

Town of Nantucket Climate Action Plan

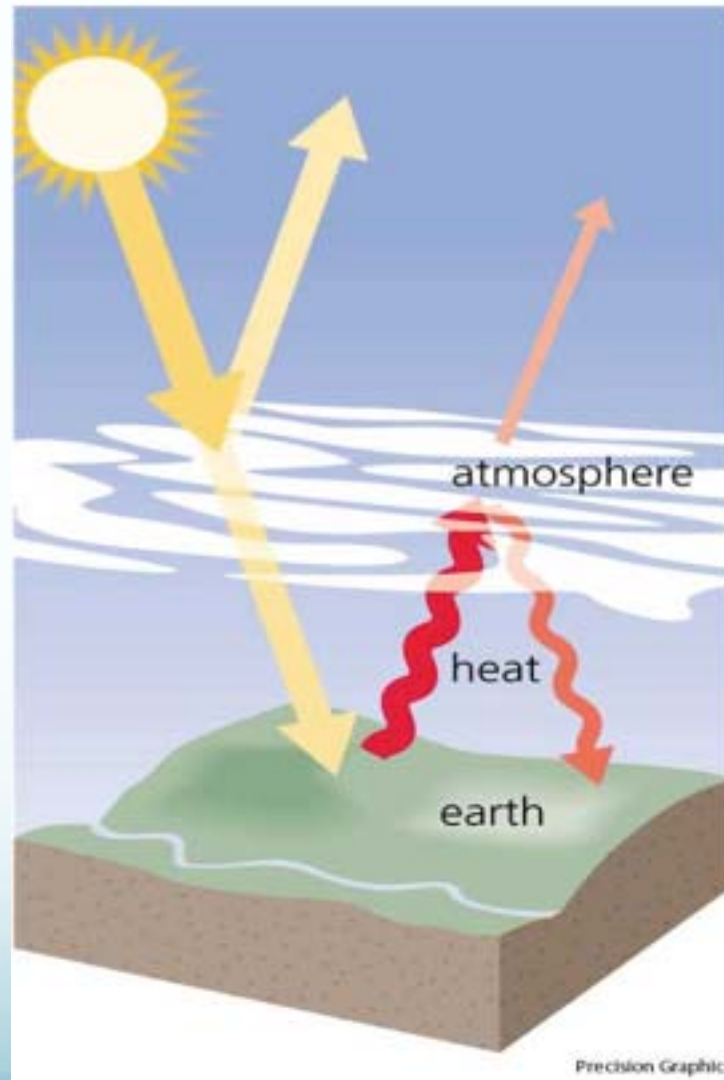
Prepared by Sustainable Nantucket

August 19, 2010

Agenda

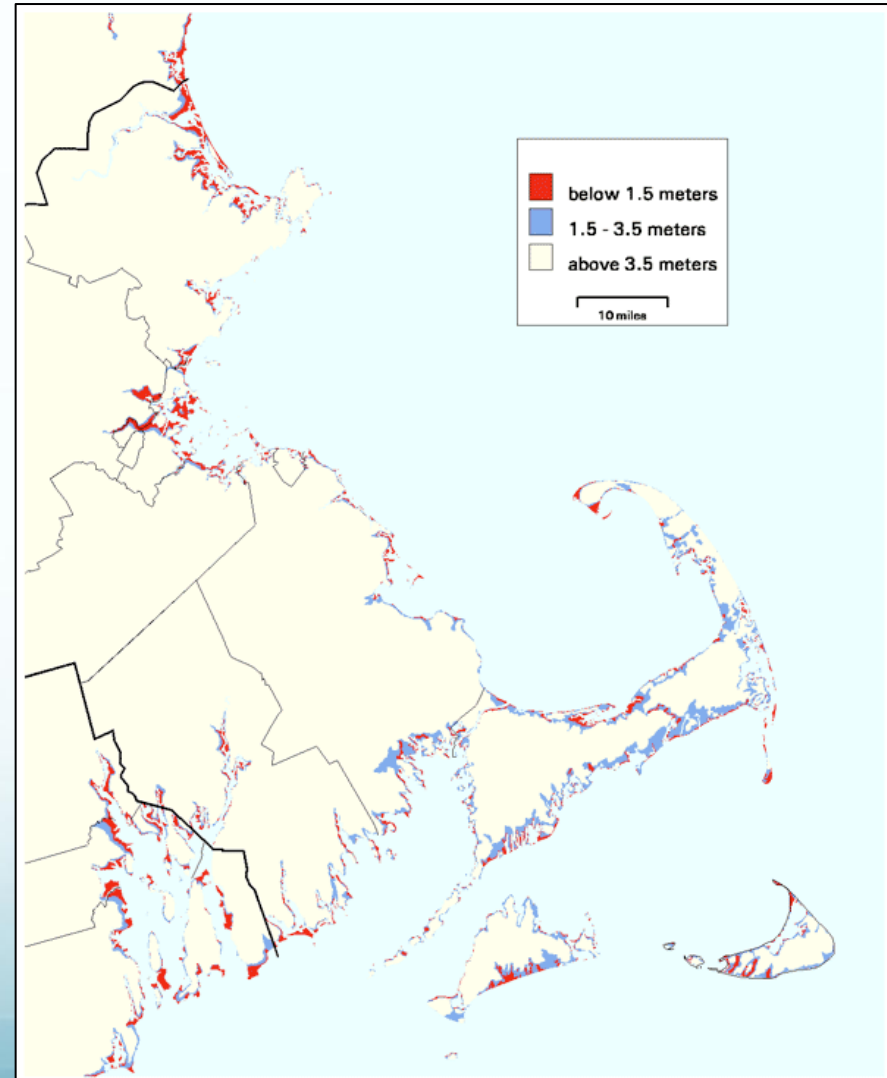
- What's The Plan?
- Nantucket's Greenhouse Gas Inventory (2007)
- How to use the Climate Action Plan (CAP)
- Getting there – Heating
 - Reduction strategies
 - Case studies
- Green Communities Requirements
- How Can The Community Participate?
- Next steps
- Questions

The Greenhouse Effect



Impacts of Climate Change on Nantucket

- Rising sea levels
- A 6° – 10° F increase in temperatures by 2090
 - i.e. from Richmond, VA to Atlanta, GA
- More frequent extreme weather
 - Heavy rainfall, heat waves
- Increase of disease
 - Poison Ivy, tick and mosquito born illnesses



Why Act?

- A low carbon way of life has **multiple economic, social and environmental benefits:**
 - Cost savings from efficiency and conservation
 - Reduced dependency on foreign oil
 - Job creation
 - Reduced congestion, improving downtown vitality
 - Cleaner air & water, habitat protection, eco-tourism
- Eligibility for State Grants
 - Green Communities
 - Smart Growth Points
- Delays in Federal Climate Legislation make local action even more critical.
- Your grandchildren.

So What's The Plan?

- Use energy more **efficiently** and **conserve** where you can (a.k.a. save \$\$)
- Design policies for **smart growth**.
- Spend a little, save a lot.
 - Many reductions strategies have **short payback periods**, from a few months to a few years.
- Tackle some larger scale **infrastructure improvements**.
- Evaluate and implement **sources of funding** to support any needed capital expenditures.

ICLEI Cities for Climate Protection



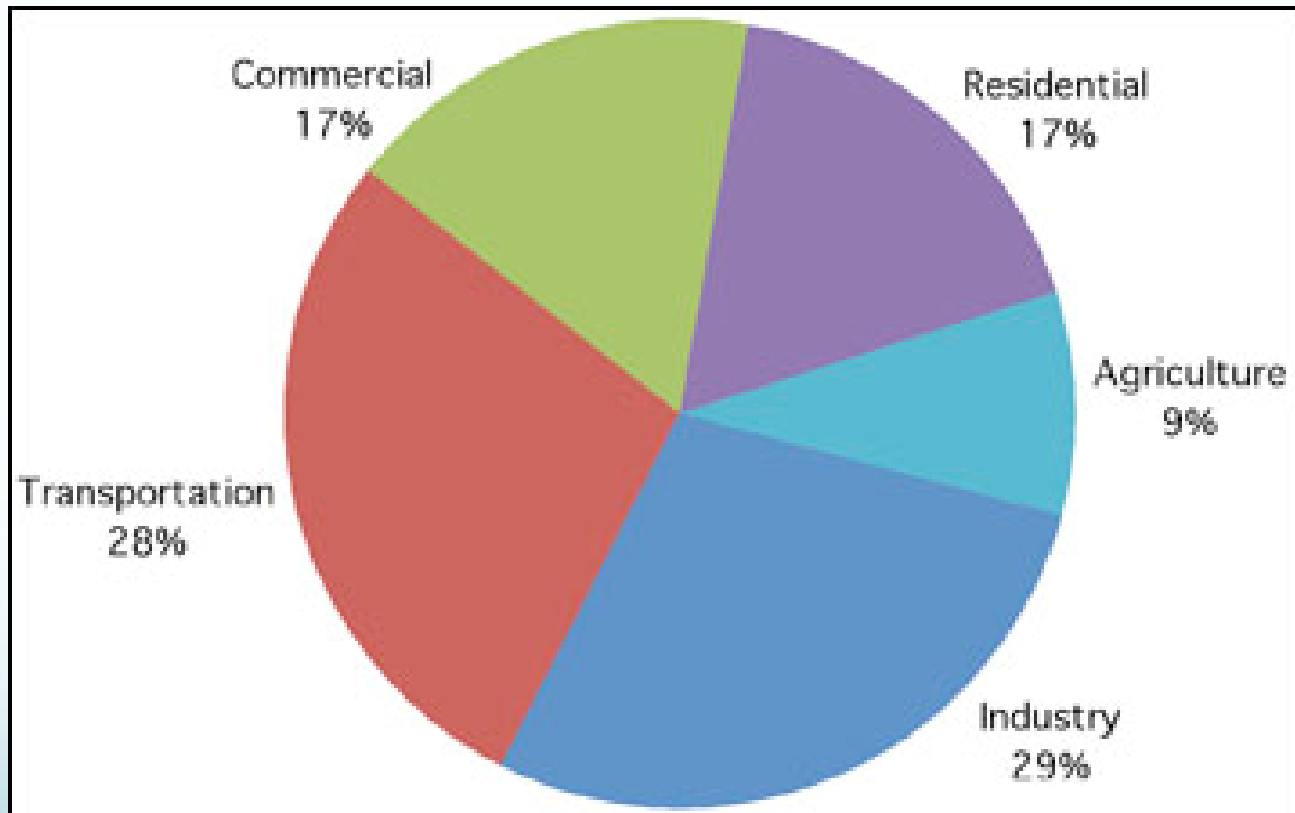
Over 1,000 local governments worldwide, 500 in the US

- ✓ Milestone 1 - Conduct baseline inventory and forecast
 - ✓ Completed 2009 (baseline year 2007)
- ✓ Milestone 2 - Adopt an emissions target
 - ✓ Completed March 2009
- **Milestone 3 - Develop and adopt Climate Action Plan**
- Milestone 4 - Implement Climate Action Plan
- Milestone 5 - Assess progress – 5-year inventory

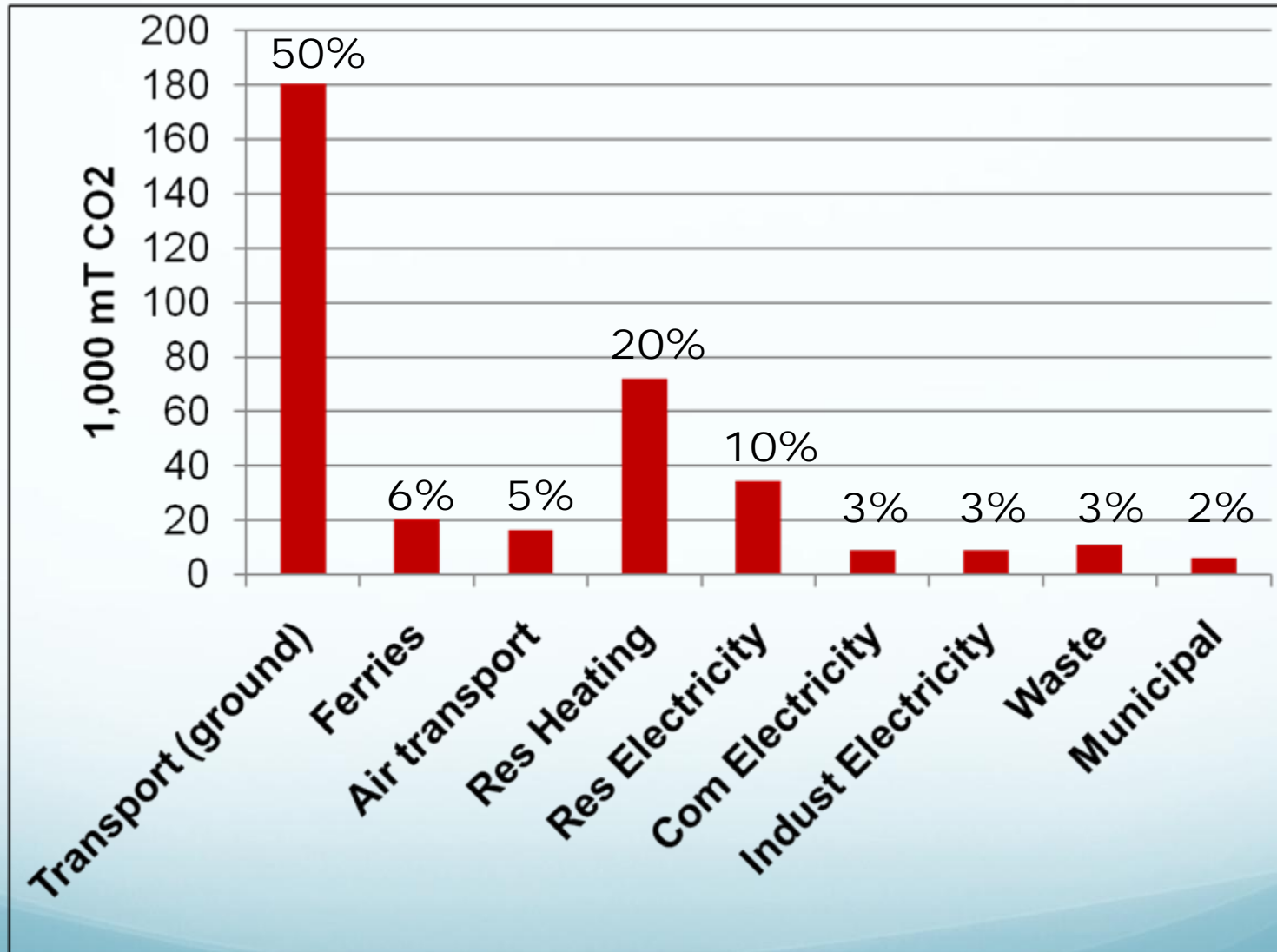
Emissions Reduction Targets

- In March 2009, the BOS approved a target for Nantucket of **10% below 2000 levels by 2020**
 - Amounts to ~20% below 2007 baseline
- Pending federal legislation targets reductions of 17% below 2005 levels by 2020
 - 20% of electricity from renewables by 2020
 - 42% by 2030, more than 80% by 2050
- Qualification for funding as a Green Community requires a **20% reduction in municipal (only) electricity use in 5 years.**

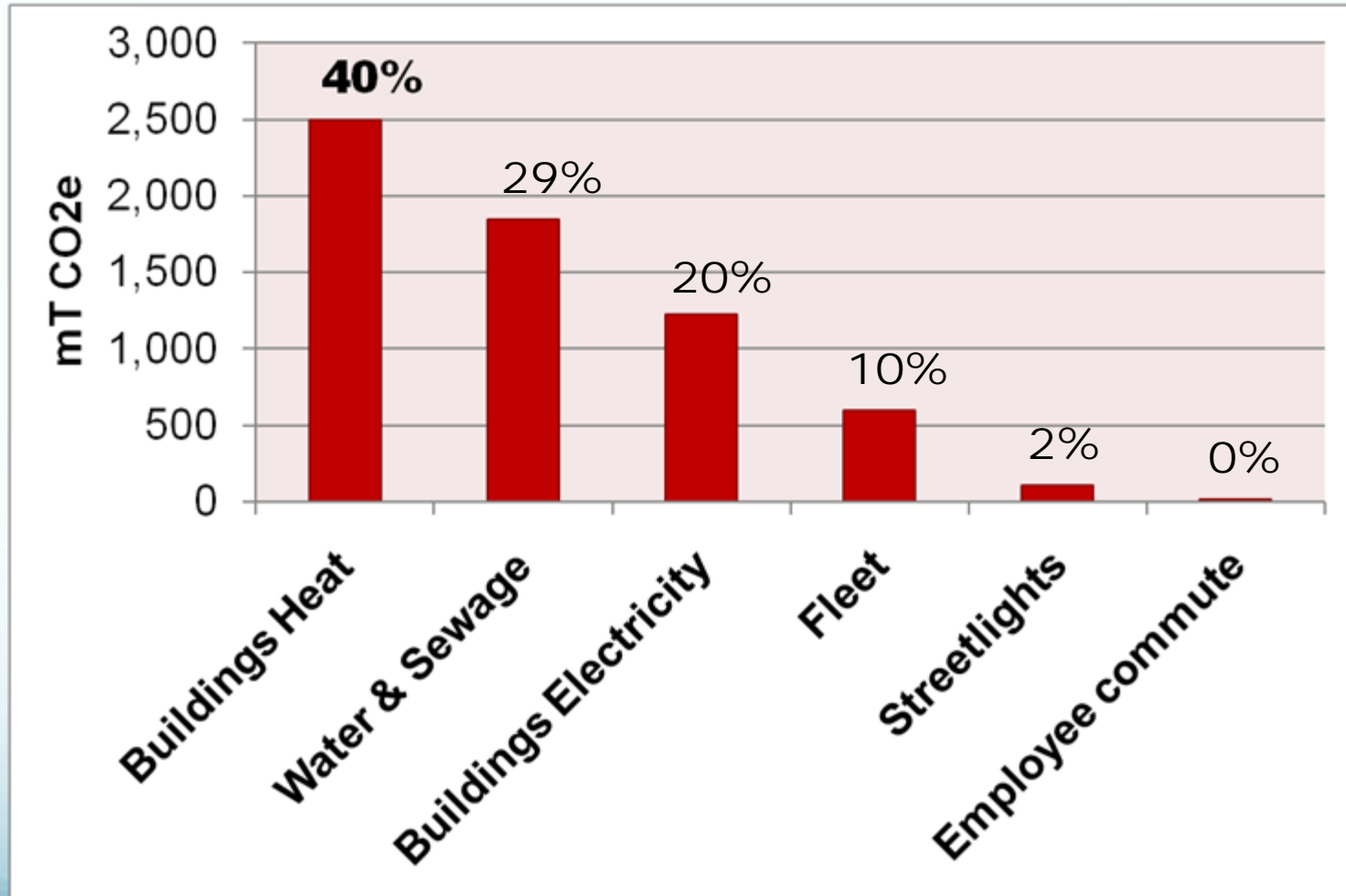
US GHG By Sector



Nantucket's GHG Emissions



Municipal Only



How To Use The CAP

- The plan is a “**menu**” of strategies focused on **efficiency, conservation** and current technologies
- The CAP designed to be INCLUSIVE (e.g. anything that reduces CO₂).
 - **The popularity contest comes in the implementation phase.**
- Must take **some big steps** to achieve reductions of at least 20% in key areas
 - Transportation
 - Heating
 - Electricity
- The CAP is a municipal plan
 - **Town as leader and catalyst**, but the community must be part of the solution
 - **Continually evolving** in response to new information, legislation, opportunities, and public input
- Clock is ticking...
 - Baseline was 2007, it's now 2010, first target is 2020.

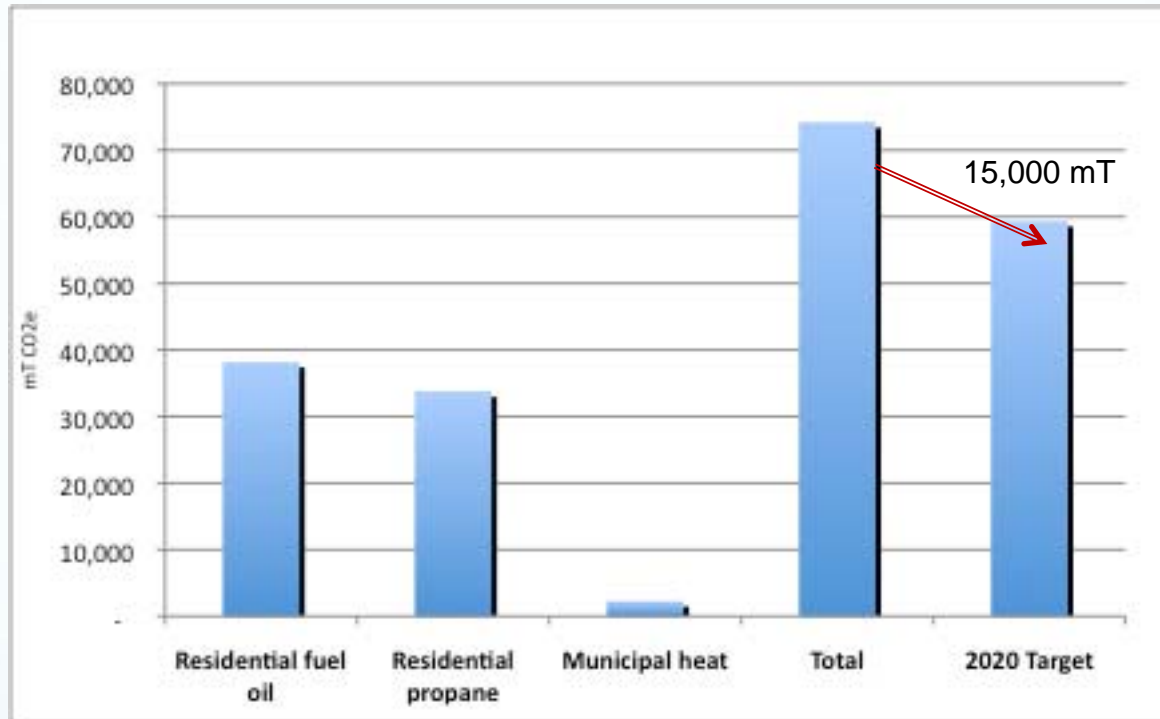
Appendix A - Transportation

Ground Transportation --> 20% reduction target	Cost	Impact	Spotlight	Agency
<i>Municipal - short term</i>				
Town anti-idling policy	Low	Med	T.7.	BOS
Optimize school transportation flows and alternatives	Low	Med	T.14.	School Committee
School bus anti-idling policy	Low	Low	T.8.	School Committee
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Optimize school transportation flows and alternatives	Low	Med	T.14.	School Committee
School bus anti-idling policy	Low	Low	T.8.	School Committee
Restrict idling at public facilities	Low	Low	T.7.	BOS
Encourage car-pooling, van-pooling, and NRTA use by municipal employees	Low	Low	T.1.	BOS / Chamber
Utilize fuel-efficient vehicles (e.g. bicycles) for parking enforcement	Low	Low	T.12.	BOS
Increase NRTA ridership	Med	High	T.1.	NRTA / BOS
Food miles program	Low	Low	T.15.	Non-profit
Local biodiesel	Med	Med	T.4.	Private
Trip consolidation technologies	Med	Med	T.5.	NP / Private
<i>Community - long term</i>				
Promote community purchases of compact, hybrid and electric vehicles	Low	High	T.9.	Non-profit
Other Transport --> 5% for airport, 2% for ferries target				
<i>Airport</i>				
Carbon offsets	Low	Low	T.10.	BOS / Airport
Anti-idling policy	Low	Med		Airport
Gasoline surcharge for private aviation to fund weatherization programs	High	High	T.11.	Various
Efficient taxi and runway management	Med	Med		Airport
<i>Ferries</i>				
Consideration of alternative fuels, biodiesel	Med	Med	T.4.	Steamship / Hy-Line
Port electrification	Med	Med		Steamship / Hy-Line

Seeking the net effect of replacing 1 in 5 car trips.

Getting There – Heating

- Emissions for heating (20% total)



- How to reduce **15,000** mT CO₂e
 - Pass MA state stretch code for new buildings (H.5.)
 - Install programmable thermostats (H.2.)
 - Weatherization (H.1.)

Pass MA State Stretch Code (H.5.)

- Low cost, high impact, Green Communities Requirement
- Required Home Energy Ratings (HERS) and associated energy efficiency gains
 - 35% for new residential (compared to 2006 code)¹
 - 20% for renovations
 - 20% for commercial
- Assume 20% penetration by 2020,
 - 40% new residential
 - 40% renovation
 - 20% commercial

✓ **4,100 mTs reduced**

¹ Actual Home Energy Ratings (HERS) s vary depending on size of building

Notes: Listed historic buildings are exempt from building energy code requirements. Code is compatible to Energy Star (Tier 2) for residential and LEED for commercial.

Over 35 Towns Have Passed the Stretch Code

- Mashpee
- Northampton
- Medford
- Salem
- Cambridge
- Newton
- Montague
- Lenox
- Lowell
- Sudbury
- Springfield
- Hanover
- Kingston
- Lexington
- Arlington
- Andover

Programmable Thermostats (H.2.)

- Low cost, high impact
- Dialing back 10° to 15° for 8 hours
 - **Saves** you 10% on your heating bill
 - **Reduces** emissions by 10%¹
- Assume 30% participation²

✓ **2,400 mTs reduced**

¹

Source: US DOE

² Based on 2020 emissions, which factors US EIA 0.3% growth between 2007-2020.

Case Study: Fayetteville Saves \$400,000

- The city of Fayetteville, Arkansas implemented an energy management program in 2007
- Extensive **energy conservation** measures
 - Including programmable thermostats that cost \$100 each
- In the program's first year, the city saved \$400,000 in energy costs
- The \$100 thermostats **paid for themselves in the first month of use**

Weatherization (H.1.)

- Federal and State funding available for low income housing weatherization
 - Weatherization Assistance Programs (WAP)
 - Heating Emergency Assistance Retrofit Task Weatherization Assistance Program (HEARTWAP)
 - MassSave
- Simple steps
 - Sealing leaks
 - Insulation
 - Low-flow fixtures
 - Changing furnace filters
- If 40% of residents participated¹

✓ **4,700 mTs reduced**

¹ Assuming 15% energy savings.

Case Study: Portland, OR

- Block By Block (BBB) Program
 - Administered by the City's Energy Office
 - Free basic weatherization and energy-use education
- Weatherizes **120 homes a year**
 - Weatherization kits include low-flow fixtures, weather stripping, storm window kits
 - Education – lowering water heater and thermostats, changing furnace filters, hanging clothes to dry
- Average cost of weatherization \$694
- 72% of BBB households **reduce energy usage by 15%**
 - Saves as much as \$100 per year
- Funded through 5 sources including existing utility and state rebates, and the City's general fund.

Let's Review

4,100	mT	Stretch code
2,400	mT	Thermostats
4,700	mT	Weatherization
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15,000	mT	Target
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3,800	mT	Remaining

- Find the remaining 3,800 mT in the “long tail”
 - Residential geothermal
 - Avoid heating (and cooling) empty homes
 - Whale oil? 😊

Case Study: Aspen

- The Renewable Energy Mitigation Program (REMP)
- Launched in 2000
- Building codes require “energy budget”
 - Homeowners who wish to consume additional energy have the option of installing onsite renewable energy
 - OR paying a mitigation fee instead
- Raised nearly **\$8 million** for energy efficiency and renewable energy projects

Sources of Funding

- State and Federal Grants
 - US Department of Energy (DOE) grants
 - Green Communities Grants (\$7M in 2010)
 - Department of Environmental Protection (MassDEP)
 - MA Technology Collaborative
- Savings from energy efficiency and conservation
- Local fees or taxes
 - Seasonal paid parking downtown
 - Congestion pricing
 - Seasonal garbage tax
 - Peak-use energy pricing
 - Local sustainability mitigation fund
- New business opportunities
 - Local biodiesel
- Power purchasing agreements from on-island renewables

Green Communities

- As-of-right siting of renewable energy
- Adopted expedited permitting process for as-of-right facilities
- Establish municipal energy use baseline and plan to reduce by 20% in 5 years
- Green fleet policy
- Minimize life-cycle energy costs for new construction
 - Stretch code or equivalent

What You Can Do?

- BOS voted to postpone vote for 90 days (scheduled for Nov. 17, 2010)
 - Use this extension to make the plan better.
- Read the CAP (www.nantucket-ma.gov/climate)
- Start putting ideas into practice.
- Voice new ideas at the community forum and to TON administration. Send your comments to AMcAndrew@nantucket-ma.gov.
- Keep the momentum going for passage in November.
- Be an active participant during the Implementation phase as the Town explores cost & benefits, and begins to prioritize strategies
- Make it (even more) local
 - Encourage your village association to track and report emissions, along with the TON, as required by Green Communities and CCP
- Encourage the BOS to vote to participate in ICLEI's Climate Resilient Communities and begin Climate Adaptation Planning

Questions?