational video content. Upgrading network backbone to 1 GB is recommended.
Wireless Networks <ul style="list-style-type: none"> Routers Access Points Switches 	<ul style="list-style-type: none"> District has a 1:1 classroom to access point (AP) ratio. Anderson 3 is utilizing 1 GB switches. 	<ul style="list-style-type: none"> District's wireless infrastructure is in excellent shape. No further recommendations are needed.
Security Issues / Plans	<ul style="list-style-type: none"> District has a security policy in place for hardware and software. Testing rooms are monitored during testing activities. 	<ul style="list-style-type: none"> Consult with the DOE on a security plan and ways to prevent outside attacks

Hardware

Readiness Score	4.5
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Area of Focus	Observations	Recommendations
Available Testing Devices	<ul style="list-style-type: none"> Crescent High - 210 lab computers, 120 student laptops. Star-Iva Middle - 180 lab computers, 60 student laptops. Elementary schools each have 60 lab computers and classroom sets of iPads in grades 3-5. 	<ul style="list-style-type: none"> Additional testing computers or moving to 1:1 in the district is recommended.
Age and ability to upgrade computers	<ul style="list-style-type: none"> All Anderson 3 computer lab computers are Windows 10. Lab computers are 1 to 4 years old. Desktop have 22" monitors, Laptops (ChromeBooks) have 11" screens. 	<ul style="list-style-type: none"> Device age and configuration is not an issue. No recommendations are needed in this area.
Available RAM (Memory) in testing computers	<ul style="list-style-type: none"> Majority of computers have 8 GB RAM. No problems have been reported with this amount of RAM. 	<ul style="list-style-type: none"> Memory in devices is sufficient for online testing and has capacity for increasing streaming demands. No further recommendations are needed.
Adequate replacement hardware	<ul style="list-style-type: none"> Anderson 3 has an inventory of available replacement machines should a machine go down during online testing. 	<ul style="list-style-type: none"> Adequate spare batteries, power supplies and mouse should also be available during testing.
Support and Replacement Strategy	<ul style="list-style-type: none"> District has a 4 year refresh plan for all desktops and laptops. Replacement strategy is supported by bond funds. 	<ul style="list-style-type: none"> No recommendations are needed in this area. The district has an excellent replacement strategy in place.
Other Comments or Concerns	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">

Teacher Readiness

Readiness Score	3.1
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Area of Focus	Observations	Recommendations
Technical Proficiency of Staff	<ul style="list-style-type: none"> Anderson 3 is not able to offer teacher computer literacy classes in all grades. The District has found the technical proficiency of new teachers varies greatly. Work orders are entered by teachers when they have problems. 	<ul style="list-style-type: none"> The district would benefit greatly from the addition of an Instructional Technology Coach. There are no resources available on staff to assume this role. Incoming teachers should be evaluated to determine their level of computer literacy and technical proficiency.
Teacher Retention	<ul style="list-style-type: none"> Teacher retention rate is approximately 88%. Most teachers leave to move closer to family, home, etc. No indication that the level of technology in the district impacts teachers' decision to leave the district. 	<ul style="list-style-type: none"> Additional professional development is needed to ensure new teachers coming in to REPLACE outgoing teachers are properly trained. Unfortunately this retention level is common for a rural district like Anderson 3. Since much of the retention issues are out of the district's control, there are no recommendations at this time.
Teacher Utilization of Technology	<ul style="list-style-type: none"> Teachers need Professional Development (PD) on new programs and teaching methods in order to fully utilize technology in the classroom. Different schools and teachers use different programs. No District wide professional development initiative. 	<ul style="list-style-type: none"> Teachers should be surveyed to understand their reluctance to use technology in the classroom. Additional professional development resources (people, money, time) are needed. The State used to supply PD resources.
Teacher Technology Literacy Development	<ul style="list-style-type: none"> The District offers some PD on teacher work days. There are no Instructional Technology coaches in the District. Some schools have a person than can help train teachers, but not all. 	<ul style="list-style-type: none"> Additional professional development is warranted but must be accompanied by a formal plan on how and when to leverage the training resources. The teachers should be held accountable by administration to take the training and utilize the lessons learned in their job functions.
Other Comments or Concerns	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">

Student Readiness

Readiness Score	4.3
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Area of Focus	Observations	Recommendations
Availability of Computer/Typing Classes for K-2	<ul style="list-style-type: none"> District is using the typing program from the Virtual SC in Elementary schools. Most students are comfortable with computers but there is always room for more training. 	<ul style="list-style-type: none"> Keyboarding lessons need to start prior to the 3rd grade. Formal computer literacy and keyboarding activities are necessary to ensure 3rd graders are prepared for the testing requirements. District is already using free keyboarding programs from Virtual SC.
Level of Poverty/Home Exposure to Computers	<ul style="list-style-type: none"> Anderson 3 has a poverty index of 73%. District has programs for homeless students so they get special help. Exposure to computers at home varies greatly throughout the District. District does not check out computers to students for them to take home. 	<ul style="list-style-type: none"> The fact that many of the district's students come from homes where heavy and consistent computer usage is unlikely only increases the need for formal computer literacy classes in the earlier grades.
English as a Second Language Concerns	<ul style="list-style-type: none"> District has an English as a Second Language (ESL) population of approximately 3% of all students. Most ESL students receive special accommodations for testing. 	<ul style="list-style-type: none"> The consultants recommend the district staff continues to work closely with the schools to formally give the ESL students an opportunity to take a practice test to ensure they are adequately prepared for testing activities. Simulated testing will help identify any potential concerns in a proactive manner
Availability of Sample Tests/ Has District already attempted online assessment testing?	<ul style="list-style-type: none"> Anderson 3 has tested some SC Ready and SC Pass last year. All testing this year will be online. Students are told of the importance of testing and do well with the tests. 	<ul style="list-style-type: none"> The online testing already completed has given the district experience and a comfort level in their ability to successfully conduct online testing. No recommendations at this time
Other Comments or Concerns	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">

Funding Mechanisms

Readiness Score	3.8
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Area of Focus	Observations	Recommendations
e-Rate Funding	<ul style="list-style-type: none"> Technology Director is waiting for their 1:1 rollout to see what infrastructure upgrades may be needed. A Level 2 request will need to be done at that time. Director of Technology determines e-Rate spending. District uses a contractor, e-Rate 360 (Carl Parker), to collect information and file e-Rate documentation. 	<ul style="list-style-type: none"> District should be commended for maximizing and effectively utilizing available e-Rate. No recommendations needed in this area.
Grant Writing	<ul style="list-style-type: none"> Some teachers are doing GoFundMe and other classroom specific grants. District does not have a grant writer. 	<ul style="list-style-type: none"> The consultants recommend collaborating with neighboring districts to share a resource to assist in this area. This is a common solution in many states It is important that any technology received through grants is approved by the technology staff to minimize compatibility issues.
Technology Budget	<ul style="list-style-type: none"> District technology budget is \$81,700 per year. Budget is set by Superintendent and Board. Budget has been the same for the last 4 years. 	<ul style="list-style-type: none"> Through the efforts of their administration and Director of Technology, Anderson 3 has been very prudent in managing available funding. Continued prudent planning and management of available funds is imperative for the financial health of the district District will need to find alternative funding to offset the reduction in K12 initiative money.
Other Comments or Concerns	<ul style="list-style-type: none"> Anderson 3 uses bond money for refresh. Title One is used for SmartBoards and iPads in the 3 elementary Schools. Principals and Title One Coordinator determine how Title One funds are spent. 	<ul style="list-style-type: none"> The increased use of technology in the classroom and the technology demands of online testing require predictable funding for technology including a line item in the general budget

Strategic Planning

Readiness Score	3.5
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Area of Focus	Observations	Recommendations
Who is involved in strategic planning?	<ul style="list-style-type: none"> District administration listens to Director of Technology for input on technology needs and for planning. District has a strategic plan but it may need more planning and detail. Sometimes the schools go off on their own with programs. 	<ul style="list-style-type: none"> Best practices require that the technology staff regularly updates the school board on technology usage and needs. Provide more visibility of the needs and successes of the technical support staff to the school board.
The role of technology is agreed upon by all parties	<ul style="list-style-type: none"> There is good communication and vision with district administration and school board. Just went through Accreditation last year so the need to make teacher needs a priority was addressed. 	<ul style="list-style-type: none"> It's very important that the technology staff have a methodology for educating administrative staff on technology needs and recommendations.
Professional Development Strategies	<ul style="list-style-type: none"> District has identified a need for more professional development. District could benefit from more long term planning. 	<ul style="list-style-type: none"> Survey teachers and staff to see what kinds of professional development they would like to see. Additional professional development resources (people, money, time) are needed. The State used to supply PD resources.
Other Comments or Concerns	<ul style="list-style-type: none"> 	<ul style="list-style-type: none">

Readiness of Technical Staff to Support Online Testing

Readiness Score	3.2
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Area of Focus	Observations	Recommendations
Technical Support Staff	<ul style="list-style-type: none"> District staff consists of the Technology Director, a Network Administrator, a PC technician and a PowerSchool Administrator. Technology staff tries to be proactive but frequently has to deal with unexpected issues. District has a work order system and handles 150-250 tickets a month. 	<ul style="list-style-type: none"> Help desk tickets increase during online testing due to the lack of available staff. Having additional resources inside the schools serve as the front line for technical issues might be needed.
Technical skills and proficiency of support staff	<ul style="list-style-type: none"> Existing technology staff must cover all areas of technology between them. District has not experienced any issues with retaining technical staff. 	<ul style="list-style-type: none"> The Director of Technology should identify the skill sets needed to fill the needs of the district. Additional staff may be needed. Losing any of the key IT resources could cause significant damage to the existing support model
What is the role of I/T during testing?	<ul style="list-style-type: none"> District only has 3 people to provide technical support for 5 schools. This could potentially cause major disruptions during online testing. Technical staff has spent a significant amount of time supporting on online testing this year. 	<ul style="list-style-type: none"> As online testing grows, Anderson 3 may need to increase the technology staff. The current staff is only marginally able to support the district during online testing.
Availability of staff to proactively engage with the teachers and administrative staff	<ul style="list-style-type: none"> Only 2 schools have someone on site to assist teachers on technology related problems. Other 3 schools must rely on technical staff only. Schools regularly request that additional technical support be available. 	<ul style="list-style-type: none"> Training of school resources OR students could help reduce the help desk ticket volume and free up I/T staff to be more strategic. District could benefit from Instructional Technology Coaches to proactively engage with both teachers and administrative staff.
Risk of Single Point of Failure. If a key resource leaves will testing become at risk?	<ul style="list-style-type: none"> The Technology Director feels that the Technology Staff can cover his roles during his absence. The Technology Department has a fairly good cross training program, but not everyone can do everything. If any staff member was sick for an extended period or left the district, it would be significantly impact the technology department's ability to support the district. 	<ul style="list-style-type: none"> The district should focus on cross training and documenting roles and responsibilities. Consultants feel that Anderson 3 has barely enough technology staff to adequately to support the District with the added demands of online testing. Additional technology staff is recommended.

Additional Consultant Observations

Highlighted below are the most frequently cited strengths of the school district, which can be used as a foundation for creating a roadmap to address any areas of concern. The items in the table are rank-ordered according to the frequency with which they were mentioned in the interviews. Multiple points of engagement took place with a minimum of two analysis team members involved with every district.

Rank	Strengths	Common Themes
1	Attitude / Enthusiasm	Everyone is tired of fighting fires and not having the ability to proactively address many of the things that need to be corrected. Cooperative and positive attitude of management and staff.
2	Work well together	Sense of collegiality - team works well together. Partnerships among schools, other districts and/or vendors. We will come together on this.
3	Dedication	Level of commitment. Very dedicated people, people who are willing to get the job done and get it done well. Hard workers who are willing to do whatever it takes to get the job done.

Commonly Cited Concerns

Listed below are the most frequently cited concerns about testing that were documented over the course of the analysis process.

Rank	Concern	Sample Answers
1	Budget	Concerns that the funds that will be necessary to procure additional infrastructure, hardware and/or professional development will be sufficient and predictable.
2	Staffing Levels and Workload	Inadequate staff to complete the workload to prepare for testing. The focus on assisting teachers and their classroom technology consumes the majority of the staff's time leaving little availability for additional tasks.
3	Professional Development	New or upgraded technology will require significant training. There are limited funds available for professional development and few resources available to conduct the training.
4	Disaster Recovery	Limited funds available for proper disaster recovery.

District's Inventory of Readiness Needs

Category	Specific Need	Detail Specific Need (As required)	Vendor	Quantity	Estimated Cost (One Time)	Estimated Recurring Cost	Potential Funding Source	Date Needed
Facilities	Space/Testing Rooms							
	Air Conditioning Unit							
	Roof/Ceiling Repair							
	Desks							
	Chairs							
	Other							

Category	Specific Need	Detail Specific Need (As required)	Vendor	Quantity	Estimated Cost (One Time)	Estimated Recurring Cost	Potential Funding Source	Date Needed	
Infrastructure	Bandwidth								
	Routers								
	Switches								
	Access Points								
	Cabling								
	Installation/Testing								
	Disaster Recovery	Bring all servers under DR			20	20,000	20,000	TBD	7/1/2017
	Other								

Category	Specific Need	Detail Specific Need (As required)	Vendor	Quantity	Estimated Cost (One Time)	Estimated Recurring Cost	Potential Funding Source	Date Needed
Hardware	Laptops							
	Desktops							
	Memory							
	Operating System Upgrade							
	Monitors							
	Computer Carts (Cart Only)							
	Extra Batteries							
	Installation/Testing							
	Other							

Category	Specific Need	Detail Specific Need (As required)	Vendor	Quantity	Estimated Cost (One Time)	Estimated Recurring Cost	Potential Funding Source	Date Needed
Teacher Readiness	Type of training needed by grade and by topic							
	Teacher's Knowledge of Online Testing Requirements including security							
	Other							

Category	Specific Need	Detail Specific Need (As required)	Vendor	Quantity	Estimated Cost (One Time)	Estimated Recurring Cost	Potential Funding Source	Date Needed
Student Readiness	Computer Literacy Curriculum							
	Computers needed for training							
	Practice Tests							
	Other							

Category	Specific Need	Detail Specific Need (As required)	Vendor	Quantity	Estimated Cost (One Time)	Estimated Recurring Cost	Potential Funding Source	Date Needed
Funding Mechanisms	Assistance/Training for Writing Grants							
	Assistance/Training to manage e-Rate							
	Other							

Category	Specific Need	Detail Specific Need (As required)	Vendor	Quantity	Estimated Cost (One Time)	Estimated Recurring Cost	Potential Funding Source	Date Needed
Strategic Planning	Consulting Assistance to educate staff in the strategic planning areas							
	Formal Training of Staff	Instructional Technologist for Each School		5	350717.6	350717.6	TBD	ASAP
	Other							

Category	Specific Need	Detail Specific Need (As required)	Vendor	Quantity	Estimated Cost (One Time)	Estimated Recurring Cost	Potential Funding Source	Date Needed
Technical Support	Consulting Assistance to help in specific areas							
	Additional resources	PC Technician for IT Department		1	70143.52	70143.52	TBD	ASAP
	Other	Training for IT Department			25000	25000	TBD	ASAP

Strategic Roadmap

This section will provide an overview of the specific action items the district should focus on to improve the readiness of each area discussed in this report. The Roadmap is broken down into measurable tasks and deliverables to

1-Month Plan

- **Plan Chromebook rollout**
- **Look at 10G connections at schools**

3-Month Plan

- **Discuss best practices for testing**
- **Assist in planning for Professional Development**

6-Month Plan

- **Chromebook Rollout at Crescent High**
- **Start planning for 2017-2018 testing using Chromebooks at Crescent High**

12-Month Plan

- **Chromebook Rollout at Starr-Iva Middle (9 month)**
- **Review Infrastructure requirements**

18-Month Plan

- **Evaluate refresh of iPads for Elementary Schools**
- **Check infrastructure needs for district**

APPENDIX

Pictures of District



Computer Lab



Shared Closet



Wall Mount Rack