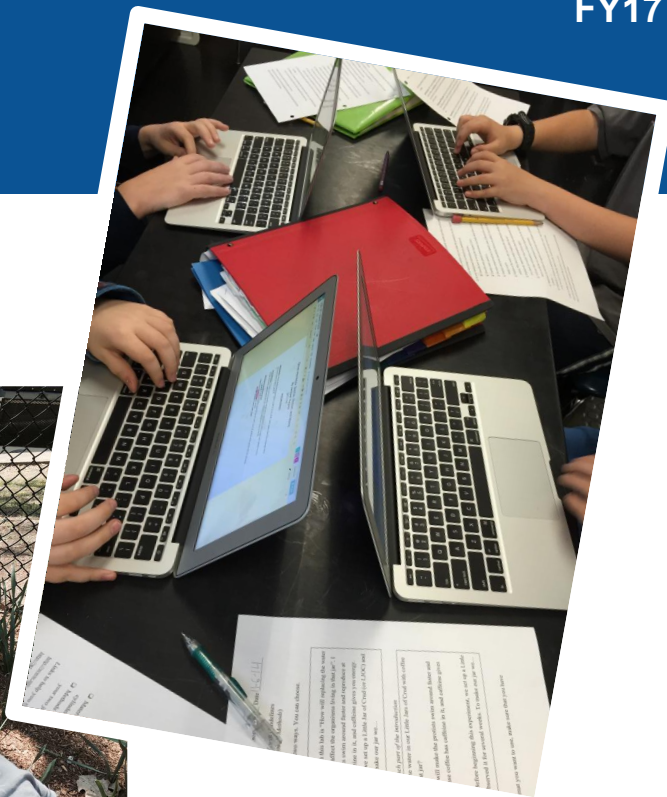
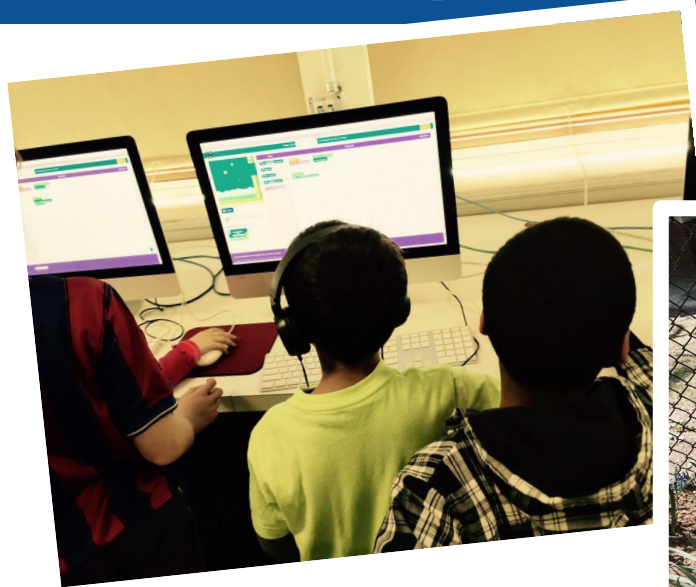


Tech Update



Scott Moore

Kevin Stokes

PSB Technology Vision

OVERALL TECHNOLOGY GOAL

By 2019, we will create the infrastructure, build instructional capacity, and support innovation for the full integration of technology into teaching, learning, and administration in the Public Schools of Brookline.

We use technology to improve our ability to. . .

1. **Maximize learning** for all students using techniques and materials that take into account varying backgrounds, capabilities, and learning styles.
2. **Communicate** and **collaborate** in our schools, our community, and the evolving global society.
3. Ensure that all students obtain **digital literacy skills** that are required in the 21st century.
4. Create a well-integrated, **learner-centered environment** focused on **inquiry** into engaging problems.
5. Enrich and extend **professional learning** for all teachers and instructional leaders.
6. **Enable all school personnel** to effectively and comfortably use technology as a teaching and administrative tool so that more resources and time can be focused on teaching students.

DEVELOPING DIGITAL LEARNERS

KEY COMPONENTS

STUDENT CAPACITY



The Public Schools of Brookline ensure all students use skills and knowledge of 21st century tools to collaborate, solve problems and create new knowledge.

TARGET AREAS:

- Digital Literacy
- Information Literacy
- Digital Citizenship
- Computer Science

EDUCATOR CAPACITY



The Public Schools of Brookline ensure all staff have the appropriate understanding of content, pedagogy and technology to support 21st teaching and learning.

TARGET AREAS:

- Digitally Competent Teachers
- Digitally Competent Leadership
- Skilled Administrative Support

CURRICULUM INTEGRATION



The Public Schools of Brookline creates and implements curriculum that develops skills and knowledge of 21st century tools to collaborate, solve problems and create new knowledge.

TARGET AREAS:

- Integrated Curriculum
- Student-Created Digital Products
- Digital Portfolios

RESOURCES



The Public Schools of Brookline invests in resources so all learners have access to high quality materials in a variety of formats.

TARGET AREAS:

- High Quality Digital Content
- Online Learning
- Assessment Tools

STUDENT CAPACITY

The Public Schools of Brookline ensure all students use skills and knowledge of 21st century tools to collaborate, solve problems and create new knowledge.

Student Capacity 1: Technology Skills

All students will demonstrate basic technology skills proficiency by the end of 8th grade in order to apply and advance these skills in high school and career.

Student Capacity 2: Information Literacy

All students will demonstrate information literacy skills as measured within core subject assignments by grade level (SS Historical writing, Science Lab reports, ect.)

Student Capacity 3: Digital Citizenship

All students will practice safe and responsible technology use throughout the grades.

Student Capacity 4: Computer Science

All students will participate in the study of computer science.



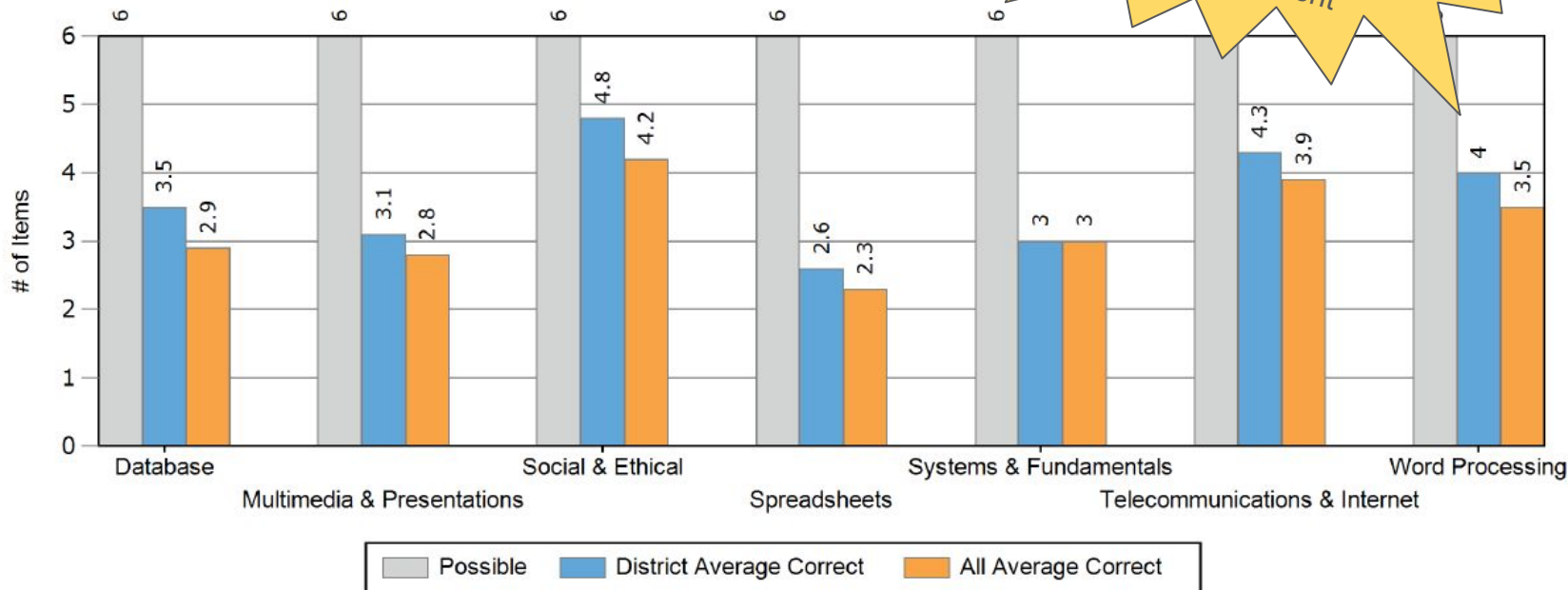
TARGET AREAS:

- Digital Literacy
- Information Literacy
- Digital Citizenship
- Computer Science

6th Grade Pilot Tech Literacy Assessment Results (Spring 2015)

80%
Percentage of 6th grade students currently meeting proficiency on the 8th grade assessment

SKILL MODULE RESULTS



EDUCATOR CAPACITY

The Public Schools of Brookline ensure all staff have the appropriate understanding of content, pedagogy and technology to support 21st teaching and learning.

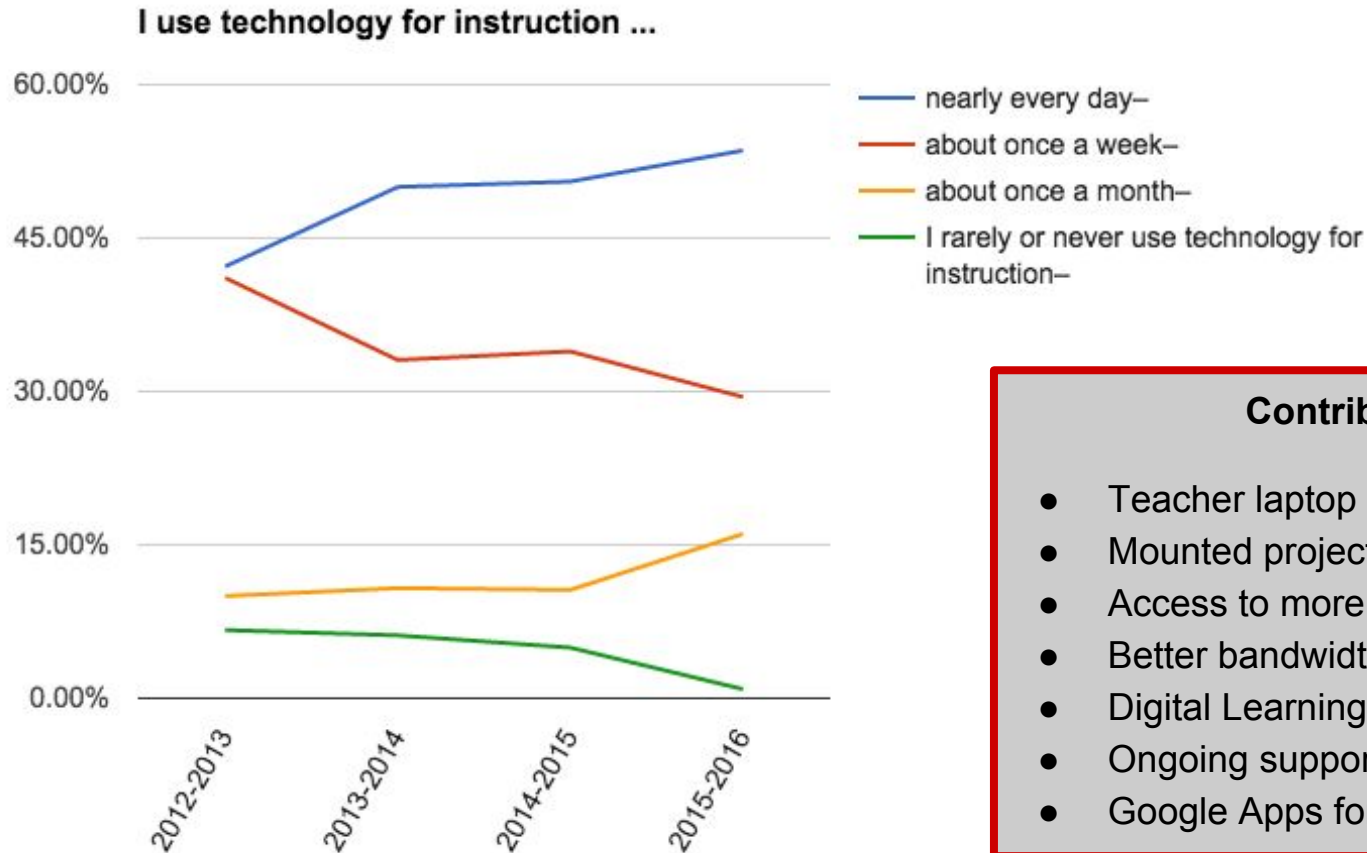
- **Tier 1: District Baseline Training**
 - School-based workshops/support
 - Collaborative time explorations
- **Tier 2: Job-Embedded Technology Coaching**
 - Role of the ETS and other specialists
 - Guidance from the curriculum areas
 - Supporting innovation and risk-taking
 - Sharing and promoting successes
- **Tier 3: Opportunities for Enhancement**
 - Conferences and workshops
- **Enterprise System Rollouts**
 - Gmail, Calendar, Groups (Spring- Summer 2016)



TARGET AREAS:

- Digitally Competent Teachers
- Digitally Competent Leadership
- Skilled Administrative Support

Professional Practice



Contributors

- Teacher laptop program
- Mounted projection in classrooms
- Access to more tech for teaching
- Better bandwidth
- Digital Learning Apps
- Ongoing support
- Google Apps for Ed and Canvas

Common Toolkits

G-Suite for Education



- Online Productivity Suite
- Google Apps for Education
 - Students in grade 3.5 -12
 - All staff throughout district
- Promotes Digital Literacy and Digital Citizenship
- Promotes collaboration
- A platform for digital portfolio
- Supports curriculum integration as well as “Digital Work”

Canvas Learning Management



- Learning Management System used to enhance student learning and content delivery
- 92% of all BHS staff using Canvas
- Clubs, Activities, and Sports
- 6-8 pilot at Pierce and Driscoll
- Professional Development Online
- Enrichment and Challenge Course

Benefits

G-Suite for Education



- Use of common tools to support
 - Communication, collaboration and digital distribution of files
 - Executive functioning and student ownership of learning
 - Formative feedback and the ability to support student work in progress
- Provides anytime access to tools to support blended learning
 - Use of surveys, discussions, grading tools, assignments, calendar
 - Prepares students for online learning experiences
- Mobile access friendly and device agnostic.

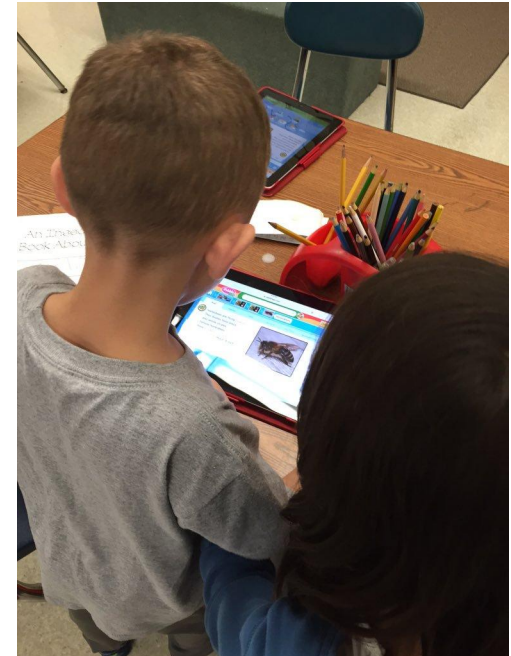
Canvas Learning Management



CURRICULUM INTEGRATION

The Public Schools of Brookline creates and implements curriculum that develops skills and knowledge of 21st century tools to collaborate, solve problems and create new knowledge.

- Curriculum Integration
 - Project-Based Learning 101
 - Coordinator led curriculum work
 - Ongoing collaboration and pioneering
- Student Developed Digital Products
- PSB Keyboarding Benchmarks
- Digital Citizenship Scope and Sequence Draft
- Scaffolded Citation Framework
- Exploration of coding, robotics and 3-D printing



RESOURCES

The Public Schools of Brookline invests in resources so all learners have access to high quality materials in a variety of formats.

- Software and Apps
- Portfolio of Digital Content
 - District sponsored (World Book, Pebble Go, ABC-Click)
 - State sponsored (Encyclopedia Britannica, Gale Resources)
 - Partnerships with public library (Tumblebooks, J-Stor)
- E-Books and Audio Books
- Devices



TARGET AREAS:

- High Quality Digital Content
- Online Learning
- Assessment Tools

Equitable Access in the Schools

Goal One:

Increase access to more mobile devices to support learning

Goal Two:

Create better equity for access to devices across the schools

Goal Three:

Establish appropriate lifecycles on equipment

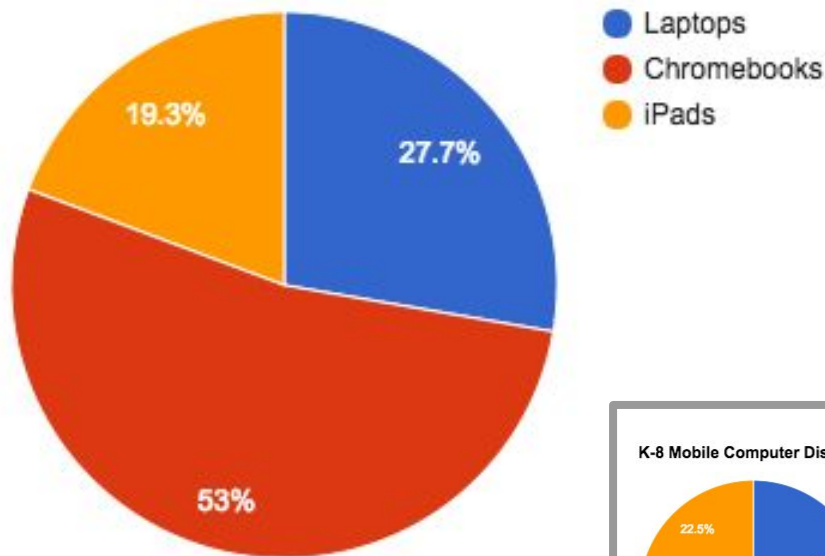
Better Access and Greater Equity Across Schools

Students per Device FY14 - FY17

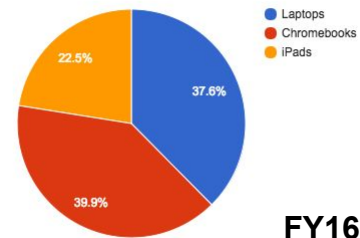
School	Ratio FY14	Ratio FY15	Ratio FY16	Ratio FY17*
Baker	6.42	4.38	2.51	1.8
Devotion	6.25	4.0	2.19	1.4
Driscoll	6.26	3.54	2.07	2.0
Heath	2.9	3.0	1.56	1.8
Lawrence	6.92	4.36	2.17	2.0
Lincoln	7.62	4.12	1.8	1.6
Pierce	8.08	3.89	2.45	2.0
Runkle	4.06	3.72	2.19	1.8
Mean	6.06	3.87	2.12	1.8
Range	5.18	1.38	.95	.6

*based on FY17 planning numbers

K-8 Mobile Distribution by Percent FY17



K-8 Mobile Computer Distribution by Percent



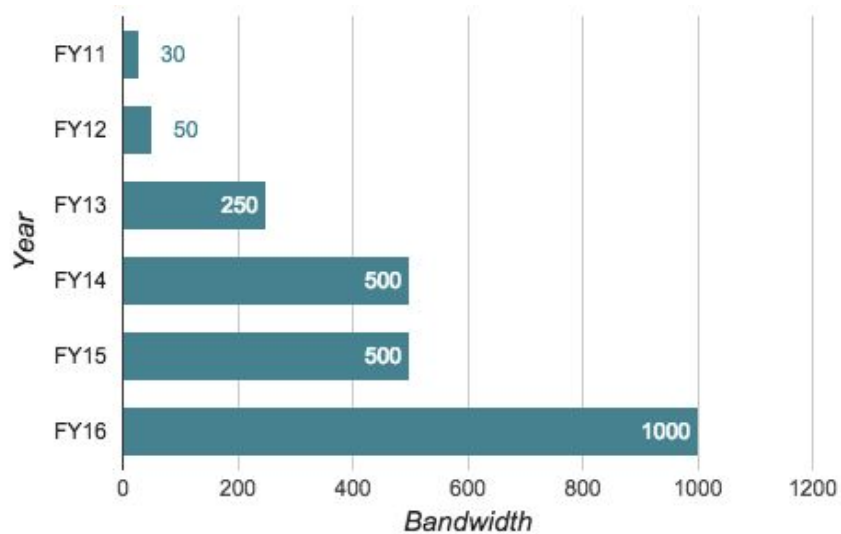
FY16

SETDA Recommendations to Address K-12 Education Infrastructure Needs

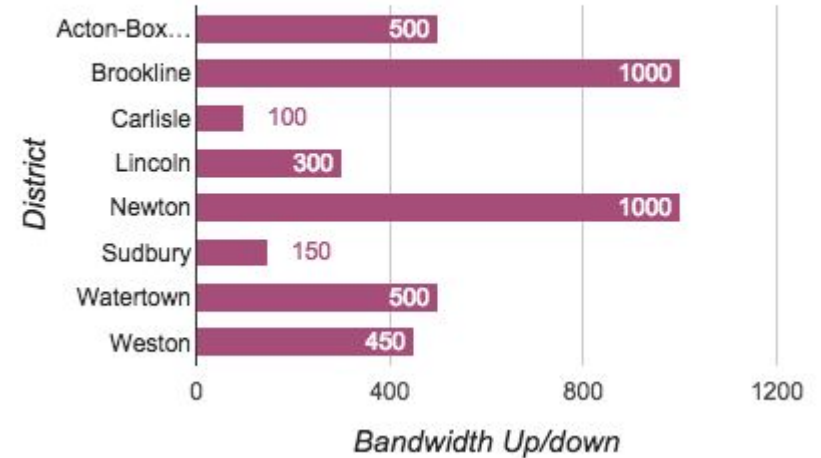
Broadband Access for Teaching, Learning, and School Operations	2014-15 School Year Target	2017-18 School Year Target
External connection to the Internet	At least 100 Mbps per 1,000 students/ staff	At least 1 Gbps per 1,000 students/staff
Internal wide area network (WAN) connections from the district 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 stu/staff

Yearly Bandwidth Subscription

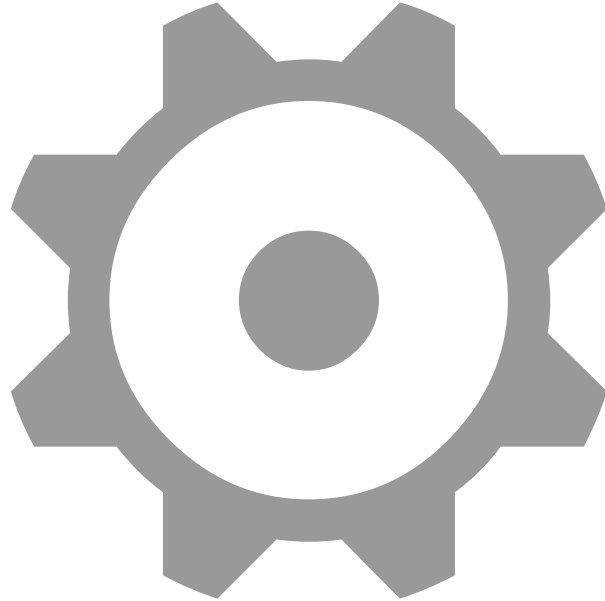
Brookline Bandwidth History



Bandwidth by EDCO Communities



Update on Infrastructure



IT Investment Summary

Network Infrastructure

- \$2M in Data Center, Building & Classroom tech plumbing
 - 100x building network capacity increase
 - 100 % wireless coverage over existing educational space
- 20x Internet bandwidth increase
- Digital Signage, Website, Telephony & Building Communications

Managing the Computing Utility

- View IT investments as “building blocks”
 - 24x7 availability is the expectation
 - Shared Infrastructure means shared investments
 - Eg. Smart buildings, Emergency Communications
 - Rising tide effect
- Drive adherence to standards
 - 14k devices on a given day, \$22M E-Commerce annually processed
 - Many stakeholders with many needs
 - Finding the right balance in relation to security
- Historical cost effectiveness
 - Leveraging the Town/School partnership

Digital Leadership Team (Working Model)

Kevin Stokes
CIO

Zeray Assefa
Network Manager

Ren Avellani
Network Assistant

Karen King
HD Manager

Mary Ellen Dunn
Deputy Superintendent of
Administration and Finance

Nicole Gittens
Deputy Superintendent of teaching
and Learning

Feng Yang
Director of IT Applications

Ben Viviane
Web and E-Commerce

Gannon Hastings
HD Technician

TBD
Project Manager

Scott Moore
Director of Ed Tech and
Libraries

Gary Vogler
Position

Gene Sun
Data and Apps

Michael Yee
HD Technician

Dale Junicke
Application Support

Steve Sullivan
Application Support

Kayson Lo
HD Technician

Nathan Campbell
Digital Learning Specialist

Linda Singh
Senior Clerk II

Bridget Knightly
Technical Librarian

Andrea Davenport
DW Lib Assistant

Stephanie Orsini
Title?

David Marquardo
Title?

Allen Wong
HD Technician

TBD
Digital Learning Specialist

BHS Lib

BHS Lib

BHS ETS

BHS Lib

Baker ETS

Lawrence ETS

Baker Lib

Lawrence Lib

Devotion ETS

Lincoln ETS

Devotion Lib

Lincoln Lib

Driscoll ETS

Pierce ETS

Driscoll Lib

Pierce Lib

Heath ETS

Runkle ETS

Heath Lib

Runkle Lib

Ben Lummis
Special Assistant to the
Superintendent for Strategy
and Performance

Erin Cooley
Director of Data

Sarah Baker
Planning Specialist

Charles Chang
Database Administrator

Joanne Shaunessey
X2 Application Support

Vicky Ching
Data Analyst

UDevo

ETS-Lib

TBD
2015 Override - Year 3

TBD
2015 Override - Year 3