

C2 Sustainability



**PRESENTATION TO C2 ADVISORY
COMMITTEE
OCTOBER 17, 2012**

Sustainability Framework

- **STAR – Sustainability Tool for Communities**
 - The built environment
 - Climate and energy
 - Economy and jobs
 - Education, arts and community
 - Equity and empowerment
 - Health and safety
 - Natural systems
- **C2 discussion will focus primarily on Built Environment and Climate and Energy**
- **Barry Bluestone from Northeastern will discuss smart growth and housing next week**

Sustainability Framework: Built Environment

- **Built environment framework:**
 - Compact and complete communities
 - Affordable housing
 - Infill and redevelopment
 - Public spaces
 - Transportation choices
 - Ambient noise and light

Sustainability Framework: Climate and Energy

- **Climate and Energy:**
 - Climate adaptation
 - GHG mitigation
 - Greening the energy supply
 - Resource efficient infrastructure
 - Resource efficient buildings
 - Waste minimization
 - Industrial sector efficiency

Sustainability in Cambridge: Where are we at?

- **Dense, mixed use city:**
 - Smaller units, lower energy use/GHG emissions per unit
 - Short distances between home, work, retail and recreation
- **Multi-modal transportation network:**
 - Cambridge recognized as “America’s Most Walkable City”
 - 25% of residents take transit to work
 - Bicycling rates increased 350% in past decade
- **Green Buildings:**
 - Green building requirements (LEED, Stretch Code); Cambridge Energy Alliance
- **Green city:**
 - Tree canopy covers 20% of city area; parks and playgrounds

Sustainability in C2: Topics discussed

- Density
- Mixed use development
- Public and green spaces
- Transit-Oriented Development
- Transportation Demand Management (TDM)
- Multimodal infrastructure
- *New topics: high performance buildings, urban heat island*

Sustainability in C2: Goals

- Focus on buildings as 80% of Cambridge greenhouse gas emissions come from building energy consumption in existing buildings
- Reduced consumption of non-renewable energy is a key strategy: new and existing
- Temperatures are rising: reduce urban heat island effect
- Minimize traffic growth, better serve sustainable modes

Sustainability in C2: Objectives

- High performance buildings (energy, water)
- Increased use of renewable energy
- Low reliance on automobiles; increased use of alternative fuel vehicles
- Mitigation of urban heat island
- Reduced storm water runoff quantity and improved water quality
- Minimize waste generation
- Make sustainability visible

Sustainability in C2: Potential Strategies

- **Potential strategies for BUILDINGS:**
 - LEED Gold certifiability (current standard is LEED Silver certifiability; focuses on building construction)
 - LEED Existing Buildings Operations and Management (focuses on building performance)
 - Steam/district energy (Osborne Triangle)
 - Cool roofs (white/green); vegetated walls
 - On-site storm water retention/treatment

Sustainability in C2: Potential Strategies

- **Potential strategies for HEAT ISLAND/OPEN SPACE:**
 - Increase tree canopy coverage/shading
 - Paving/roofing materials with high reflectance
- **Potential strategies for TRANSPORTATION:**
 - Multimodal infrastructure
 - TDM (already incorporated)
 - Support for Hubway bikesharing program
 - Expansion of EV charging network
 - Increased use of alternative fuel vehicles (EV, biodiesel)