



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF EDUCATION

P.O. BOX 2120  
RICHMOND 23218-2120



---

Before the  
Federal Communications Commission  
Washington, D.C. 20554

In the Matter of )  
 )  
Modernizing the E-rate ) WC Docket No. 13-184  
Program for Schools and Libraries )

Initial Comments of the K-12 Learning Infrastructure Work Group  
FCC Public Notice DA 17-921 Seeking Comment on Category 2 Budgets

---

Timothy Ampy  
Director of Technology  
Dinwiddie County Public Schools  
14016 Boydton Plank Road  
Dinwiddie, VA 23841

Jagan Chowdam  
Senior Network Engineer-Wireless  
DISYS Solutions, Inc.  
44670 Cape Court, Suite 100  
Ashburn, VA 20147

Dr. Susan M. Clair  
Learning Infrastructure Coordinator  
Virginia Department of Education  
101 N. 14<sup>th</sup> Street  
Richmond, VA 23219

Rod Carnill  
Supervisor of Instructional Technology  
Coaches  
Frederick County Public Schools  
1415 Amherst Street  
Winchester, VA 22601

Cynthia Church  
Continuing Education Consultant  
Library of Virginia  
800 E. Broad Street  
Richmond, VA 23219

Brian Dalhover  
Director of Solutions Engineering  
Education Networks of America (ENA)  
618 Grassmere Park #12  
Nashville, TN 37211

Brian Dibble  
Senior Account Executive  
DISYS Solutions, Inc.  
44670 Cape Court, Suite 100  
Ashburn, VA 20147

James Funkhouser  
Business Development Manager-Fiber Sales  
Shentel  
500 Shentel Way  
Edinburg, VA 22824

Dr. Scott Kiser  
Director of Technology  
Wise County Public Schools  
628 Lake Street  
Wise, VA 24293

John Littlefield  
Director of Technology  
Suffolk Public Schools  
100 N. Main Street  
Suffolk, VA 23434

Eddie McAndrew  
Chief Operations Officer  
AISN  
9620 Madison Leigh Court  
Mechanicsville, VA 23111

Kevin Perkins  
Director of Technology  
Rockingham County Public Schools  
100 Mount Clinton Pike  
Harrisonburg, VA 22802

Dr. Jennifer Piver-Renna  
Senior Executive Director for Research  
Virginia Department of Education  
101 N. 14<sup>th</sup> Street  
Richmond, VA 23219

Scott Rodgers  
Enterprise Account Executive  
SEGRA  
4050 Innslake Drive, Suite 350  
Glen Allen, VA 23060

Dan Smith  
Technology Systems Coordinator  
Roanoke City Public Schools  
40 Douglass Avenue, N.W.  
Roanoke, VA 24012

Marc Elliott  
Account Service Manager  
Education Networks of America (ENA)  
618 Grassmere Park #12  
Nashville, TN 37211

Brook Hatcher  
Director of Technology  
Mecklenburg County Public Schools  
1175 Mayfield Drive  
Boydton, VA 23917

John Lawson  
Consulting Engineer  
Virginia Tech  
1770 Forecast Drive  
Blacksburg, VA 24060

Caroline Luxhoj  
Broadband Program Administrator  
Center for Innovation Technology  
940 Sydenham Boulevard  
Chesapeake, VA 23322

Launa McMillen  
Senior Account Manager  
ABS Technology  
2809 S. Lynnhaven Road, Suite 250  
Virginia Beach, VA 23452

AJ Phillips  
Director of Information Technology Services  
Prince William County Public Schools  
14715 Bristow Road  
Manassas, VA 20110

Karen Richardson  
Executive Director  
Virginia Society for Technology in Education  
(VSTE)  
PMB 149, 9702 Gayton Road  
Richmond, VA 23238

Mark Saunders  
Technology & Virtual Learning Coordinator  
Virginia Department of Education  
101 N. 14<sup>th</sup> Street  
Richmond, VA 23219

Pete Zicari  
Director of Instructional Technology  
Spotsylvania County Public Schools  
8020 River Stone Drive  
Fredericksburg, VA 22407

---

## Comments of the Virginia K-12 Learning Infrastructure Work Group

The Virginia K-12 Learning Infrastructure Work Group (hereafter referred to as the KLIP WG)<sup>1</sup> appreciates the opportunity to submit these comments in response to the Public Notice in the above referenced proceeding.

To support greater broadband access for Virginia's public school system, the Virginia Department of Education (VDOE) established the K-12 Learning Infrastructure Program (KLIP) in 2015<sup>2</sup>. The program was established in partnership with the Office of the Governor and the EducationSuperHighway (ESH). The KLIP WG supports increased access to affordable, high-speed Internet in every classroom in Virginia public schools.

In the 2016 Virginia Appropriation Act (Item 137.G), the Virginia General Assembly directed school divisions (in Virginia, school districts are referred to as "school divisions") to report to the VDOE, by November 1 of each year, the status of broadband connectivity capability of schools in the division. The VDOE has collected broadband connectivity data each year starting in 2016. The Broadband Connectivity Capability Survey (BCCS) is completed each year by school division technology directors who are responsible for network infrastructure and the E-rate program.

Results from the 2017 KLIP BCCS suggest that Virginia is making significant progress in increasing broadband connectivity in its 132 public school divisions<sup>3</sup>. Survey results indicated that 99 percent of public school buildings in Virginia were connected to high-speed fiber and 122 school divisions of 132 were exceeding the minimum bandwidth goal set by the Federal Communications Commission (FCC) of 100 kbps per student. Additionally, the survey data show that the cost of bandwidth for schools became more affordable with bandwidth decreasing as school divisions increased the amount of bandwidth needed to support digital learning. In 2017, only 29 percent of Virginia school divisions met the affordability benchmarks developed by ESH. The 2018 BCCS survey data indicate that 99.5 percent of schools continue to have high-speed fiber connections, 99 percent of school divisions are meeting the 100 kbps target, and 45 percent of Virginia school divisions meet the ESH affordability benchmarks<sup>4</sup>. Virginia school divisions are making progress with broadband connectivity, but challenges do remain.

One of the major challenges facing school division technology leaders is the way in which Category Two funds are currently allocated. In 2018, the VDOE administered the BCCS to 132 school divisions and 128 divisions responded. There were five sections on the survey including a section on E-rate, Funding Your School Division's Network Infrastructure, Internet Access at Home, Information Security, and Wi-Fi. Question 4 on the E-rate section of the survey asked the following question:

4. How do you think E-rate Category Two funds should be allocated?

By school (as currently regulated). If so, why? <Text input>

By school division (allocated by school division needs). If so, why? <Text input>

One hundred fifteen of the 128 respondents (90 percent) indicated that they think E-rate Category Two funds should be allocated by division. Only thirteen (10 percent) of the 128 respondents indicated that E-rate Category Two funds should be allocated by school building.

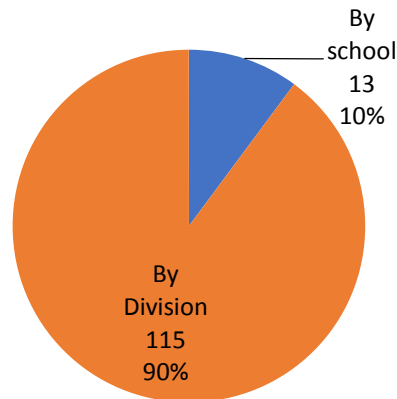
---

<sup>1</sup> The K-12 Learning Infrastructure Work Group (KLIP WG) assists the Virginia Department of Education (VDOE) with issues and innovation in network infrastructure and broadband technologies. The Work Group provides leadership, guidance, and support for K-12 technology initiatives in Virginia

<sup>2</sup> See K-12 Learning Infrastructure Program, available at: [http://www.doe.virginia.gov/support/technology/edtech\\_plan/infrastructure\\_program/index.shtml](http://www.doe.virginia.gov/support/technology/edtech_plan/infrastructure_program/index.shtml)

<sup>3</sup> See K-12 Learning Infrastructure Program, available at: [http://www.doe.virginia.gov/support/technology/edtech\\_plan/infrastructure\\_program/index.shtml](http://www.doe.virginia.gov/support/technology/edtech_plan/infrastructure_program/index.shtml)

<sup>4</sup> Source: 2018 KLIP Broadband Connectivity Capability Survey. See Appendix A



Technology directors were given the opportunity to provide comments as to why they thought Category Two funds should be allocated by division, not school building. Their comments include:

“By school division would allow for greater flexibility in determining where to use the funds (e.g., older school buildings have greater Cat 2 needs than newer school buildings)”

“Division allocation would allow for school divisions to determine which schools need the most to the least funding”

“Documentation of Cat 2 budgets by school is an administrative record keeping burden and student enrollment alone does not define the needs of a school, school buildings within the division have different needs.”

“Allocation by school division would allow for greater flexibility.”

“By letting school divisions decide where funds are spent would give us more flexibility. Depending on where schools are located different services and/or equipment might already be established in that area, letting us use the funding as a division can help get equipment and services where they are needed the most.”

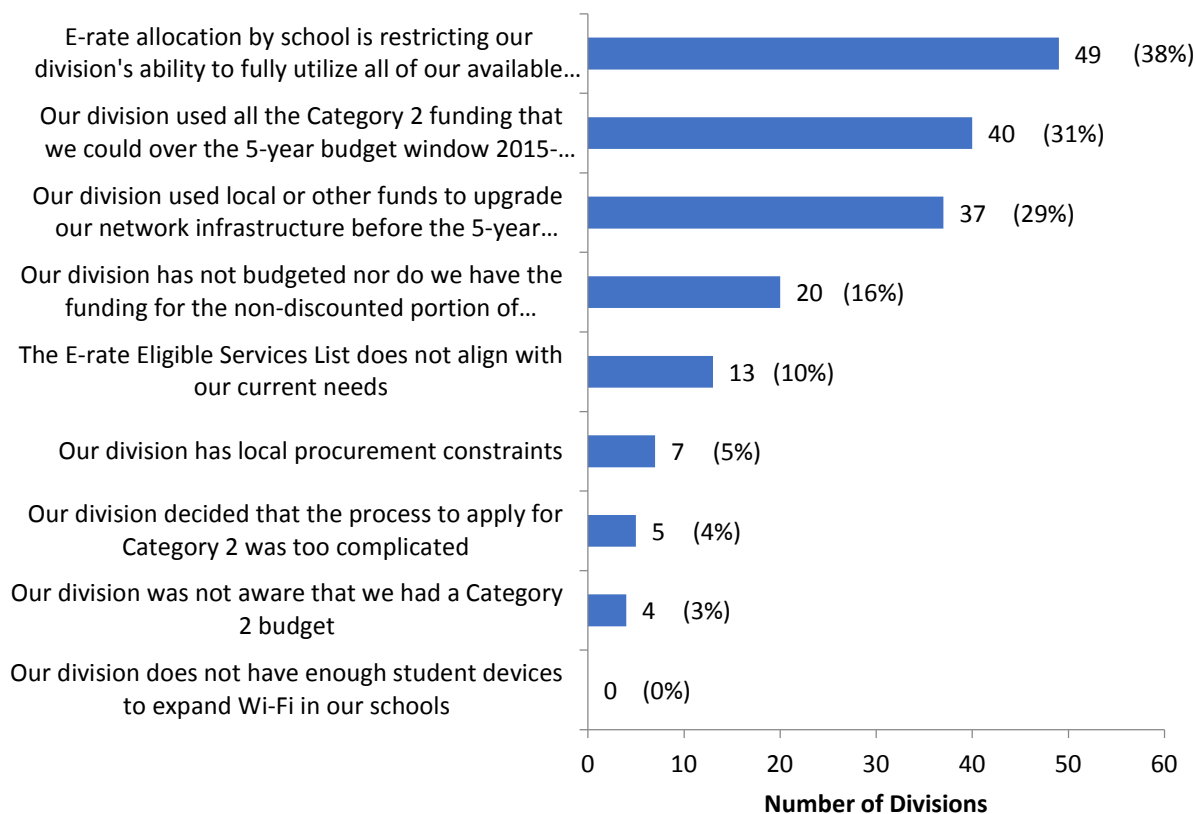
“It makes it harder to document when budgets are allocated by school.”

“.....the needs of the schools are not necessarily aligned with the number of students at the schools which is the current calculation method. If instead the funds were central and not by school, they could be allocated to schools as needed.”

“We are a very small division with buildings and the IT department which consists of two staff tries to upgrade all schools at one time so being able to do this by Division would alleviate some of the paper work.”

“Some of our older buildings have more needs than newer buildings.”

An additional question on the E-rate section of the 2018 BCCS asked school technology directors about why their division had not spent all of its E-rate Category Two funds. Respondents could check all the reasons why they have not spent these funds. The results show that 49 divisions (38 percent) indicated that E-rate allocation by school is restricting their division’s ability to fully utilize all of the available Category Two funds. Forty divisions (31 percent) indicated that they had used all of their Category Two funds over the five-year budget window from 2015-2019. Thirty-seven (29 percent) divisions checked indicated that their division used local or other funds to upgrade their network infrastructure before the Category Two 5-year budget window from 2015-2019. Twenty respondents indicated that they had not budgeted nor did they have the funding for the non-discounted portion of Category Two purchases.



## CONCLUSION

The VDOE KLIP collects annual broadband data to better understand the technology landscape in Virginia's public schools. Virginia continues to make significant progress in broadband connectivity including an increase in the number of schools on fiber, meeting FCC bandwidth benchmarks to support digital learning, and paying less for more bandwidth. The E-rate program funds are a very important source of funding for Virginia's public schools. We point out however; that there are significant administrative challenges in Category Two allocation by school building in Virginia. Technology directors need greater flexibility in how to spend Category Two funding. One hundred fifteen of 128 divisions expressed a need to have Category Two funds allocated by division. Technology leaders overwhelmingly emphasized that the record keeping associated with keeping track of Category Two funds for each school building in a division is unnecessarily burdensome, especially for large divisions. A division wide budget would also preclude schools from the onerous task of reducing each line item in a request to meet their budget. Reducing each line item is very time consuming.

The KLIP WG requests the Commission to immediately reconsider its decision to limit applicant budgets to a school-specific allocation, and instead allocate the Category Two funds on a division wide (i.e. district wide) basis. Federal E-rate policies need to align more with local realities. As stated in the State E-rate Coordinators Alliance (SECA) Initial Comments on Category 2 Budgets, October 23, 2017, "This change would truly give E-rate applicants the flexibility they need to make decisions about how to best deploy infrastructure where it will be most effective for the *entire organization*, rather than limiting their decision-making processes to the school building level." The data presented in these KLIP WG comments support and confirm the Category Two budget comments made by SECA<sup>5</sup> and those of COSN, EducationSuperHighway, and Funds for Learning<sup>6</sup>.

<sup>5</sup> Initial Comments of the State E-rate Coordinator's Alliance Regarding FCC Public Notice DA 17-921 Seeking Comments on Category 2 budgets.

<sup>6</sup> Comments of CoSN, EducationSuperHighway, and Funds For Learning

Respectfully Submitted by:

Bobby F. Keener, Jr.  
Director, Office of Technology Innovation  
Virginia Department of Education  
James Monroe Building  
101 N. 14<sup>th</sup> Street  
Richmond, VA 23219

Dr. Susan M. Clair  
Learning Infrastructure Coordinator  
Office of Technology Innovation  
Virginia Department of Education  
James Monroe Building  
101 N. 14<sup>th</sup> Street  
Richmond, VA 23219



VIRGINIA DEPARTMENT OF EDUCATION

**Report**

# **Report on Broadband Connectivity Capability Survey 2018-2019**

**Presented to:  
Virginia's K-12 Learning Infrastructure  
Program (KLIP) Work Group**

**February, 2019**

*Virginia Department of Education  
P. O. Box 2120  
Richmond, Virginia 23218-2120*

Page Left Blank Intentionally



## Table of Contents

<b>E-rate.....</b>	<b>1</b>
1. If the VDOE were to provide a contract for E-Rate consulting, how likely would your division be to use this contract and its consulting services?.....	1
2. How many staff members in your division are trained/have experience in the E-rate program's rules and procedures?.....	2
3. What percentage of your eligible E-rate Category 2 needs were met by Category 2 funds?.....	2
4. How do you think E-rate Category 2 funds should be allocated?.....	3
5. Please indicate which of the following services you believe should qualify for E-rate support:.....	3
6. The Federal Communications Commission (FCC) may consider permitting schools to share Internet access off-campus, connecting students at home via wireless connections that originate from the school's Internet. What are your concerns about this proposal? .....	4
7. If your division has not spent all of its E-rate Category 2 funds; please identify the reason(s) why. ....	5
<b>Funding Your School Division's Network Infrastructure.....</b>	<b>6</b>
1. Please identify the funding streams that your division uses to support its network infrastructure ..	6
2. Indicate below your familiarity with each of these network infrastructure funding streams and whether your division has ever used them. ....	6
3. Has your division encountered challenges in funding its network infrastructure initiatives? .....	7
4. If yes, provide a brief description of up to three of your greatest challenges? .....	7
5. Has your school division's technology department worked with local government when planning your network infrastructure projects (e.g. public library, county or city government technology department, public works, transportation, police/sheriff department)? .....	8
6. If Yes, briefly describe how you worked or are currently working with your local government and any challenges you experienced.....	8
<b>Internet Access at Home.....</b>	<b>9</b>
1. Estimate the percentage of your student population that does not have Internet access at home? ..	9
2. Have you considered partnering with local government officials to explore ways to provide high-speed Internet access to homes of families in need in your division?.....	9
3. Does your division provide after-hours access to school facilities for student use of the Internet? ..	10
4. Which, if any, of the following away-from-school Internet access initiatives has your division implemented?.....	10
5. If your division does provide away from school Internet access initiatives, identify the funding sources currently being used. ....	11
<b>Information Security .....</b>	<b>12</b>
1. Does your division have a network & data security policy?.....	12
2. Would your division be interested in the availability of a State information security guideline? ..	12
3. Has your division had a 3rd party review of network and data security practices completed in the past 24 months?.....	12
4. Were recommendations provided by the 3rd party review? .....	12
5. If recommendations were provided did your division implement them?.....	13
6. Identify which of the following barriers prevented implementation of the recommendations .....	13
7. Does your division have a yearly documented security awareness campaign? .....	13
8. How does your division approach the campaign?.....	14
9. Does your division have a yearly documented information security training?.....	14

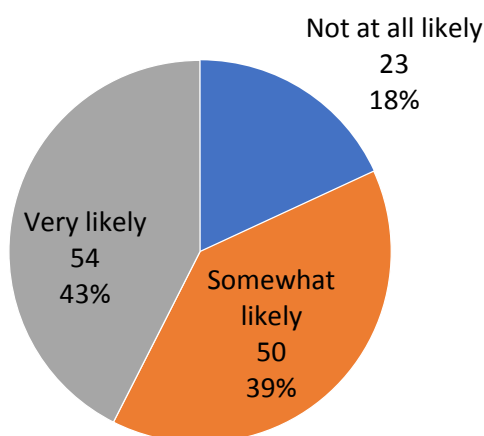
10. Who implements the training? .....	14
11. Does your division have Cyber Insurance to mitigate the costs associated with a data breach and recovery?.....	15
12. Is the Cyber Insurance included in your division's general liability insurance or was it purchased through a separate policy?.....	15
13. Does your division have documented policies for backing up and restoring critical systems? ....	15
14 Does your division have a network access policy? .....	16
15. Rate the extent to which the information security issues listed below are a concern for your division.....	16
16 Does your school division have a Single-Sign On (SSO) strategy at the division level that authenticates teachers, administrators, students, parents, and other support personnel against applications? .....	16
17. Who are your SSO providers? .....	16
18. What content filtering technology does your school division implement? .....	17
<b>Wi-Fi .....</b>	<b>18</b>
1. What is the primary wireless networking gear vendor in your division? .....	18
2. Which 802.11 standards are supported by the currently installed hardware? .....	18
3. What controller architecture does your school division implement? .....	19
4. Total number of SSIDs used within this school division: .....	20
5. Does your division allow - Bring Your Own Device (BYOD) ? .....	20
6. Does your division provide guest access to your wireless network? .....	20
7. When was your last radio frequency heat map completed? .....	21
8. When did your division last upgrade its wireless infrastructure? .....	21
9. When does your division plan to upgrade its current wireless infrastructure? .....	21
10. Given the complexity of managing large-scale, high-density Wireless Local Area Networks (WLAN), VDOE is considering creating a statewide contract vehicle allowing divisions to create new partnerships with service providers who provide E-rate eligible managed services for Wi-Fi. If a contract vehicle for these services was available, how likely would your division be to take advantage of the contract and/or available services such as: .....	22

## 2018-2019 Broadband Connectivity Capability Survey (BCCS)

128 school divisions out of 132 responded to this survey. The participation rate is 97%.

### E-rate

1. If the VDOE were to provide a contract for E-Rate consulting, how likely would your division be to use this contract and its consulting services?



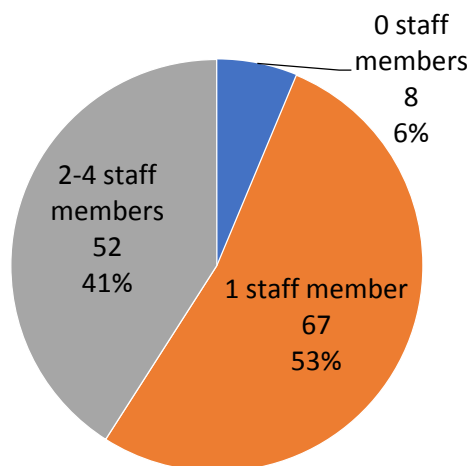
\*One participating division did not respond to this question.

What terms of a contract for E-rate consulting would be most important to your division?

Themes	Quotes
<b>Overall cost to the division for consulting</b>	<ul style="list-style-type: none"> <li>- "Price and service"</li> <li>- "price as close to \$0 as possible or fully subsidized by the state"</li> <li>- "Price -- who pays?"</li> </ul>
<b>Flexibility in contract terms</b>	<ul style="list-style-type: none"> <li>- "annual vs. long term"</li> <li>- "length of contract"</li> </ul>
<b>Expertise of consultant</b>	<ul style="list-style-type: none"> <li>- "The consulting company must be required to inform the district of all eRate compliance changes and rulings as it applies to the fund in a timely manner. The consultant must meet regularly via web delivery or in person. The consultant would assist in the application process, reporting of fund requests, spending/management, and compliance. The consultant must have applicable certification and historical experience with the fund."</li> <li>- "Keeping us updated on changes. General guidance with the various forms and timelines, understanding and maximizing eligibility."</li> </ul>

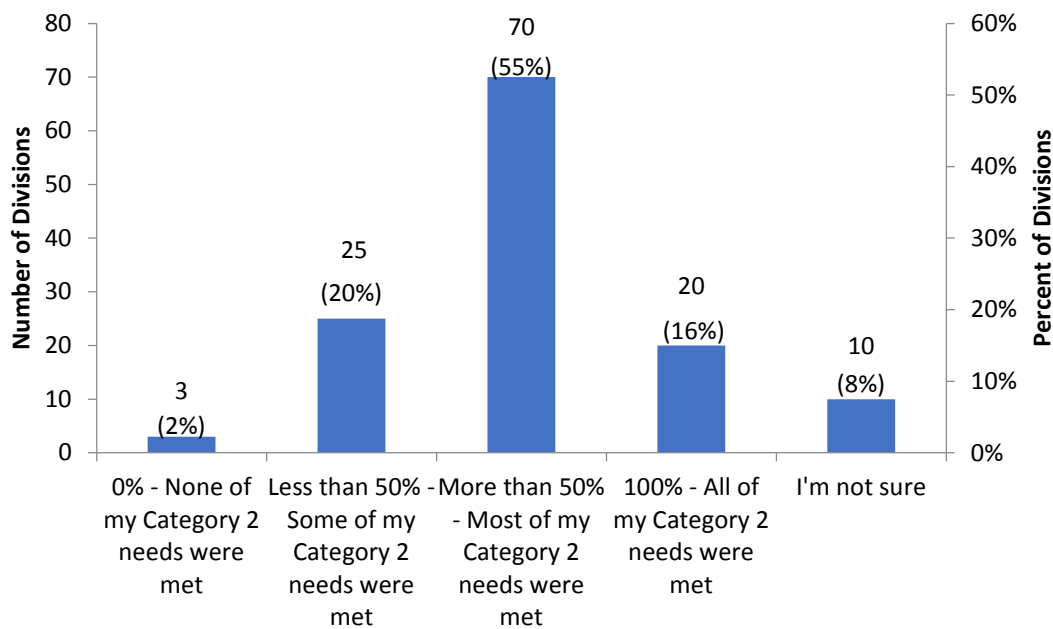
(See Appendix A for a detailed description)

2. How many staff members in your division are trained/have experience in the E-rate program's rules and procedures?



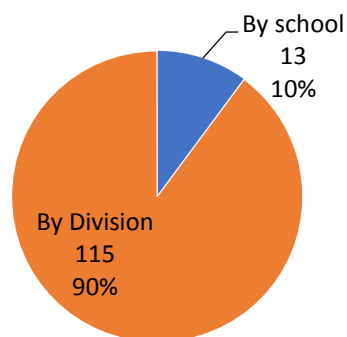
\*One participating division did not respond to this question.

3. What percentage of your eligible E-rate Category 2 needs were met by Category 2 funds?



4. How do you think E-rate Category 2 funds should be allocated?

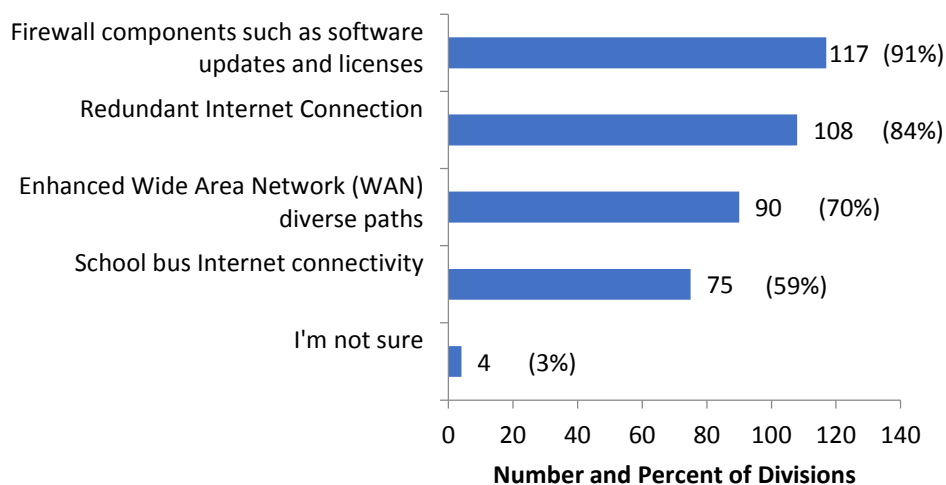
Ninety percent, a hundred and fifteen divisions (or school districts) think E-rate Cat 2 funds should be allocated by division needs. Ten percent of divisions think the funds should be allocated by school (as currently regulated).



Divisions provided the following rational for their preference to fund Cat 2 allocations by school division:

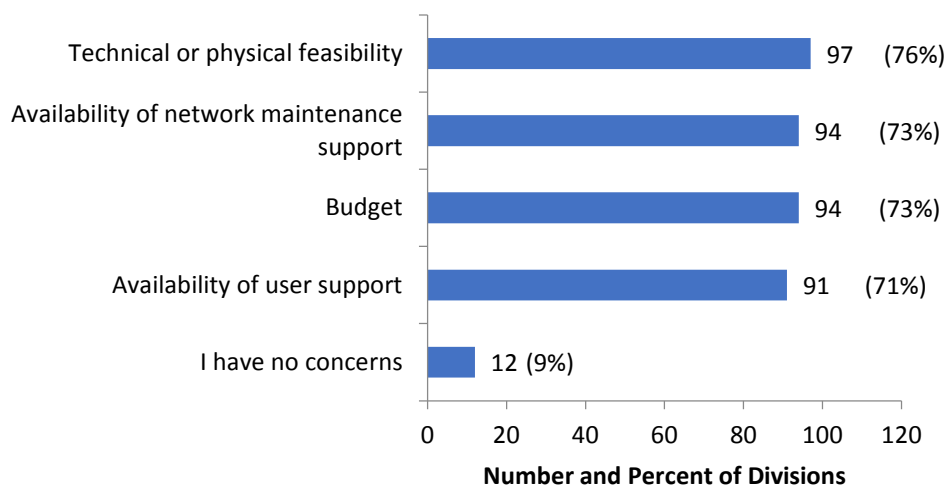
- By school division allocation would allow for greater flexibility in determining where to use the funds (e.g. older school buildings have greater Cat 2 needs than newer school buildings);
- Division allocation would allow for school divisions to determine which schools need the most to least funding;
- Documentation of Cat 2 budgets by school is an administrative record keeping burden; and
- Student enrollment alone does not define the needs of a school, school buildings within the division have different needs.

5. Please indicate which of the following services you believe should qualify for E-rate support: (check all that apply)



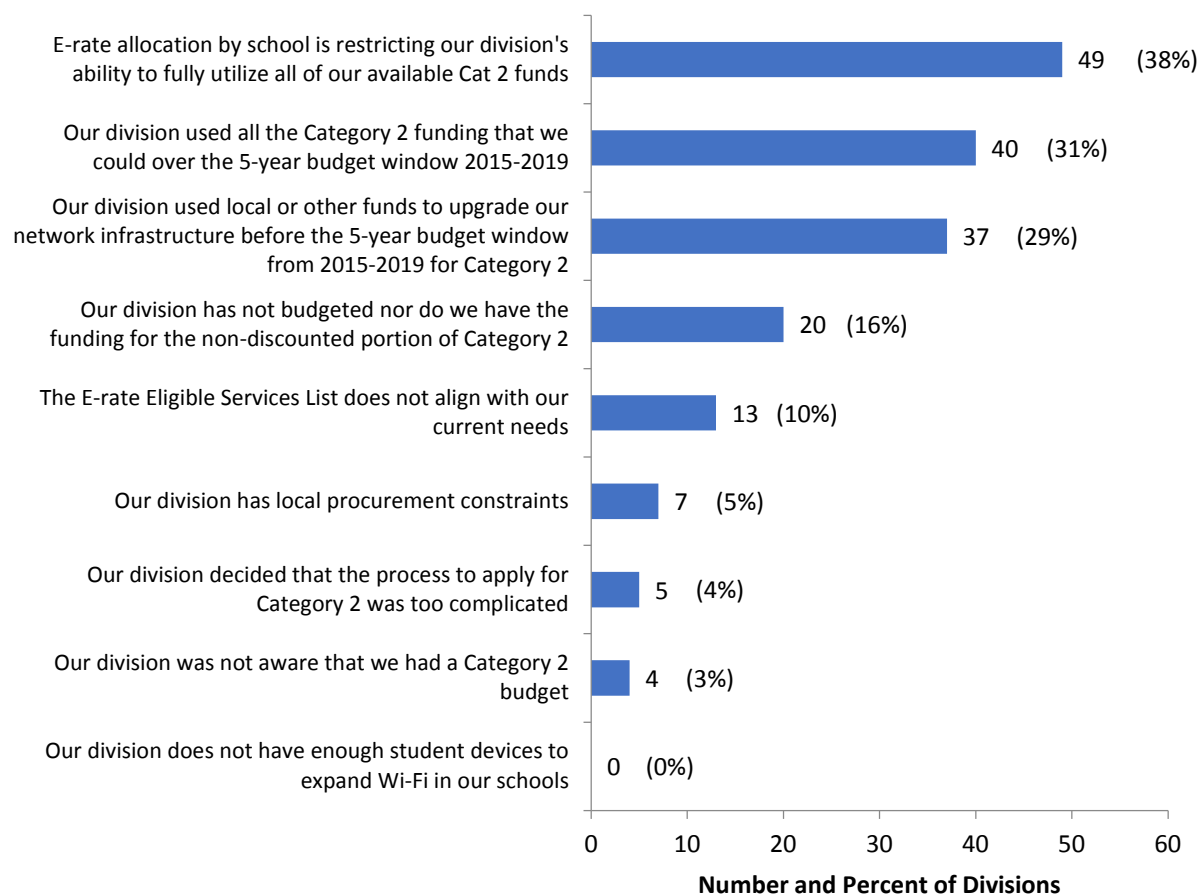
Thirty-four divisions provided responses for additional services that should qualify for E-rate support. The most common responses were devices or services that increased internet access at home (12 divisions), web filtering (five divisions) and VOIP services (five divisions).

6. The Federal Communications Commission (FCC) may consider permitting schools to share Internet access off-campus, connecting students at home via wireless connections that originate from the school's Internet. What are your concerns about this proposal? (check all that apply)



Thirty-four divisions provided other concerns about permitting schools to share internet access of-campus. The most common concerns were web filtering and ensuring appropriate use (nine divisions), staffing to manage the additional workload and support hours (seven divisions), security (six divisions), and limited feasibility due to geography (six divisions).

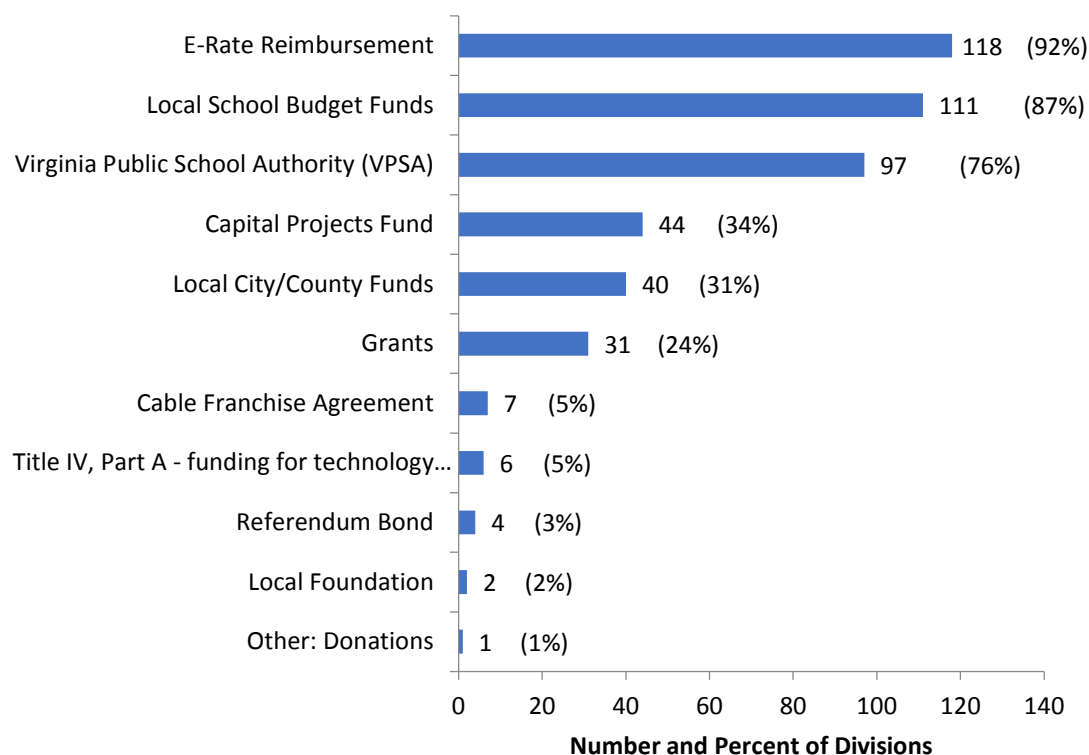
7. If your division has not spent all of its E-rate Category 2 funds; please identify the reason(s) why (Check all that apply)



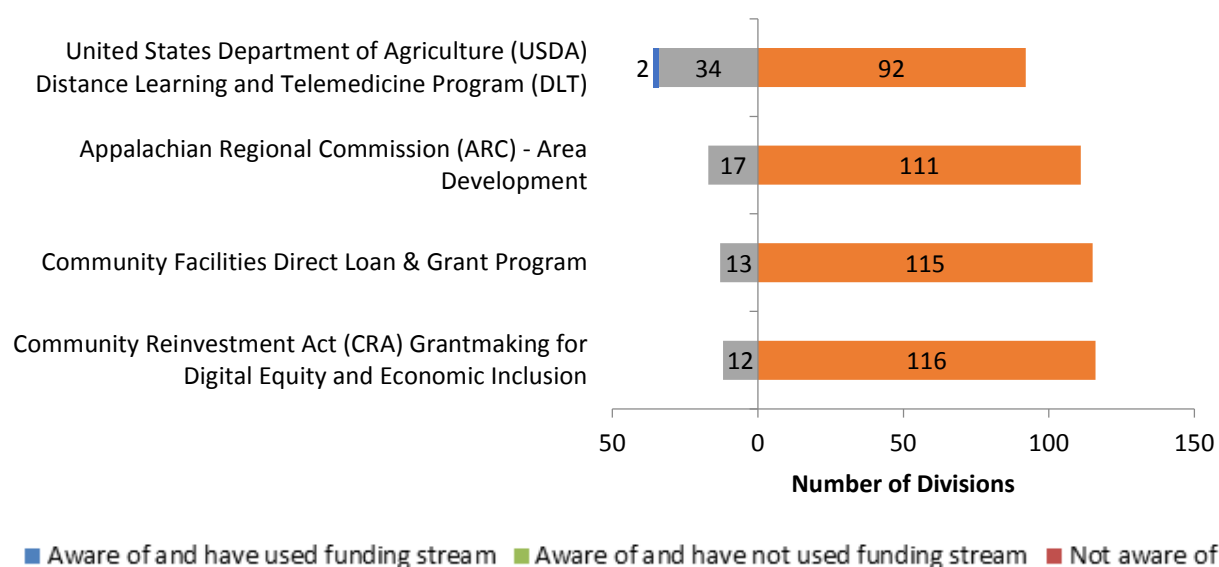
Of the twenty-nine divisions that provided additional responses, thirteen indicated that they would be able to expend all of their E-rate Category 2 funds by the end of the billing cycle. The next most common responses were extended approval time (four divisions) and inability to match funds (three divisions).

## Funding Your School Division's Network Infrastructure

1. Please identify the funding streams that your division uses to support its network infrastructure (check all that apply).

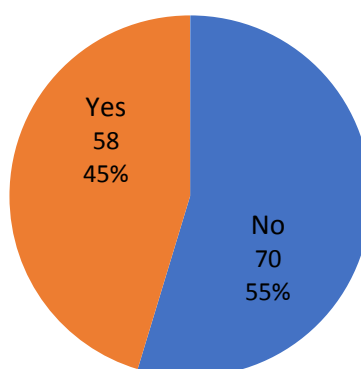


2. Indicate below your familiarity with each of these network infrastructure funding streams and whether your division has ever used them.





3. Has your division encountered challenges in funding its network infrastructure initiatives?

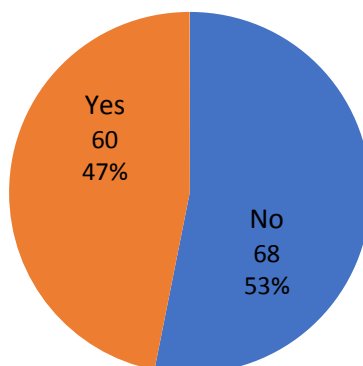


4. If yes, provide a brief description of up to three of your greatest challenges?

Themes	Quotes
Local and state government dollars are limited	<ul style="list-style-type: none"> <li>- "School budget and local government funding"</li> <li>- "Local funding is limited, developing interest for maintenance and improvement of existing systems, procurement and timing for installation upgrades"</li> </ul>
Aging facilities	<ul style="list-style-type: none"> <li>- "Aging facilities"</li> </ul>
Increasing number of devices and applications on the network require continuous upgrades --keeping up is challenging	<ul style="list-style-type: none"> <li>- "With the number of devices and applications served on our network, it is a continual challenge to provide adequate funding to ongoing network equipment/bandwidth refresh and upgrade requirements."</li> <li>- "Most funding has been one-shot. Funding for future replacement cycles is always a concern."</li> </ul>
Competing priorities for funding	<ul style="list-style-type: none"> <li>- "Funds being prioritized to other items"</li> </ul>
Capital upfront costs and ongoing operational costs are expensive	<ul style="list-style-type: none"> <li>- "Network equipment requires replacement, in general, each 5-7 years to be in alignment with current technologies and the educational reliance on such networked technologies. In environments where much of the equipment requires larger financial investment, replacing equipment for a district our size on such intervals is very cost prohibitive yet the demand remains for such widespread upgrades to occur."</li> </ul>
Decreasing enrollment means less state funding	<ul style="list-style-type: none"> <li>- "Small size of the division and decreasing enrollment"</li> </ul>
1:1 initiatives are funded but difficult to maintain and sustain	<ul style="list-style-type: none"> <li>- "1:1 at high school has been funded but it is hard to maintain and keep working."</li> </ul>
Cost of infrastructure, time to implement, and labor (staff)	<ul style="list-style-type: none"> <li>- "Oftentimes we need an upgrade and must wait beyond reasonable time for E-Rate approval."</li> </ul>
Not a focus of school board, they have other priorities	<ul style="list-style-type: none"> <li>- "School board priorities"</li> </ul>

*(See Appendix A for a detailed description)*

5. Has your school division's technology department worked with local government when planning your network infrastructure projects (e.g. public library, county or city government technology department, public works, transportation, police/sheriff department)?



6. If Yes, briefly describe how you worked or are currently working with your local government and any challenges you experienced.

Divisions identified the following main themes regarding their **work experiences** with local government:

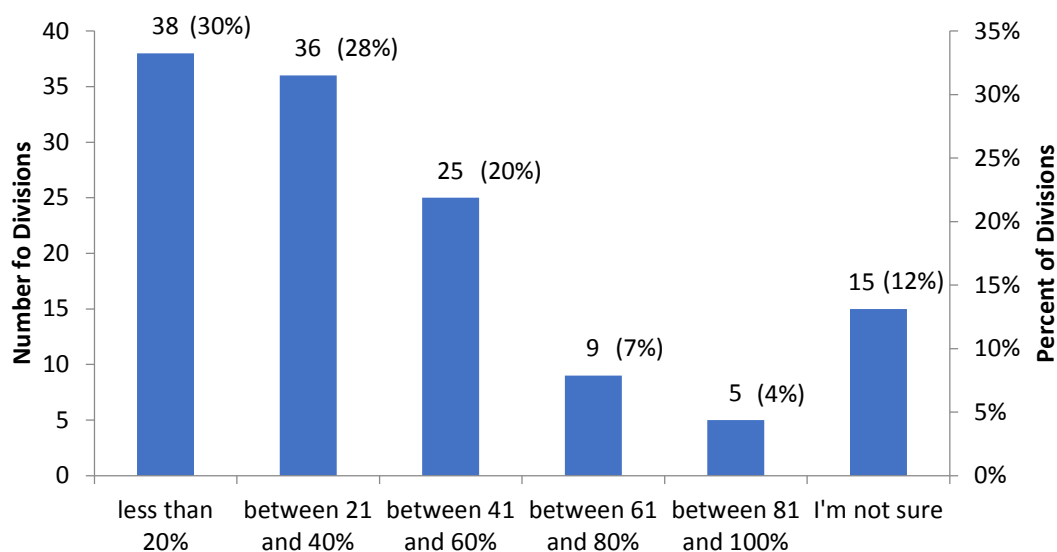
- Collaborative fiber projects that connect schools and county buildings/services
- Library services
- Working with the county on planning for county wide broadband
- Combined RFP for dark fiber to all facilities ; provide IP phones at local emergency services
- Formed county /school technology committees
- County and school division share the same network
- Share WAN with county and work together on a private fiber project which will connect all county and school buildings.
- Share Internet access with county government

Divisions identified the following main themes regarding the **challenges they experienced** working with local government:

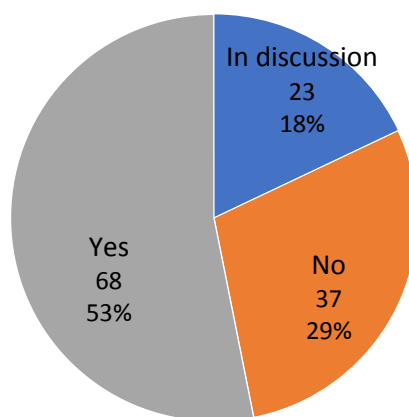
- Goals and vision of county do not align
- Different priorities between schools and counties: Who will own? Who will support? Costs.
- Getting the county to understand how "E-rate" could be used to build out fiber projects
- Lack of project management to coordinate needs of all stakeholders
- Funding from county
- Local politics
- Changes in county administration and Board of Supervisors

## Internet Access at Home

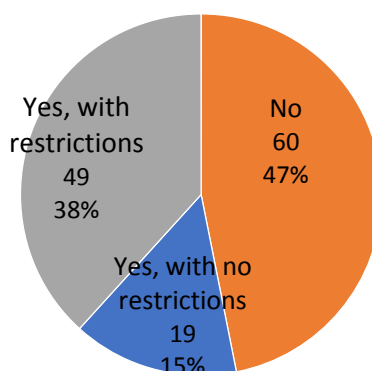
1. **Estimate** the percentage of your student population that does not have Internet access at home?



2. Have you considered partnering with local government officials to explore ways to provide high-speed Internet access to homes of families in need in your division?

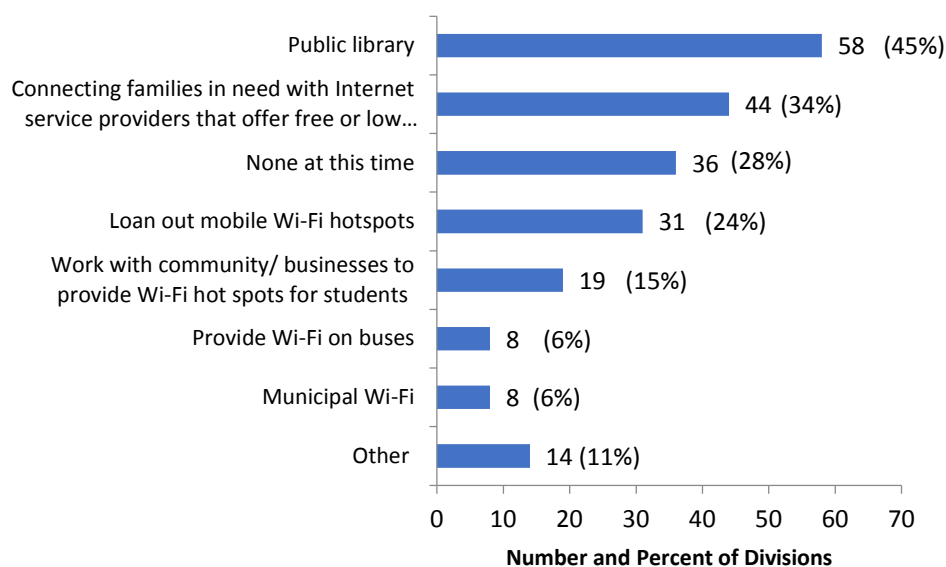


3. Does your division provide after-hours access to school facilities for student use of the Internet?



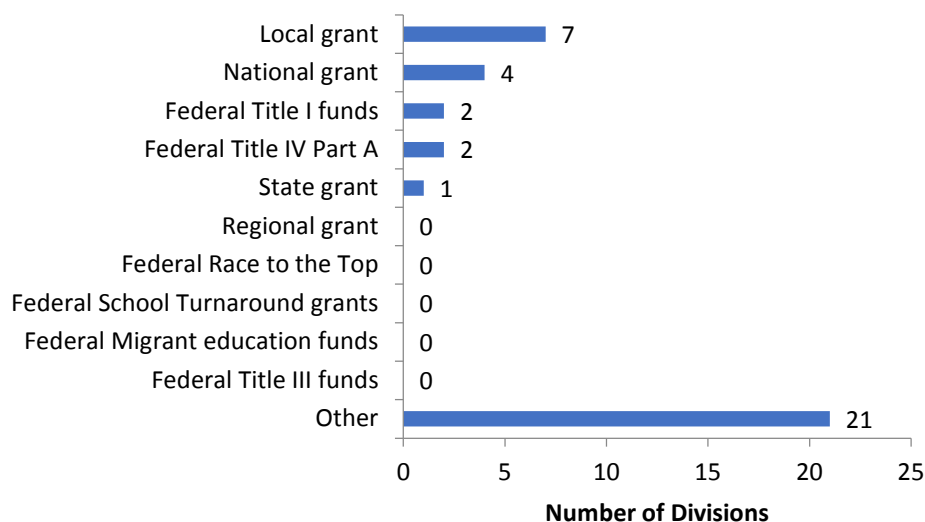
School divisions provided additional comments about their restrictions on after-hours access to the Internet. The main restrictions are listed below:

- Limits on hours and campus locations
  - Limited parking lot hours
  - After school hours in the library or computer labs have restricted hours
  - Restricted to night school hours
4. Which, if any, of the following away-from-school Internet access initiatives has your division implemented?



Fourteen divisions provided noted additional away-from-school internet access initiatives. Five divisions noted working with private companies to increase access, such as Sprint's 1 Million Project or Microsoft's TV whitespace technology. Three divisions also noted that internet access is available in the outdoor spaces of school campuses, including sporting areas.

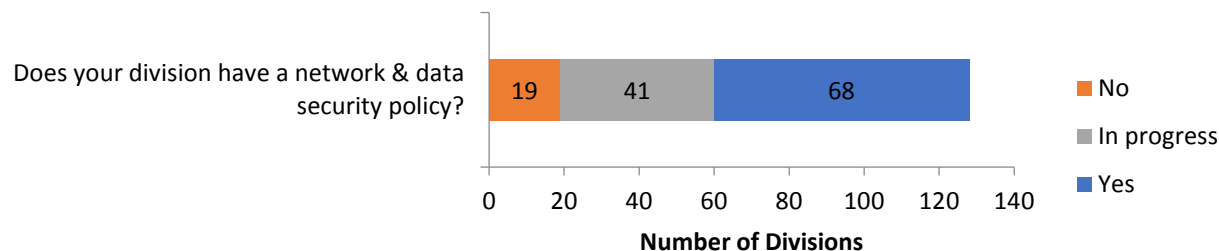
5. If your division does provide away from school Internet access initiatives, identify the funding sources currently being used.



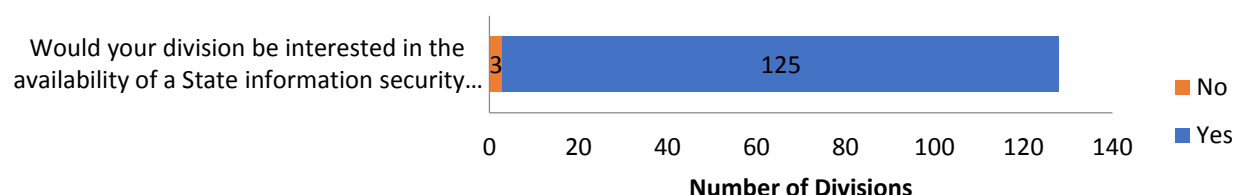
Of the twenty-one divisions that identified other funding sources for away-from-school Internet access initiatives, most divisions cited local funds and some divisions cited national corporate partnerships (Gear Up grant, Sprint 1Million, Microsoft and MidAtlantic Broadband Corporation).

## Information Security

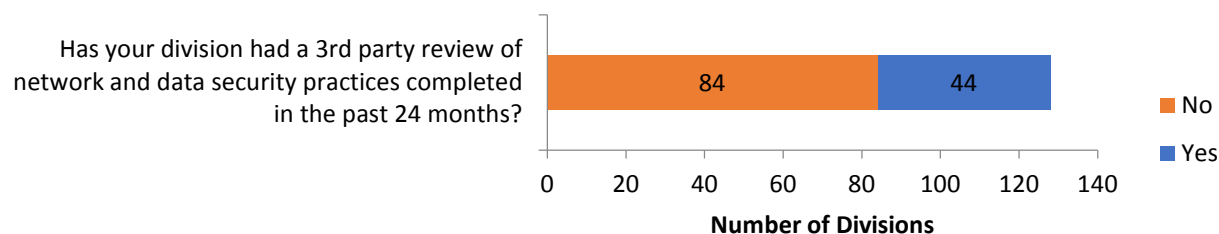
1. Does your division have a network & data security policy?



2. Would your division be interested in the availability of a State information security guideline?



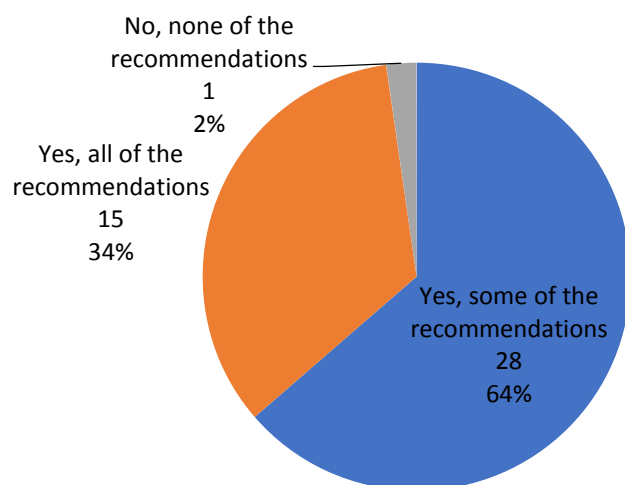
3. Has your division had a 3rd party review of network and data security practices completed in the past 24 months?



4. Were recommendations provided by the 3rd party review?

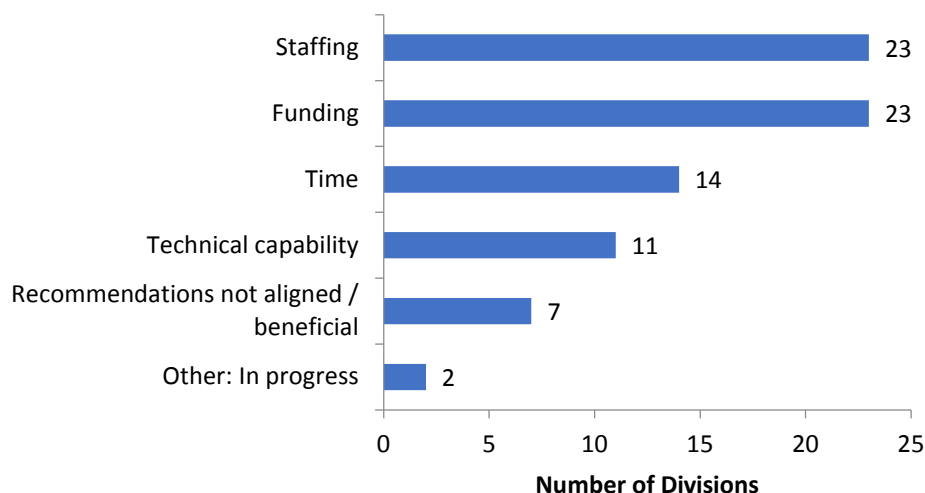
All 44 divisions that indicated they received a 3rd party review of network and data security practices within the last 24 months reported receiving recommendations from the review.

5. If recommendations were provided did your division implement them?

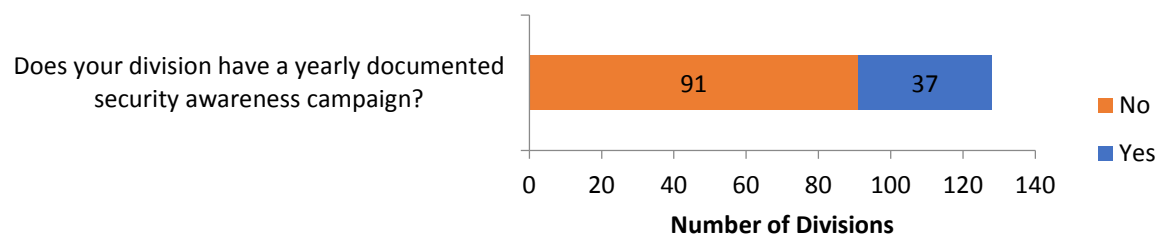


6. Identify which of the following barriers prevented implementation of the recommendations

The 29 divisions indicating that they implemented some or none of the recommendations from their 3<sup>rd</sup> party review identified the following barriers to implementation:

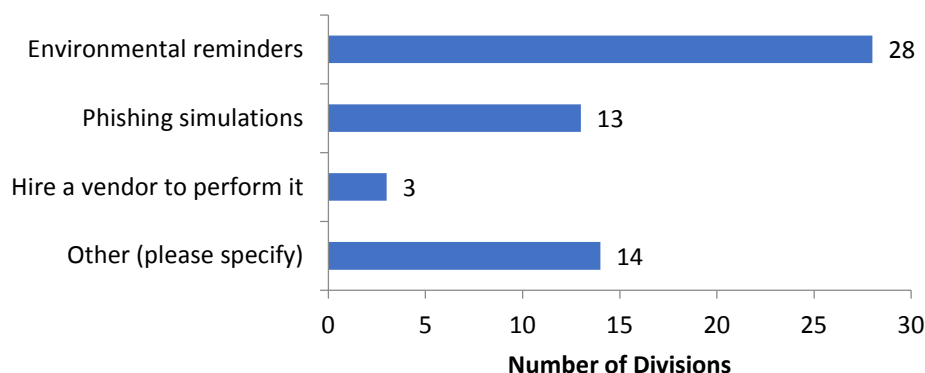


7. Does your division have a yearly documented security awareness campaign?



### 8. How does your division approach the campaign? (check all that apply)

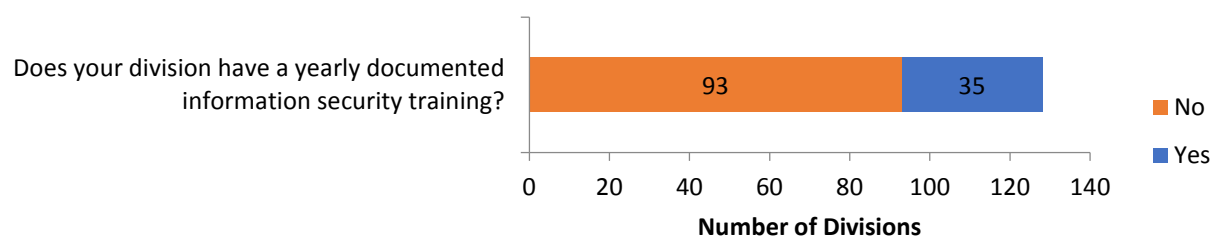
Thirty-seven divisions indicated they had a yearly documented security awareness campaign. Those divisions approached the campaign through the following methods (more than one option could be selected):



Fourteen divisions identified other approaches to security awareness campaigns. The most common response was:

- Online training modules, beginning of year technology online course
- ITRT's review security awareness with teachers
- Professional development for new hires

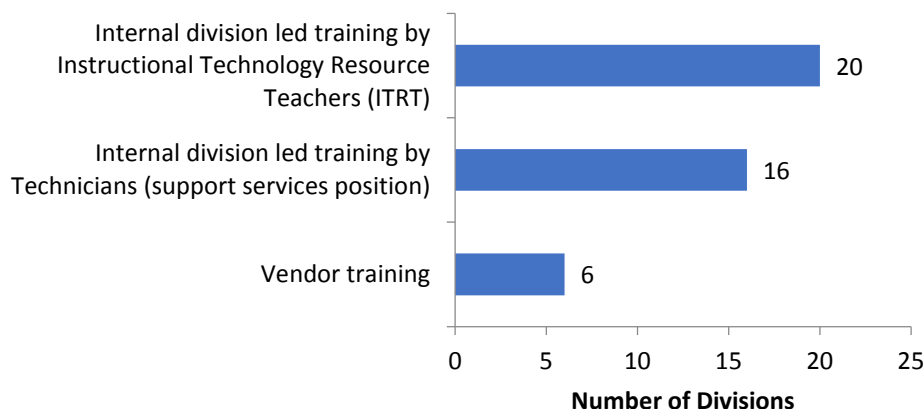
### 9. Does your division have a yearly documented information security training?



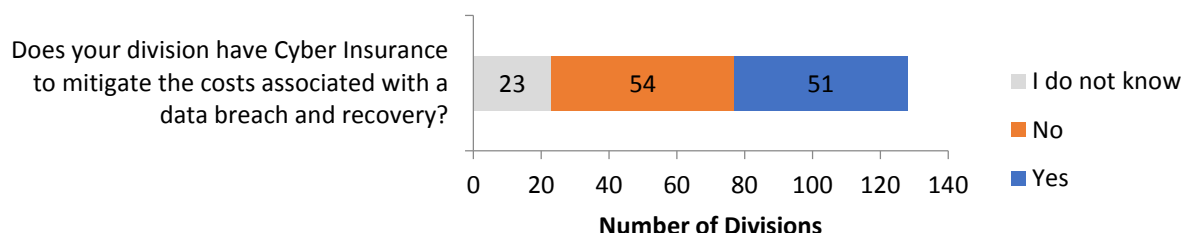
### 10. Who implements the training? (check all that apply)

The 35 divisions reporting a yearly documented information security training indicated the following as being responsible for implementing the training (more than one option could be selected):





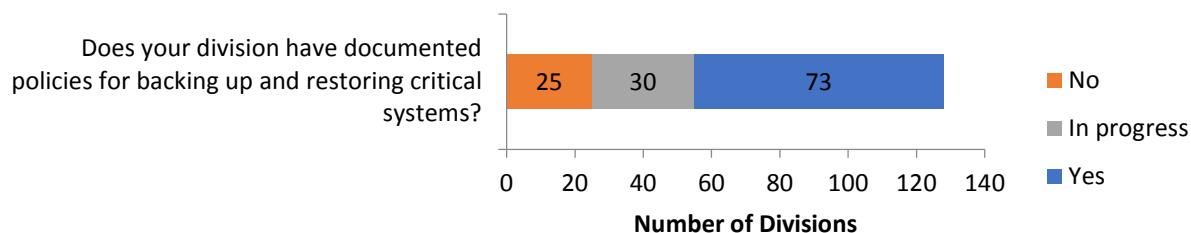
11. Does your division have Cyber Insurance to mitigate the costs associated with a data breach and recovery?



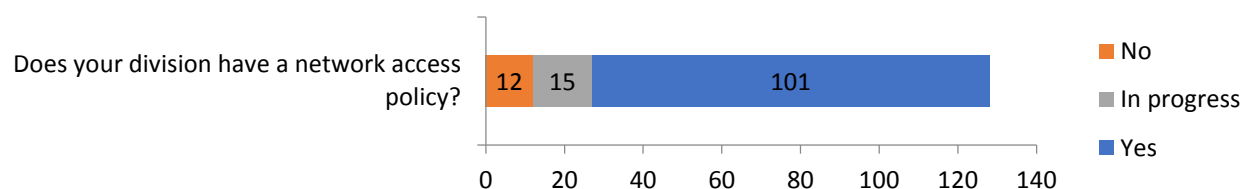
12. Is the Cyber Insurance included in your division's general liability insurance or was it purchased through a separate policy?

Fifty-one divisions indicated they have Cyber Insurance to mitigate the costs associated with a data breach and recovery. Among those, 39 divisions (76 percent) indicated that the insurance was included in their general liability policy. Eleven divisions (22 percent) indicated that the insurance was purchased through a separate policy. The others are part of coverage through VACORP or optional add-on.

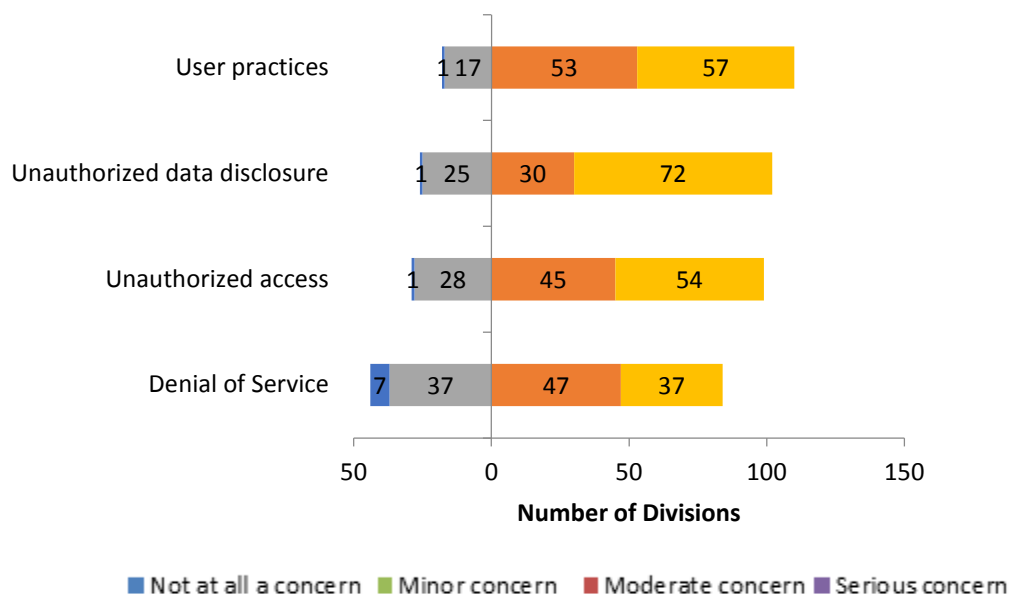
13. Does your division have documented policies for backing up and restoring critical systems?



14 Does your division have a network access policy?

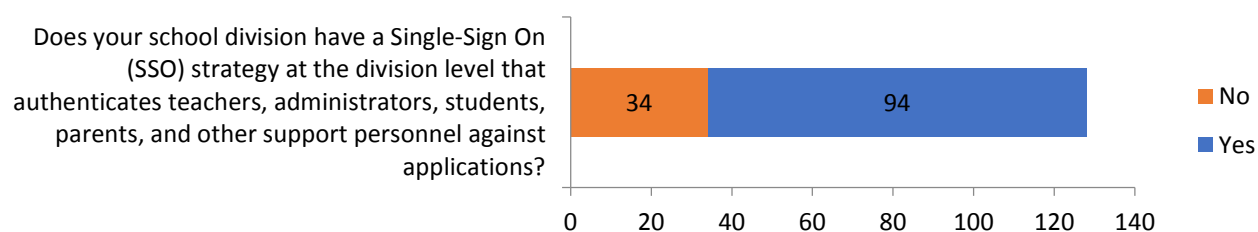


15. Rate the extent to which the information security issues listed below are a concern for your division.



“Other” responses: Ransomware

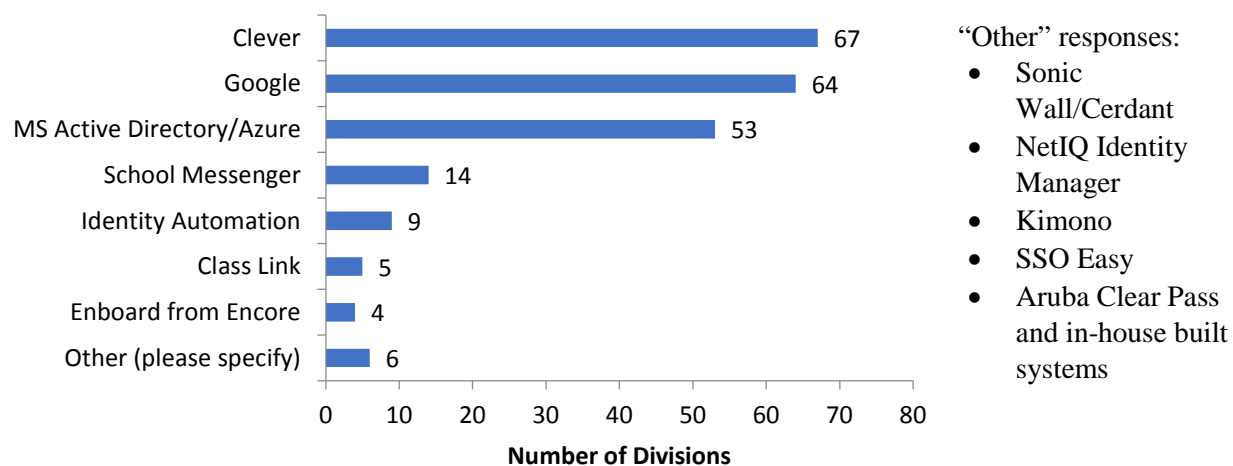
16 Does your school division have a Single-Sign On (SSO) strategy at the division level that authenticates teachers, administrators, students, parents, and other support personnel against applications?



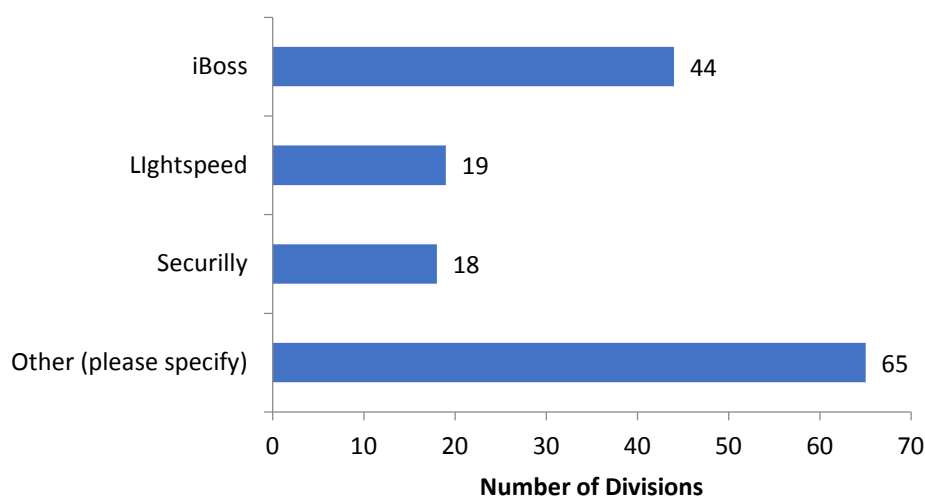
17. Who are your SSO providers? (check all that apply)

Ninety-four divisions indicated that they do have an SSO strategy at the division level that authenticates teachers, administrators, students, parents and other support personnel against applications. Among those, divisions indicated the following companies as their SSO providers (more than one option could be

selected):



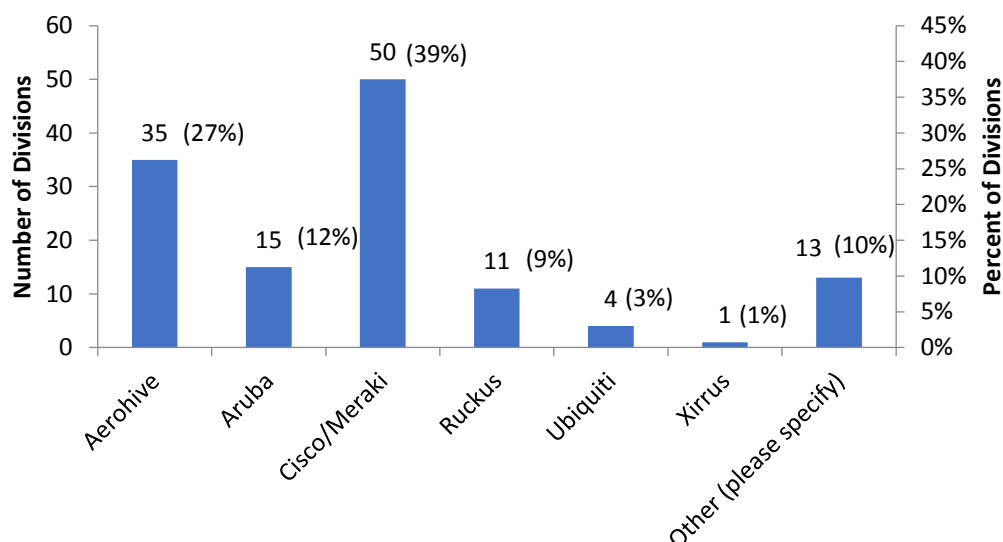
18. What content filtering technology does your school division implement? (Select all that apply)



Sixty-five divisions identified additional content filtering technology. The most common responses were Fortinet Fortigate (eight divisions), Palo Alto (seven divisions), Barracuda (six divisions), and Cisco Umbrella (six divisions).

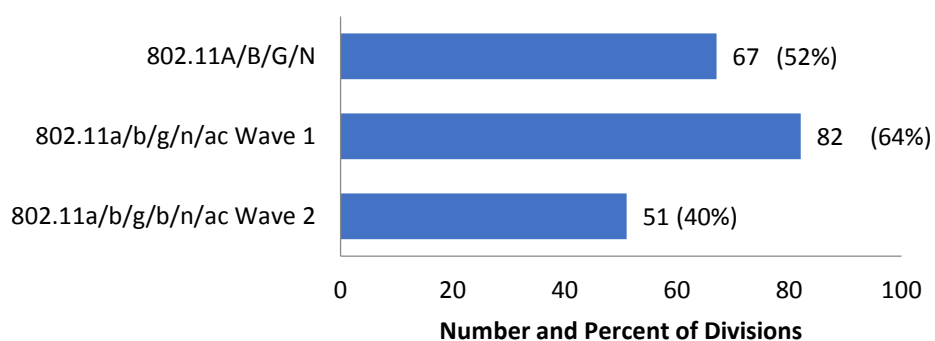
## Wi-Fi

1. What is the primary wireless networking gear vendor in your division?

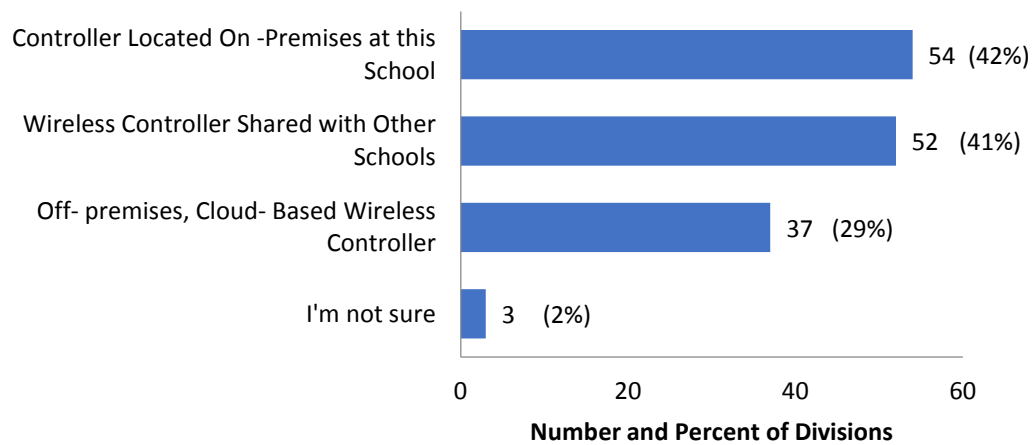


Six of thirteen divisions that provided an additional wireless networking gear vendor identified Extreme Networks as their vendor. Other divisions reported Adtran, Fortinet/Meru and HPE as their primary wireless networking gear vendor.

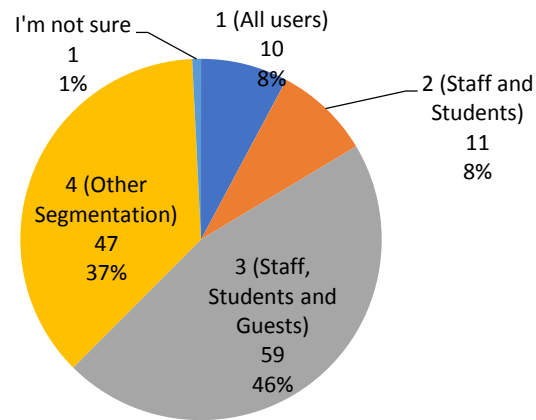
2. Which 802.11 standards are supported by the currently installed hardware? (check all that apply)



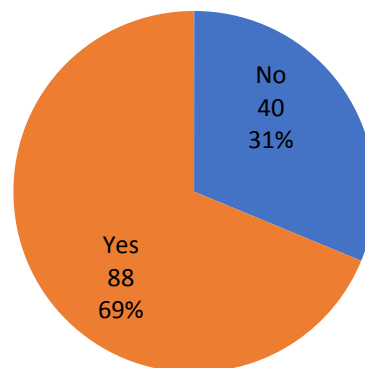
## 3. What controller architecture does your school division implement?



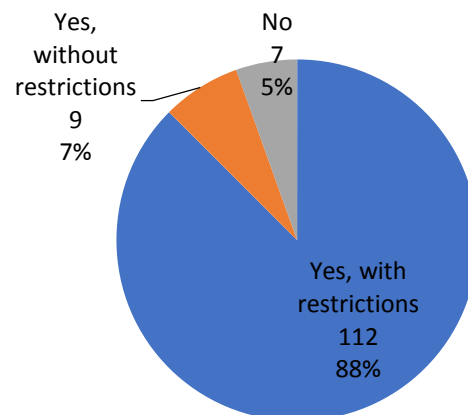
4. Total number of SSIDs used within this school division:



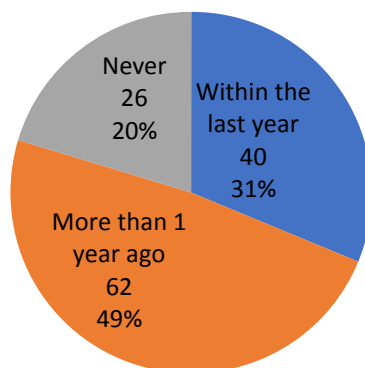
5. Does your division allow - Bring Your Own Device (BYOD) ?



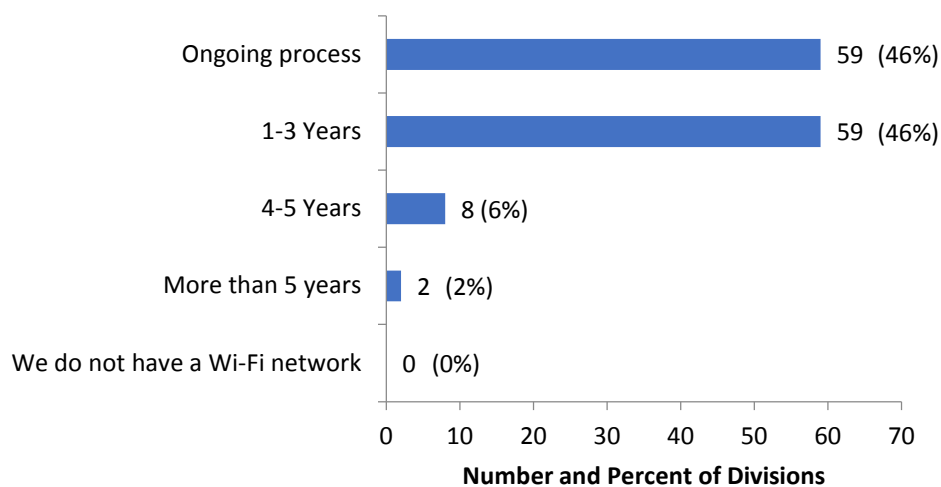
6. Does your division provide guest access to your wireless network?



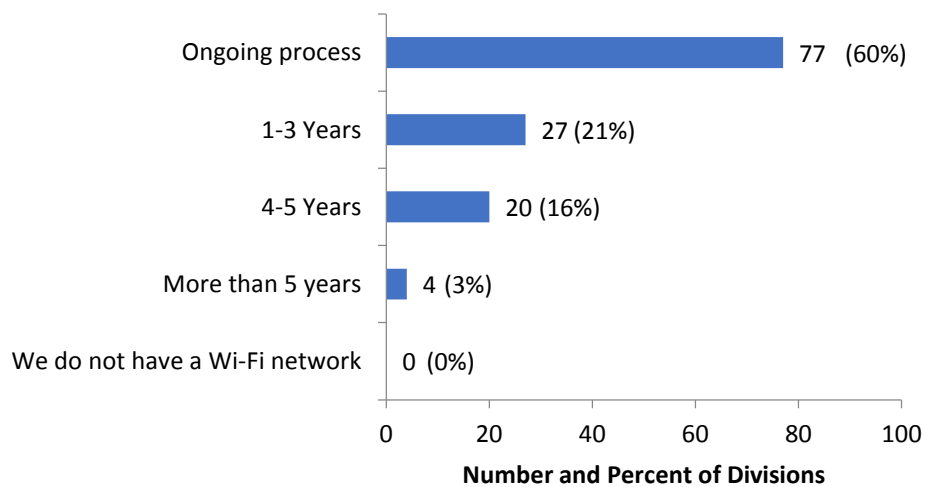
7. When was your last radio frequency heat map completed? (Only select one)



8. When did your division last upgrade its wireless infrastructure?



9. When does your division plan to upgrade its current wireless infrastructure?



10. Given the complexity of managing large-scale, high-density Wireless Local Area Networks (WLAN), VDOE is considering creating a statewide contract vehicle allowing divisions to create new partnerships with service providers who provide E-rate eligible managed services for Wi-Fi. If a contract vehicle for these services was available, how likely would your division be to take advantage of the contract and/or available services such as:

