
Haverhill Massachusetts

Mayor's Energy Task Force



Task Force Report

May 2007

Executive Summary

TBD – Mike?

Table of Contents

Executive Summary.....	2
Introduction.....	4
The Task Force.....	4
Goals.....	4
Members.....	4
Advisers.....	4
Meetings Held.....	5
Web Site.....	5
Research.....	6
Current Haverhill Energy Expenses.....	6
Energy Expense Trends.....	8
Energy Cost Projection.....	10
Benefits of Energy Reduction and Alternative Supply.....	11
Role of an Energy Manager.....	12
Energy Savings Performance Contracting (ESPC).....	13
Massachusetts Technology Collaborative Programs.....	14
Environmental Protection Agency Programs.....	15
Recommendations.....	16
References.....	18
List of Appendices.....	19

Introduction

The Task Force

On 29 June 2006 the Haverhill City Council convened a subcommittee meeting to discuss biofuels. The City Council asked the Mayor to form a task force, and he agreed.

Goals

TBD – Jared?

Members

Ted Becker

Ted is a teacher at the Nettle Middle School in Haverhill. His former experience includes employment at an energy services company.

Jeff Dill

Jeff is Building Supervisor for Haverhill.

Jared Fortna

Haverhill citizen

Mike LaBonte – chairperson

Mike is a telecommunications engineer who has had an interest in energy since childhood.

David Swartz

Haverhill City Council

Advisers

Jack Bevelaqua

Jack is Energy Conservation Improvement Program Manager at the Massachusetts Division of Energy Resources.

Kathy LaRoque

Haverhill citizen and diesel advocate.

Robert Scattamaccia

Haverhill City Council

Meetings Held

Task force public meetings were held on the following dates:

- 16 October 2006 – Public meeting
- 22 January 2007 – Public meeting
- 26 February 2007 – Public meeting
- 19 March 2007 – Public meeting
- 19 April 2007 – Public meeting
- 7 May 2007 – Public meeting

In addition, Mike LaBonte attended an Energy Services Workshop conducted by the Division of Energy Resources 24 April 2007.

Web Site

All documents and communications regarding task force activities are stored on the task force web site:

<http://havenergy.civiczone.net>

Research

Current Haverhill Energy Expenses

Energy used by Haverhill government facilities can be estimated by the budget allocated. Figure 1 shows that the major energy expenditures in Haverhill currently are for the schools, wastewater, water, and street lighting.

FY2007 Energy Allocation

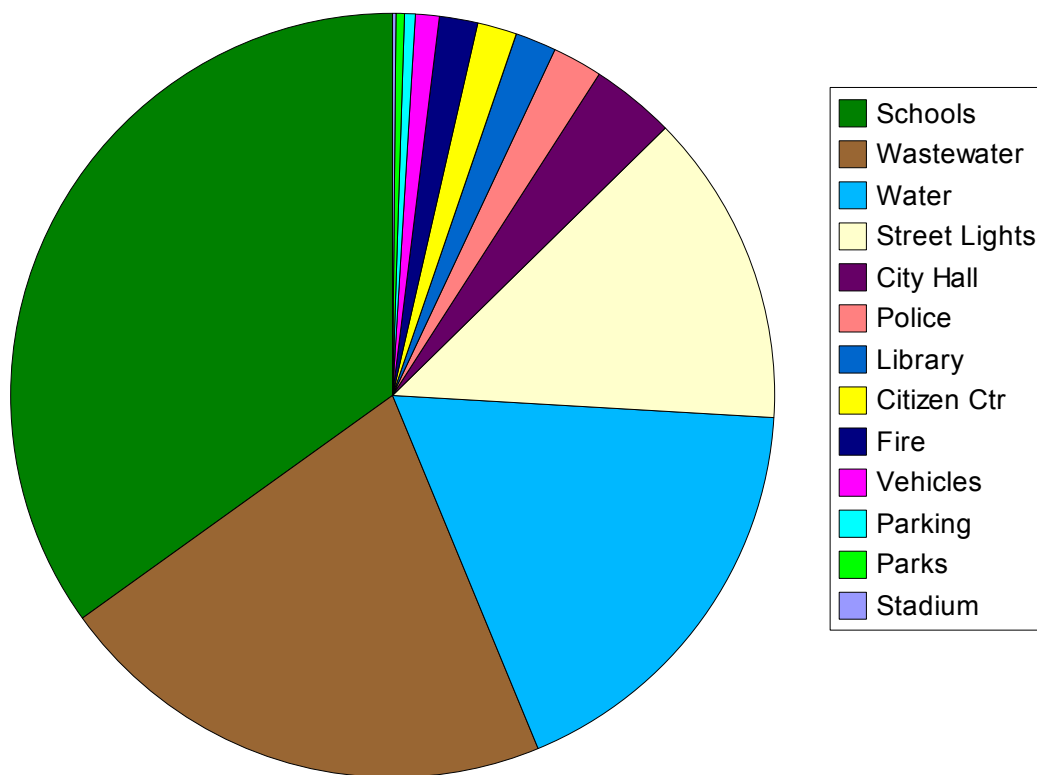


Figure 1: Haverhill FY2007 Energy Budget Allocation
Source: [1] *Haverhill Fiscal Year 2007 Financial Plan*

The total allocation for energy expenses in the fiscal year 2007 budget is \$4,717,604, about 3.2% of the total budget of \$149,073,605 (General Fund: \$135,502,325 + Sewer Fund: \$7,086,721 + Water Fund: \$6,484,559).

Most of the energy expense is for electricity. Table 1 Shows the energy items from the FY2007 budget, categorized as electricity and fuels.

Haverhill Facility	FY2007 Budget	Electricity	Fuel
Citizen Ctr-Electricity	\$39,500	\$39,500	
Citizen Ctr-Heat	\$40,000		\$40,000
City Hall-Utilities	\$171,000	\$128,250	\$42,750
Fire-Utilities	\$75,000	\$56,250	\$18,750
Library-Utilities	\$81,874	\$61,406	\$20,469
Parking-Lighting	\$20,250	\$20,250	
Parks-Electricity	\$8,775	\$8,775	
Parks-Heat	\$8,000		\$8,000
Police-Utilities	\$101,300	\$75,975	\$25,325
School Maintenance-Electric Elem	\$425,000	\$425,000	
School Maintenance-Electric HS	\$200,000	\$200,000	
School Maintenance-Electric Mid	\$200,000	\$200,000	
School Maintenance-Heat-Electric Elem	\$45,000	\$45,000	
School Maintenance-Heat-Gas Elem	\$500,000		\$500,000
School Maintenance-Heat-Gas HS	\$50,000		\$50,000
School Maintenance-Heat-Gas Mid	\$20,000		\$20,000
School Maintenance-Heat-Oil Elem	\$125,000		\$125,000
School Maintenance-Heat-Oil Mid	\$80,000		\$80,000
Stadium-Electricity	\$4,832	\$4,832	
Street Lighting	\$625,000	\$625,000	
Vehicle Maint-Electricity	\$25,650	\$25,650	
Vehicle Maint-Heat	\$20,000		\$20,000
Wastewater-Electricity	\$890,103	\$890,103	
Wastewater-Heat & Hot Water	\$113,195		\$113,195
Water-Electricity	\$783,125	\$783,125	
Water-Pumping Fuel & Heat	\$65,000		\$65,000
TOTALS	\$4,717,604	\$3,589,116	\$1,128,489

NOTES:

a) Assuming elec = 75% of utilities for City Hall, Fire, Library and Police

Table 1: Haverhill FY2007 Energy Budget

Source: [1] Haverhill Fiscal Year 2007 Financial Plan

Energy Expense Trends

Energy expenses from FY2004 to FY2006 have generally been on an upward trend. When viewing Figure 2 be careful to note that while most of the numbers are actual energy expenses, for fiscal year 2007 the budget allocation is given. The actual expenses for FY2007 may not match the budgeted numbers.

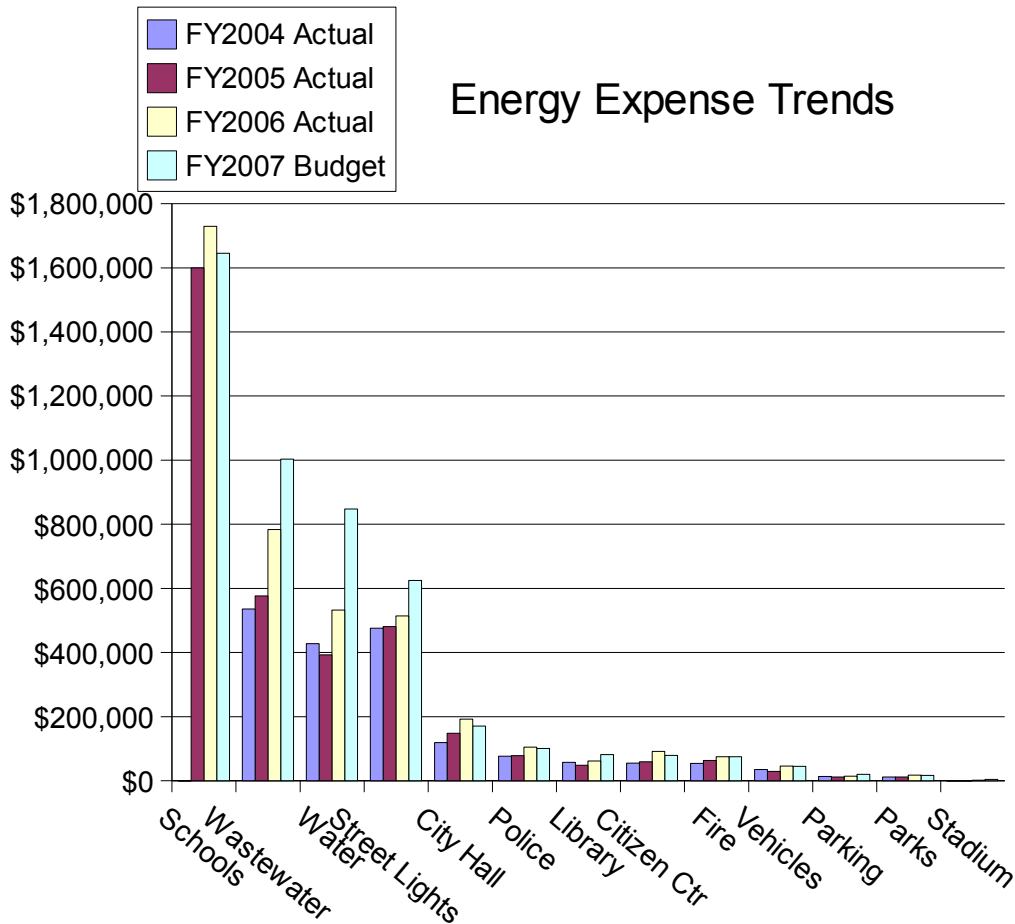


Figure 2: Haverhill Energy Expense Trends
Source: C. Benevento 27 April 2007

Note that the FY2004 datum for schools is missing above, due to incomplete data for individual school line items. Figure 2 shows aggregated data. For example, all schools are bundled into a single line item. The detailed data for Figure 2 is shown in Table 2 below.

Haverhill Facility	FY2004 Actual	FY2005 Actual	FY2006 Actual	FY2007 Budget	FY2007 YTD (2)	FY2007 Projected (3)
Citizen Ctr-Electricity	\$28,053	\$27,881	\$46,357	\$39,500	\$35,872	\$43,937
Citizen Ctr-Heat	\$27,566	\$31,467	\$45,464	\$40,000	\$25,286	\$30,971
City Hall-Utilities	\$119,184	\$148,825	\$192,613	\$171,000	\$128,240	\$157,073
Fire-Utilities	\$54,292	\$64,046	\$75,481	\$75,000	\$74,302	\$91,008
Library-Utilities	\$57,948	\$48,336	\$62,008	\$81,874	\$70,012	\$85,753
Parking-Lighting	\$13,609	\$11,973	\$14,977	\$20,250	\$18,960	\$23,222
Parks-Electricity	\$4,461	\$6,187	\$8,635	\$8,775	\$8,136	\$9,965
Parks-Heat	\$7,694	\$5,800	\$9,445	\$8,000	\$6,553	\$8,026
Police-Utilities	\$76,921	\$78,390	\$105,426	\$101,300	\$86,247	\$105,638
School Maintenance-Electric Elem		\$399,834	\$517,995	\$425,000	\$295,041	\$361,375
School Maintenance-Electric HS		\$136,494	\$145,997	\$200,000	\$90,351	\$110,665
School Maintenance-Electric Mid		\$71,878	\$206,456	\$200,000	\$142,755	\$174,851
School Maintenance-Heat-Electric Elem				\$45,000		
School Maintenance-Heat-Electric HS					\$8,571	\$10,498
School Maintenance-Heat-Electric Mid					\$289	\$354
School Maintenance-Heat-Gas Elem		\$694,478	\$572,165	\$500,000	\$142,792	\$174,896
School Maintenance-Heat-Gas HS		\$48,898	\$55,753	\$50,000	\$248,538	\$304,417
School Maintenance-Heat-Gas Mid		\$22,705	\$57,342	\$20,000	\$247,270	\$302,864
School Maintenance-Heat-Oil Elem		\$153,098	\$106,741	\$125,000	\$89,435	\$109,542
School Maintenance-Heat-Oil HS		\$16,806	\$10,992			
School Maintenance-Heat-Oil Mid		\$55,345	\$55,521	\$80,000	\$53,020	\$64,940
Stadium-Electricity		\$	\$2,417	\$4,832	\$4,982	\$6,102
Street Lighting	\$476,528	\$481,238	\$514,101	\$625,000	\$519,971	\$636,878
Vehicle Maint-Electricity	\$17,584	\$16,079	\$19,793	\$25,650	\$23,812	\$29,165
Vehicle Maint-Heat	\$17,902	\$13,380	\$26,835	\$20,000	\$16,981	\$20,799
Wastewater-Electricity	\$481,308	\$484,013	\$699,584	\$890,103	\$756,287	\$926,325
Wastewater-Heat & Hot Water	\$54,992	\$92,513	\$84,371	\$113,195	\$136,567	\$167,272
Water-Electricity	\$404,030	\$359,517	\$493,923	\$783,125	\$376,130	\$460,696
Water-Pumping Fuel & Heat	\$23,768	\$33,615	\$38,881	\$65,000	\$35,160	\$43,065
TOTALS	\$1,865,840	\$3,502,796	\$4,169,274	\$4,717,604	\$3,641,558	\$4,460,298

NOTES:

- 1) Data for some years is missing
- 2) YTD values are for 27 April 2007
- 3) Projected values linearly extrapolated from YTD

Table 2: Haverhill Energy Expense Trends

Source: C. Benevento 27 April 2007

Moodys Investors Service has indicated that energy costs currently play a significant role in Haverhill expenditure increases:

The fiscal 2007 budget is 5.8% greater than the previous year with the main expenditure drivers being fuel and energy health insurance and educational costs.

-- Moodys Investors Service, Haverhill (City of) MA, 31 OCT 2006

Source: [2] Haverhill's 2006 Report by [Moody's](#)

TBD – Local energy price trends

Energy Cost Projection

TBD – Mike?

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Benefits of Energy Reduction and Alternative Supply

The most direct benefit of energy use reduction is reducing energy expenditure from city budgets. David L. O'Connor, Commissioner of the Massachusetts Division of Energy Resources (DOER) gave a keynote speech at the 27 April 2007 Performance Contracting Seminar in Worcester, MA. Mr. O'Connor described three other potential benefits:

- Revenue from selling Regional Greenhouse Gas Initiative credits
- Revenue from forward capacity agreements
- Revenue from selling Alternative Energy Portfolio Standard credits

TBD – explain RGGI

TBD – explain forward capacity

TBD – explain AEPC

Role of an Energy Manager

The Haverhill school system achieves a reduction in energy use through:

- Energy conservation policies
- Energy use monitoring software
- Designation of an energy auditor

School Dude© software is used to track energy and manage use, among other items. An employee designated as energy auditor is responsible for communicating and enforcing energy conservation policies, as well as collecting energy use data through records examination and instrumentation. The School Dude© software automates reporting and analysis.

Some Massachusetts cities have an Energy Manager position:

- Worcester (planned)
- Newton

TBD – establish potential savings

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Energy Savings Performance Contracting (ESPC)

TBD – Ted?

Can savings during contract fund an energy manager?

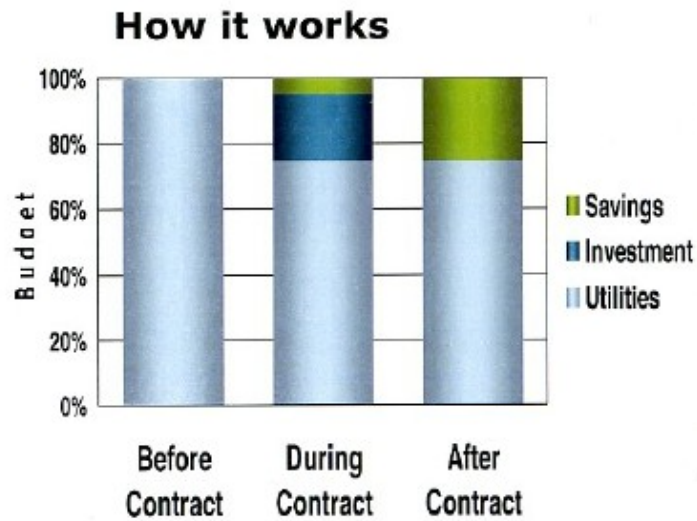


Figure 3: ESPC Economics

Massachusetts Technology Collaborative Programs

TBD – Ted?

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Environmental Protection Agency Programs

TBD – Jared?

Energy Star

Clean Energy Challenge

Portfolio Manager web service

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Recommendations

1 Create a position for City Energy Manager

The designation of an energy auditor within the school maintenance force, coupled with use of energy management software, has resulted in significant energy savings for the school system. The city is likely to enjoy a net savings from applying this strategy to all city facilities.

2 Utilize MTC Clean Energy Choice credits

The Massachusetts Technology Collaborative Renewable Energy Trust offers grants through the Clean Energy Choice program. Currently Haverhill has a credit of \$9,002 in the program, resulting from renewable energy certificates purchased by Haverhill residents and businesses. Haverhill's first grant under this program will be a solar photovoltaic system for the Citizen's Center. Appendix A contains helpful information.

3 Encourage Haverhill citizens to use clean electricity

As of 30 September 2006, 61 out of 22,976 Haverhill households were buying clean electric power. We can accelerate the accumulation of Clean Energy Choice credits by increasing participation by Haverhill citizens in the New England GreenStartSM program from Mass Energy, for example.

4 Issue an energy savings performance contract RFQ

Haverhill may be able to conserve a great deal of energy by having an Energy Service Company (ESCO) analyze and improve city facilities. The services of such a company may be obtained through the simplified Request For Qualifications (RFQ) process. Appendix D contains Massachusetts general laws related to the process.

The greatest gains might be achieved for city buildings that have not been recently subjected to energy analysis and improvement. The school buildings, for which there is currently an energy auditor, might not benefit sufficiently from new energy services to warrant new contracts.

5 Pursue a wind power purchase agreement

It is the opinion of the task force that the Golden Hill might be a suitable site for a wind power system.

6 Consider the use of bio-diesel fuel for city vehicles

TBD – Mike?

7 Take the EPA Community Energy Challenge

The city Energy Manager should make use of the EPA program described in Appendix F.

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References

- [1] *Haverhill Fiscal Year 2007 Financial Plan*
<http://www.ci.haverhill.ma.us/departments/auditor/budgetbook07.pdf>
- [2] *Haverhill's 2006 Report by Moody's*
<http://www.ci.haverhill.ma.us/departments/auditor/Moods-rating-06.pdf>
- [3] *Massachusetts DOER - Energy Management Services in Massachusetts*
<http://www.mass.gov/doer/>
- [4]

List of Appendices

- Appendix A.....Clean Energy Choice program grant application
- Appendix B..... Sample MTC Wind Site Survey Grant Application
- Appendix C..... Guidance Documents for Wind Facility Permitting
- Appendix D.....Massachusetts General Law: Section 25C
- Appendix E..... List of DCAM Certified Energy Service Companies
- Appendix F..... EPA Community Energy Challenge Information

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