Strategies to Reduce Fleet Emissions…
UNH's Coordinated Transportation Approach

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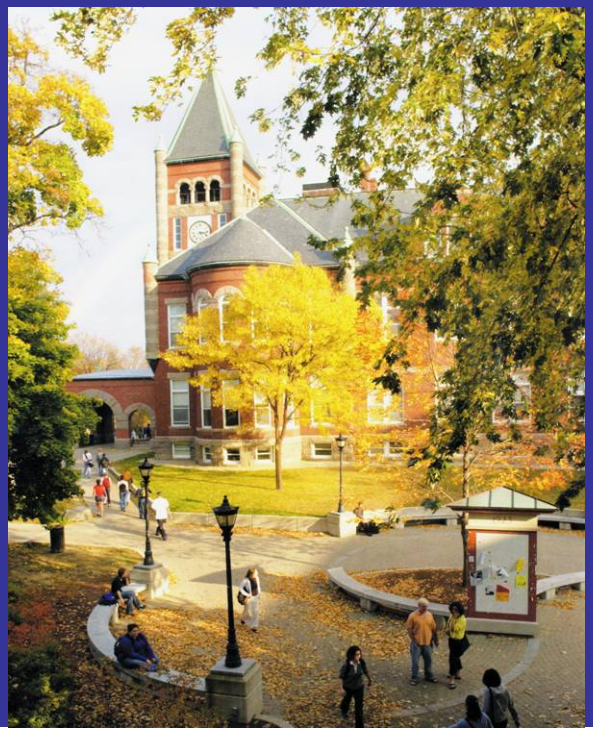
Campus Image

There are three distinct and differentiating images:

New England village

New England college



New England landscape

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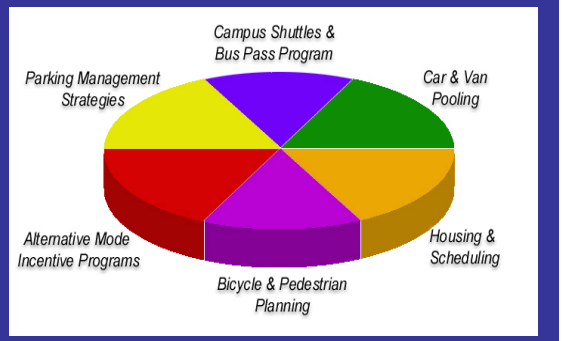
Systems Approach

- Sustainability ⇔ Climate Education ⇔ Transportation Systems
- After heat and electricity, fleet fuel consumption and personal commuting are the biggest energy uses and emission generators at UNH.
    - Eco-Line™ deals with first two items….Today, an overview of our transportation and alternative fuel efforts
- We are approaching the issue with a series of institutional practices, transportation system choices, demonstration of new technologies and general community education

Evolving Transportation Policy

Leadership and Community Dialog

- **2001 Transportation Demand Management Policy**
  - dialog on transportation choices, costs and impacts on land-use, climate and energy
- **2004 Campus Master Plan** - reinforces walking campus
- **System Improvements Yield Positive Results**:
  - **Transit ↑ 100% since 2001** - >1.1 million trips last year
  - **Amtrak Downeaster ↑ 500%** - >50,000 this year
  - **2004-2006 UNH fleet fuel consumption**:
    - Gas and petroleum diesel ↓ **10%**
    - CNG ↑**10x** displacing >12,000 gallons gas/diesel
    - Biodiesel (B20) introduced 2006 - **saved 11,000** gallons petroleum diesel
    - Increasing hybrid and electric vehicles in our fleet (demonstration of EVs)
  - **Parking Permits** - flat or down in last years
  - **Ongoing improvements** to short-term access, campus transit standards



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20 Year Master Plan Context

Reducing Commute trips (VMT) and emissions through on-Campus Housing

Population Component	2002 Base	2012 Build Projection	2022 Build Projection
Faculty/Staff (all commute)	3,320	3,400	3,520
Graduate (all commute)	2,150	2,325	2,500
Undergraduate Population:	10,850	11,450	12,000
On-Campus undergraduate housing	*5,610*	*6,400*	*7,200*
On-Campus family/graduate housing	*333*	*420*	*566*
Commute population **Faculty/Staff *plus* students *minus* on-campus housing**	**10,377**	**10,355**	**10,254**

Reduced traffic and emissions due to significant increases in on-campus housing

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Coordinated Efforts

Energy-Transportation – Climate Education

- **UNH Clean Fleet Programs**
  - Eco-Cat alternative fuel
  - B20 Biodiesel transition
  - CNG for on-campus
  - Enterprise hybrid fleet
  - Right-sizing and AFV use
- **DOT/DOE/EPA Partnerships** on high visibility successful projects
  - Over **$6.5 million** of USDOT and USDOE funds leveraged for transit, rail station, ped/bike and alternative fuel projects
- **Investment in Transit**
  - Leveraged USDOT funds
  - Voluntary student investment
  - Expanded free community transit
  - Cost-effective utilizing student drivers
  - Largest transit agency in state
    - Projected 1 million trips removing over 4 million VMT in 06-07

ECO Cat B20 UNH
American-grown low emission biodiesel

BEST Workplaces for Commuters℠

UNH TRANSPORTATION CLEAN FLEET PROJECT

Powered by Natural Gas:
a clean, quiet, alternative fuel.

CNG

UNH is a climate protection campus. Learn more at **www.sustainabileunh.edu**

funded by: Clean Cities

sponsored by: Environmental Services

UTS University Transportation Services

Office of Sustainability

Institutionalizing Choices:

Clean Fleet Practices and Policies

Vehicle Need Identified by User
(replacement or new)

↓

Determine '**Right Size**' for Customer Need

↓

Screen for **Alternative Fuel** suitability
potential grant funding by Energy Staff

↓

Provide **Fuel Efficiency Thresholds** and
Life Cycle Cost reviews
= purchasing options in an approved vehicle list

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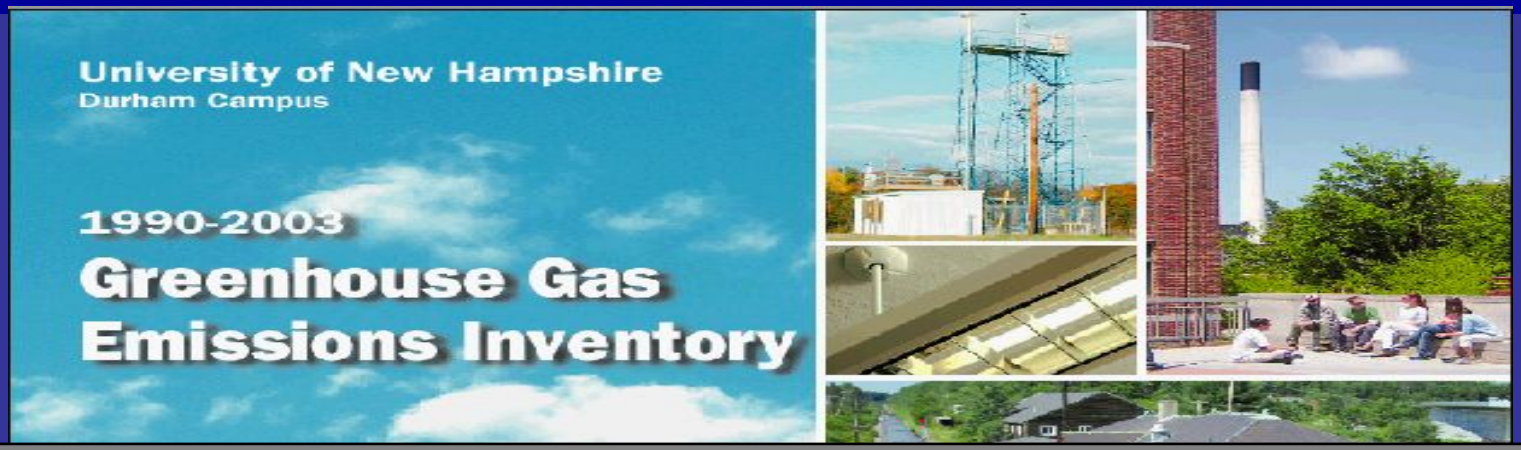
Client Selects eligible vehicle.
At registration, vehicle stats recorded with BSC
(fuel type, Epact, grant, tax credit)

US EPA Certified SmartWay

Fleet Fuel Consumption and Emissions



UNH - Durham Fleet Fuel Consumption FY 2004-2006								
	Transit Gallons Diesel/Gas	Transit CNG therms	Plant & Animal Sciences Gallons Diesel/Gas	Non-Transit Gallons Diesel/Gas	Non-Transit CNG therms	UNH Total Gallons Diesel/B20 /Gas	UNH Total CNG Therms	TOTAL
2004	91,961	387	15,687	118,463	787	210,424	1,174	211,598
2005	81,981	15,548	14,292	106,336	3,887	188,317	19,435	207,752
2006[1]	83,600	15,145	16,700	120,000	3,786	220,300	18,931	222,000
Change 04-06	*-9%*	*+40X*	*+6%*	*+1%*	*+5X*	*+5%*	*+10x*	+5%%
2007 data will show B20 transition								

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Fuel Efficiency

Next Steps

- Fulfill Mandates and meet/exceed State/Fed and UNH Goals
  - Governor's Executive Order re Fuel Efficiency and EPAct
- Demonstrate leadership as part of Climate Education Initiative
- Formalize Vehicle Choice Policies incorporating life-cycle and emissions
- Utilize selection/analysis procedures from EPA Smart Way programs
- Improve benchmarking and fleet mgmt
- Continue Clean Fleet & Eco-Cat.
- Continue AFV infrastructure research, support and investment and public demonstration

Transportation Improvements Underway

New Transit Fleet – Ongoing

$1.5 million of new clean fuel vehicles since 05

Main Street-East (2007)

$1.9 million street redesign improved bike/transit

Rail Station (2007)

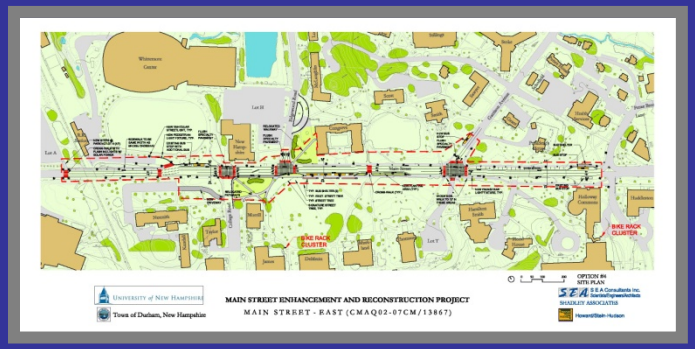
$913,000 renovation and transit improvements

CNG Station/Garage Upgrade (2007-8)

$900,000 renovation and transit improvements

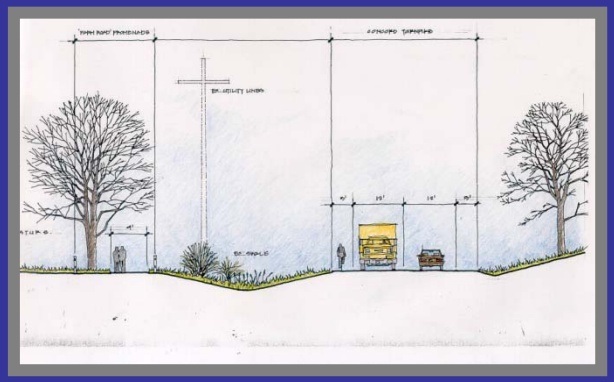
Main Street-West (summer 09)

$350,000 multi-use trail/sidewalk to west edge



Next Steps?

- *McDaniel Drive Extension to Main St.*
- *Conant Courtyard*
- *Parking Consolidation*
- *College Way*



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