West Hartford Public School District

Agenda Item: Technology Planning Update

Meeting Date: December 6, 2011

From: Tom Moore, Assistant Superintendent for Administration

Through: Karen L. List, Superintendent of Schools

Background:

During the 2009-2010 school year, the need for a District Technology Plan was discussed, and a process for creating one was begun. At the Board meetings on September 21, 2010; January 4, 2011; and May 17, 2011, Tom Moore, Jeri Van Leer, and Pat Drago presented to the Board regarding the Technology Development Plan that would guide the district as we move into the next decade. We contracted with CELT (Center for Educational Leadership and Technology) to produce a Technology Blueprint for the West Hartford Public Schools. This report will present that Technology Blueprint to the Board of Education.

Dr. Phillipo (from CELT), Dr. Keating (from CELT), and Mr. Moore will present. Dr. Phillipo, Dr. Keating, Mr. Bajgot (from CELT), Mr. Moore, Mr. Drago, and Mrs. Van Leer will be available to answer questions.

Technology Planning Update

Progress to Date—December 6, 2011

- Meetings were held with our steering group to examine the charge put forth to the Technology Development Planning Team.

- Pat Drago, Jeri Van Leer, and Tom Moore met bi-weekly, to examine the current issues in our technology planning and implementation and to begin proceeding with our next steps.

- Meetings and discussions took place with the District Management Council, the CREC Technology Services Department, and CELT (Center for Educational Leadership and Technology) to look at where we are and what type of outside support we need to fully realize the district's needs and to accentuate our strengths over the coming years. We contracted with CELT to create our West Hartford Public Schools Technology Blueprint.

- February-May weekly status calls between Laurie Keating and Pattie Sullivan-Hall from CELT were held with Pat Drago and Jeri Van Leer to lay out the plan for the project and its launch.

- Project launched April 26 with meetings of key stakeholders and a community focus group.

- From April 26-May 4, CELT engaged in onsite data gatherings, including:
  Key stakeholder interviews
  Focus group meetings
  School visits
  Inventories
  Document review

- June-October--Technology teams met to review CELT's findings, by committee.

- In November, a final meeting was held with CELT representative Laurie Keating and the members of the steering team to go over the final draft of the report and to discuss the executive summary.

West Hartford Public Schools

Technology Blueprint
Executive Summary

December 6, 2011

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I. ENVISIONING THE FUTURE

It is difficult to recall the subtle changes that have evolved in our school districts since the mid-1980s when the microcomputer first entered classrooms across our nation. From the early PET Commodore computers to the Macintosh mouse-driven interface to the advent of the Internet, the changes over the past 25 years have been significant. At the same time, the changes present many challenges to institutions, which are as slow to change. The next 25 years will bring even greater change and challenge. The Executive Summary of the Technology Blueprint helps to present a vision of what the next 10 years may hold in terms of both promise and potential.

West Hartford Public Schools ~ 2014

It is 2014 and the West Hartford Public Schools is in the third year of implementing their new technology plan. All schools are connected by a fiber-optic wide area network; a robust district-wide wireless infrastructure enables all WHPS students and staff to access the Internet anytime; a portal provides students, teachers, administrators, and parents with a role-based gateway to network resources. What does this mean for the users?

Ninth grader Sean has struggled with mathematics throughout his schooling. His teacher has signed up for a mathematics support that he can access easily from anywhere and it seems to be making a difference. They have set a goal for the week and he has only a few items left. While waiting for friends at the basketball court, he logs in through his smartphone and steps through these easily, then when his friends arrive, he puts the phone away and nobody realizes he's been doing homework.

Sixth grader Jane rushes home, heads to her room, and takes out her netbook to begin her homework. In social studies they are studying Japan and in Science, tectonic plates, so she links to the assigned video about the 2011 earthquake and views it, then opens a GoogleDocs file and lists five main points for the essay they will write in class the next day. Her teacher will check these during the evening and let the class know if they should consider other details.

Third graders Jackie and Sam are excited about the digital storytelling project they are starting in class. After school, they find a quiet spot and turn on their tablets to the site the teacher had sent them. They really enjoy the stories of the students in other countries and look forward to creating their own to tell children from around the world about life in West Hartford. They plan to include videos from the recent hurricane and snowstorm to show children from the desert about these weather events.

Mrs. Allen has been teaching in West Hartford for almost thirty years. A few years ago, she was thinking about retiring because school had lost the new fresh feeling. Since the district launched the ubiquitous wireless and "bring your own technology (BYOT)" program, students are excited about learning and it is fun and challenging to find new ways to engage them. Even those reluctant learners have shown significant improvement and she finds herself looking forward to what next few years will bring.

II. BACKGROUND

For the West Hartford Public Schools (WHPS), technology planning is the culmination of a series of strategic steps that the school district has undertaken since July, 2009. West Hartford Public Schools has recently developed and adopted the *District Development and Performance Plan for Continuous Improvement,* which defines the district goals, strategies for achieving them, and indicators for measuring their success, seeks to align the school district's technology goals to this plan. To clearly define the starting point, the school district seeks assistance with assessing the use of technology throughout the district so that they may better understand and address how technology can make a difference in the effective and efficient operation of the schools and the central office.

The Center for Educational Leadership and Technology (CELT) has conducted the technology assessment and planning effort. The project team has been guided by advice and assistance from Tom Moore, Assistant Superintendent for Administration, Jeri VanLeer, Supervisor, Library Media Services and Information Technology, and Pat Drago, Supervisor, Technical Education and Information Technology.

The overall goal for the study is to ensure the alignment of West Hartford's information technology system with the school district's vision and goals for teaching and learning in the 21st century. In order to achieve this objective, the study has been divided into three phases. During the first phase, the CELT team worked with district staff to perform comprehensive information gathering that focuses on the diverse needs of learners and decision makers throughout the West Hartford Public Schools. Through site visitations, focus groups, key stakeholder interviews, document reviews, surveys, inventories, and other strategies, the CELT team developed an accurate profile of the current status and impact of technology in schools. The information collected will assist WHPS in developing a plan that supports the educational mission of the district through technology. During the second phase, the CELT team addressed key findings derived from the information gathered and offered research and experience-based recommendations regarding important learning and administrative issues. The third phase of the planning process focused on the development of a five-year technology blueprint that offers guidelines in such areas as curriculum integration, professional development, communications and network infrastructure, decision support, staffing, security, maintenance, implementation, and funding.

III. METHODOLOGY

The methodology used in developing this plan involves a qualitative and quantitative approach with an outcome that aligns the status and goals of the school district as a whole. The project team conducted an assessment of the district's information technology needs using quantitative measures designed to gain a generalized understanding of information technology across the district and qualitative methods that included conducting focus-group sessions, interviewing key stakeholders, and reviewing WHPS documents.

The CELT team reviewed, summarized, and presented the raw data that was collected in a Key Findings and Recommendations document, which described the current status

of the school district and made recommendations based on the best practices of other school districts in these areas. The documents were reviewed by teams of WHPS staff.

To further quantify this assessment, a benchmark assessment has been completed and attached as Appendix A with this document. This tool was adapted from the School Technology and Readiness (STaR) chart, originally created by the Texas Education Agency to evaluate schools in that state and later adopted by ISTE's CEO Forum as well as several other states.

IV. OVERALL FINDINGS AND RECOMMENDATIONS

The following sections list the major findings and recommendations for each chapter in the Technology Blueprint.

The *Technology Blueprint* is organized into 15 major chapters:

Chapter 1: Vision/Introduction

Chapter 1: Vision/Introduction of the *Technology Blueprint* provides an overview of changes in educational environments in the Digital Age, *describes* the plan revision process, and presents school district technology planning goals and guiding principles. It also includes a summary of current school district demographics.

Chapter 2: Curriculum and Assessment

Chapter 2: Curriculum and Assessment of the *Technology Blueprint* focuses on the role of technology resources to enhance the delivery of curriculum content and support the assessment of student achievement. The **key findings** identified in this chapter are:

- WHPS adopted the Connecticut Student Technology Competencies and NET*S standards and within the past year, the state of Connecticut adopted the CCSS. WHPS does not actively promote student technology standards, except at the high school, though there is a desire to do so. Student technology standards are not disseminated or mandated by the school district, except at the high school.
- Information skills are taught at all levels through the Library Media program.

The **major recommendations** in this chapter include:

- Develop a Formal Scope and Sequence for Student Technology Competencies.
- Embed Student Technology Standards and Information Literacy Skills into the WHPS Curriculum.

Chapter 3: Teaching and Learning Technologies

Chapter 3: Teaching and Learning Technologies of the *Technology Blueprint* focuses on the types of technology-based teaching and learning *resources* that will be made

available to WHPS teachers, students, and community members. The **key findings** identified in this chapter are:

- There is an extensive list of software available on the elementary network, which is installed upon request to individual computers. However, the software inventory has not been updated in some time. The list contains some out-of-date software titles and some that are no longer published or supported.
- All teachers and students have access to the Internet, but users report that Web filtering is too restrictive and results in lack of use.
- The AUP does not include new and emerging technologies, such as Web 2.0 tools

The **major recommendations** in this chapter include:

- Develop, formally endorse and advance an equity policy and/or guidelines to ensure that all teachers, students, parents, and staff in all schools have equitable access to current district technology resources to promote advanced and interactive learning in all classrooms by providing technological tools to engage students
- Review and revise existing AUP in light of new and emerging technologies, such as Web 2.0 tools. Develop clear guidelines for proper use of district resources and clearly define infractions for misuse.

Chapter 4: Learning Environments and School Facilities

Chapter 4: Learning Environments and School Facilities of the *Technology Blueprint* focuses specifically on the types of learning environments that can be configured, reconfigured, and moved to achieve ubiquitous access to learning resources for all students. Additionally, the standards for facilities technology infrastructure are addressed to ensure that all schools have the ability and flexibility to create a wide variety of exciting and engaging learning environments. The **key findings** identified in this chapter are:

- Classroom configurations consist of machines that are between 3-to-6 years old or older, which are generally whitebox computers. Many of these have low performance and are not adequate for classroom use.
- Technology is not equally distributed across the district or within schools, resulting in inequities. Although the student to computer ratio is 2:1, this figure includes hardware that is greater than five years old.

The **major recommendations** in this chapter include:

- Establish Minimum Technology Learning Environments Guidelines for classrooms, labs, and library media centers
- Develop, formally endorse and advance an equity policy and/or guidelines to ensure that all teachers, students, parents, and staff in all schools have equitable access to district technology resources to promote advanced and interactive learning in all classrooms by providing technological tools to engage students.

Chapter 5: IT Organizational Development and Staffing

Chapter 5: IT Organizational Development and Staffing of the *Technology Blueprint* focuses on providing WHPS with a staffing and organization roadmap to meet the demands of implementing this *Technology Blueprint*. The **key findings** identified in this chapter are:

- The long-time technology director left WHPS in 2010. The supervisors of library media services and technology education, both of whom have worked closely with IT in the school district, are assuming the responsibilities of this role. This situation has been in place for less than one year. During this time, WHPS has been researching and planning the goal-setting and restructuring of IT. In addition, they are also managing the responsibilities of their assigned departments.
- Job descriptions are available for all positions but have not been reviewed or revised on a regular basis. They describe the general responsibilities and qualifications for each position, but do not describe the types of skills or qualifications that are needed or the rubric used to measure/monitor performance.
- The IT Professional Development and Curriculum Coordinator works with teachers across the school district supporting projects that integrate technology into the curriculum. She provides train-the- trainer offerings for library media specialists and interested classroom teachers on software and devices as they are introduced. However, her primary purpose is on identifying hardware and software instructional resources and providing training. As a single individual, she cannot meet the needs of the entire school district.

The **major recommendations** in this chapter include:

- Restructure the IT Department into the department of Communication and Technology Services (CaTS).
- Revise job descriptions to reflect the comprehensive responsibilities of each position.
    - Identify the proficiencies (skills, knowledge, and behavioral attributes) required for all employment tasks for each IT staff member.
    - Update the IT staff evaluation process/criteria based on predetermined rubrics aligned to each of the staff proficiencies
- Identify the training that is needed for each member of IT staff to have the proficiencies required for their position.
- Create the position of Instructional Technology Specialist as an instructional coach position to support the integration of technology in the curriculum.

Chapter 6: Staff Development and Human Resources Management

Chapter 6: Staff Development and Human Resources Management of the *Technology Blueprint* is designed to focus on the staff development and training needed to support the use of technology within the WHPS. Staff development promotes continuous

learning and improvement among teachers and other school staff. Ideally, professional development includes education, training, and support for using technologies. The use of technological tools in the recruitment, selection, and retention of staff is described. The **key findings** identified in this chapter are:

- West Hartford Public Schools adheres to National Educational Technology Standards for Teachers (NETS*T) and Partnership for 21st Century Skills. The state of Connecticut posts standards based on the NETS*T. While training goals are based on achieving these standards, most teachers and administrators are not aware of them.

The **major recommendations** in this chapter include:

- Define and assess technology proficiencies for all staff as determined by productivity and/or instructional needs.

Chapter 7: Standards, Procurement, Maintenance, and Asset Management

Chapter 7: Standards, Procurement, Maintenance, and Asset Management of the *Technology Blueprint* focuses on improving the school districts' processes in this area and recommending how technology could be used to assist in these improvements. The **key findings** identified in this chapter are:

- Technology is being purchased from multiple places and with multiple funding sources. There is evidence that through the local procurement process, the IT department is not always involved at the building level.

The **major recommendations** in this chapter include:

- Create an Information Technology Clearinghouse to ensure that all technology requests, purchases, and donations are consistent with school/district-wide technology goals.

Chapter 8: Policies, Procedures, Security, and Safety

Chapter 8: Policies, Procedures, and Security of the Technology Blueprint focuses on those parts of the organization that communicate *strategic* direction and formalize organizational practice. The **key findings** identified in this chapter are:

- The IT department has two documents that provide information for technology use: the "Supervisory Procedures for Internet and Computer Usage" and "Administrative Guidelines for the Use of Technology (date October 1998) which provide information for staff technology use. (October 1998).

The **major recommendations** in this chapter include:

- Create a technology policies and procedures working group to focus on identifying necessary policies and procedures to be published to various stakeholder groups, such as internal employees, students, and the community.

Chapter 9: District-, School-, and Department-Level Planning Process

Chapter 9: District-, School-, and Department-level Planning Process of the *Technology Blueprint* focuses on a coordinated approach to district-, school-, and departmental planning. This chapter addresses the ways in which technology resources can support and enhance the planning efforts in WHPS. It further describes processes and procedures to track the effects of planning and to monitor success. The **key findings** identified in this chapter include:

- Projects are managed by department staff as an additional task in addition to their assigned jobs, without coordination and attention to interdependencies. Service level agreements are not evident and timelines are not enforced.
- There is not a project management office coordinating the execution of the multiple projects underway. Organizing these under single manager would enable that person to view the status and upcoming milestones of all projects, monitor resources, and notify departments of status and potential risks.

The **major recommendations** in this chapter include:

- To manage the myriad projects currently planned and underway in WHPS, define and implement a process for project management so that all major projects can be sponsored and reviewed by a group of executive staff who can address issues when they arise.

Chapter 10: Administrative Computing and Productivity Systems

Chapter 10: Administrative Computing and Productivity Systems of the *Technology Blueprint* focuses on enhancing the functional capabilities and efficiencies of administrative and decision support systems to support school district operations. By developing new strategies to enhance user operational capabilities with associated improvement in service delivery, it will be possible to better serve present needs and provide the foundation for advanced administrative support and decision support capabilities in the future. The **key findings** identified in this chapter are:

- There is a district-wide vision for integrating administrative systems to provide real-time and longitudinal data that administrators can use to improve district operations and student achievement.
- School libraries are well staffed and supported by WHPS. The Athena Library/Media Management system was purchased in 1992 and was last upgraded in 2004. Athena has reached "end-of-life" it is not web-based and it is no longer supported. The school district searched and recommended Destiny as a replacement in 2009.
- A request for the replacement system appears in the 2011–2012 Information Technology budget and will be completed during the 2011-2012 school year.

Chapter 11: Decision Support and Accountability Systems

Chapter 11: Decision Support and Accountability Systems of the *Technology Blueprint* focuses on information systems with the specialized purpose of storing and processing data to be used to support decision making and accountability in the School District, in

departments and in the schools. Systems are comprised of hardware and software to store and manage the data, report generators to configure the data into useful forms, and the processes associated with data-driven decision making. Decision support and accountability systems are supporting technologies in that they provide the means to increase capacity and effectiveness rather than act as the foundation for core processes. The **key findings** identified in this chapter include:

- There is limited evidence that each data element has a single source and single data manager to assure accuracy and understanding of the data.
- There is no evidence that the school district has identified data ownership or stewardship and the responsibilities associated maintaining accuracy for each data element. The IT department has primary responsibility for the student information system (PowerSchool).

The **major recommendations** in this chapter include:

- Identify the appropriate data owner or steward for each data element. For example, a school nurse reviewing documentation for kindergarten registration or a designated clerk creating a student record shall be responsible for entering student name and address in the SIS.

Chapter 12: Communications and Network Infrastructure

Chapter 12: Communications and Network Infrastructure of the *Technology Blueprint* focuses on continued enhancement and expansion of advanced infrastructure systems for communication, computing, and networking throughout the school district. The **key findings** identified in this chapter are:

- Establish a cross-departmental convergence and digital infrastructure committee to plan the future direction for integration and convergence of infrastructure to a common standards-based cabling system and IP network. This approach increases efficiency and network-based access while offering unprecedented control of resources to monitor, manage, and support the buildings and users.
- In terms of desktop management, IT specialists work hard to maintain a diverse set of end-user devices while using ineffective processes. The current desktop management processes are outdated and do not maximize the use of available resources.

  There are numerous network management tools available today to support desktops. These include policy enforcement, real-time visibility from a single management console, effective centralized management, patch distribution and updates, power management, and security compliance.
- There is evidence of attempts to provide limited wireless access to the network. However, a wireless local area network (WLAN) has not been a priority for the school district. Past attempts have had marginal success.
- The LAN electronics is made of a variety of manufacturers and vintages. The majority of the switches (and hubs?) are Enterasys (formally Cabletron), and active management of these devices appears to be minimal and/or simply not

taking place at all. Generally, all switches have ports that are capable of providing at least 100Mbps to the device.

- The school district is aware of the need for security (i.e. separate networks for students/teachers vs. administration, locked MDF/IDF, network logins). However, some evidence does exist that security is not a primary objective in all cases. For example, the school district does not have a network security position, passwords are never changed.

The **major recommendations** in this chapter include:

- Establish a cross-departmental convergence and digital infrastructure committee to plan the future direction for integration and convergence of the infrastructure to a common standards-based cabling system and IP network.
- Implement a comprehensive network and end-point management solution. Improve network support capabilities while reducing the time and effort required to maintain network devices.
- Develop and deploy school district-wide enterprise wireless network access. Because West Hartford has access to a dark fiber network spanning the entire district, it is in WHPS' best interest to consider this valuable asset in any network decision.
- Refresh Network Hardware and Cable. The policies regarding the LAN switches and network cable system should be addressed by the Convergence and Digital Infrastructure Committee.
- Generate a Network and Information Security plan. To start, create a network security planning team and assign them the task of outlining the requirements for the plan.

Chapter 13: Community/Home Access and Participation

Chapter 13: Community/Home Access and Participation of the *Technology Blueprint* focuses on needs of the WHPS community to participate in life-long learning experiences from home, school, and other locations; to better connect school and the world of work; and to access the information they need to make informed educational choices and decisions. The **key findings** identified in this chapter are:

- WHPS is implementing several strategies for reaching out to parents electronically and is receiving positive feedback about these efforts. These include the PowerSchool Parent Portal, email, and school websites and blogs.

  The estimated percentage of parents with computers at home and Internet access varies from school to school, from 65% to 98%. Those who cannot access the Internet from home often do so at the public library.

The **major recommendations** in this chapter include:

- Implement a series of kiosks in strategic locations, such as school lobbies, for parents and community members to access Web-based information pertinent to the school district.

Chapter 14: IT Monitoring, Evaluation Programs, and Implementation Management

Chapter 14: IT Monitoring, Evaluation Programs, and Implementation Management of the *Technology Blueprint* focuses on the processes, structures, and tools for monitoring the implementation of the plan and evaluating its impact in terms of quality and effectiveness. The **key findings** identified in this chapter are:

- There is currently no plan in place for evaluating the impact and effectiveness of major initiatives. The *District Development and Performance Plan for Continuous Improvement* defines a set of indicators for major school district goals, but they have been introduced recently and their use has not yet become institutionalized. The progress of indicators is reported to the Board of Education.

The **major recommendations** in this chapter include:

- Create processes, structures, and tools for monitoring the implementation of the Technology Blueprint and evaluating the impact on learning outcomes and improved productivity.

Chapter 15: Budget, Funding Sources, and Total Cost of Ownership

Chapter 15: Budget, Funding Sources, and Total Cost of Ownership (TCO) of the *Technology Blueprint* focuses on planning for and funding technology expenditures.

V. NEXT STEPS

The CELT team has developed the Technology Blueprint and reviewed it with West Hartford Public Schools district staff. A priority and phasing process has been begun to help WHPS rank the most important of these recommendations and decide on how to stage them. Those recommendations that are identified for near-term will be included in the school district's technology plan update.

Successful implementation of this plan will have far-reaching benefits for the school district. Students, teachers, administrators and classified staff will be empowered with the 21st century literacy and technology skills necessary to lead productive and fulfilling lives as lifelong learners and responsible citizens. Schools will be provided with a variety of technology-based resources to facilitate teaching, learning, and management. Insightful leadership will ensure that these powerful technologies empower teachers, provide stimulating and supportive learning environments, enable powerful learning, expand and enhance communication, strengthen information access, and ensure achievement of high academic standards by all students.

APPENDIX A: TECHNOLOGY BENCHMARK ASSESSMENT

Types of Technology Used in the Classroom

	Early Tech	Developing Tech	Advanced Tech	Target Tech
Students/networked computer ratio	Greater than 10	**10 or less**	5 or less	1 to 1
Use & access to other forms of technology	Use of cable TV, projection devices, calculators	**Plus addition of digital cameras, telephones, voicemail**	Plus addition of random access video, scanners, portals, PDAs, 2-way video conferencing	Plus broad use and addition of thin clients, servers, video production capacity
Format of digital content	**Receive information/ tools from prepackaged software**	**Receive information from CD, server-based, & searchable online content**	Manipulatable digital content and tools available on the web, commercially	Full range of digital content/tools structured to support production & collaboration
Equity of access	**Some students have access for basic skills**	Can access the Internet beyond school day hours	Can access wide range of digital content beyond school day hours	Equitable access to all students anytime, anywhere

Level of Technology Integration into the Curriculum

	Early Tech	Developing Tech	Advanced Tech	Target Tech
Degree to which digital content is integrated	Supplements instruction	**Beginning to be integrated into instruction**	Fully integrated, used for simulations, research, planning, presentations, communication	Changes the teaching process, allowing for high levels of inquiry, analysis, creativity, content production
Alignment and continuous improvement	**25% aligned standards, curriculum, & assessment**	50% aligned, 25% monitored & measured to inform instructional decision	100% aligned, 50% monitored & measured to inform instructional decision	100% aligned, 100% monitored & measured to inform instructional
Use of technology for assessment	25% + beginning to integrate, limited to fixed answer formats	**50% + integrating, 25% of 21st century skills measured, experimenting with multiple formats**	75% + integrating, 50% of 21st century skills measured, using multiple formats	100% + integrating, 100% of 21st c. skills measured, multiple formats, challenging experiences

Student Use of Technology in the Classroom

	Early Tech	Developing Tech	Advanced Tech	Target Tech
Student use of digital content to enhance learning	Use to reinforce basic skills	**Plus, used to research, communications and presentations**	Plus, used to solve problems, analyze data, contact experts, become content producers	Digital content changes the learning process, supporting collaboration, inquiry, analysis, creativity
% and frequency of students using digital content	**50% +, weekly use**	75% +, 3-4 times/week 20% have online courses available	100% +, daily use 30% have online courses available to expand offerings	Seamlessly integrated into classes/subjects 100% have online courses available
Student achievement & 21st Century Skills	**Demonstrate improved basic skills**	Demonstrate some improved mastery of 21st century skills	Demonstrate mastery of 21st century skills	Improved student achievement & mastery of 21st c. skills