AGENDA

SPECIAL MEETING
COMMITTEE ON COMMUNITY IMPROVEMENT

April 16, 2013 | **4:00 p.m.**
Aldermen Roy, Shea, | **Aldermanic Chambers**
Craig, Greazzo, Gamache | **City Hall (3rd Floor)**

1. Chairman Roy calls the meeting to order.

2. The Clerk calls the roll.

TABLED ITEMS
(A motion is in order to remove any item from the table.)

3. Resolutions and budget authorization providing for acceptance and expenditure of $2.8 million bond for City schools technology upgrades. *(Tabled 4/02/2013; approved technology plan is attached.)*

4. If there is no further business, a motion is in order to adjourn.

CIP BUDGET AUTHORIZATION

CIP#:	310413	Project Year:	2013	CIP Resolution:	6/12/2012
Title:	City Schools Technology Upgrades			Amending Resolution:	4/2/2013
Administering Department	School Department			Revision:	

Project Description: To equip all City schools with WiFi, purchase 5,000 computers and tablets, provide professional development for staff, update and replace telephone and intercom systems.

Federal Grants

Federal Grant: No

Grant Executed: N/A

Environmental

Review Required: No

Completed:

Critical Events

1	Program Initiation	4/2/2013
2	Program Completion	6/30/2020
3		
4		
5		
		6/30/2020

Line Item Budget

	BOND			TOTAL
Salaries and Wages	$0.00	$0.00	$0.00	$0.00
Fringes	$0.00	$0.00	$0.00	$0.00
Design/Engineering	$0.00	$0.00	$0.00	$0.00
Planning	$0.00	$0.00	$0.00	$0.00
Consultant Fees	$0.00	$0.00	$0.00	$0.00
Construction Admin	$0.00	$0.00	$0.00	$0.00
Land Acquisition	$0.00	$0.00	$0.00	$0.00
Equipment	$2,500,000.00	$0.00	$0.00	$2,500,000.00
Overhead	$0.00	$0.00	$0.00	$0.00
Construction Contracts	$0.00	$0.00	$0.00	$0.00
Other	$300,000.00	$0.00	$0.00	$300,000.00
TOTAL	**$2,800,000.00**	**$0.00**	**$0.00**	**$2,800,000.00**

Revisions

Comments: Breakdown of the funds to include: $500,000 for WiFi to all City schools, $1.5 million for the purchase of 5,000 computers and tablets, $300,000 for professional development, $300,000 to update and replace telephone systems, and $200,000 to update and replace intercom systems.

City of Manchester
New Hampshire

In the year Two Thousand and Thirteen

A RESOLUTION

"Authorizing Bonds, Notes or Lease Purchases in the amount of Two Million Eight Hundred Thousand Dollars ($2,800,000) for the 2013 CIP 310413 – City Schools Technology Upgrades Project."

Resolved by the Board of Mayor and Aldermen of the City of Manchester as follows:

SECTION 1. That there be and hereby is authorized under and pursuant to the Municipal Finance Act, and any other enabling authority, the issuance and sale of general obligation serial bonds, notes or lease purchases of the City in the aggregate principal amount of Two Million Eight Hundred Thousand Dollars ($2,800,000) at one time or from time to time as one or more separate bond, note or lease purchase issues for purposes stated in Section 3 of said Act, as more specifically hereinafter indicated. The bonds, notes or lease purchases of each issue shall bear the City Seal, shall be signed by the manual or facsimile signature of the Mayor, countersigned by the manual or facsimile signature of the Finance Officer and shall be payable in such annual installments as shall be determined by the Finance Officer with the approval of the Mayor. Except as otherwise provided by law and this Resolution, discretion to fix the date, maturities, denomination, place of payment, form and other details of each issue of said bonds, notes or lease purchases and of providing for the sale thereof is hereby delegated to the Finance Officer.

SECTION 2. That the proceeds of said bonds, notes or lease purchases be and they are hereby appropriated for the purpose of financing costs of the following public works and improvements of a permanent nature, hereby authorized namely,

Purpose	Amount
2013 CIP 310413 – City Schools Technology Upgrades Project	$2,800,000

It is hereby declared that the public works and improvements to be financed by said bonds, notes or lease purchases have a useful life in excess of 7 years.

SECTION 3. That the Finance Officer, with the approval of the Mayor, is hereby authorized to issue at one time or from time to time notes in anticipation of said bonds, notes or lease purchases and to renew or refund the same under and pursuant to and to the extent authorized by RSA 33:7a.

SECTION 4. That an amount sufficient to pay the principal of and interest on said bonds, notes or lease purchases payable in each year during which they are outstanding be and hereby is appropriated and, to the extent other funds are not available for such purpose, said amount shall be included in the tax levy for each year until the debt represented by said bonds, notes or lease purchases is extinguished.

City of Manchester
New Hampshire

In the year Two Thousand and Thirteen

A RESOLUTION

"Authorizing Bonds, Notes or Lease Purchases in the amount of Two Million Eight Hundred Thousand Dollars ($2,800,000) for the 2013 CIP 310413 – City Schools Technology Upgrades Project."

Resolved by the Board of Mayor and Aldermen of the City of Manchester as follows:

SECTION 5. That the bonds, notes or lease purchases herein authorized may be consolidated with any other issue of bonds, notes or lease purchases heretofore or hereafter authorized, provided that the last annual installment of any such consolidated issue shall be payable not later than the date on which the last annual installment of the bonds, notes or lease purchases herein authorized must be payable pursuant to this Resolution.

SECTION 6. This Resolution shall take effect upon its passage.

City of Manchester
New Hampshire

In the year Two Thousand and Thirteen

A Resolution

"Amending the FY 2013 Community Improvement Program, authorizing and appropriating funds in the amount of Two Million Eight Hundred Thousand Dollars ($2,800,000) for the FY 2013 CIP 310413 City Schools Technology Upgrades Project."

Resolved by the Board of Mayor and Aldermen of the City of Manchester as follows:

WHEREAS, the Board of Mayor and Aldermen has approved the 2013 CIP as contained in the 2013 CIP budget; and

WHEREAS, the 2013 CIP contains all sources of funds to be used in the execution of projects; and

WHEREAS, the Board of Mayor and Aldermen wishes to allocate funding from Bond proceeds to implement specific technology upgrades and professional staff development in the City's school system;

NOW, THEREFORE, be it resolved that the 2013 CIP be amended as follows:

By adding:

FY 2013 CIP 310413 City Schools Technology Upgrades Project - $2,800,000 Bond

Resolved, that this Resolution shall take effect upon its passage.

MSD Technology Strategic Plan Executive Summary
And
Technology Bond Budget Narrative

The following is an executive summary of the Manchester School District Strategic Technology plan. The purpose of this executive summary is to provide an outline of key technology areas in need of improvement, the prioritization of upgrade goals as well as a broad funding overview tied to the proposed technology bond funding of 2.8 million dollars.

Success Factors

Successful integration of technology into the classroom relies on ALL of the following success factors being part of the implementation process.

Vision - Clear, committed and shared by all stakeholders, including parents and students.

Skills – Technical proficiencies need to be developed for change to take place.

Incentive - A final result that is going to lead to improved teaching and learning outcomes.

Resources - Adequate staffing, equipment and training.

Action Plan - Change takes time. Time needs to be managed. Management requires planning.

MSD Technology Implementation Strategy

Implementing new technology requires putting not only the **resources** in place but also developing the **skills** to use them. Our strategy is based on our longer-term technology **vision** of embedding digital learning into the classroom**.** We must articulate how instructional technology is actually going to improve teaching and learning in the classroom and result in better outcomes, which in turn will provide the **incentive** to change current practices.

At a system level, we must ensure that we do not spend money on resources for short term gain only to run out of money to maintain resources before teachers are ready to take advantage of them after decent training based on a purposeful action plan.

Prioritization of Technology Infrastructure Deployment and Tech Vision

We strive to deploy technology infrastructure improvements following a meaningful implementation prioritization in order to realize the maximum total cost of ownership benefit to the district. Our strategy includes a multi-phased approach that maximizes the purchasing power of our dollars and matches the right technology to the right task (see Appendix A, Figure A1).

Our strategic vision is supported by our Technology Leadership Framework (http://trc.mansd.org/tlf) and detailed Technology Plan (http://trc.mansd.org/living-tech-plan).

Primary Strategic Technology Goals

Our overarching technology vision is to facilitate ***Student Centered Learning***, and provide ***Equitable Access*** to technology for all students. The following district initiatives support this vision:

Student Centered Learning

We define student centered learning as creating classrooms that are interactive, inquiry driven, cooperative, collaborative, and relevant.

Current Initiatives:

1. Embedding technology across all academic areas

   Access Infrastructure

   - Adequate Internet connectivity
   - Campus wide wireless connectivity
   - Update of Library research centers
   - Updating of ICT (Information Communication Technology) labs
   - Update classroom instructional technology including student classroom computers projectors and interactive whiteboards.

2. Updating of our policies

   - Internet Responsible Use
   - Social media and web tools
   - 1 to 1 and BYOD

3. Improving teacher technology literacy

   - New teacher classroom computers
   - Professional development

Equitable access

Technology is a key element of 21st century learning. Our goal is to ensure ***ALL*** students have access to technology.

Current Initiatives

- Device neutral **B**ring **Y**our **O**wn **D**evice pilot program.
- 1 to 1 pilot program supplementing BYOD initiatives.
- Campus wide software licensing.
- Deployment of district wide free and open source web-centric learning.
    - Communication, collaboration and student portfolios.
    - Learning Management System
    - Electronic textbooks and content licensed under Creative Commons
    - Web based hosted learning applications

Following is a narrative of funding priorities related to the expenditure of the 2.8m bond appropriation[1]. Please refer to Appendix B for a line item expense summary.

[1] The columns within the accompanying technology bond budget spreadsheet in Appendix B represent the following:

One Time Capital Expense - This is a broad budget allocation based on specific technology infrastructure categories
Related Recurring Operating Expense - The recurring budget column shows the ongoing operational costs to the district associated with the one time capital expenditure for each spending category.

Funding Priorities

Current progress made - Internet Access Bandwidth, Teacher Internet Connectivity

In the March 2013 addition of District Administration magazine, Andrew Dyrli Hermeling discusses the needs of schools to meet new common core assessment standards. He states: "In May 2012, State Educational Technology Directors Association (SETDA) released "The Broadband Imperative," a paper that addressed these upcoming infrastructure needs. In it, SETDA designed bandwidth benchmarks for schools, setting the minimum requirements at 100 Mbps per 1,000 students and staff by the 2014-2015 school year and 1 Gbps per 1,000 students and staff by 2017-2018" (Hermeling, 2013).

Strategically we are utilizing web based resources in all educational content areas as well as our operational production systems such as our student information system, email, website and student portfolios. These systems rely on an enhanced Internet access infrastructure. To this end we have provided every school with a dedicated connection to the internet, which will meet our current needs as well as provide a scalable infrastructure to grow based on the demands of future needs such as BYOD (Bring Your Own Device) initiatives and common core assessments. Embedding learning across all subject areas cannot succeed without adequate teacher technology skill proficiency. This year we will have installed a new teacher computer in every classroom with the funding from the teacher computer refresh initiative. Providing teachers with connectivity to each school's dedicated Internet access bandwidth is the first step toward embedding web-based digital learning content into lesson planning, as well as developing teacher web tools literacy. The teacher refresh leverages the district's existing wired infrastructure.

Priority 1 – Digital Telephone System and Intercoms (Communications and Safety)

A modern telephony system based on cost effective digital technologies that leverage the extensive wiring infrastructure already in place. A Modern phone system that supports traditional voice communication, VoIP (Voice over IP), IP-based data communication and wireless solutions through Wireless LAN and can be integrated with functions of Firewall and VPN. The new phone system can automate functions such as fax and messaging and can for example make an emergency call in the case of electric power's failure as well as provide e911 location information during an emergency. A new phone system will also provide unified messaging service of telephone, IP Phone, e-mail, voice mail, and FAX as well as Web based access from outside of the district buildings.

Priority 1a - Wireless Access

In a section entitled *Infrastructure: Access and Enable*, the U.S. Department of Education, National Education Tech Plan sets the following goal: "All students and educators will have access to a comprehensive infrastructure for learning when and where they need it" (Infrastructure: Access and Enable, 2013). A comprehensive infrastructure must include a district wide managed wired, and wireless network. The management tools associated with this network will provide the district with a crucial data collection analysis and control mechanism. This visibility is critical to providing the district with information to make intelligent fiscal decisions based on the accurate real time application and bandwidth requirements of each school. A fully managed network with wireless capability will be able to support scaled BYOD initiatives.

Priority 2 - Teacher and Staff Professional Development – MSD Digital Learning Network

Facilitating purposeful professional development based on our longer-term technology **vision** is crucial to successful integration of digital learning in the classroom**.** This training must help improve teaching and learning in the classroom and result in better outcomes, which in turn will provide the **incentive** to change current teaching practices. We will leverage technology to deliver one-time professional development training that can then be shared by creating a professional learning network across the district.

Professional development is targeted specifically at Digital Learning (using technology within lesson planning across all subjects) our efforts will be focused on the following:

- Development of the **Manchester School District Digital Learning Network** Team, led by Jeff DeLangie including Principals, Teachers, and Tech members from each school. We have organized the stakeholders into two groups, Core and Advisory. The core members will participate in a 7-week free course (which begins on April 8th) called Digital Learning Transitions, with the objective of developing a set of goals as well as an action plan for digital learning in the district. The core group consists of 12 members. The advisory group consists of 42 members. A full description of the course can be accessed online at http://dlt.mooc-ed.org/course_info/outline. We hope to establish the MSD Digital Learning Network as a standards consortium and support group to the district as well as a springboard to student ELO engagement opportunities such as student led technology help desk.

- Define specific NETS Standard[2] **training goals** starting with ED-306.42 and progressing through various levels, from basic to advanced, based on the teacher competency.

[2] NETS are education specific technology standards created by the ISTE(International Society for Technology in Education) that define specific proficiency standards for Administrators, Teachers and Students. http://www.iste.org/standards/nets-for-teachers

- Build a professional development **knowledge base** utilizing purchased courseware to build a custom training resource. (ex. the product Atomic Learning)

Priority 3 - Local Wired Network Fabric

With the addition of a managed network infrastructure, increasing initiatives involving embedded technology in the classroom, as well as the increasing support of BYOD, we will need to update our core network switch fabric to accommodate the increased bandwidth demands of the Local Area Network. This priority update would include replacing approximately 200 10/100mb network switches across the district with 1GB[3] switches. This will position our internal LAN to support an ever-increasing volume of BYOD and 1 to 1 traffic, as well as provide a foundation for expanded network services such as a VOIP (Voice over IP) telephone system.

Priority 4 - Instructional Technology in the Classroom (student computers for use in the classroom)

Priority 4 goals include computer upgrades to enhance the ICT (Information Communication Technology) Business labs, Media Graphics labs, and Mobile Computing Carts in the schools. These computers enable shared access to programs that are used in reading, writing, math, science and social studies based on ED306.42 standard. ICT labs and mobile computer carts will support the new common core standards, Smarter Balanced Online Assessment, which will replace NECAP testing beginning in 2015. In a BYOD environment these computers will serve as a supplement for those students who do not own a personal computer. Also included in this funding priority is the replacement of aging library catalog and research systems that support the libraries in the schools. These systems are crucial to facilitating research in learning. Due to the rapid evolution of technology, (computing power doubles roughly every 18 months) the practical life span of a typical computer is

[3] This is approximately 10X the speed of our current infrastructure. This is recommended to support tripling the number of devices on the network.

less than 5 years. I propose a two-phase refresh purchase for the student computers, with the first purchase to cover our immediate needs, which include approximately 825 mobile cart computers[4], 150 ICT business lab computers, 115 MS and HS library computers, and 50 media graphics lab computers. The second phase would provide a refresh (replacement) of the mobile computers (approximately 1740 computers) over the course of the bond funding period. In this way by the time we are finished paying the bond, the mobile computers will not be more than 5 years old. Another benefit of this approach is the likelihood that the number of computers that the district will be able to purchase at a future date may be significantly more than what today's dollars can purchase.

Summary:

Previously, technology was considered a tool used to help educate students. Now, we consider technology an integral part of student and professional life – not just "tools", but actually a change agent that is shaping our culture and our way of life. We believe that we need to take an active role in helping shape student access, understanding, and use of technology as a part of their lifelong learning. The mission and goals of our Technology Leadership Framework are driven by global business market trends, new technology integration, and student-centered learning strategies. This framework serves as our guiding principles for the dynamic execution of the Manchester School District Technology Plan. The TRC collaboration vision is about providing applications, services and infrastructure that deliver pervasive capabilities to enable people to work together more effectively. The TRC is addressing challenges in four areas that are critical to effective collaboration: integrated communications; collaborative workspaces; access to information and people; and infrastructure. By providing rich, connected information worker tools we will provide our staff and students the collaborative capabilities they need to meet the challenges ahead, compete and win in a more interconnected world.

[4] Due to recent grant funding and other upgrades, we have been able to meet roughly half of the number of computers required to facilitate Smarter Balanced online assessment testing. The calculation is based on having enough computers to allow every student in grades 3-8 and 11 to test over a 5 day period (see Appendix C)

Sources:

Hermeling, A. D. (2013, March). *Network Infrastructure Requirements for Common Core Assessments*. Retrieved from District Administration: http://www.districtadministration.com/article/network-infrastructure-requirements-common-core-assessments

Infrastructure: Access and Enable. (2013). Retrieved from U.S. Department of Education: http://www.ed.gov/technology/netp-2010/infrastructure-access-and-enable

Appendix A

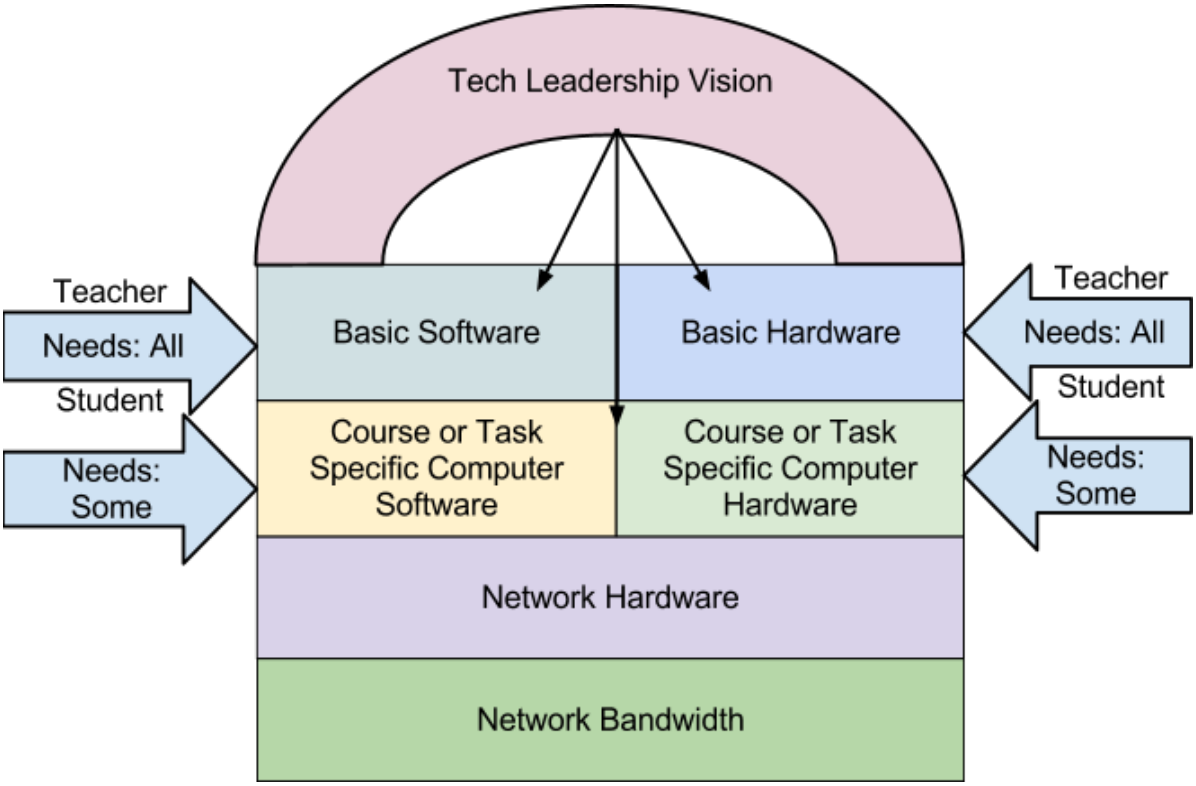

Figure A1 - District Technology Standards

End user computer standards are set by the types of data processing tasks required and referred to as; Consumption, Light Production or Heavy Production tasks.

Basic hardware/software systems are designed to meet the needs of all users and are best suited for consumption or light production tasks we currently use the ED306.42 standard as a reference for this platform.

Higher end computers are targeted to a subset of the total user population and their configuration is determined by a specific course instruction, task or instructional standard. They are designed for heavy production tasks.

Consumption consists of playing, streaming, reading, browsing, manipulating text, and capturing still, video and audio content. Common devices of this type are tablet computers and Chromebooks.

Light Production: Reference ED306.42 standard. Involves reading, writing and creation of documents that may include limited graphics. Most business documents, research papers, financial spreadsheets, and presentations, web portal access and collaboration tasks fall into this category. Common devices supporting this type of task include Chromebooks, laptops and commodity desktop computers.

Heavy Production involves advanced tasks such as those associated with full motion audio/video editing; three-dimensional rendering; AI; and other advanced programming methods which require higher processing power. These types of devices are higher end engineering workstations and desktop computers.

Appendix B
Budget

MANCHESTER SCHOOL DISTRICT					
TECHNOLOGY BOND FUNDING BUDGET			$2,800,000.00		
FY 2013 (AS OF MARCH 13, 2013)					
			One Time Capital Expense FY14	**One Time Capital Expense Refresh**	**General Fund Operating Expense FY 15+**
640	Information Resources				
		Upgraded Library Software System	$59,000.00		$10,600.00
		District Microsoft Site License	$42,695.00		$42,695.00
		Professional Development	$250,000.00	$250,000.00	
		Total Information Resources	$351,695.00	$250,000.00	$53,295.00
730	Equipment				
		New Telephone system and Intercoms	$400,000.00		$54,000.00
		Managed Wireless Infrastructure equipment	$455,225.00		$72,000.00
		One Time Wireless Installation and Cabling	$127,000.00		
		Wired Switch Network, from 100mb to 1GB district wide. Approx 200 switches @ $509 each	$101,800.00		
		Library Computers HS and MS, 115 @ $533ea (7 yr life)	$61,295.00		
		ICT computer Lab upgrades Highschools (6 labs 150 computers @ $533 per, Central and West -	$79,950.00		
		ICT Media Graphics Labs upgrades Highschools (2 labs 50 computers @ $1200ea, Central and	$90,000.00		
		Student computers Elementary Schools (ED306.42 standard) Smarter Balanced online	$59,985.00	$200,880.00	
		Student computers Middle Schools (ED306.42 standard) Smarter Balanced online assessment,	$117,180.00	$167,400.00	
		Student computers High Schools (ED306.42 standard) Smarter Balanced online assessment,	$53,010.00	$117,180.00	
		Classroom Teacher Refresh computers 600 @		$167,400.00	
		Total Equipment	$1,545,445.00	$652,860.00	$126,000.00
Totals			$1,897,140.00	$902,860.00	$179,295.00

Appendix C
Smarter Balanced Computer Needs

ELEMENTARY SCHOOLS	Students per grade 3	4	5	6	7	8	11	Total Students	Existing Computers available	New Computers needed	Total Computers needed	Days to complete testing	Mobile Carts or Labs of 30 needed
Bakersville, 20 Elm St, 03101	46	40	57					143	0	30	30	4.77	1
Beech St, 333 Beech St, 03103	101	91	92					284	60	0	60	4.73	2
Gossler Park, 99 Sullivan St, 03102	67	52	59					178	60	0	60	2.97	2
Green Acres, 100 Aurore Ave, 03109	96	90	105					291	25	35	60	4.85	2
Hallsville, 275 Jewett St, 03103	55	37	50					142	30	0	30	4.73	1
Highland-Goffe's Falls	93	80	94					267	60	0	60	4.45	2
Jewett, 130 S Jewett St, 03103	63	70	58					191	25	35	60	3.18	2
McDonough, 550 Lowell St, 03104	75	108	85					268	0	60	60	4.47	2
Northwest, 300 Youville St, 03102	94	91	93					278	50	10	60	4.63	2
Parker-Varney, 223 James A Pollock Dr.	70	54	62					186	60	0	60	3.10	2
Smyth Rd, 245 Bruce Rd, 03104	63	58	76					197	60	0	60	3.28	2
Webster, 2519 Elm St, 03104	79	73	89					241	60	0	60	4.02	2
Weston, 1066 Hanover St, 03104	115	78	96					289	15	45	60	4.82	2
Wilson, 401 Wilson St, 03103	55	71	62					188	60	0	60	3.13	2
									505	215	720		
MIDDLE SCHOOLS													
Hillside Middle, 112 Reservoir Ave, 03104				266	253	286		805	0	150	150	5.37	5
McLaughlin Middle, 209 S Mammoth Rd, 03109				248	275	275		798	0	150	150	5.32	5
Middle School at Parkside, 75 Parkside Ave				255	222	195		672	90	60	150	4.48	5
Southside Middle, 140 S Jewett St, 03103				233	274	258		765	90	60	150	5.10	5
									180	420	600		
HIGH SCHOOLS													
Central High, 207 Lowell St, 03104							487	487	25	95	120	4.06	4
Memorial High, 1 Crusader Way, 03103							398	398	120	0	120	3.32	4
West High, 9 Notre Dame Ave, 03102							269	269	25	95	120	2.24	4
Manchester School of Tech., 530 S Porter St							122	122	60	0	60	2.03	2
									230	190	420		
Grand Totals									915	825	1740		