**TO:** **Finance, Buildings/Grounds Subcommittee of the Board**
**FROM:** **Jason Perrin, D.Ed.**
**RE:** **Technology Proposal**
**REVISED:** **April 2018**

# Five-Year Technology Proposal (DRAFT)

## Background/Rationale:

In 2018, it is no longer possible to separate conversations regarding technology and those surrounding the triangular foundation on which we build the student experiences that serve as the infrastructure for our district's core mission. The foundation of curriculum, instruction and assessment now include and assume the use of various technological tools that serve as platforms, avenues, and instruments of strong pedagogy. Quality teaching and learning require strong pedagogy, and strong pedagogy now assumes and requires the application of an ever developing technology.

Perhaps more important than the technological devices and software that we put in the hands of our administrators, teachers, and students is the professional development required to incorporate these tools into daily instructional practice and learning experiences. In order for our students to experience quality, technology rich instruction, we must take steps to ensure that our teachers have the support needed in order to deliberately, intuitively, and seamlessly incorporate all resources available to them, in order to differentiate instruction as the vehicle for a personalized learning experience for students.

For the purpose of expanding support for teachers and enhancing quality experiences for our students, our team investigated our current technology structure in order to consider a multi-year plan. Our proposal can be found below and begins with a review of our current technology use, support, and integration.

*The **overall goal or rationale**, the overall goal of this plan is to enhance student experiences in classrooms and maximize achievement and post high school readiness…This inquiry resulted in an investigation to meet the overall*

*goal(s) by expanding technology leadership underneath the curriculum and instruction umbrella, while providing greater supports and professional development for teachers, that would enhance student experiences, and overall district teaching and learning. This rationale also included consideration of the resulting operating costs associated with any recommendation for change. This proposal supports our personalized learning efforts, through the hybrid learning model, and through continued use of our learning management system (LMS).*

## Current Instructional Technology Use/Integration:

### Elementary

Students in grades 3-5 use blended instructional models that combine proven teaching techniques with new digital resources to create a more personalized learning environment for students. Known as "hybrid learning", these models are recognized by the Pennsylvania Department of Education as an effective way to increase student engagement.
Our school administrators and teachers have worked with the Hybrid Learning Institute (HLI) to develop a customized hybrid learning model that meets the unique needs of our students. Hybrid learning helps us further individualize the educational experience for students and provide teachers with the ability to better use technology, digital applications and student data in the classroom. Each hybrid classroom incorporates a variety of instructional methods on most school days- teacher instruction in small groups, collaborative learning with other students and independent learning using books or computers. The goal is for every single day to be different, engaging and interesting for our students. It allows teachers to spend more time with students in small groups, provides better opportunities for students to interact with their peers and provides faster feedback about how well the students are understanding the material.
Students in grade K-2 use a blended approach for whole and small group instruction and during independent learning stations. Ipads are the preferred device for the early learning environments but we encourage second grade teachers to introduce students to the laptop functions to assist with the transition to the hybrid learning station rotation model.

### Middle School

Students in grade 6 also use the hybrid learning model of instruction. Teachers continue to work with the Hybrid Learning Institute and Intermediate Unit consultants and coaches to develop and implement a model appropriate to the middle school. The goal for teachers is to utilize small groups, collaborative stations, and independent tasks (often on the computer) to differentiate instruction according to student needs.

Next year, grades 7-8 teachers will also use the hybrid learning model of instruction. As with sixth grade, our goal is to provide engaging, real world learning opportunities that teach problem solving skills necessary for success in the 21st century. Because the middle school is 1:1 and all students have access to a laptop, teachers will continue to integrate technology tools within the blended learning model.

The middle school currently offers two technology education courses which expose students to a variety of topics that fall under the Science, Technology, Engineering, Math (STEM) umbrella. Next year, we look to revamp these courses, as well as other unified arts courses, to better address STEM standards. Goals include scaffolding instruction focused on STEM standards beginning in sixth grade and culminating in a student self-directed project in 8th grade.

Teachers in grades 6-8 continue to utilize itslearning, our Learning Management System (LMS). It's Learning has become the hub where teachers can individualize the learning experience in both content and pacing. Various technology resources are linked to itslearning for easy access at home or in school. Students are able to keep pace with their course material at all times, freeing up the teacher to work with small groups and individuals on learning needs.

Finally, middle school teachers utilize digital content to support instruction and meet students at their level of understanding. Aleks, MobyMax, Study Island, NoRedInk are a few of the programs used by students. These resources supplement classroom instruction and allow students to fill in gaps in understanding and/or move ahead in content.

## **High School**

Instruction and technology are inseparably bound at Gettysburg Area High School. As educators, two critical goals in our profession are to empower students to access, analyze, and evaluate information and to personalize content and skill acquisition to each student's needs. With these goals in mind, the utilization of technology becomes imperative. With a device in the hands of each student, the possibilities of learning become nearly limitless. We live in a world in which information, as well as the ability to utilize, synthesize, and generate content with information, equates to power. In the past, this power was often placed in remote storehouses, such as libraries. As our libraries of the past have taken on an

electronic form, open access to the readily-available information (as well as the capacity to effectively utilize such information) is critical for preparing our students to compete in a global economy. Providing such access to ALL learners, even those traditionally at a disadvantage (due to economic and other situational factors), is one of the most beneficial aspects of making a "one-to-one" device model an essential component of any high-school education.

With a commitment to a "one to one" instructional environment, there is also a commitment to personalized learning. Maximizing growth and achievement for each and every student in our care requires a differentiated approach to meet each student's needs at the appropriate instructional level. One-to-one computer models provide the means to allow students to progress through a curriculum at their own pace, in a remote space, and in different ways and modalities than can be accomplished through traditional means. A one-to-one model of technology integration provides instructors with the ability to communicate efficiently and effectively. Well-integrated technology allows instructors to construct various pathways of learning, and it provides a platform for students to easily become creators of content--synthesizers and generators of information in various forms.

A well-functioning Learning Management System (LMS) has also become a critical element within today's classrooms. Instructors can use an LMS, such as itslearning, to orchestrate the educational process into a consistent and relevant learning environment. Uninhibited access to such a system equates to a classroom without borders. Learning spaces become virtual and can extend well-beyond the limitations of a brick-and-mortar school or the 7-hour day. The teacher can be accessed remotely, and so can the content. Learning can happen at any time. Such a platform also allows instructors to customize and individualize the learning experience in both content and pacing. At GAHS, teachers are able to utilize electronic tools/systems such as Albert, Study Island, Khan Academy, ALEKS, Google Classroom, CDT's, Flipgrid, Quizlet, and Quizizz to deliver content, provide choice and differentiated pathways to learning, assess learning, and create a learning environment that is more authentic to how technology is integrated into daily life. The LMS acts as the educational hub, bringing order to an expansive network of educational offerings and creating a consistent and efficient experience for students, teachers, and parents. Itslearning provides messaging systems and other tools to promote functional communication, helping assignments and assessments flow back and forth from instructor to student(s) within the LMS.

Aside from all the benefits already mentioned about a one-to-one device model, students also gain increased access to other learners. Collaboration and teamwork are 21st-century skills that we are obligated to foster in our students, and access to collaborative platforms like Google Docs, Flipgrid, or *Itslearning* discussion boards enables students to interact with one another in a more engaging way, as peer-to-peer discussions provide the opportunity to extend interaction beyond the confines of synchronous communication. Such communication allows for more reflective and developed communication as well as a provides our more socially inhibited students with the opportunity to engage their classmates in an authentic, yet virtual way. This electronic interaction is now the norm throughout the world, both in and out of the workplace. It is our job as educators to prepare our students at GAHS to become successful citizens in such a world. For all the above-mentioned reasons, we must remain fully committed to an instructional model that is fully integrated with technology.

## Rationale for Additional Personnel:

### Rationale For Technology Manager

The Technology Department staff currently consists of:
Technology Director – Jeffrey Williams
High School Building Technician – Sarah Warner
Middle School Technician/ Help Desk – John Ziegler
K-5 Technician – Stacy Owings
Administrative Educational Software Specialist – Lynn Schoppaul (While Lynn Schoppaul is listed as a member of my staff, she spends the majority of her time maintaining the Student Information System and also completing PIMS reports for the state.)

With the resignation of Doug Dubs in April 2017, it was decided to not replace that position. Instead, we outsourced some of server and network management to an outside company (Candoris) in the amount of $33,540 per year. While this service was helpful, it has presented some challenges: Candoris is doing well at monitoring our servers and network but if something breaks that needs fixed it is not covered in their contract. That work is then pushed back to us or we have to pay additional money to have them do the repairs. Outsourcing Doug's position never replaced an onsite staff member to help where needed. This has made it hard to keep up with technology support requests when staff members are out sick or on

vacation. Staff have voiced their frustration of not having enough support to maintain technology. It has created a bottleneck in the advanced troubleshooting of issues. If my staff is stuck trying to fix a problem, they come to me for help. Since I am responsible for the Budget, E-rate, Purchasing, and server/network tasks not covered in our outsourcing contract it can delay response time. Instead of doing my daily management tasks, I find myself doing more support tickets in the schools. I am doing my management tasks at home in the evening to keep caught up. There have been two incidents were we needed to provide emails for legal or Right to Know requests. These email searches take a long time to prepare which resulted in extra work outside of the normal workday or additional costs to outsource these tasks.

**Recommendation**

We recommend eliminating the outsourcing from Candoris and hiring a staff member to replace Doug Dub's position. The title for the new staff member would be, Technology Manager. This position would report to the Technology Director.

**Rationale For Instructional Technology Director**

With the expansion of our hybrid learning station rotation model and GAHS Blended Learning Model, teachers are in need of consistent support with technology integration. We need a person designated to overseeing the implementation of our hybrid and blended models, supervising instructional coaches and monitoring the technology integration of all professional staff. The IT Director would plan and deliver professional learning opportunities for our teachers and ensure instructional coaches are supporting teachers with the integration of their new learning. He/she would also monitor the usage of our digital content and follow up with teachers when reports evidence a lag. Our Learning Management System (LMS) requires someone be dedicated to communicating the updates, integrating the changes and monitoring the usage by teachers and students. This responsibility would be designated to the IT Director instead of being distributed to school principals and Jeff Williams.

**Recommendation**

We recommend hiring an administrator to lead our efforts toward personalizing learning for our students and expand our hybrid learning and blended learning practices in out district. This administrator would work directly with Dr. Lay to ensure our technology integration is driven by our curriculum and instructional pedagogy.

**Rationale For Instructional Coaches**

With the expansion of our hybrid learning station rotation model and GAHS Blended Learning Model, teachers are in need of consistent support with technology integration. Support is needed on-site and needs to align with the instructional delivery models endorsed by GASD. The coaches serve to support teachers in a non-evaluative manner so teachers feel comfortable seeking assistance from them. The coaches would be able to facilitate job-embedded professional learning opportunities, model instructional expectations, co-teach learning experiences and secure technical resources for teachers that support their content.

**Recommendation**

We recommend eliminating the outsourcing of instructional coaches from the LIU and hiring our own instructional coaches so they can be available for consistent support not just on a few designated days we currently offer our teachers.

**Plan For Instructional Coach Implementation** We would plan to utilize one of the instructional coaches at the secondary (shared between GAMS and GAHS) and one at the elementary level (shared between the 3 elementary campuses). This would give both coaches approximately the same number of teachers to support. Eventually we would have an instructional coach at GAHS, GAMS and 2 coaches to be shared at the elementary schools.

**Cost savings:** We have spent $77,500 for the 2017-18 school year outsourcing support from the LIU for coaching, professional development and planning days and from Delicker Strategies for solutions and operational support. Therefore, there would be a $77,500 savings to the overall district budget, not noted in the Financial Plan for the Technology Proposal.

**Rationale for Chromebooks**

To accommodate the additional staff to support technology we looked at the devices we are providing students to see if there is a cost effective alternative to the existing devices in use. In the 2011 – 2012 school year, we piloted Chromebooks at our Middle School. At that time, there were many applications and online subscriptions that did not support these devices. Teachers became frustrated because they could only do certain things on Chromebooks. Since then, many schools have started using them because of their cheaper cost so content providers have upgraded their content to support Chromebooks. Beginning this Winter/Spring we began a pilot in 3 classrooms at the Middle School to assure they would be able to meet the needs of our staff. So far all teachers report that they like Chromebooks because they hit the power button to turn them on and start working almost immediately. The students so far

have liked them as well because of their easy of use. For the Technology staff, they are also easy to manage because changes and updates are pushed out by Google and automatically installed when the devices are turned on. Google also has a management console that allows for centralized control of the devices. Chromebooks are being used in many districts, as they have proven to be durable (in one to one settings), effective for cloud based and most programming needs, while being cost effective compared to other devices.

## Recommendation

We recommend replacing 6th grade computers with Chromebooks this summer and further piloting of Chromebooks in the District for the 2018-2019 school year. Moving forward we will begin migrating to Chromebooks throughout the District in future years.

### Technology Proposal: Financial Plan

| Budget Type | 2017-2018 Current Costs | 2018-2019 Proposed Costs | 2019-2020 Proposed Costs | 2020-2021 Proposed Costs | 2021-2022 Proposed Costs |
|---|---|---|---|---|---|
| **Infrastructure Costs**<br><br>**(Licences, Server, Maintenance, Contracted Services,..)** | $812,267 | $779,267<br><br>-33K Outsourcing (Candoris) Brought in House | $779,267 | $779,267 | $779,267 |
| **Device Costs**<br><br>**Student/Teacher Devices** | HS: $222,080<br>MS: $127,180<br>K-5: $95,400<br>Teachers: $32,700 | HS: $222,080<br>MS: $68,685<br>K-5: $95,400<br>Teachers: $32,700 | HS: $111,700<br>MS: $68,685<br>K-5: $95,400<br>Teachers: $32,700 | HS: 111,700<br>MS: $68,685<br>K-5: $79,830<br>Teachers: $32,700 | HS: $111,700<br>MS: $68,685<br>K-5: $71,352<br>Teachers: $32,700 |
| **Infrastructure and Device Totals** | **$1,289,627** | **$1,198,132** | **$1,087,752** | **$1,072,182** | **$1,063,704** |
| **Current Technology Leadership and Support Staffing Costs*** | Director:1<br>Support:3<br>PIMS: 1<br><br>$426,073 | Director:1<br>Support:3<br>PIMS: 1<br><br>$426,073 | Director:1<br>Support:3<br>PIMS: 1<br><br>$426,073 | Director:1<br>Support:3<br>PIMS: 1<br><br>$426,073 | Director:1<br>Support:3<br>PIMS: 1<br><br>$426,073 |

| | | | | | |
|---|---|---|---|---|---|
| **Recommended Additional Technology Leadership and Support Costs**** | Instructional Technology Director: 1 (Investment-Portion of 17/18) | Instructional Technology Director:1=110K Tech Manager: 1=87K Coaches: 2=164K<br><br>Total=361K | Instructional Technology Director:1=11 Tech Manager: 1=87K Coaches: 3=246K<br><br>Total=443K | Instructional Technology Director:1=11 Tech Manager: 1=87K Coaches: 3=246K<br><br>Total=443K | Instructional Technology Director::1=11 Tech Manager: 1=87K Coaches: 4=328K<br><br>Total=525K |
| **Estimated Grand Total: Technology Proposal** | **$1,715,700** (Investment-Portion of 17/18) | **$1,985,205** | **$1,956,825** | **$1,941,255** | **$2,014,777** |
| | **Change In Costs** | **+$269,505** | **(-$28,380)** | **(-$15,570)** | **+$73,522** |

***All Personnel Costs in the chart above, include the combined costs of salaries/benefits***
****All Personnel Costs in the chart above, include the projected costs of salaries/benefits***
***Relationships between New/Existing Positions are show in the Organizational Chart-Appendix A***

## Summary of Proposal:

The original Goal/Inquiry: *"the overall **goal** of this plan is to enhance student experiences in classrooms and maximize achievement and post high school readiness…This **inquiry resulted in an investigation to** meet the overall goal(s) by expanding technology leadership underneath the curriculum and instruction umbrella, while providing greater supports and professional development for teachers, that would enhance student experiences, and overall district teaching and learning. This rationale also included consideration of the resulting operating costs associated with any recommendation for change. This proposal supports our personalized learning efforts, through the hybrid learning model, and through continued use of our learning management system (LMS).."*

This five-year plan, beginning with the current school year, allows for several key aspects of our original effort to be realized while mitigating the impact on the overall district budget. This plan enables us to consider and implement less expensive student devices over a multi-year period. The savings associated with the less expensive devices would then be leveraged to increase personnel to meet a variety of current and future needs. The instructional technology director would

work closely with Dr. Lay and the principals to provide leadership in the instructional technology environment, and serve with a future focused lens, to make sure that **instruction is driving technology.** Instructional coaches would then be added over the period of this plan. The coaches would work with Dr. Lay, the principals, and the Instructional technology director in order to support our teachers by providing ongoing embedded professional development. The would be done in a variety of ways, including but not limited to: large groups, small teams, and individual teachers and staff members. The recommended technology manager would work with Mr. Williams, and would provide duplicity in some abilities that we sometimes call "keys to the kingdom" types of processes. The manager would also be able to relieve the district of outsourcing work that is currently done through a contracted service.

Overall, our team believes that this plan enables us to provide effective 1:1 computing devices, while providing additional support in the infrastructure world, and additional leadership and support in the instructional technology realm.
Our team feels strongly this plan will best provide additional leadership and support for our teachers in order to enhance instruction and maximize positive instructional and programming experiences for our students in a personalized environment.

## Recommendations For Next Steps:

### Continue to Pilot Devices

In order to move forward with implementing devices at a lesser cost while determining benefits and challenges, Chromebooks would be piloted at each organizational or grade level prior to implementation. Several 6th grade teachers are currently piloting Chromebooks to prepare for implementation of new devices in Fall 2018. The piloting and implementation of the Chromebooks at various levels would follow the timeline below. It is important to note, that the piloting and implementation timeline could be rearranged in order to more quickly implement Chromebooks.

### Pilot/Implementation Timeline

| Organizational/Grade Level | 2017-2018 | 2018-2019 | 2019-2020 | 2020-2021 | 2021-2022 |
|---|---|---|---|---|---|

| | | | | | |
|---|---|---|---|---|---|
| **Middle School** | 6th Grade Pilot | 6th Grade Implementation<br>7th Grade Pilot<br>8th Grade Pilot | Full Implementation of Chromebooks | Full Implementation of Chromebooks | Full Implementation of Chromebooks |
| **High School** | N/A | 9th Grade Pilot<br>10th Grade Pilot | 9th and 10th Grade Implementation<br>11th and 12th Grade Pilot | Full Implementation of Chromebooks | Full Implementation of Chromebooks |
| **Elementary Grades 3-5** | N/A | Possible Grade 3-5 Pilot | Possible Grade 3-5 Pilot | Full Implementation of Chromebooks | Full Implementation of Chromebooks |
| **Elementary Grades K-2** | N/A | N/A | N/A | Grade K-2 Pilot | Full Implementation of Chromebooks |

**Timeline for Personnel Additions**

The following timeline for personnel additions is recommended as part of this proposal.

| Position | Recommended Posting Time | Budget Year |
|---|---|---|
| **Instructional Technology Director** | April 2018 | 18-19 (Begin June) |
| **Technology Manager** | May 2018 | 18-19 (Begin July 1) |
| **Instructional Coaches (4)** | | |

| | | |
|---|---|---|
| **2** | June 2018 | 18-19 |
| **1** | May 2019 | 19-20 |
| **1** | May 2021 | 21-22 |

**Possible Site Visit**

A site visit to a school district currently implementing Chromebooks for Grades 3-12, with an already existing Instructional Coaching model, would be helpful for our team to eliminate or mitigate hurdles through the piloting and implementation phase of this proposal.

## Other Considerations:

**An Agile Plan**

This proposal includes a five-year plan, (beginning with the current school year). It will be extremely important, to be agile enough as an organization, to shift or adapt the plan given the experiences of our administrators, teachers, and students. This may result in action steps being done earlier or later than originally planned. Any changes to the proposal would be done through reflection and assessment of the process and our goals for meeting the original rationale of the plan.

**Future Devices**

As technology changes, and devices become available, our team and district would need to be proactive in shifting resources for instruction to those which most able us to meet our goals within the budget footprint of our district. We will also need to plan for support of programming that requires software not available in a cloud-based framework. This could be done through laptops within classrooms as needed, and could also include laptop carts in building libraries that could be utilized for special projects requiring capabilities beyond what a Chromebook would be able to do.

**Partial Implementation**

Depending upon the final approved budget for 18-19, this plan must be able to move forward with partial implementation if necessary. This plan could be implemented over a longer period of time, or with varied personnel revisions to meet the budgetary goals or reality of the district.

**Future Savings/Costs**

The possibility of future savings could be realized through reduction in costs associated with infrastructure.
These possibilities have not been built into this proposal, but could be easily integrated in future fiscal years. Examples could include changes in email system, adoption of free classroom tools through Google, changes to the student management system, etc…

There may also be additional costs regarding infrastructure to consider as we move forward. One example, would be the replacement cycle of our current projection technology. A few new projectors are purchased each year, though moving forward, we may need to expedite the replacement cycle in order to have projection units that work with our other existing devices/infrastructure.

## Appendix A: Organization Chart