



**ENERGY CONSERVATION  
COST SAVINGS/COST AVOIDANCE  
TOWN OF ANDOVER**

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**PLANT & FACILITIES DEPT.**

**Joseph R. Piantedosi CPE**

**Director Plant & Facilities**



# Plant and Facilities Department

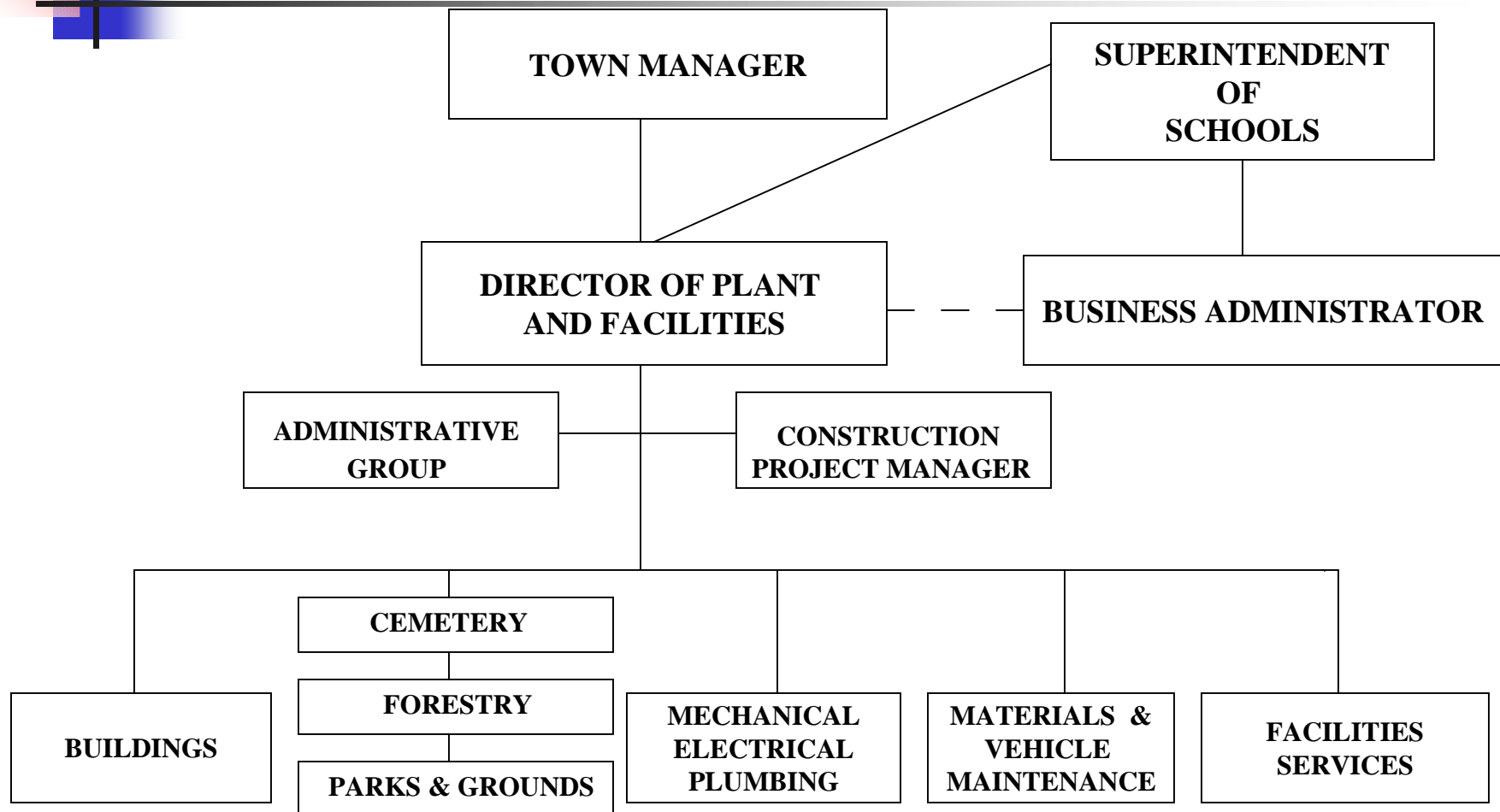
Joseph R. Piantedosi - Director

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## ENERGY CONSERVATION



# Plant & Facilities Organization



Town of Andover

# FY08 Energy Budget

	<i>Vehicle Fuel FY2008</i>	<i>Natural Gas FY2008</i>	<i>#2 Fuel Oil FY2008</i>	<i>Electricity FY2008</i>	<i>Total FY2008</i>	<i>Total FY2007</i>
<i>Plant and Facilities</i>	\$55,720	\$82,300	\$9,600	\$167,200	\$314,820	\$298,470
<i>DPW</i>	\$100,000	\$90,000	\$23,000	\$1,255,000	\$1,468,000	\$1,375,000
<i>Police</i>	\$93,495	\$110,000		\$150,000	\$353,495	\$324,250
<i>Fire</i>	\$38,354	\$14,000		\$9,250	\$61,604	\$60,230
<i>Library</i>		\$40,000		\$105,000	\$145,000	\$134,600
<i>Youth Services</i>	\$3,500				\$3,500	\$3,500
<i>Town Manager</i>	\$1,000				\$1,000	\$600
<i>COA</i>	\$4,140				\$4,140	\$2,700
<i>DCS</i>				\$3,000	\$3,000	\$3,500
<i>Town Totals</i>	\$296,209	\$336,300	\$32,600	\$1,689,450	\$2,354,559	\$2,202,850
<i>School Totals</i>		\$78,036	\$771,240	\$996,902	\$1,846,178	\$1,795,496
<i>Total Town and Schools</i>	\$296,209	\$414,336	\$803,840	\$2,686,352	\$4,200,737	\$3,998,346



# Back to Basics

## Preventive Maintenance

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- Change Filters & Belts
- Clean Coils
- Clean & Tune Boilers (1/8" soot = 6" insulation)
- Maintain Steam Traps
- Inspect/Verify Control Settings
- Lubrication
- Roof Leaks (loss of R value wet insulation)
- Vehicle/Heavy Equipment Maintenance

# Back to Basics

## Operating Procedures

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- Stage Equipment Start Up
- 35 – 50 Rule – Shut boilers off
- Shut Off Unneeded Equipment/Lights
- Computers Shut Down Two Hour Rule
- Space Heaters & Refrigerators
- Exterior Lighting
- Exhaust Fans & Hot Water Heaters
- Close windows & Blinds/Shades
- Vehicle Idling Policy (MGH CH 90 S16A)
- Heating & Cooling Set Points 68 Winter/76 Summer



# Back to Basics

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SCHOOL NIGHT PROGRAMS CONSOLIDATION

10 SCHOOL BUILDINGS IN ANDOVER

THANKSGIVING TO APRIL VACATION

**7 SCHOOLS CLOSE AT 6:00 PM**



# ENERGY PROJECTS

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## **3 YEAR PAYBACK RULE**

Cost – Rebates/Savings = 3 Years

Higher Paybacks OK if Other Benefits

Total Andover Rebates:

**\$195,000**

## Plant and Facilities Dept.

- Town-wide Energy Management System





# ENERGY PROJECT ACCOMPLISHMENTS

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- Town/School Wide Energy Management System
- HVAC Controls Converted to Direct Digital Controls (DDC)  
Town/School
- CO2 Sensors Installed to Improve Air Quality & Save Energy
- Variable Frequency Drives in Multiple Town/School Buildings
- Energy Efficient Lighting in Multiple Town/School Buildings
- Lighting Motion Sensors in Multiple School Buildings
- LED Energy Efficient Traffic Signals on town Owned Traffic Signals
- LED Energy Efficient Exit Signs in School Buildings
- Thermal Pane Windows in Multiple Town/School Buildings
- Energy Efficient Exhaust Fans in Multiple Town/School buildings



# ENERGY PROJECT ACCOMPLISHMENTS

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- New Boilers in Multiple Town/School Buildings
- New Unit Ventilators in Multiple Town/School Buildings
- Computerized Preventive Maintenance Program Town/School Buildings, and Vehicle & Heavy Equipment Fleet
- Construction of New Public Safety Center and New Schools using State of the Art Technology (Heat Recovery, DDC Controls, & Energy Efficient Lighting)
- White Roofing & Improved Insulation in Multiple Town/School Buildings
- New Energy efficient HVAC Systems in Multiple Town/School Buildings
- New Prototype System Shuts Down All Night Lighting with Security System
- Weather Stripping/Caulking Exterior Doors & Windows



# PURCHASING ENERGY

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- Andover - First Town Region 1999  
Buy Contract Electricity
  
- Presently Contracts:  
Electricity - Natural Gas - #2 Oil  
Diesel - Unleaded Gasoline



# SAVINGS/COST AVOIDANCE

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## EXAMPLE NINE PROJECTS 2002:

- CONTROLS: \$31,093

- LIGHTING: \$6,343

ANNUAL SAVINGS \$37,436

PAYBACK 1.8 YEARS



# SAVINGS/COST AVOIDANCE

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2006 SAVINGS/COST AVOIDANCE

POST HURRICANE KATRINA

**\$400,000+**

# Future Opportunity Geothermal

