

# Cutting Costs and Saving Energy in the City of Cambridge

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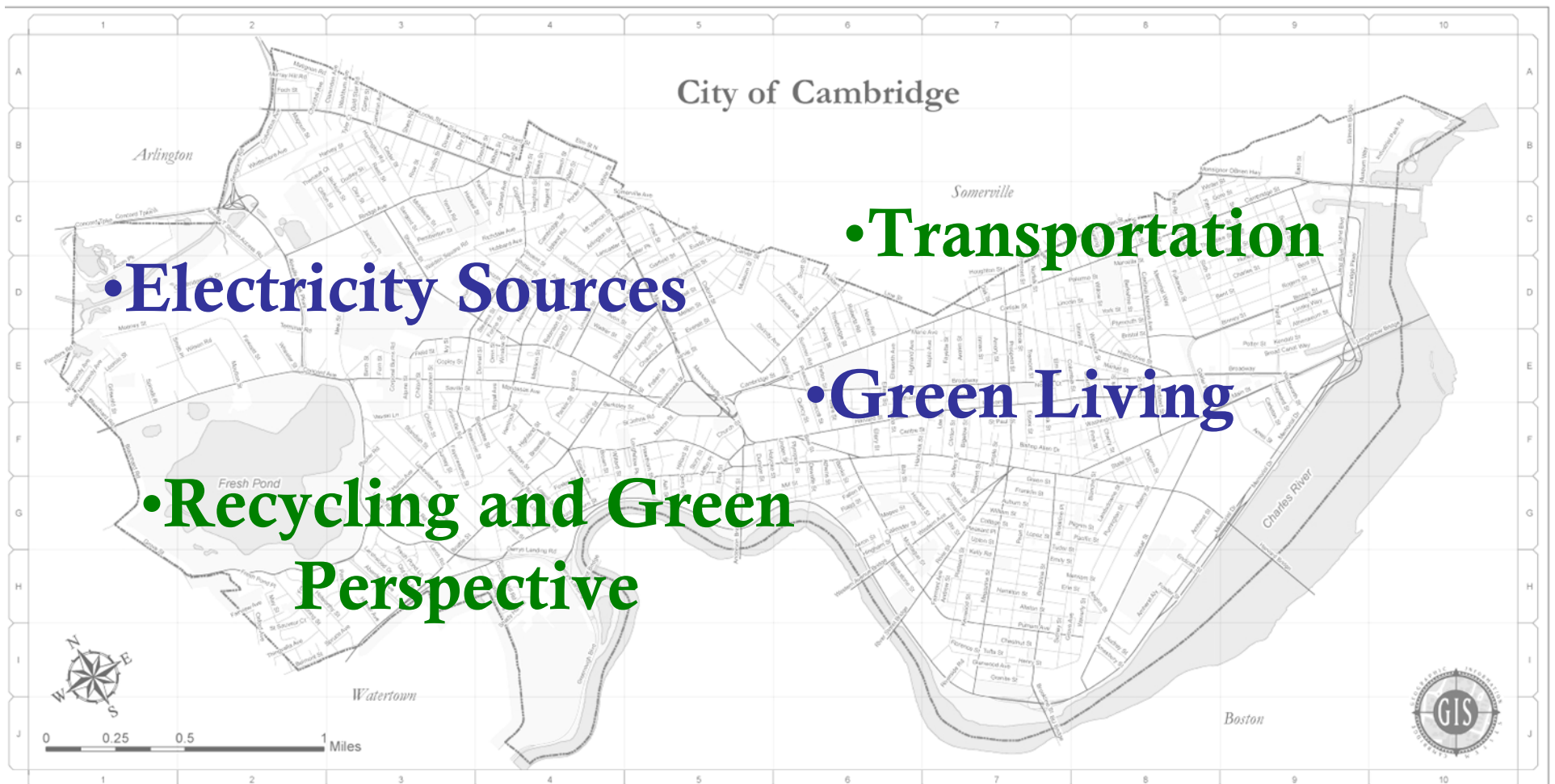


## Learning Objectives

- Energy efficiency programs at City buildings
- Other cities and towns can easily adopt these programs and practices
- Lessons learned and suggestions ✓

# Cambridge: #6 of Top 50 Greenest Cities in America

- Popular Science, February 2008



# Energy Efficiency Programs



- **Green building policy**
  - **Track consumption**
- **Energy audits**
  - **Capital renovations**
- **Peak demand reduction**
  - **O&M measures**
- **Employee behavior**

# Track Consumption and Costs

## Energy Information System (EIS)

- **Web-based**
- **Downloads from utilities**
- **Electricity, natural gas, heating oil**
- **Vehicle fuels**



# Capital Renovations

## A/E Requirements:

- Meet with utility program manager
- Prepare rebate applications
- Final payment after rebate application ✓

## Product Specifications:

- ENERGY STAR®-rated (or equivalent)
- Qualifies for utility incentive (or higher)

# **Operations and Maintenance**

## **HVAC Maintenance & Repair Specs**

**Start-up and preventive maintenance**

**Equipment replacement:**

- **Quotes - Code-compliant vs. high efficiency**
- **Savings and rebate info**

**Motor Replacement: NEMA premium**

# Motor Management - MotorUp

Install premium-efficiency motors when appropriate

- **Motor inventory**
- **Involve and educate departments**
- **Procedures/requirements for HVAC contractor** ✓
- **Educate contractor**
  - **“efficient” vs. “premium efficiency”** ✓

# Reduce Peak Load – “Tag Day”

City Manager meeting with department heads

Memo to employees

- Turn off unneeded lights, window AC's
- Turn off computers every night

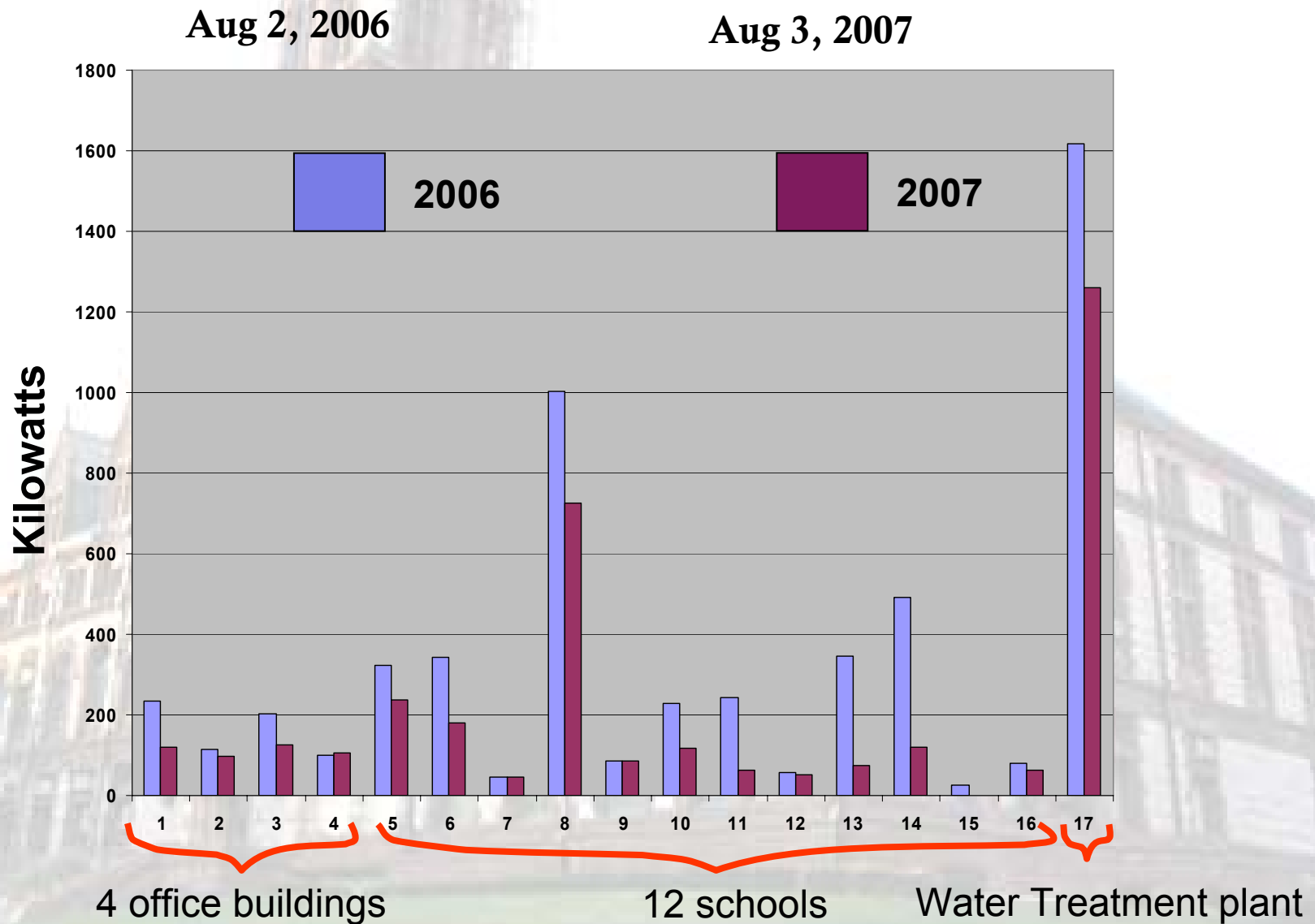


Facilities Staff:

- Increased cooling set points, adjusted air handler schedules
- Water Treatment Plant: reschedule energy intensive operations for off-peak times

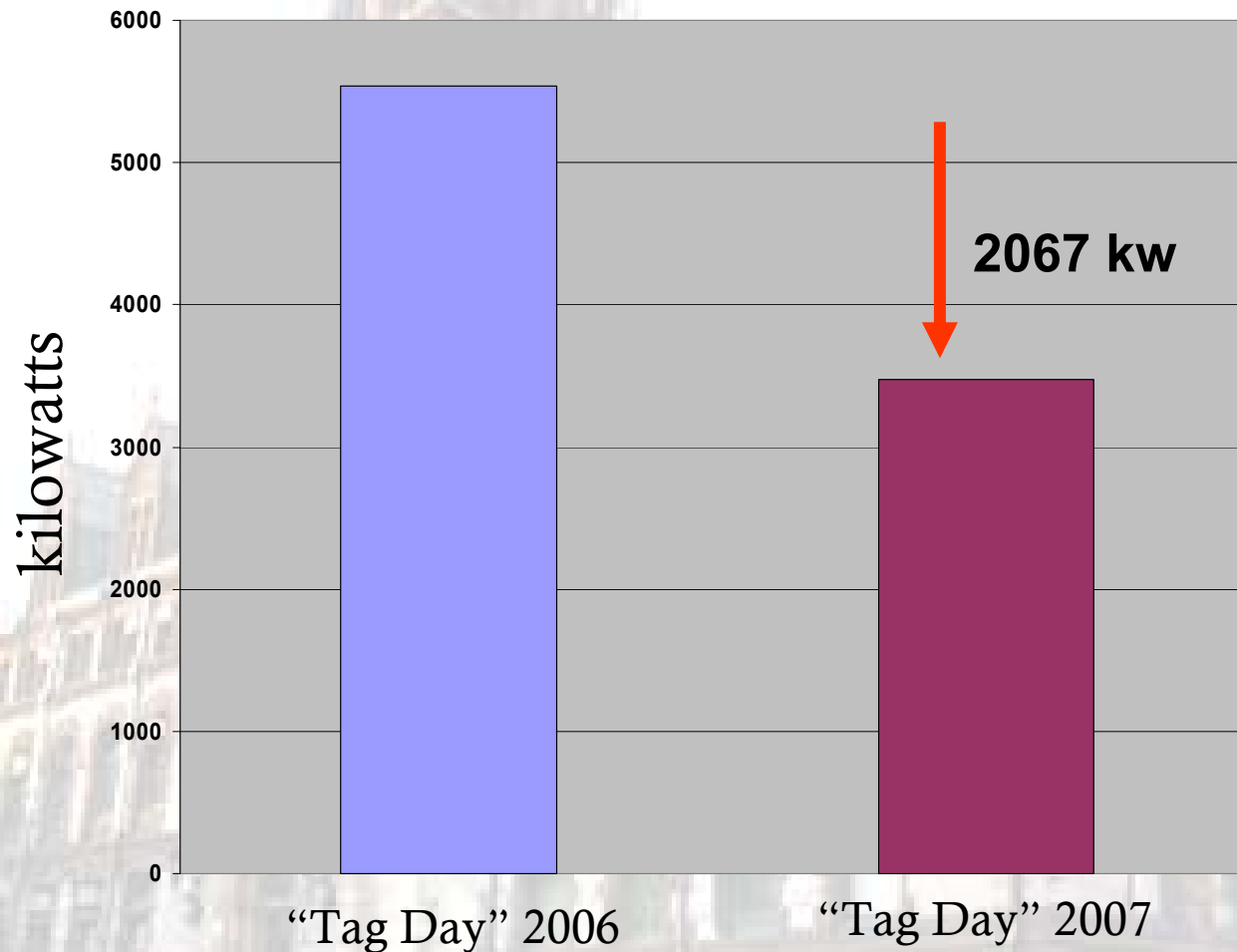
# Reduce Peak Load – “Tag Day”

## Energy Demand on “Tag Day” 2006 vs. 2007



# Reduce Peak Load – “Tag Day”

Prelim. estimate: 20% reduction in demand



Projected Annual Savings of \$70,000 on Capacity Charges

# Energy Awareness: Cambridge GreenSense

- **Promote energy-efficient practices among employees**
- **Initial target: 5% decrease in 12 months**
- **Surveyed 10 buildings after hours**
  - **50% computers on**
  - **50% off!**
  - **Lights on in conference rooms, work spaces, common areas, bathrooms**
  - **AC units running**

# Energy Awareness: Cambridge GreenSense

## Next steps:

- **Energy Tips to raise awareness and promote simple changes**
- **Educational materials**
  - Website
  - Posters
  - Energy Guide
- **Energy Captain for each department**
- **Environmental + financial benefits**
- **Track results and report quarterly**

# Energy Efficiency

## Lessons Learned



**Communicate with multiple departments**



**Involve operations staff**



# Energy Efficiency

## Lessons Learned



**Don't rely solely on consultants and vendors**



# Energy Efficiency

## Lessons Learned



**Develop in-house expertise**



**Thank you for your time!**

**Questions?**

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