



219 North Main Street, Suite 402  
Barre, VT 05641 (p) 802-479-1030 | (f) 802-479-1835

## **Annual Technology Survey Results 2016**

The Annual Technology Survey, administered statewide each year in June, gathers information about schools' technology programs and provides vital data for the legislative season, ongoing media requests, various reporting within school systems and general information for schools and the public on the current state of technology in schools in Vermont. The data is gathered via a simple survey tool and collected from June to July each year. While every year since 2012 has seen a good response rate on the survey, this year, 2016, has been exceptional with all public schools and most tech centers reporting. This report summarizes the data for 305 schools in Vermont. Typically, this survey is completed by either a Principal at the school or a Technology Director/Coordinator at the school or SU level.

The actual survey that was delivered can be found in the Appendix of this report.

The results are reported in the order they occur in the survey. The areas of the survey have been broken down into sections; Broadband Connectivity, One to One Program Status, Overall Devices for Student Use, Other, and Phone Systems.

The results in this report are aggregate results. Individuals and schools may request the raw data results in spreadsheet format. They are provided here in the Appendix in .pdf. Personal data from the persons entering the data in the survey is not included in this report. That data is kept within the Agency for reference purposes only. The survey results here represent all public schools, and most all of the CTE centers. For this year, 10 CTE centers and 295 schools reported.

It should be noted that this particular year of collection represented a joint effort with the E9-1-1 Board. There are two major collections encompassed; the Annual Technology survey related to technology infrastructure in school buildings and the phone section, which relates to phone 911 capacities at each building. The E9-1-1 Board can be called upon to answer questions related to the latter part of this report. In this report, those results begin on page 14.

Questions about information contained in the other sections of this report should be directed to Peter Drescher, Education Technology Coordinator, at the Vermont Agency of Education. His email is [peter.drescher@vermont.gov](mailto:peter.drescher@vermont.gov), and phone contact is 802-479-1169.

## Broadband Connectivity

Vermont considers the State Education Technology Directors Association (SETDA) standards, released in 2012, to be the goal we are hoping all schools can reach. The SETDA standards are as follows:

Broadband Access for Teaching, Learning and School Operations	2014-15 School Year Target	2017-18 School Year Target
An external Internet connection to the Internet Service Provider (ISP)	At least 100 Mbps per 1,000 students/staff	At least 1 Gbps per 1,000 students/staff
Internal wide area network (WAN) connections from the district to each school and among schools within the district	At least 1 Gbps per 1,000 students/staff	At least 10 Gbps per 1,000 students/staff

This year’s survey results indicate we are making good progress towards meeting the SETDA standards. The standards are nationally based and we find that for some of our very small schools, the standards seem over and above what is necessary or needed in those environments. We must continue to promote the acquisition of high quality connectivity at least to the 100Mbps standard for small schools. Even in some small schools the reliance on streaming video, real-time data, and other cloud-based information continues to grow. We encourage schools to look out ahead so limitations are not placed on instructional activities and ultimately student success.

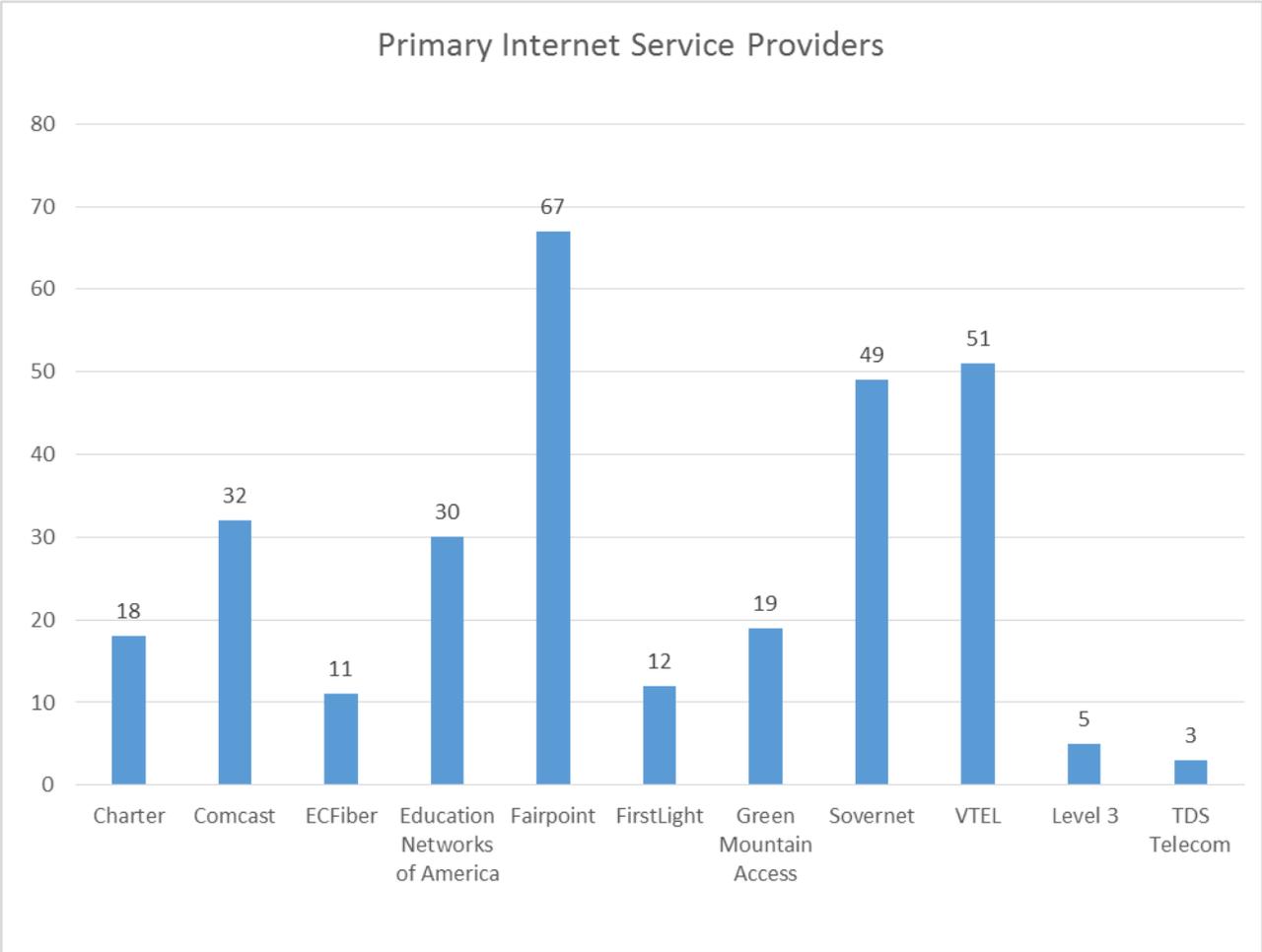
The Vermont Agency of Education, observing recent national trends and reflecting on the data within this report, urges all schools in Vermont to focus their energies on the acquisition of the highest speed broadband data that is possible in their region or community. We continually see more services and software moving to a “cloud-based” environment and technology will continue to see a trend of moving away from the reliance on powerful desktop or even laptop machines, to relying on powerful Internet connections to access software, tools, resources and services.

This first section of results refer to questions that were asked regarding school broadband connectivity.

1. Survey Question: What is the primary Internet Service Provider (ISP) for this school?

Results:

Not surprisingly, the three most prevalent ISP’s for Vermont are Fairpoint, VTel and Sovernet.



Notes: Chart represents ISP categories with 3 or more responses.  
 Total number of responses = 297

2. Survey Question: What is the primary connection type this school uses to connect to the Internet?

We ask this question because Fiber connections represent the highest quality for connection for schools nationwide.

Results:

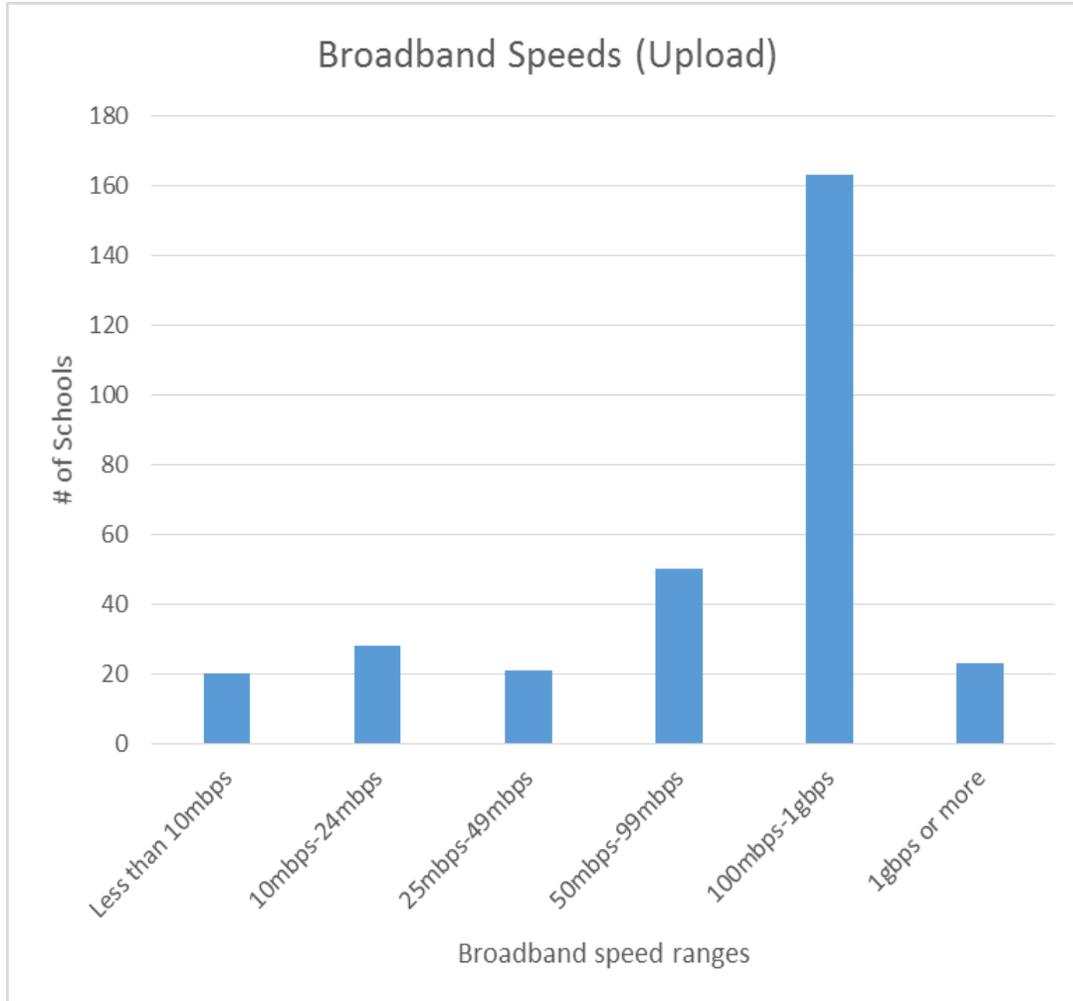
- 237 schools report Fiber as their primary connection type.
- 31 schools report Cable as their primary connection type.
- 17 schools report DSL (or Digital Subscriber Line) as their primary connection type.
- 10 schools reported "Other"

It is important to note that the number of schools using Fiber is actually higher than reported, as a quick follow-up reveals that many of the "Other" schools actually have some level of Fiber connectivity.

As more Fiber becomes available in more rural locations, we anticipate the number of Fiber connections to increase.

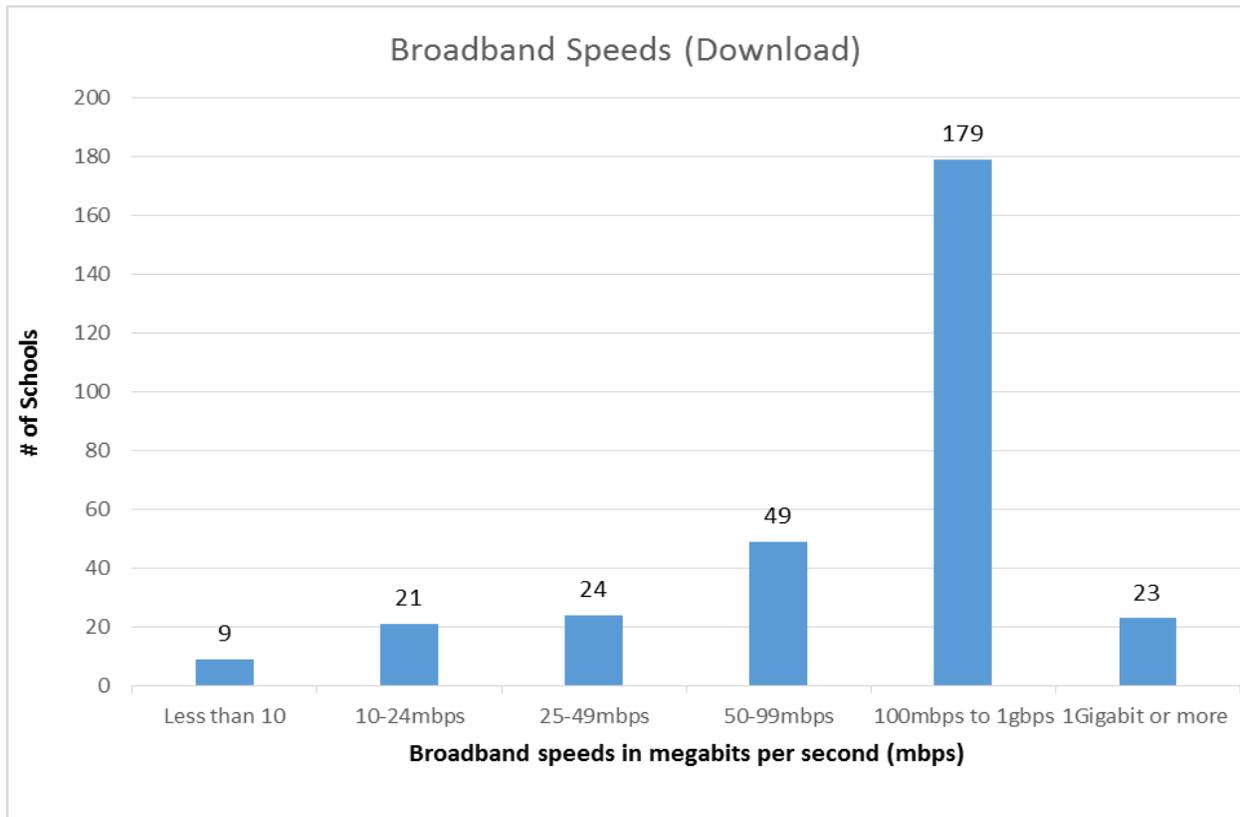
3. Survey Question: What is your current upload speed (as advertised by your provider?)  
Often upload and download speeds differ. It is becoming more common that connections have the same capacity up or down, but we still ask schools to report on both upload and download.

Result:



4. Survey Question: What is your current download speed (as advertised by your provider)?

Result:



5. Survey Question: Is your connection shared?

Results: 163 schools report a shared connection with multiple schools (at least the reporting school and one other).

4 schools reported Unknown—as most likely the survey taker did not know the answer.

The rest of the schools have a dedicated connection to the building.

6. Survey Question: Does your school have wireless Internet capability?

Results: In 2016, we can proudly report that 100% of schools reported having wireless or wifi access in their building. Only 5 schools reported partial access choosing “Yes, but only in selected parts of the building” as their answer.

With regards the follow up question: Do you anticipate upgrading your wireless Internet network in the next year? 138 schools reported “Yes” under this question, including all 5 of the schools that reported partial access or coverage in their building.

7. Survey Question: What is the typical cell phone coverage at the school?

Results broken down by Choices available:

Cell phone coverage is "spotty" at the school. **100** schools reported "Yes" (32%)  
Various networks have accessibility but throughout the school are "dead spots".

Cell phone coverage is available but consistently poor. **20** schools reported "Yes" (7%)  
Coverage is there, but not relied upon. May mean there are days when it is completely unavailable.

Cell phone coverage is good for certain networks only. **45** schools reported "Yes" (15%)  
AT&T, Verizon or Sprint may exclusively be the most reliable.

Cell phone coverage is good throughout the building. **81** schools reported "Yes" (27%)  
Can be relied upon.

Cell phone coverage is regularly unavailable. **59** schools reported "Yes" (19%)  
For the most part cell coverage is not viable in these schools.

This question is asked to ascertain the viability in the future of phones being used as instructional tools or resources. It also gives a sense of the viability of using cell towers as access to the Internet for schools. This in turn relates to addressing the "homework gap" whereby students can gain access to the Internet from home on school devices via a local cell tower signal.

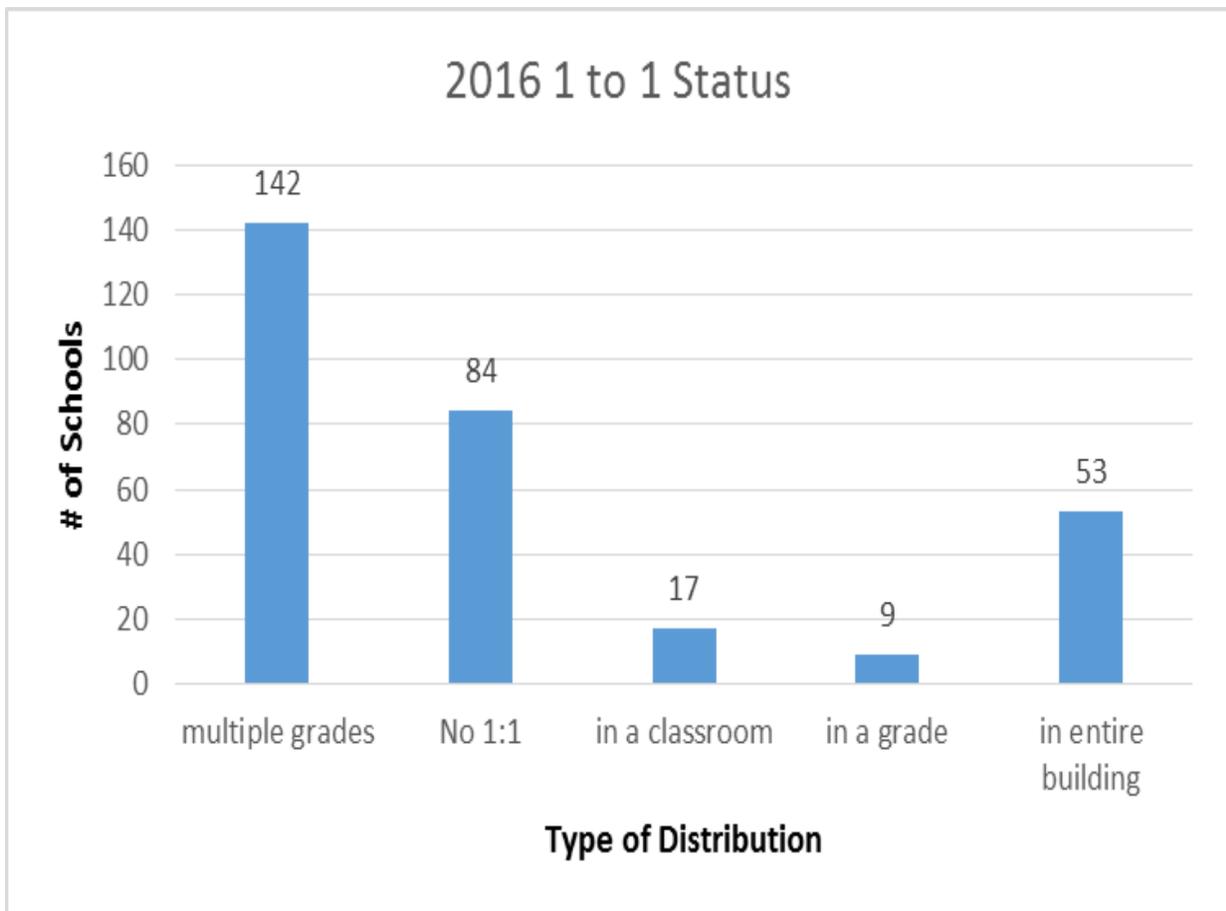
## One to One Program Status

One to one computing is defined as a program where each student has a computing device dedicated to them over the course of a year, or multiple years at their school. This device may or may not go home with the students depending on the individual school policy.

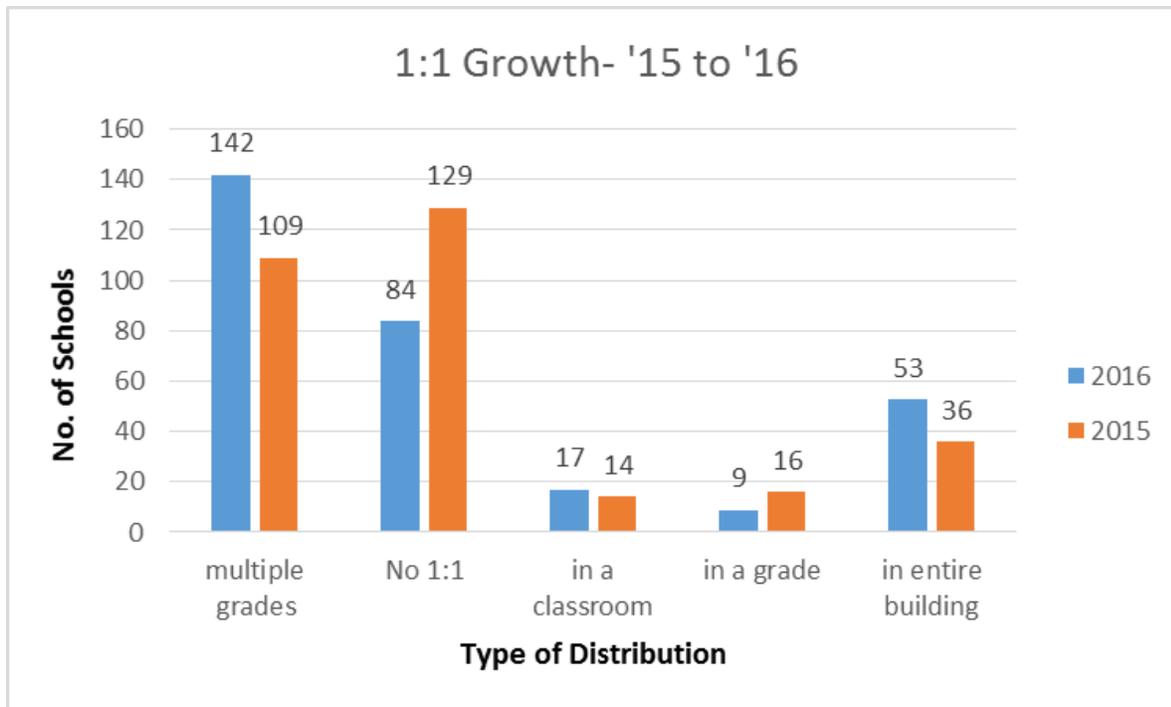
8. Survey Question: Please select all grade levels where one-to-one activities are in place. Within this question there was a breakdown for participants to indicate the extent to which this was present in their school. That data is represented in the graph below.

A further question had them indicate which individual grade levels one-to-one was taking place. That data is represented further along in this report.

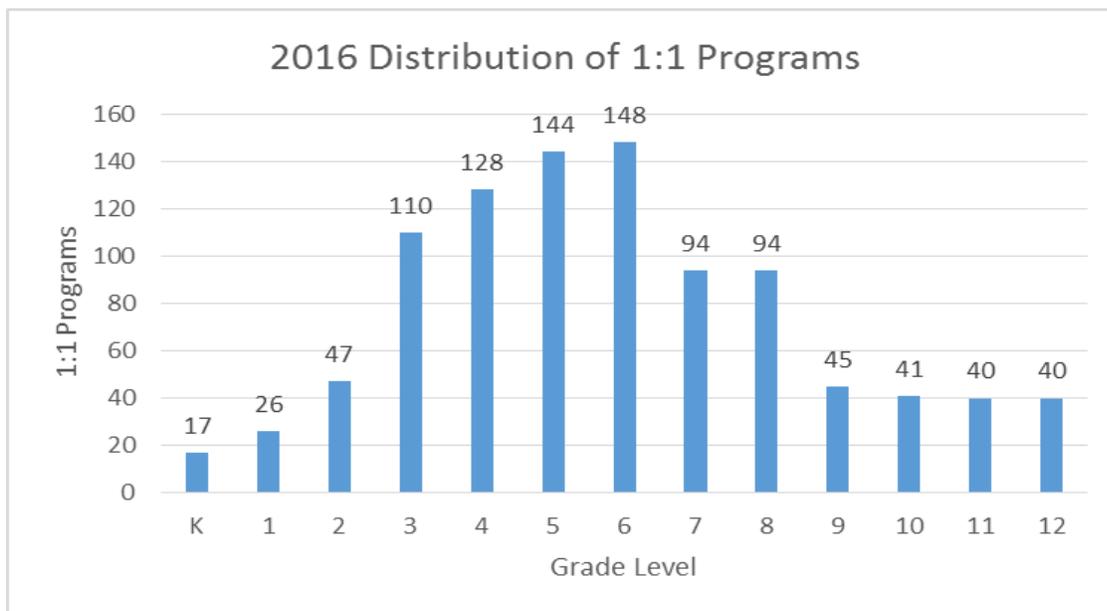
Note: The advent of Chromebooks has helped to expand one to one computing at schools.



Change in 1:1 status from 2015 to 2016

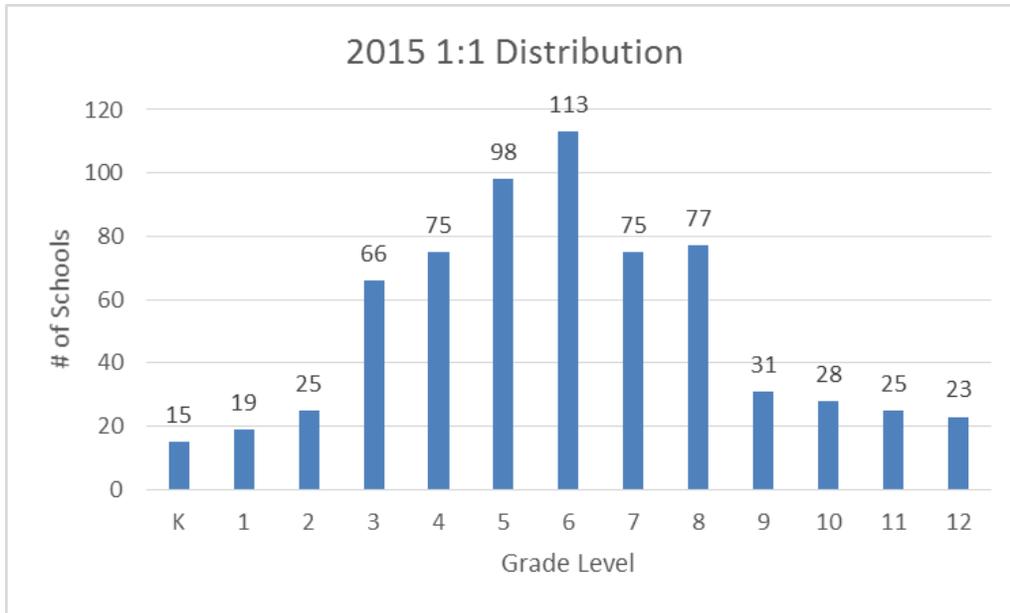


Grade Distribution of 1:1 programs



Not surprisingly, most of the 1:1 programs fall in the Middle grades, a segment of schooling that often allows for flexibility in scheduling and overall program scope. A rise in 1:1 programming at lower grades (i.e., K-2) for 2016 is also indicated. Grade levels 9-12 or High School programs have also increased over the past year, though not as dramatically as the increase in middle grade programs.

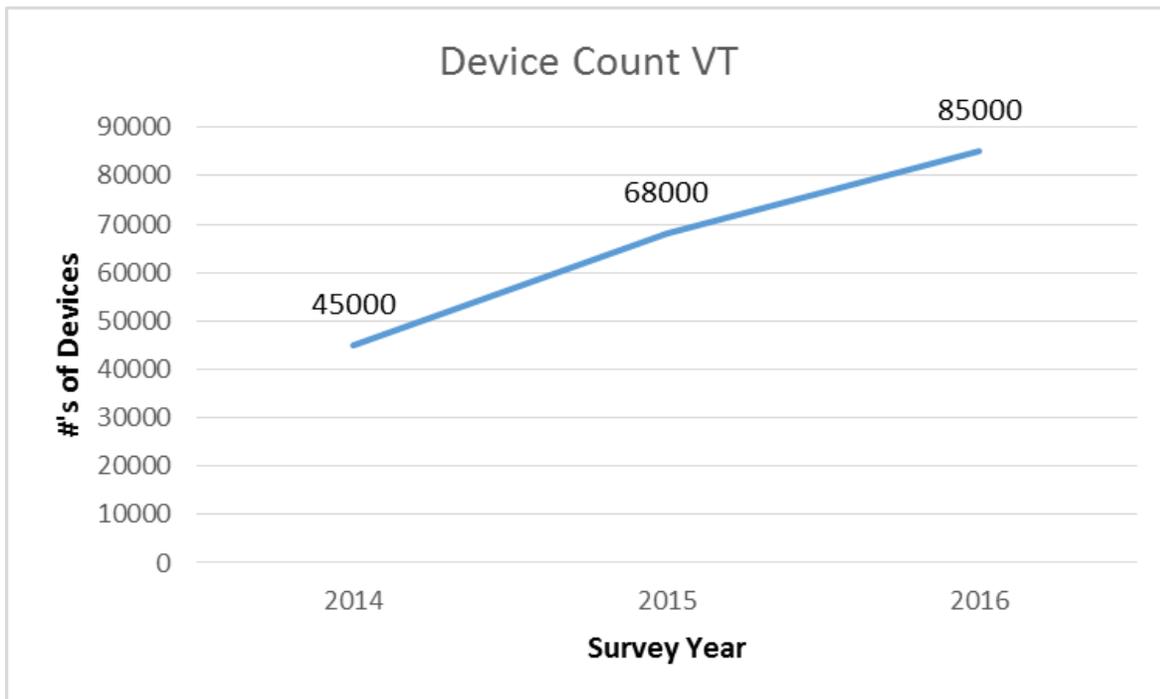
Comparison to 2015:



### Overall Devices for Student Use

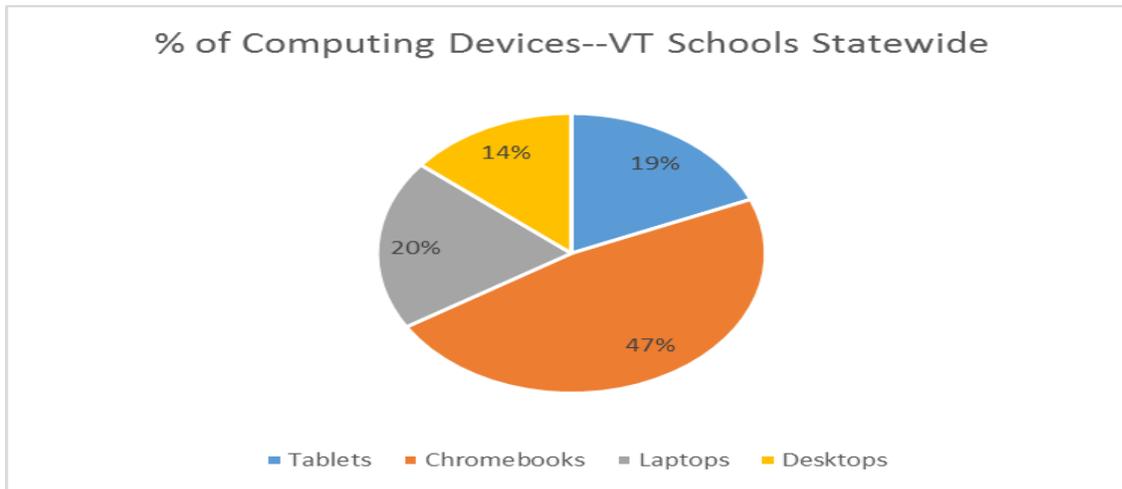
9. Survey Question: How many TOTAL devices are currently in place at the school for student use?

Results:



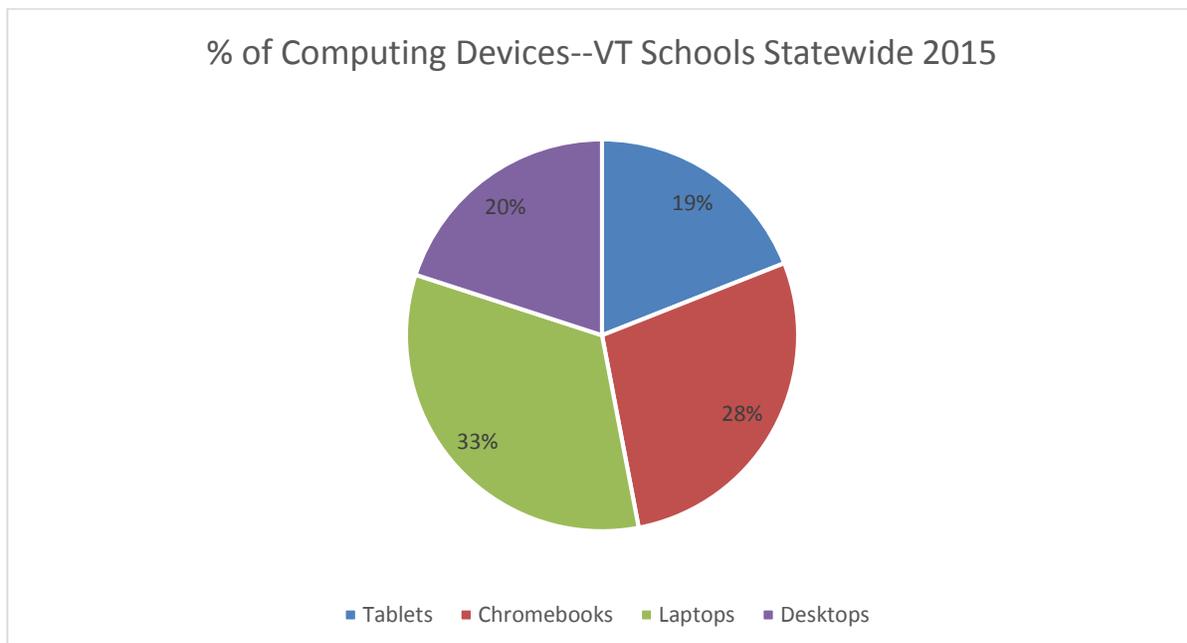
2016 marks the point where our device count now exceeds the student population in K-12 public schools. Our public school population for 2016 is approximately 77,000 students.

10. Survey Question: Please estimate the total percentage (%) of devices your school has for student use in each category.



Note that almost half of the computing devices available to students are Chromebooks. Since the advent of these devices, their steady increase in numbers has been remarkable. In essence, a “perfect storm” contributed: broadband access steadily has increased in speed and quality, Chromebook management allows education tech staff to streamline and the price point is highly affordable for schools.

Note the change from 2015:



## Additional Questions related to Educational Technology Program

11. Survey Question: Approximately what percentage (%) of your IT services are currently situated in the cloud?

Results:

150 schools report that more than 50% of those services reside in the cloud

60 of the 150 reporting above say they are at 90%

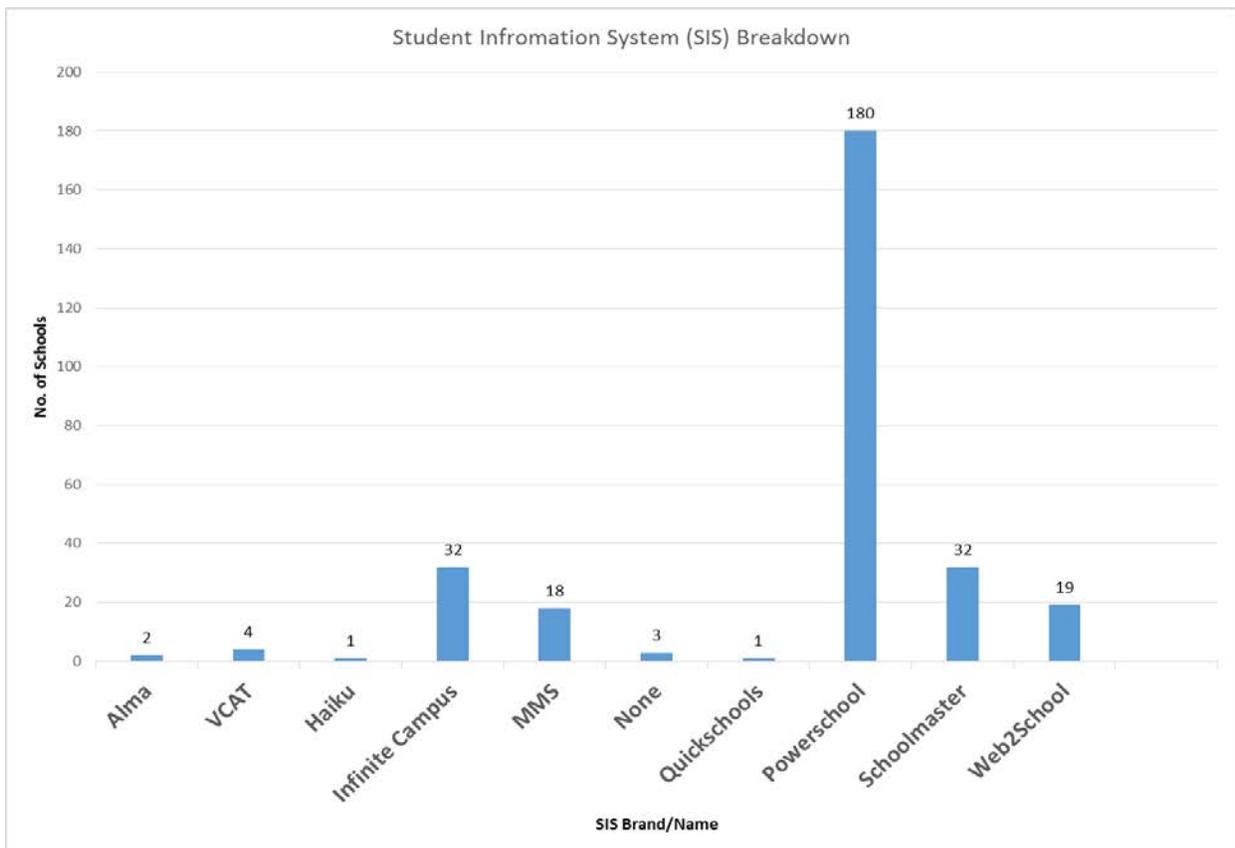
7 of the 150 reporting above say they are at 100%

12. Survey Question: Does your school have a Google domain?

Results: 100% of schools report “Yes”

13. Survey Question: What Student Information System (SIS) does your school currently use?

Results:



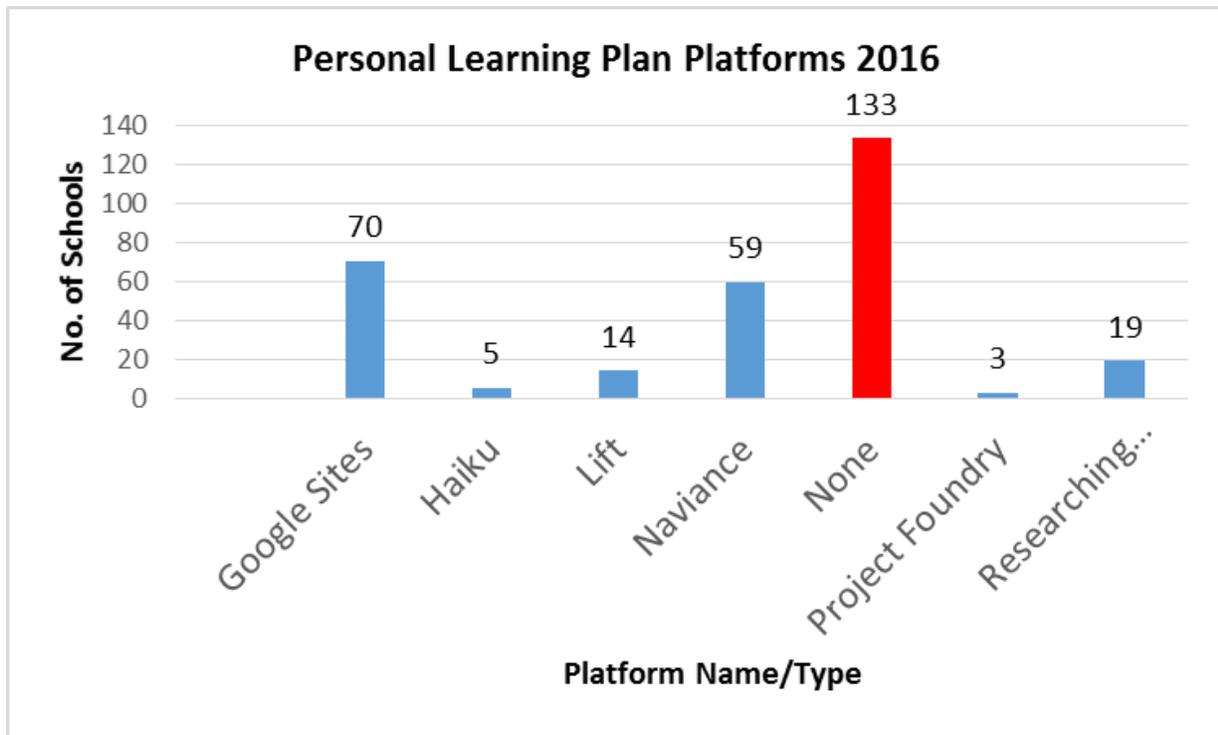
The largest share of SIS in Vermont is served by Powerschool at 180 schools.

14. Survey Question: Do you anticipate upgrading your SIS in the next year?

Results: 61 schools indicated “yes” as to upgrading or changing their SIS in the coming year.

15. Survey Question: What technology platform is your school using to support your work with Personalized Learning Plans?

Results:



“Researching” allows that a school is still seeking a solution to how they approach their PLP work.

A number of schools, 133 according to the survey, have not chosen a platform. Most all of those are Elementary schools who do not need to address Personalized Learning Plans at this time. A number of the Career and Tech Centers also have not chosen a platform or have indicated they are researching options.

## Virtual Learning

16. Survey Question: How many students take online courses through a provider other than Vermont Virtual Learning Cooperative?

Approx. 860 students take online courses outside of the Vermont Virtual Learning Cooperative.

Most of those take courses through Virtual High School, based in Maynard, MA

Other online providers indicated include the following:

APEX

Brown University

Community College of Vermont (CCV)

Brigham Young University (BYU Online)

University of Vermont

Middlebury Interactive Languages

PLATO

UDEMY Online Courses

American School

Raritan Valley Community College (RVCC)

ALEKS

Virtual Learning Academy Charter School

Questions pertaining to the questions above this line, should be addressed to Peter Drescher at the VT Agency of Education: [peter.drescher@vermont.gov](mailto:peter.drescher@vermont.gov), (802) 479-1169

## Phone Systems

In 2016, the Agency of Education partnered with the E9-1-1 Board and provided a survey vehicle to ascertain the current status of phone systems across the state in our public schools. The purpose of doing this was to catalog those schools that were currently up to date with E9-1-1 compliant phone systems. The following data was provided after analysis of the raw survey data by the E9-1-1 Board and provides a snapshot of the findings. Schools have been contacted directly by the E9-1-1 Board through the Fall to learn more about their plans for updating their phone systems where it is necessary to do so. There is some limited funding available through the E9-1-1 office to assist schools with this work.

Contacts for this section should be directed to the E9-1-1 Board, currently directed by Barb Neal. She can be reached at [barb.neal@vermont.gov](mailto:barb.neal@vermont.gov), and her phone number is (802) 828-4911.

The following summary was provided by Karen Reilly, Analyst on the E9-1-1 Board:

- 41% of schools report they are capable of sending the “best case scenario” information, i.e., complete address information along with specific location information (room number, or other specific location information within the facility).
- 31% of schools indicate their phone system will send the accurate physical address, but will not send specific location information within the facility.
- 12 schools, or 4%, report the billing address and telephone number will display to a call-taker.
- 24% of schools are unsure what information would be sent

It is worth noting that 72% of Vermont’s public schools indicate that, at a minimum, the correct physical address of their facility would display to the 9-1-1 call-taker.

Detail about each of the percentage categories follows:

### **A. Full Info: Precise phone number, extension and specific location within the facility: 125 schools (41%)**

This is the “best case scenario”. These schools are reporting that the 9-1-1 call-taker will see the caller’s unique phone number, extension, street address, town name and specific location within the facility.

Follow Up Needed:

Board staff will contact each school and coordinate test calls to confirm this self-reported information. Board staff will also confirm the school has a data maintenance plan in place.

## **B. Main Office Telephone Number and Associated Address: 95 schools (31%)**

This is the “next best” situation. These schools are reporting that the 9-1-1 call-taker will see the school’s main telephone number, street address, and town name. However, the specific location within the school will not be displayed.

Of the 95 Schools reporting this condition, 61 report they are NOT currently pursuing compliance, while 34 stated they are pursuing compliance. “Cost prohibitive” was the overwhelming response to why some schools were not currently pursuing compliance.

### **Follow Up Needed:**

Board staff will contact each school and coordinate test calls to confirm this self-reported information. Supervisory Unions will be provided with information about the 9-1-1 Compliance Grant funds which may provide needed financial assistance and incentive for these schools to pursue compliance more quickly.

## **C. Billing address Telephone Number and Associated Billing address: 12 schools (4%)**

This is the worst case scenario! The 9-1-1 call-taker is provided with phone number and address information which may be completely unrelated to the actual location of the emergency. All 12 schools stated they ARE actively pursuing compliance, though five indicate cost may be prohibitive.

### **Follow Up Needed:**

Board staff will contact each school and coordinate test calls to confirm this self-reported information. Supervisory Unions will be provided with information about the 9-1-1 Compliance Grant funds which may provide needed financial assistance and incentive for these schools. These schools are considered the highest priority in grant fund distribution.

## **D. Don’t know what info would be sent: 74 schools (24%)**

We were surprised by the number of schools reporting they do not know what information would be sent to a 9-1-1 call-taker.

### **Follow Up Needed:**

Board staff will contact each school and coordinate test calls to determine what information is being sent to 9-1-1. Schools may also be advised to consult with their telecommunications service provider for additional information about their capabilities. These schools may be eligible for grant funds once the capabilities are determined.

# Appendix

## Annual School Technology Survey 2016

Welcome!

The following annual technology questionnaire is being administered to all Vermont schools during the month of June 2016. The data collected serves a vital **need in keeping the Vermont Agency of Education and other public entities abreast of the school-based education technology status.** The survey contains questions related to three main topic areas: Internet access, one-to-one computing, and cloud storage. This year, in a cooperative effort with the E9-1-1 Board, there are some additional questions pertaining to the status of E9-1-1 phone systems in schools.

The Agency of Education is requiring schools to provide the information contained herein to the best of their ability. Responses must be made for each individual school, NOT for the Supervisory Union. Please use the most recent school year as your reference point when responding to questions regarding personnel actions, i.e. professional development, etc. Realizing that often there are updates/upgrades done over the summer, for Internet access related questions please indicate the service level you *anticipate will be available* at your school on September 1, 2016. If that is not known, simply indicate the current status. For student device related questions please use the *estimated numbers you anticipate* when school opens in August or September of 2016.

Again, if that is not known, use current numbers.

Number of Questions 35

Average Time to Complete is 18 minutes

Due Date is June 30, 2016

*Note:* The survey works on your IP address of your computer. If you leave the survey and come back, do so on the same machine and you should be fine. The best scenario to complete the survey is to review all of the questions from the .pdf version, make a few notes, and then complete it in one sitting.

Contact:

Peter Drescher, Education Technology Coordinator Vermont

Agency of Education

802-479-1169

[peter.drescher@vermont.gov](mailto:peter.drescher@vermont.gov)

## Annual School Technology Survey 2016

### Contact Information

Questions? Contact Peter Drescher (802-479-1169 | [peter.drescher@vermont.gov](mailto:peter.drescher@vermont.gov))

1. What is the name of your school?
2. What is your title?
3. What is your first name?
4. What is your last name?
5. What is your work email address?
6. What is your work phone number?
7. Is the primary technology contact also tasked with managing phone services in the building?
8. Are you the primary contact for technology-related matters at your school?

If you are not the primary contact at your school, please answer the following three questions:

9. What is the name of the primary technology contact?
10. What is the phone number of the primary technology contact?
11. What is the email address of the primary technology contact?

### Internet Access

12. What is the primary Internet service provider for this school?
13. What is the primary connection type this school uses to connect to the Internet?
14. What is your current upload speed (as advertised by your provider)?
15. What is your current download speed (as advertised by your provider)?
16. Is your connection shared?
17. How many schools share the connection? (please enter NA if not shared)
18. Does your school have wireless Internet capability?
19. Do you anticipate upgrading your wireless network in the next year?
20. What is the typical cell phone coverage at the school?

## Annual School Technology Survey 2016

### One-to-One Computing

One-to-one computing is defined as a school providing one computer or device to one student. This computer or device is essentially dedicated to this student full-time for an extended period of time. In some cases the devices are allowed to go home with students as well.

21. Which option most accurately describes the one-to-one status in your school?

22. Please select all grade levels where one-to-one activities are in place.

- a) None
- b) Kindergarten
- c) 1<sup>st</sup>
- d) 2<sup>nd</sup>
- e) 3<sup>rd</sup>
- f) 4<sup>th</sup>
- g) 5<sup>th</sup>
- h) 6<sup>th</sup>
- i) 7<sup>th</sup>
- j) 8<sup>th</sup>
- k) 9<sup>th</sup>
- l) 10<sup>th</sup>
- m) 11<sup>th</sup>
- n) 12<sup>th</sup>

The Questions below pertain to ALL devices, not just one-to-one.

23. How many TOTAL devices are currently in place at the school for student use?

24. Please *estimate* the percentage (%) of devices your school has *for student use* in each category. (Positive whole numbers only; must add up to 100%)

- a) Tablets (iPads, Surfaces, etc.)
- b) Chromebooks
- c) Traditional Laptops
- d) Desktop Computers (not mobile)

25. Does your school currently have a Bring Your Own Device (BYOD) policy?

### Cloud Storage

26. Approximately what percent (%) of our IT services are currently situated in the cloud?

27. Does your school have a Google domain?

## Annual School Technology Survey 2016

### Other

28. What Student Information System (SIS) does your school currently use?
29. Do you anticipate upgrading your SIS in the next year?
30. How many students take online courses through a provider other than Vermont Virtual Learning Cooperative?
31. What provider(s) do you use? (Please enter NA if no other provider is used)

(This section includes dropdown response options)

### E9-1-1 Capability

This year, 2016, the Agency of Education is working with the E9-1-1 Board to help ascertain the current state of E9-1-1 capability in the schools. To that end, the following questions are being asked specific to your schools' E9-1-1 capability. Please answer to the best of your knowledge.

In Vermont, efforts are underway to help schools become safer in the event they need to call 9-1-1. To assist us in better understanding the existing capabilities and/or limitations of your schools' telephone system(s), please answer the following questions:

32. If you dial 9-1-1 from any phone in your school, what information will be sent to the 9-1-1-call-taker?

#### **Answer Choices**

- a) The precise phone number of the extension being used and complete location information (street address, town name, floor and room #)
  - b) The main office telephone number and associated street address (regardless of the caller's location within the school)
  - c) I don't know what information would be sent
33. If someone were to dial 9-1-1 from any phone line in your school, it would be most beneficial if your school's telephone system was capable of scenario (a) above. If your answer was (b) or (c), are you currently pursuing the technology that would allow for scenario (a)?

#### **Answer Choices**

- Yes
- No

## Annual School Technology Survey 2016

### Other (continued)

34. If you are not pursuing such an option, what are your obstacles in doing so?

#### **Answer Choices**

Financial/cost prohibitive

We haven't thought about this/would like more information

Other (please explain)

35. Please provide the contact information of the individual responsible for your schools' telecommunications system(s).

#### **Answer Choices**

Name

Title

Phone #

Email