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Date: Oct 15, 2018

From: Adam Larsen, Assistant Superintendent

To: Board of Education

Cc: Thomas Mahoney, Superintendent

Re: October 2018 Board Report

Technology Appliances

Per a request from the September board meeting, descriptions of the various Barracuda networking appliances follow. As our support contracts for these devices are nearing their natural ends, we are currently reviewing new options that have reached the market since we implemented these tools in 2014. We are also looking at ways that we can consolidate these functions at one site to eliminate the unnecessary cost. We should be able to maintain functionality at both campuses without the additional expense of unused capacity.

Firewall

The firewall provides a number of services for the district. First and foremost, it handles the routing in and out of the district. Any outside connection first connects to the firewall and is then routed into Oregon. This includes our connections to Meridian School District and OCEC. On top of this, the firewall also functions as our primary means of security in the district. It achieves this through the use of an Intrusion Prevention System and forwarding rules. The Intrusion Prevention System analyzes all network traffic, looks for malicious activity, and blocks the traffic whenever necessary. The firewall forwarding rules ensure that only traffic on ports that we designate are allowed to reach the internal network or our servers. Beyond that, it also handles the port forwarding for our servers to be accessible from the outside, such as PowerSchool or the district website. Outside of security measures, the firewall also provides VPN access, Quality of Service traffic shaping, and simply logs all traffic entering or leaving the district. The VPN access is helpful, as it allows users to authenticate and connect to the district from outside, enabling them to retrieve documents or allowing the technology department to manage servers remotely. Quality of Service essentially prioritizes different types of traffic, such as Voice over IP or video conferences to make sure that bandwidth is appropriately allotted for these highly demanding services. The traffic logs help us to troubleshoot and identify problems when they arise. Technical specifications of the firewall include twelve Ethernet ports (each capable of 1000 Mbit/s speeds), a maximum throughput of 5.7 Gbps, management of up to 400,000 concurrent sessions,160 GB of Solid State storage, 8 GB of RAM, and an Intel Quad Core processor.

Web Filter

The Barracuda Web Filter is an appliance that sits in-line on the network, in between the firewall and the rest of the internal network. Like the firewall, it needs to capture all of the traffic that is attempting to leave or enter the district. Barracuda has created categories for almost every website, or at least all those they are aware of. The Web Filter gives us the ability to block or allow access to these categories, potentially changing the access based on the user

or group that is trying to reach the site. For example, the Web Filter generally allows access to streaming media, but does block most streaming content when it is a student is attempting to access it. The Web Filter also provides another layer of security, blocking access to websites that are known to be not safe and even filtering out most advertisements on the web. It even gives us the ability to inspect encrypted through the use of a certificate that has been deployed to all district devices, though this feature is currently only used for students. Technical specifications of the Web Filter include a maximum throughput of 2,000 Mbps and management of up to 10,000 concurrent users.

Spam Filter

The Barracuda Spam Filter has a much more limited scope than the other appliances. It is configured so that all of our inbound and outbound emails first get processed by the Spam Filter before reaching their next stop. This means that all messages are logged by the appliance, which analyzes them looking for potential and easily recognizable spam or even viruses. Messages that are blocked by the Spam Filter can still be manually delivered when necessary. While some filters are established manually, most spam is filtered by an algorithm developed by Barracuda, which examines where the email is coming from, where it is going, and the contents to determine if it is a valid and trusted message. Technical specifications of the Spam Filter include a 20GB message log and the capacity to manage up to 10,000 active email users.

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Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP)

NWEA's Measures of Academic Progress (MAP) test has been used in the school district since the Spring 2008 testing season. This assessment is a form of computer-adaptive testing, where the test taker is presented a series of questions that is tailored to that particular student's academic level. If a student answers a question correctly, the computer will give the student a more difficult question. If the next question is answered incorrectly, the following question will be easier. The number of questions in the test bank is vast, and no two students take the same exact test. This approach offers a number of advantages over traditional testing, including reduced standard error of measurement, less time spent testing, and fewer questions required for each student. Because the assessment is taken on the computer, results are available immediately after a student completes the test. Reports on student progress are available the next day, and growth is tracked over time (season to season and year to year).

In Oregon, the introduction of the MAP assessment has been along the following schedule:

School Year	Grade K	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12
2007-2008						S	S						
2008-2009						F, S	F, S						
2009-2010				F, W, S	F, S	F, S	F, S	F, S	F, S				
2010-2011			S	F, W, S	F, W, S	F, S	F, S	F, S	F, S	F, S	F, S		
2011-2012			F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S (SpEd)	F, W, S (SpEd)		
2012-2013			F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S (SpEd/ELL)	F, W, S (SpEd/ELL)	F, W, S (SpEd/ELL)	F, W, S (SpEd/ELL)
2013-2014			F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S (ELL)	F, W, S (ELL)	F, W, S (ELL)	F, W, S (ELL)
2014-2015			F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S				
2015-2016			F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S				
2016-2017			F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S				
2017-2018			F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S	F, W, S				
2018-2019	F	F	F	F	F	F	F	F	F				

F=Fall, W=Winter, S=Spring

We added the MAP assessment for grades K and 1 this year to examine whether this is a better, more comprehensive fit for our younger students. Initial indications are that students were able to complete the assessment successfully and that it correlates with other assessments that take more time to administer, score, and report. We may be looking to trim back some assessments in Fall of 2019 to streamline these processes and leave more time for instruction.

The Fall 2018 testing window was recently completed, and 2130 individual test events were recorded. Many personnel are involved in the testing window, including principals, teachers, aides, and tech staff, and all deserve recognition for their efforts.

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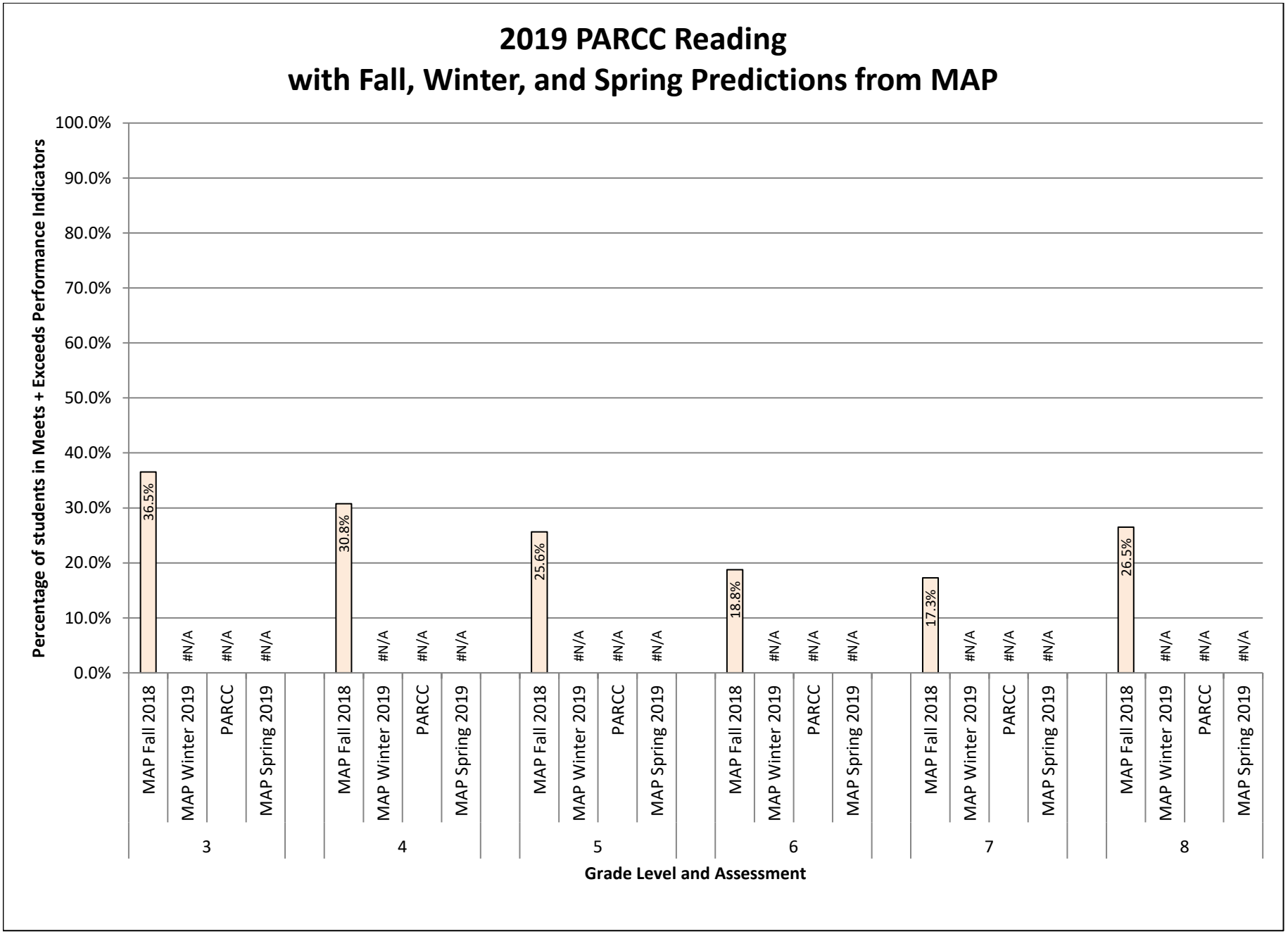
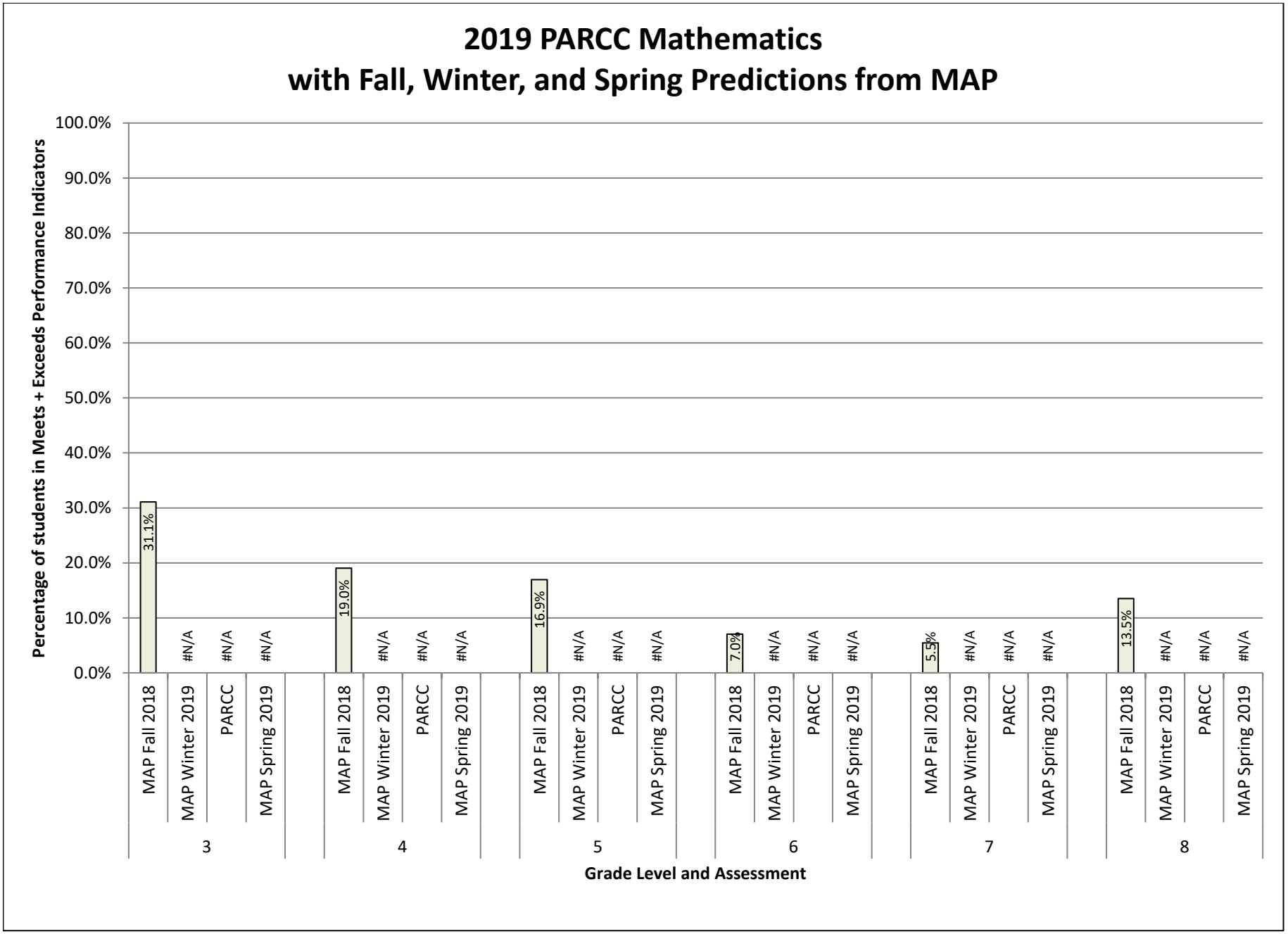
Predicting the 2019 PARCC

NWEA released updated MAP-PARCC correlate cutscores in November of 2016. These cutscores allow school districts to make predictions about which students are expected to meet and not meet expectations when they take the PARCC each spring. This analysis is useful both for 1) program evaluation, determining how well the overall curriculum is working to prepare students, and 2) resource allocation, identifying which students need additional support to make the gains they need to close the achievement gap with their peers.

A summary of expected performance in Reading and Mathematics follows. These graphs are used each year to track cohort progress toward the expected goal. By plotting the achievement tests on a consistent scale each term, it allows for easy comparisons to be made after every testing season. On these charts, which will be updated periodically throughout the 2018-2019 school year, predictions of PARCC performance based on MAP scores will be plotted alongside actual PARCC performance from the same school year.


2019 PARCC Reading
with Fall, Winter, and Spring Predictions from MAP
Percentage of students in Meets + Exceeds Performance Indicators
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
36.5%
#N/A
#N/A
#N/A
30.8%
#N/A
#N/A
#N/A
25.6%
#N/A
#N/A
#N/A
18.8%
#N/A
#N/A
#N/A
17.3%
#N/A
#N/A
#N/A
26.5%
#N/A
#N/A
#N/A
MAP Fall 2018
MAP Winter 2019
PARCC
MAP Spring 2019
3
4
5
6
7
8
Grade Level and Assessment


2019 PARCC Mathematics
with Fall, Winter, and Spring Predictions from MAP
Percentage of students in Meets + Exceeds Performance Indicators
100.0%
90.0%
80.0%
70.0%
60.0%
50.0%
40.0%
30.0%
20.0%
10.0%
0.0%
31.1%
#N/A
#N/A
#N/A
19.0%
#N/A
#N/A
#N/A
16.9%
#N/A
#N/A
#N/A
7.0%
#N/A
#N/A
#N/A
5.5%
#N/A
#N/A
#N/A
13.5%
#N/A
#N/A
#N/A
MAP Fall 2018
MAP Winter 2019
PARCC
MAP Spring 2019
3
4
5
6
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8
Grade Level and Assessment

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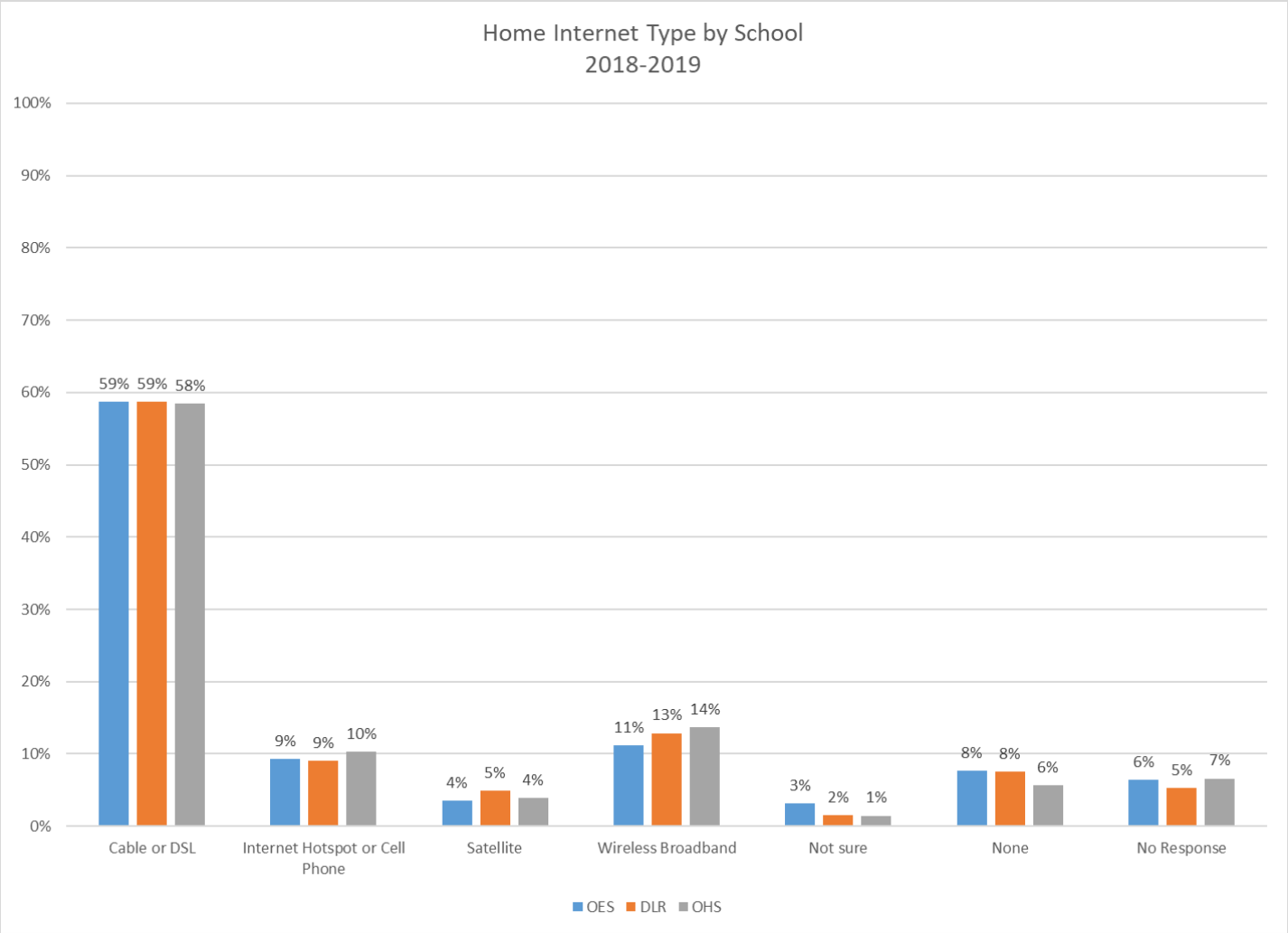
Home Internet Survey

As we continue to explore learning management systems and other tools for moving the curriculum into the digital age, a perennial question is the availability of the Internet in our students' homes. We continue to ask questions related to device and connectivity during registration. Results from the summer of 2018 are shared below.

Overall, connectivity appears to hover above 90% in all three of the buildings. This remains high, despite changes in demographics that might suggest that our students might have limited access to the Internet.



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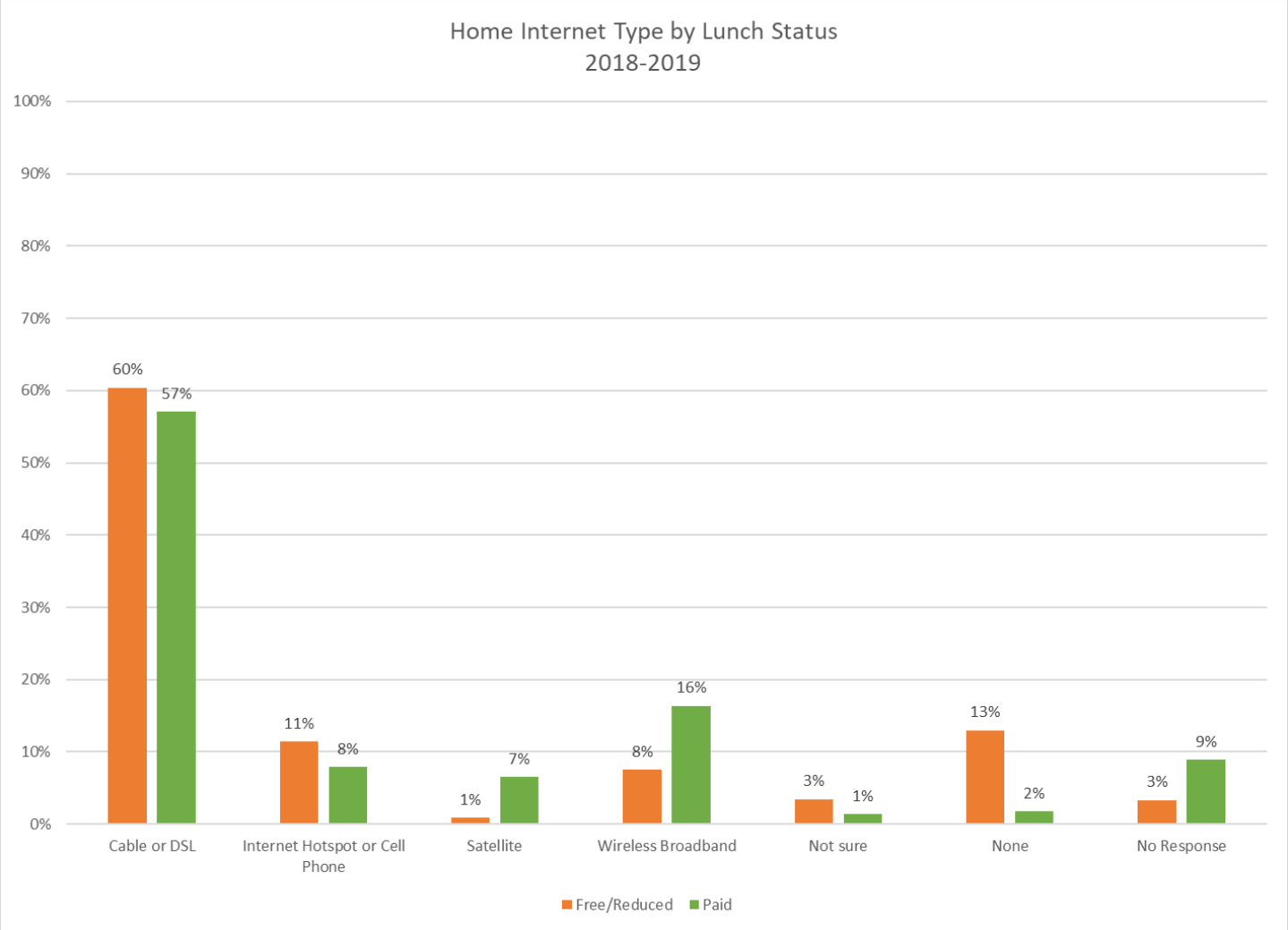

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E-Discipline

About five years ago, we developed an electronic solution to handling discipline referrals. It combines teacher submission pages, workflows for administrators, reporting, charting, and communicating with teachers, parents, and students. It started humbly and grew into a fully-featured PowerSchool plugin that could be implemented anywhere. When it became apparent that other PowerSchool districts might want to use this in their settings, Dr. Mahoney and I worked out an agreement with the Board where OCUSD would receive 20% of the sales figures from that plugin. All sales and support of the plugin would be handled through my consulting company, Aurora Educational Technology.

Although this agreement was reached in principle a few years ago, the first sales of E-Discipline did not occur until summer 2018. Three districts came online this past summer and have successfully implemented this paradigm—two in Illinois and one in Virginia. The OCUSD portion of these three sales totals $600.00, which will be paid in October. The current plan is to make this payment at the end of each quarter for sales that have been made during the preceding three months.

This is a very exciting development as we continue to extend the reach of the important data work that we have done in the district. It speaks volumes to our internal capacity when other schools are able to make use of what we have created. We are planning on following the same process for our Grade Verification and Early Warning System plugins, so stay tuned for future updates as we expand these offerings.

Respectfully Submitted,

Adam P. Larsen

Adam P. Larsen
Assistant Superintendent
Oregon CUSD #220