Duxbury School Building Committee
Middle School & High School Recommendations

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Duxbury School Building Committee
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Duxbury Superintendent of Schools

SBC Committee Members

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Andrew Stephens
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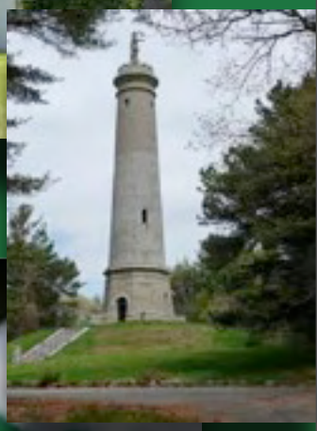
Agenda

- Historical Perspective
- State of Buildings
- Role of Technology
- Options
- Recommendation
- Cost to Taxpayers
- Model Schools
- Why now?



Duxbury Town PRIDE

Beach Bay Open Spaces History
Arts Athletics Education Seniors

School Building History

- 1926 - Original DHS built; became Free Library in 1997
- 1949 - Alden Elementary built; addition in ‘54
- 1960 - Jr/Sr. HS built - now DMS
- 1968 - Current DHS built
- 1974 - Chandler built; additions to DMS/DHS
- 2000 - Master Facilities Plan identified project needs
- 2001-03 - Alden/Chandler additions & PAC built at 67% reimbursement; completed on time and on budget
- 2007 - Request to State for Chandler roof, DMS & DHS
- 2009 - Feasibility Study for DMS/DHS; Chandler roof approved, completed on time and on budget
- 2010 -MSBA invites Duxbury to collaborate on project

Current State of DMS & DHS

(per 2010 Feasibility Study)

- **Failing systems and aged equipment**
  - **Boilers, HVAC, mechanical, plumbing, electrical, and temperature controls need to be replaced; not energy efficient or code compliant**
- **Deteriorating infrastructure beyond repair**
  - **Frequent roof leaks disrupt learning; window seals and door gaskets failed, insulation deficient, classroom lighting below state foot-candle requirements; creates potential health & safety issues**
- **Deficiencies hindering curriculum & instruction**
  - **Classrooms undersized; spread-out additions inefficient; cannot deliver AP requirements in science labs; Special Education space insufficient; buildings restrict technology use**
- **2002 NEASC report also cited DHS facility needs**

A "RAIN DAY" at DMS January 2011
Senora Mehegan's classroom after gushing water from ceiling filled 2 barrels; 175 students disrupted

Monday, March 14, 2011

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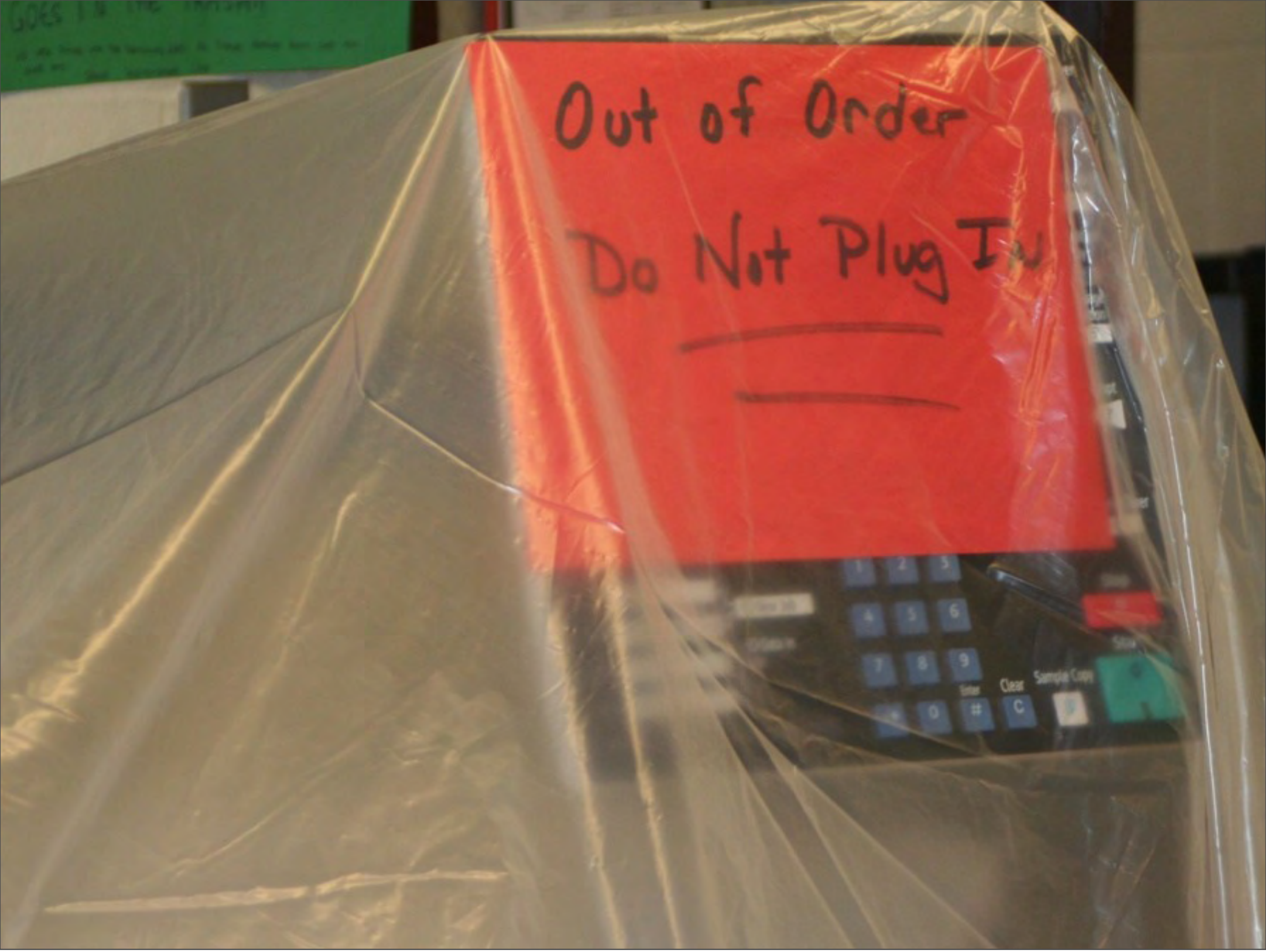
Out of Order
Do Not Plug In

Deteriorating systems: windows, walls, doors, boilers and fixtures

Monday, March 14, 2011

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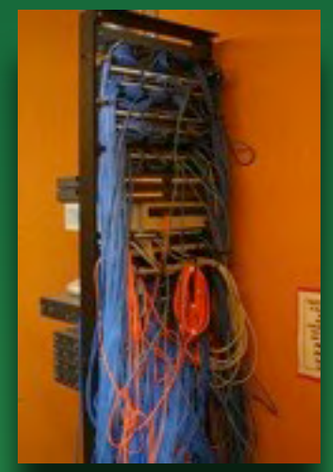
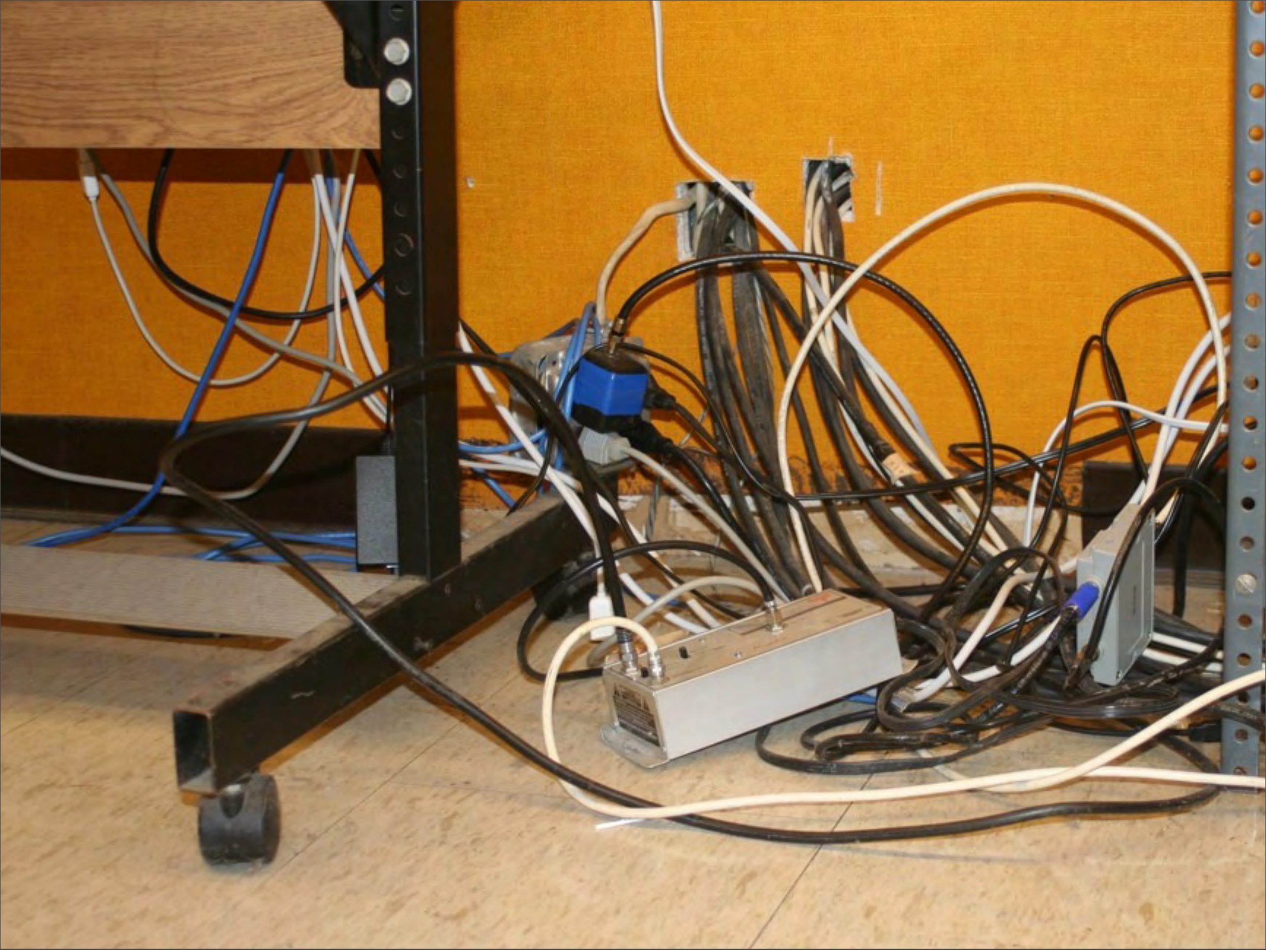


Where are all the outlets?
Inadequate systems cannot accommodate basic classroom needs



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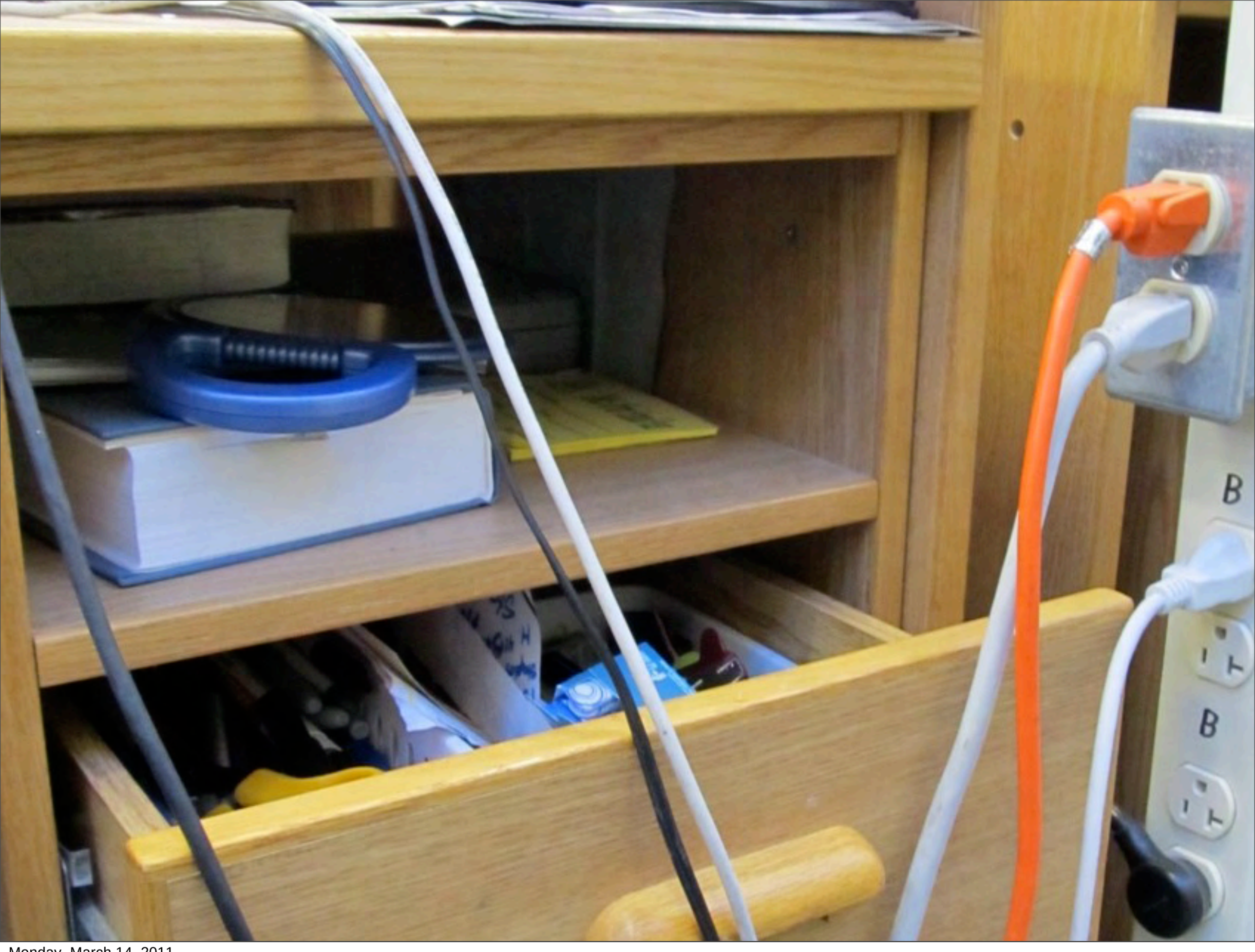

Monday, March 14, 2011

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Technology:
Integral to education today

- Digital natives vs. digital immigrants; a critical tool to keep pace with current knowledge
- Over 90% of DHS graduates go to college and need to be fluent in technology
- 21st century skills and learning require students to synthesize, analyze, think and interact; need flexible space & wireless capability
- All current equipment & systems - purchased or leased - can be transitioned

Current Science Rooms

- **National HS Lab Standards - 1,700 SF**
- **DHS - 1,100 SF**
- **No hoods for chemical exhaust**
- **Five microscopes cause overloads**
- **Lab experience limited by inadequate facilities**
- **No computers at stations due to network limits**

Compare Science Labs

Interactive Classrooms

Options:
Repair. Renovate. Rebuild.

Eight options presented to Town in Spring 2010

MSBA senior study team evaluated buildings in 2010; validated facility needs

SBC evaluated all options

Feasibility Study Options*	Cost
Repairs: system replacement at DMS/ DHS	$68.2m
1a. DMS Renovation	$46.8m
1b. DHS Renovation	$70.5m
2. New MS	$54.0m
3. New HS	$83.5 m
4. New MS addition to renovated HS	$125.6m
5. New HS addition to renovated MS	$144.1m
6. New MS/HS on Train Field	$136.6m
Post Study Option	
7. New co-located MS/HS**	$130m

Repair Costs for Systems ($mm)

SYSTEM or NEED	DMS	DHS	TOTAL COST
HVAC	$7.8	$10.8	$18.6
Electrical	7.2	10.1	17.3
Roof	3.9	5.4	9.3
Windows	3.7	5.2	8.9
ADA	3.0	4.2	7.2
Sprinklers	1.2	1.6	2.8
Kitchen	0.85	0.85	1.7
Locker Rooms	0.68	0.68	1.3
Gym Floors	0.48	0.48	0.9
TOTAL Systems	**$28.8**	**$39.4**	**$68.2**

Repair Option

- **Repair work would trigger additional code required work on other parts of building**
- **Repairs of more than 30% assessed value of building trigger upgrade for codes**
- **Would be lengthy and disruptive**
- **Future MSBA reimbursement, if approved, unknown**
- **Does not improve delivery of educational program**
- **SBC/MSBA don't recommend repair only**

Renovate Option

School	Sq. Foot	Cost	Total
DMS	153,000	$312	$46.8mm
DHS	213,000	$331	$70.5mm
			$117.3mm

- Includes code upgrades and new finishes
- Improves science labs only as structure allows
- Reimbursement less than new construction

Renovate Option

- **Limits educational improvements**
- **Lengthy disruption & trailers**
- **Only one school addressed at a time**
- **Second school will require repairs while waiting**
- **MSBA has not approved Duxbury for renovation; SBC does not recommend**

Renovate Timetable

- **Fall 2011 - Submit SOI for DMS**
- **March 2012 TM - Request design funds**
- **March 2013 TM - Request construction $ DMS**
- **June 2013-15 - Renovate DMS**
- **Fall 2015 - Submit SOI for DHS**
- **March 2016 TM - Request design $ for DHS renovation**
- **March 2017 TM - Request construction $ for DHS renovation**
- **June 2017-19 Renovate DHS**

SBC Recommendation

- **Co-located DMS & DHS**
  - **Two separate, distinct schools; one structure**
  - **MSBA accepted Duxbury into model school program, 2010**
  - **Provides the most cost effective means of rebuilding two schools; maximizes reimbursement and efficiency**
  - **Saves Town 5-10% in construction costs; Norwood saved $30mm**
  - **4 models available; customize to fit Duxbury needs**

Advantages of One Co-located Building

- **Economic Benefits:** Single shared mechanical plant for HVAC, electrical, plumbing, technology support; provides savings in building costs and ongoing maintenance; more efficient footprint with shared kitchen, media center

- **Academic Benefits:** Co-location allows for alignment in curriculum & instruction for grades 6-12, enhanced technology with shared software & labs; peer tutoring; easier transition to HS

- **Logistical Benefits:** Disruption minimized, no trailers needed with students remaining in existing buildings; shorter construction duration; may reduce gridlock problem on St. George St.

Co-located School Costs

Based on MSBA standards:

- **HS 1000* pupils x 195 sf = 195,000 SF**
- **MS 850* pupils X 160 sf = 136,000 SF**
- **Total SF = 331,000**

Building cost ($200/sf)	**$66.2 mm**
Construction cost ($275/sf)	**$91.0 mm**
Total project cost ($392/sf)	**$130 mm**

Total Cost to Town

- **Total project cost $130 mm**
- **Reimbursement 43.42%**
    - **31% base rate**
    - **4.42% community factor**
        - **5% model school**
        - **2% green construction**
        - **1% construction manager at risk**
- **TOWN SHARE = $74 mm**

Estimated Cost to Duxbury Taxpayers

- **Median home valued at $481,000**
- **Tax increase to be approximately $737 or about 11% ($1.53 added to tax rate)**
- **Based on current market conditions for a 25 year level debt service**
- **Begins in 2014**

Comparison of Three Options

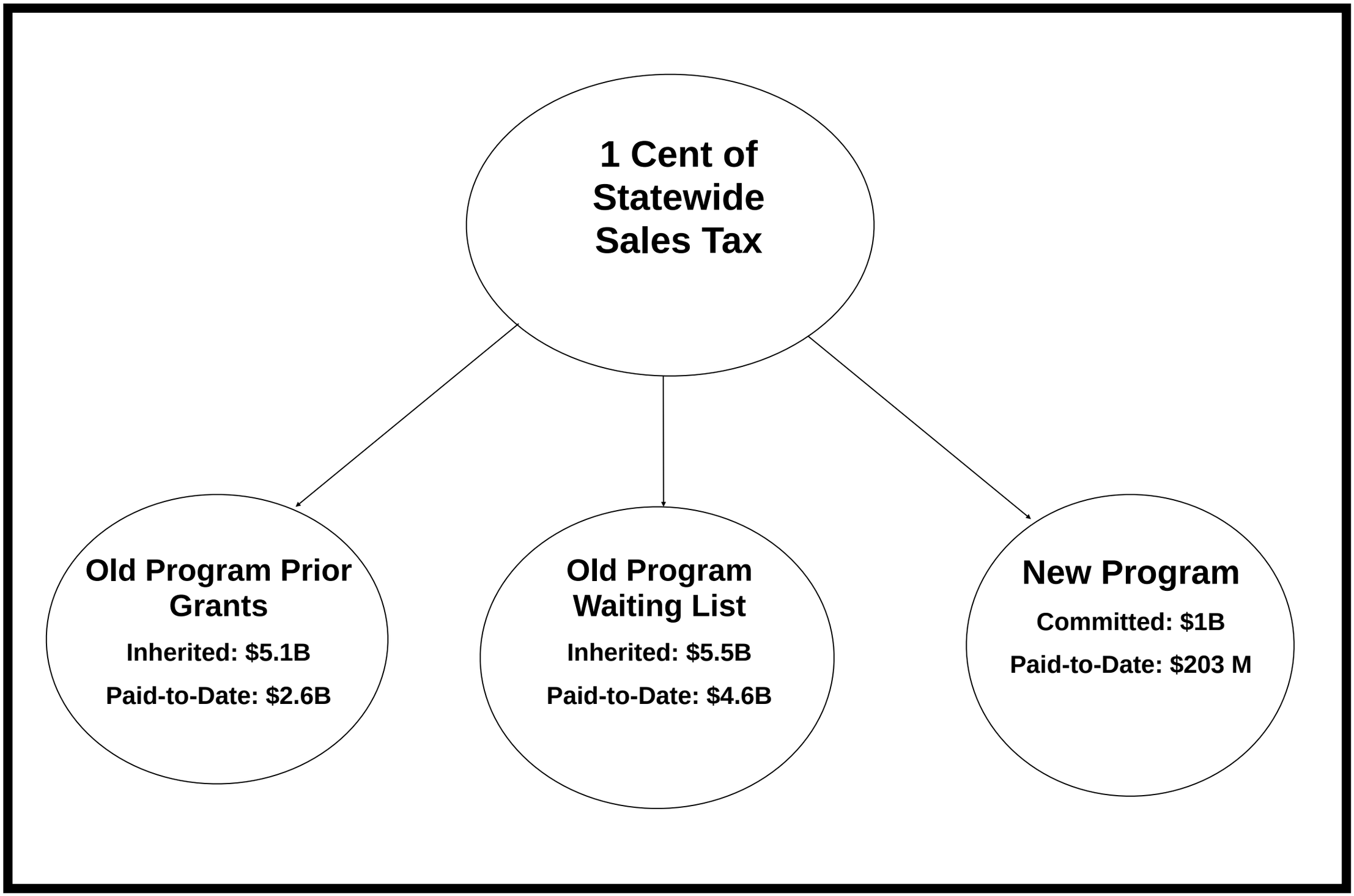
	Repair	Renovate	Rebuild
Cost effective			X
Educationally sound			X
Flexible and functional			X
Less disruption			X
Addresses both buildings			X
Improves instruction		Partially	X
Improves efficiency	Partially	Partially	X
MSBA acceptance			x
Estimated cost/max reimbursement*	$68m /35%	$117m/41.42%*	$130m/43.42%
Estimated Town Share	$44.2mm	$68.5mm	$73.6mm

Massachusetts School Building Authority

Treasurer Steven Grossman, Chairman

Katherine P. Craven, Executive Director

How the MSBA is Funded - finite budget



Massachusetts School Building Authority

Model School Program – Reuse of Proven Designs

Proven Designs

Incorporates successful, proven elements of existing schools, confirmed by local students, teachers, administrators, and facilities maintenance personnel

Best Practices

Perpetuates best practices for flexible, environmentally sustainable and easy to maintain school building design

Fewer Change Orders

Reduced likelihood of change orders, and therefore improves cost control

Shortens Design Process

Simplifies the design process, enhances design coordination, reduces the amount of time projects are in design and lowers design fees

Start Sooner – Reduce Uncertainty

Projects can start construction more quickly and reduce the uncertainty construction cost inflation will have on the construction costs for the project

Less Impact of Teachers/Students

Reduction of design and construction time will lessen the impact of a major construction process on students, teachers and other building occupants.

- At least a year of design work can be saved by using a Model School

Models keep Improving

Model School designs can be improved by lessons learned on previous projects

See, Touch, Observe

Local support from taxpayers may be more likely if they visit and walk through Model Schools which were effectively constructed on-time and on-budget.

How will the MSBA succeed?

- ✓ Never promise what we can't afford to pay for

- ✓ Work collaboratively with cities and towns to create educationally sound and fiscally responsible solutions to school facility problems

- ✓ Think creatively for solutions that support educationally sound projects and help local districts and the MSBA reach common goals
  - **ProPay system** - Districts get reimbursement within 15 days of submittal/audit review
  - **On-line Enrollment Projection system** – provides FREE resource to districts to generate enrollments
  - **Model Schools Program** - Innovative new program that is educationally sound, cost effective, and saves time/money for both the local district and the MSBA money
  - **Regulations Revisions** - Focus put on Core Academic Spaces, removed focus on "grand" spaces, spectator amenities and other spaces that do not have direct relation to educating students or are not in regular use throughout the school day by a majority of the student population.

- ✓ Implement Better Business Practices to create efficiencies and generate savings for both local districts and the MSBA
  - **Standardized Contracts** - protect the best interest of the local district and the MSBA, not the consultant
  - **Web-based systems for easier access and less paper** – Statement of Interest (SOI), Enrolment Project Systems, ProPay system for monthly payments during construction
  - **Use of public / private partnerships to help manage Billions of dollars of construction and renovation projects —** Owner's Project Managers (OPMs), Designers, Engineers

Duxbury New vs. Reno

- Report submitted to the MSBA by the Town of Duxbury, concluded that building a new school was the desired option for district.

- Both the existing High School and Middle Schools are much larger than what would be approved under the current MSBA sq/ft guidelines. To renovate such large areas, could prove to be more costly than new construction of a MSBA Model school designed for the agreed upon enrollment of 1735.

- District-provided 2010 feasibility study references MSBA square footage guidelines and that construction of a new facility would be less than what currently exists.

- District-provided 2010 feasibility study states that renovation options do not address the educational visions for team teaching in the middle school and Core Plus for the high schools as developed in the District's visioning process.

- Based on footage numbers district will have between 60,000 and 70,000 less square feet in a newly constructed MS/HS, depending on the model school that is selected and the agreed upon space summary.

Duxbury's Reimbursement Rate

2011 Base Rate: 35.42%

+ 5.00%- assuming new construction with Model School. Up to 5.00 % points are also awarded for add/reno to facilities

+ 2.00% if sufficient sustainable design features are included as required to achieve these points incentive

+ <u>1.00%</u> for CM-at-Risk, which the district would have to vote to support and complete an application to seek approval from the Inspector General

43.42%, <u>Projected</u> Reimbursement Rate if Duxbury uses an MSBA approved Model School.

*In addition, the District may be eligible for maintenance points which would be calculated based upon the districts submittal of the

Massachusetts School Building Authority

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Questions?

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$2.9mm Schematic Design Phase

- Adapt Model School Plan to Duxbury site and program
- Meet with stakeholders to identify needs of schools
- Prepare Education Plan
- Complete soils testing, haz mat survey, site survey, etc.
- Design team prepares preliminary design plans
- Designer and OPM prepare independent cost estimates, reviewed by MSBA
- Execute project funding agreement, defining project and cost
- Present for Town Vote at Special Town Meeting Fall 2011

Phase 1 – New middle school and core facilities behind existing middle school

Phase 2 – Existing Middle School Demolition

Phase 3 – New Construction

(High School and Parking)

Ashland High School

Whitman-Hanson High School

Natick High School
Next Generation of Whitman-Hanson

Ipswich Middle/High School

Timeline

- Approval today will move Article 18 to ballot
- Town Election ballot March 26 needs majority
- April - Interview model school designers – each designer presents a model that would be adapted to our site and program
- May to Sept - Complete schematic design and cost estimate
- Fall 2011 - Obtain funding for final design and construction
- Construction begins Spring 2012; completed 2015
    - current 3rd, 4th and 5th graders enter new Middle School in 2014;
    - current 6th, 7th and 8th graders enter new High School in 2015.

Why Now?

- **State of buildings erodes long standing PRIDE in Duxbury education among students, teachers and community**

- **Infrastructure and major systems at DMS and DHS are failing; we must address these issues now**

- **Duxbury is eligible for State reimbursement at 43.42%; many districts aren't accepted**
- **NEASC accreditation for DHS under way; status review in August 2011**
- **Most cost effective, educationally sound solution is to rebuild a co-located DHS/DMS with reimbursement, when construction costs are low and interest rates favorable**

We're at a Crossroads:

All options raise taxes;
only one moves Duxbury Schools forward

REPAIR - $44.2mm

RENOVATE - $68.5mm*

REBUILD- $73.6mm

Duxbury takes great PRIDE in its bay, open spaces and historical buildings. Where we educate our children and support our teachers deserves that PRIDE too.