Clearwater City Commission
Agenda Cover Memorandum

Work session Item #: _____

Final Agenda Item # _____

Meeting Date: 11-29-10

SUBJECT/RECOMMENDATION:

Provide direction regarding preliminary greenhouse gas reduction targets which will guide the selection and refined analysis of a set of greenhouse gas reduction strategies that, upon future City Council approval, will comprise *Clearwater Greenprint: A Community Action Plan for Sustainability*.

☐ and that the appropriate officials be authorized to execute same.

SUMMARY:

Clearwater Greenprint: A Community Action Plan for Sustainability will result in a vision and strategic plan that looks beyond municipal functions and incorporates energy saving, pollution reducing programs and practices that can be implemented by households, businesses and institutions citywide. The first phase of this project will also include amendments to the Clearwater Comprehensive Plan pursuant to Florida House Bill 697 provisions of Chapter 163, Florida Statutes, and Florida Senate Bill 360 (2009). Under these provisions, local governments must develop strategies and actions that address energy efficient land use patterns, transportation and housing, reductions in greenhouse gases, energy conservation, renewable energy sources and mobility. The project will build on existing City programs and initiatives to improve community sustainability and livability including the Mayor's Climate Protection Agreement, Green City Certification and energy conservation policies in the Comprehensive Plan.

Planning and Development Department staff has been working with a consultant team to complete a citywide greenhouse gas (GHG) emissions inventory (base year 2007). The inventory provides the City with a baseline for comparison of GHG emissions forecasts for both trend ("business as usual") and plan implementation scenarios (see attached GHG Inventory Summary Sheet).

The *Clearwater Greenprint* stakeholder steering committee has met five times to identify project-related issues, opportunities and almost 200 strategies categorized under eight major topic areas. Five of these topic areas have direct impacts on GHG reduction (i.e., land use and urban form, transportation, green energy and buildings, solid waste, and water resources), while the remaining three topic areas are indirectly related to GHG reduction but will be vitally important to achieving the GHG reduction targets (i.e., education and awareness, food production, and green business and jobs). This universe of strategies was ranked using a methodology which was refined by the stakeholder steering committee. Top-ranked strategies will be analyzed further for the *Clearwater Greenprint* (see attached GHG Strategies document).

At their November 10, 2010 meeting, the steering committee recommended that City Council support the GHG reduction targets recommended by the project team. Fourteen members voted in favor, one opposed, and six members were not present to vote. The committee challenged the project team to achieve the higher end of the proposed ranges, and suggested that it might be possible to reach higher goals over time. The opposing committee member expressed concern over establishing a single set of goals for the community as a whole, as well as the static increments of percent reduction. He suggested that there should be two sets of goals (one for municipal operations and one for the community) and that the goals should increase by greater percentages over time to incorporate and address the community's learning curve.

The recommended GHG reduction targets, represented by the percentage ranges listed below, will be validated through more rigorous analysis to determine with a greater level of accuracy that which could be achievable through implementation of specific strategies.

Recommended Preliminary Greenhouse Gas Reduction Targets:

- 10-20% by 2020
- 25-35% by 2035
- 40-50% by 2050

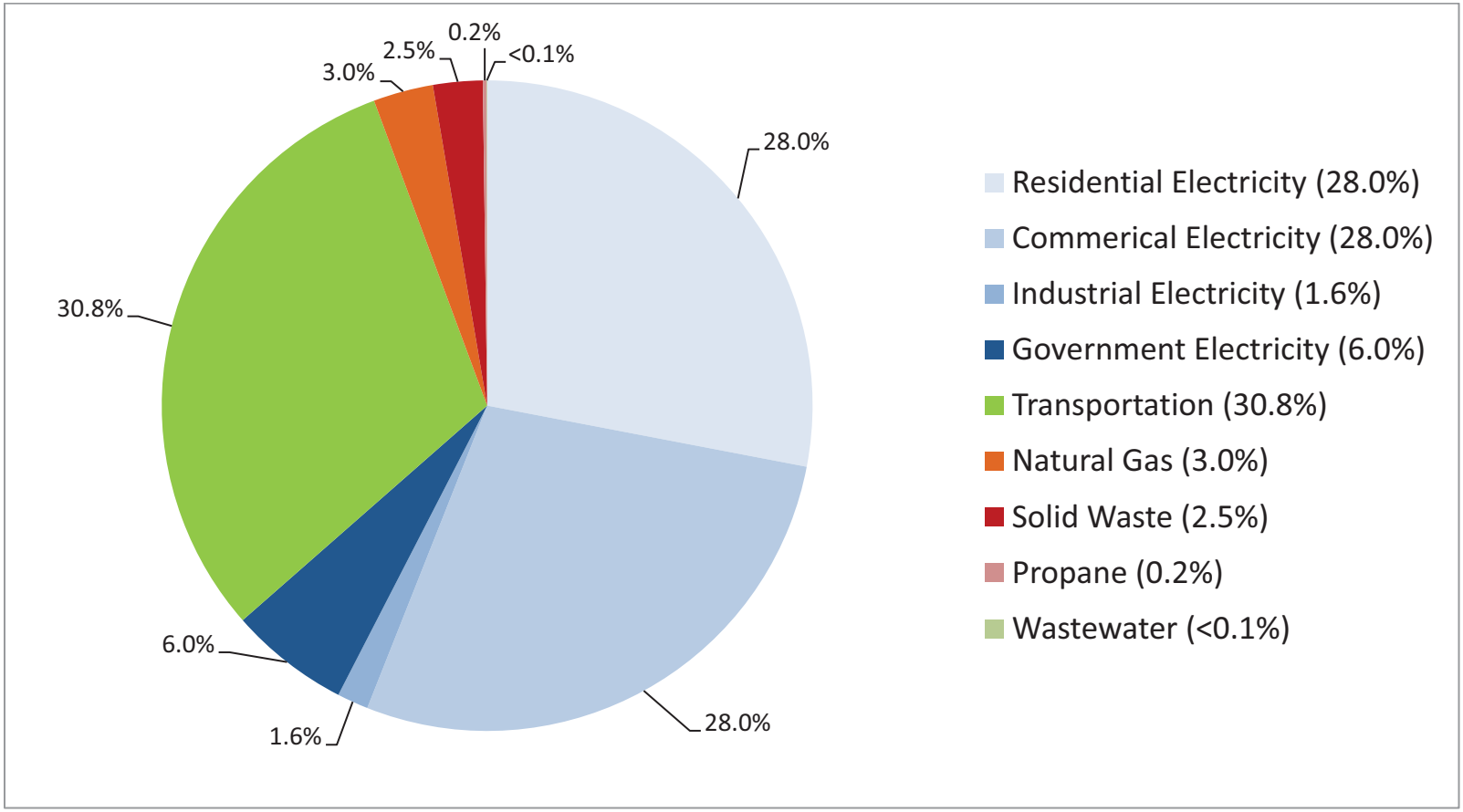
Planning and Development Department staff requests that City Council provide direction regarding these preliminary greenhouse gas reduction targets which will guide the selection and refined analysis of a set of greenhouse gas reduction strategies that, upon future City Council approval, will comprise *Clearwater Greenprint: A Community Action Plan for Sustainability*.

Clearwater Community Greenhouse Gas Inventory and Reduction Strategies

Greenhouse Gas Inventory

In 2007, the Clearwater community emitted 1,253,070 metric tons of carbon dioxide equivalents (mtCO2e). Electricity use (approximately 63%) and transportation (approximately 31%) accounted for just over 94% of the community's greenhouse gas emissions.

2007 Clearwater Community Greenhouse Gas Emissions by Source



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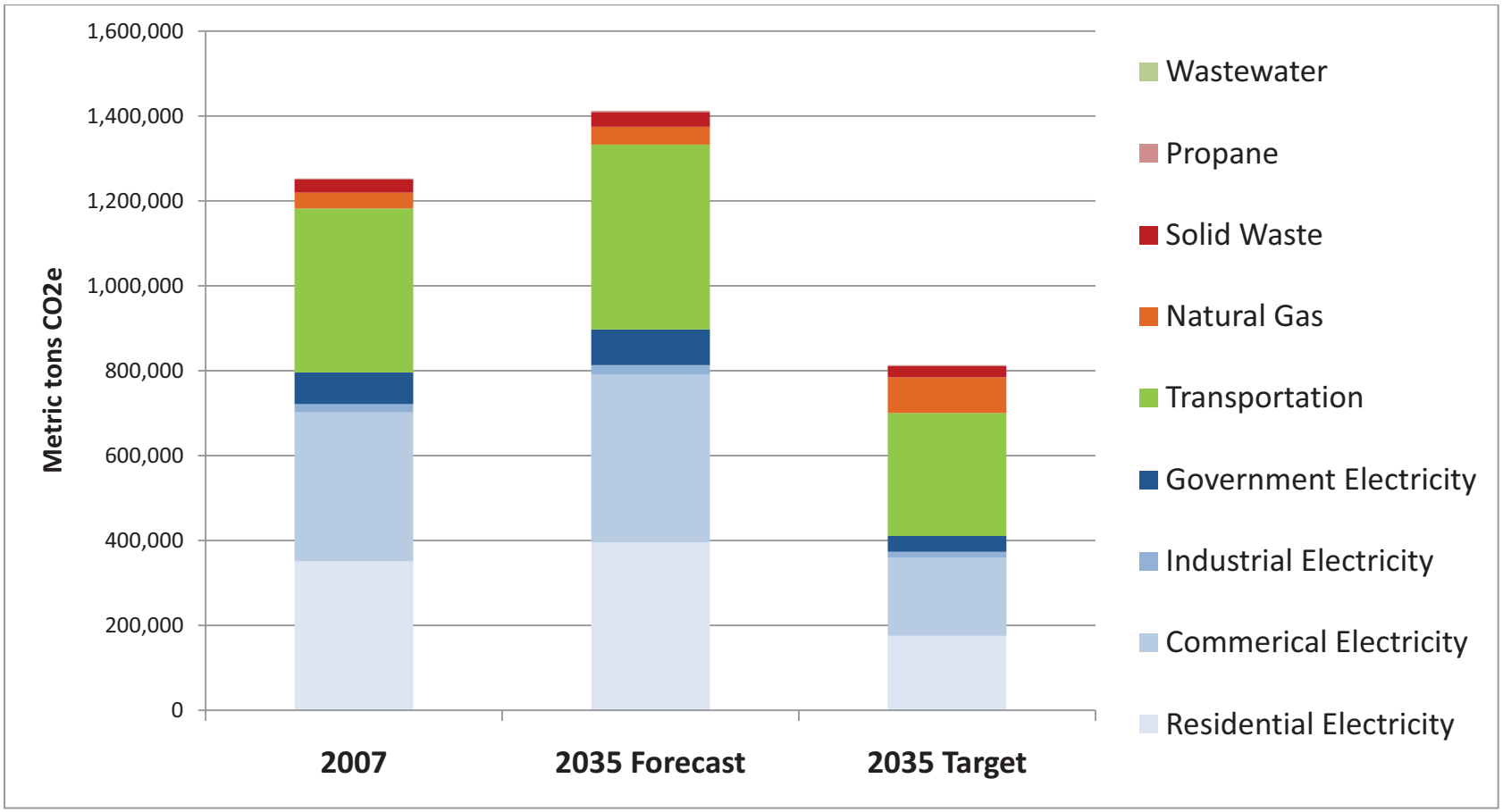
In a business as usual scenario, the Clearwater community greenhouse gas emissions are expected to increase to 1,412,582 mtCO2e by 2035, a 13% increase from the 2007 baseline. The proposed greenhouse gas reduction target will aim to reduce 2007 baseline emissions by 35% by 2035.

2035 Clearwater Community Greenhouse Gas Emissions Forecast and 35% Reduction Target Scenario



Greenhouse Gas Reduction Strategies

The recommended Clearwater Greenprint greenhouse gas (GHG) reduction strategies are citywide strategies that apply to government, businesses and residents. GHG reductions will be achieved through conservation, investments in energy efficiency measures and positioning to take advantage of emerging technologies and clean and renewable energy sources. The focus is on actions that can and should be taken at the local level. The total GHG reduction needed to meet the City's 2035 target (shown by percentage by strategy category in the table below) will result from local choices, decisions and investments.

Greenhouse Gas Reduction Goals and Strategies by Category to Meet 35% Reduction by 2035

Category	Goals	Primary Strategies	% of GHG Reduction
Green Energy and Buildings	Decrease energy demand of municipal buildings and operations.	• Convert remaining traffic signals and all City-owned street lights to light emitting diodes (LED). • Develop energy management policy for all municipal facilities and operations. • Benchmark and monitor energy use of municipal facilities. • Continue to upgrade the City's existing facilities through weatherization and higher efficiency equipment. • Implement a commissioning plan for all City buildings to verify that the building systems are achieving their desired performance. • Construct all new City facilities to conform to a nationally recognized, high performance standard such as LEED, Florida Green Building Coalition or Energy Star.	60%
	Decrease the energy demand of existing privately-owned buildings through weatherization and energy efficiency upgrades.	• Assist property owners to obtain capital for energy efficiency upgrades through implementation of an energy financing program. • Work with local vendors and utilities to offer residents and businesses discounted solar and natural gas water heaters. • Partner with local organizations and vendors to create a Resource Conservation Management Program for large electricity consumers to minimize energy and water use in commercial and industrial buildings. • Provide development incentives such as increased development intensity and reduced parking requirements for energy efficiency retrofit and weatherization improvements on commercial properties.	
	Increase the energy efficiency of new privately-owned buildings.	• Encourage all new residential and commercial properties to meet a nationally recognized, high performance standard such as LEED, Florida Green Building Coalition or Energy Star.	

Category	Goals	Primary Strategies	% of GHG Reduction
Green Energy and Buildings	Replace conventional sources of energy with clean and renewable sources.	• Continue to expand natural gas service and offer rebates to encourage more residents and businesses to use and convert to natural gas. • Increase electrical generation capacity of alternative and renewable energy from existing city-wide resources such as biogas and biomass. • Set a challenge to install solar panels on 10% of residential buildings and 15% of commercial, industrial and government buildings. • Investigate options for public/private partnerships to finance renewable energy systems such as roof top solar photovoltaic systems. • Encourage developers to build solar-ready homes.	
Transportation	Reduce the number and length of vehicle trips and reduce congestion.	• Set a 10% challenge for businesses and individuals to reduce vehicle miles traveled (VMT) with web-based tracking and recognition of success. • Provide employer incentives for teleworking and virtual office programs to reduce peak hour travel demand. • Implement a commute trip reduction program with goals for VMT reduction for City employees. • Implement roundabouts instead of traditional signalized or stop-controlled intersections where possible.	32%
	Rely on transit, walking and cycling for a greater percentage of overall travel.	• Enact a Transit First Policy, establishing transit, walking and biking as priority policies. • Increase transit frequencies on existing routes. • Create a bus rapid transit network that spans the city's arterials and connects to major origins and destinations. • Support implementation of passenger rail from Clearwater to Tampa and St. Petersburg. • Continue to implement, monitor, review and update Clearwater's 2006 Shifting Gears Bicycle and Pedestrian Master Plan. • Increase bicycling by adding improvements that make bicycling more safe, convenient and enjoyable. • Continue to construct gap infill sidewalks citywide where they are currently missing.	
	Reduce the greenhouse gas emissions of the vehicle fleet by shifting to cleaner fuels and more fuel efficient vehicles.	• Prioritize low-to-zero emission transportation modes such as electric and natural gas vehicles in planning, policy plans and ordinance development. • Encourage alternative fuels when they are shown to produce fewer greenhouse gases than gasoline or diesel and when their production does not negatively impact food production. • Improve government vehicle fleet-efficiency by replacing City vehicles with higher MPG rating, hybrid gas-electric, electric, or other alternative vehicles.	

Category	Goals	Primary Strategies	% of GHG Reduction
Land Use and Urban Form	Create vibrant, mixed-use, walkable, transit-supportive neighborhood activity centers to link people with jobs and services and reduce the need for automobile travel.	• Develop incentives for energy efficient infill development and redevelopment in activity centers and commercial corridors. • Provide for and encourage mixed use development in local ordinances and plans. • Identify areas appropriate for mixed use activity centers and create small area plans to grow and connect these areas. • Encourage the development of life-cycle housing to enable residents to remain in the City as housing needs change.	6%
	Fully utilize public and other property to sequester carbon and reduce the heat island effect.	• Increase the urban tree canopy through planting, preservation, community education and outreach programs.	
Waste Management	Decrease the amount of solid waste generated by increasing the recycling rate.	• Continue to provide education and training to commercial businesses to increase the commercial recycling rate. • Continue to expand yard waste collection service to residents. • Launch residential food waste composting program giving assistance to residents in composting on private property.	1%
Water Resources	Reduce water consumption and stormwater runoff through conservation and low impact development measures.	• Provide incentives to developers to create landscapes that integrate water saving principles such as Florida Friendly Landscaping principles. • Assist high volume water consumers across the residential, commercial and industrial sectors in developing water conservation plans. • Develop a low impact development plan with the ultimate goal of capturing rainfall from 10% of impervious surfaces.	1%

There are strategies that do not have a direct effect on citywide GHG emissions but are vitally important to achieving the overall goals of Clearwater Greenprint. These strategies will increase community awareness of the benefits of sustainable practices and result in individual actions that ultimately reduce GHG emissions.

Goals and Strategies without Direct Greenhouse Gas Reduction Benefits by Category

Category	Goals	Primary Strategies
Education and Awareness	Educate the Clearwater community on current environmental conditions and the "triple bottom line" value of sustainability.	• Institute a program to inform City Council about sustainability issues and opportunities. • Train City staff on sustainability issues and best practices. • Continue to highlight the City's green initiatives and report the associated benefits. • Identify training and educational needs within each Clearwater Greenprint focus area, recognizing synergistic opportunities. • Continue to conduct neighborhood outreach and education campaigns that promote sustainability initiatives and best practices. • Create a "savings challenge" checklist where users can identify and pledge reductions in carbon emissions.
Green Business and Jobs	Create an environment for Clearwater to be a leader in green businesses and jobs and grow the green job sector.	• Expand database information on green businesses and profile businesses that are taking steps to become more "green." • Partner with local tourism agencies and industries (local hotels, restaurants, real estate rentals, tour operators and visitor travel outlets) to develop a green guide to Clearwater. • Establish a green investment fund to support initiatives that align with Clearwater Greenprint goals and strategies and grow local jobs. • Partner with local and regional economic development organizations to attract and expand green businesses in the Tampa Bay Area. • Establish a framework to track and monitor the environmental, social and economic value of public and private investments in green initiatives.
Food Production	Identify areas with potential for local food production. Encourage citizens to grow their own food and ensure they have access to locally sourced food.	• Create a task force (e.g., Urban Agriculture Task Force) to survey and recommend methods to advance local food production. • Identify foods and other agricultural products that can be produced locally. • Identify spaces throughout the city where food can be produced. • Update the Community Development Code to support community gardens and urban agriculture, including increasing the availability of land for community gardens and other food systems initiatives. • Allow for and promote hydroponics or other food production facilities on rooftops of existing and new buildings. • Maintain and expand the urban forest, including edible fruit trees.

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Clearwater City Council

November 29, 2010

Clearwater Context

- Commitment
- Integration
- Action
- Monitoring
- Reporting
- Planning

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- Commitment
- Integration
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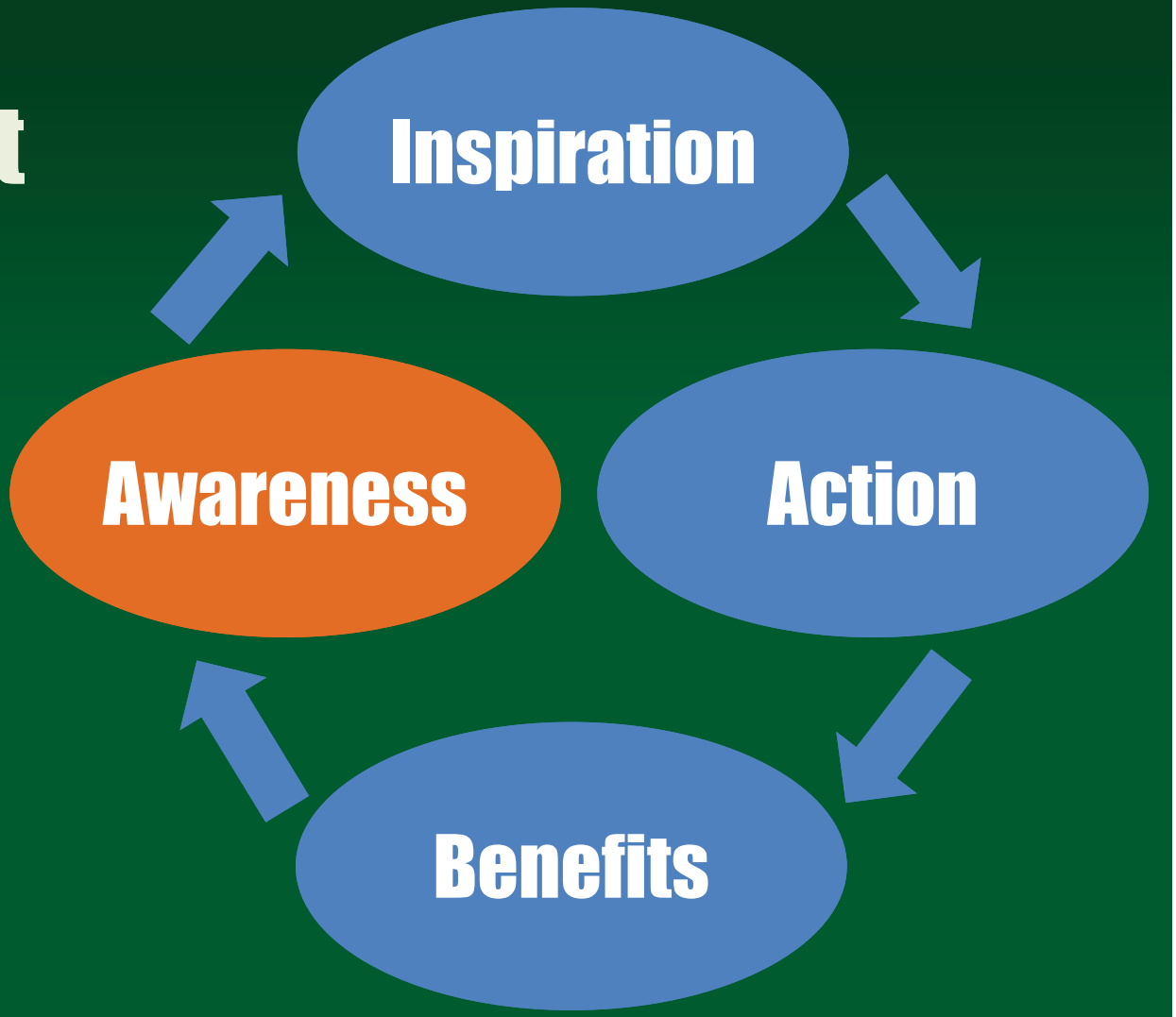
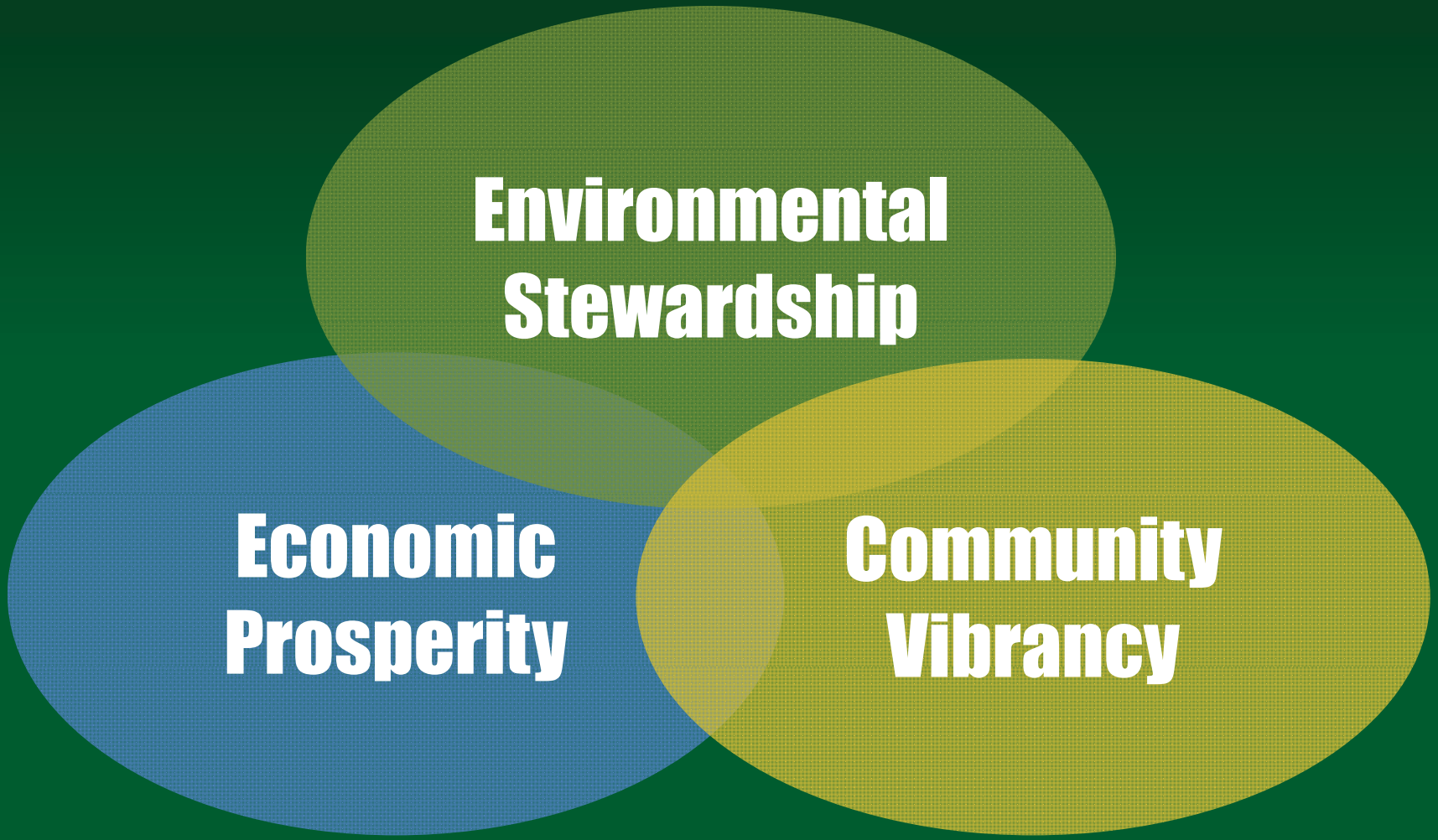


Sustainability and Livability



Clearwater Greenprint

- **Clearwater Greenprint is:**
  - –Action Plan for Sustainability
  - –Strategies for Residents, Businesses and Government
  - –Opportunity and Adaptation versus Regulation

Greenprint Process

- Greenhouse Gas (GHG) Inventory
- Identify Strategies
- Set GHG Reduction Goals
- Quantify GHG Reductions
- Build Consensus for Strategies
- Adopt Action Plan

Greenprint Topics

- Green Energy and Buildings
- Land Use and Urban Form
- Transportation
- Waste Management

Greenprint Topics

- Water Resources
- Food Production
- Education and Awareness
- Green Business and Jobs

Steering Committee

- Diverse
- Dynamic
- Informed
- Committed
- Forward-thinking
- Practical

September Open House

- Education
- Listening
- Gauging Opinion

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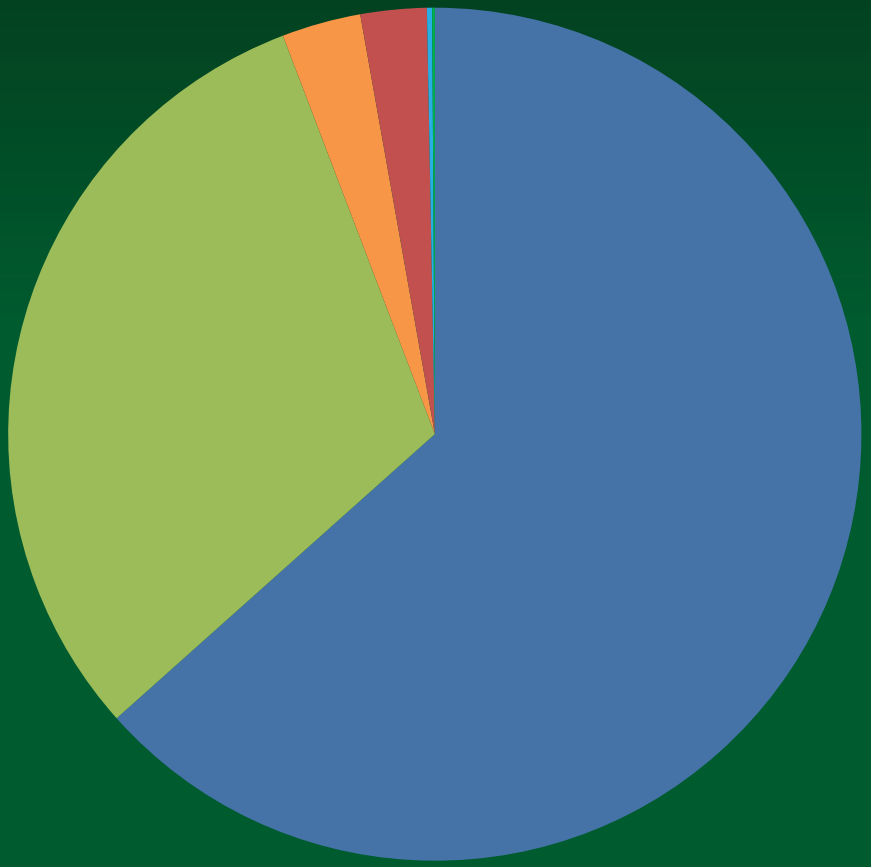
Climate Protection Agreement

- U.S. Conference of Mayors Climate Protection Agreement in June 2007
- Kyoto Protocol: 7% greenhouse gas reduction from 1990 levels by 2012

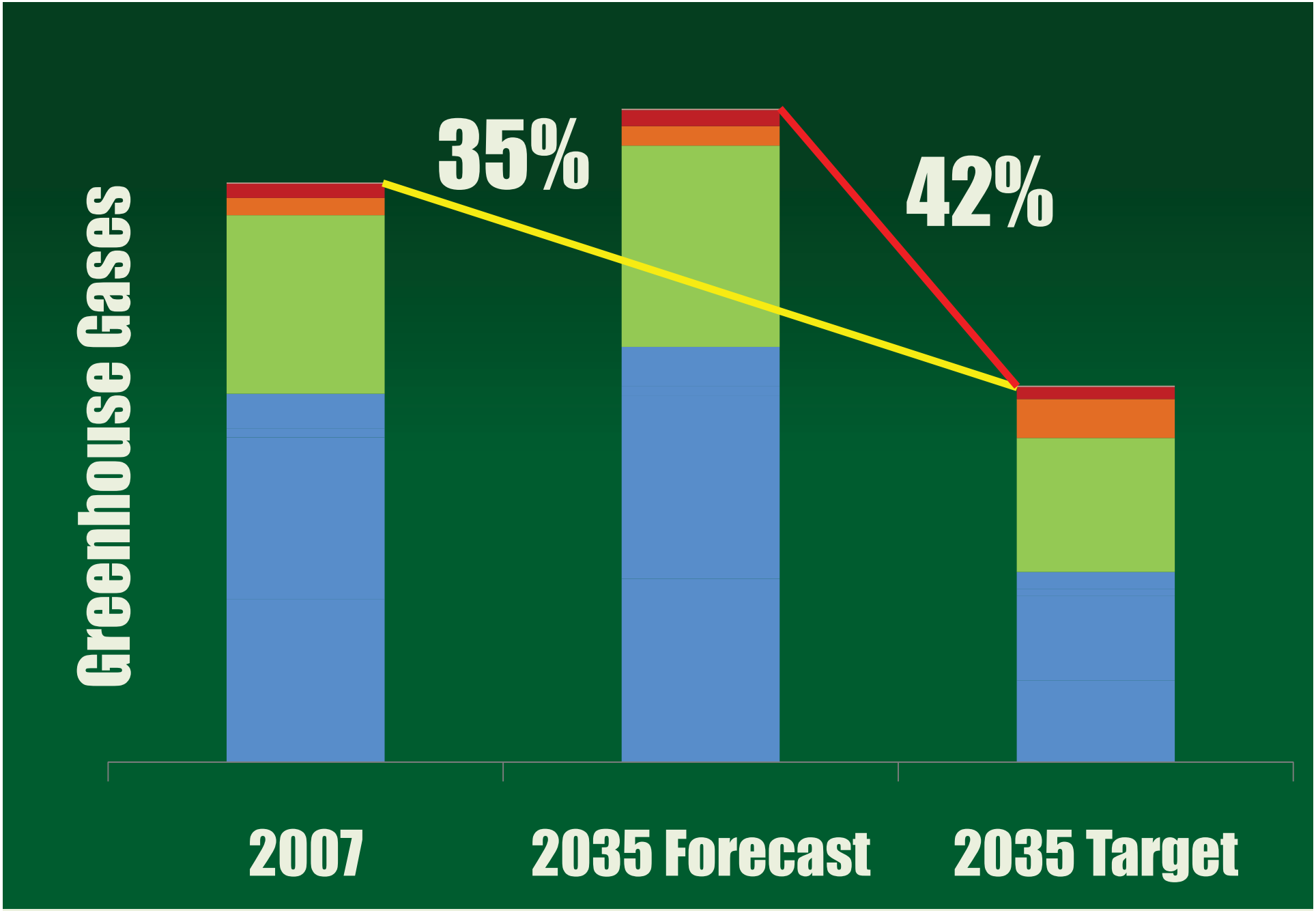
GHG Reduction Targets

- Steering Committee Recommended Targets
- 2007 Baseline
- 20% by 2020
- 35% by 2035
- 50% by 2050

Clearwater Community GHG Emissions



- Electricity (63.4%)
- Transportation (30.8%)
- Natural Gas (3.0%)
- Solid Waste (2.5%)
- Propane (0.2%)
- Wastewater (<0.1%)



Clearwater

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Meeting the Goals

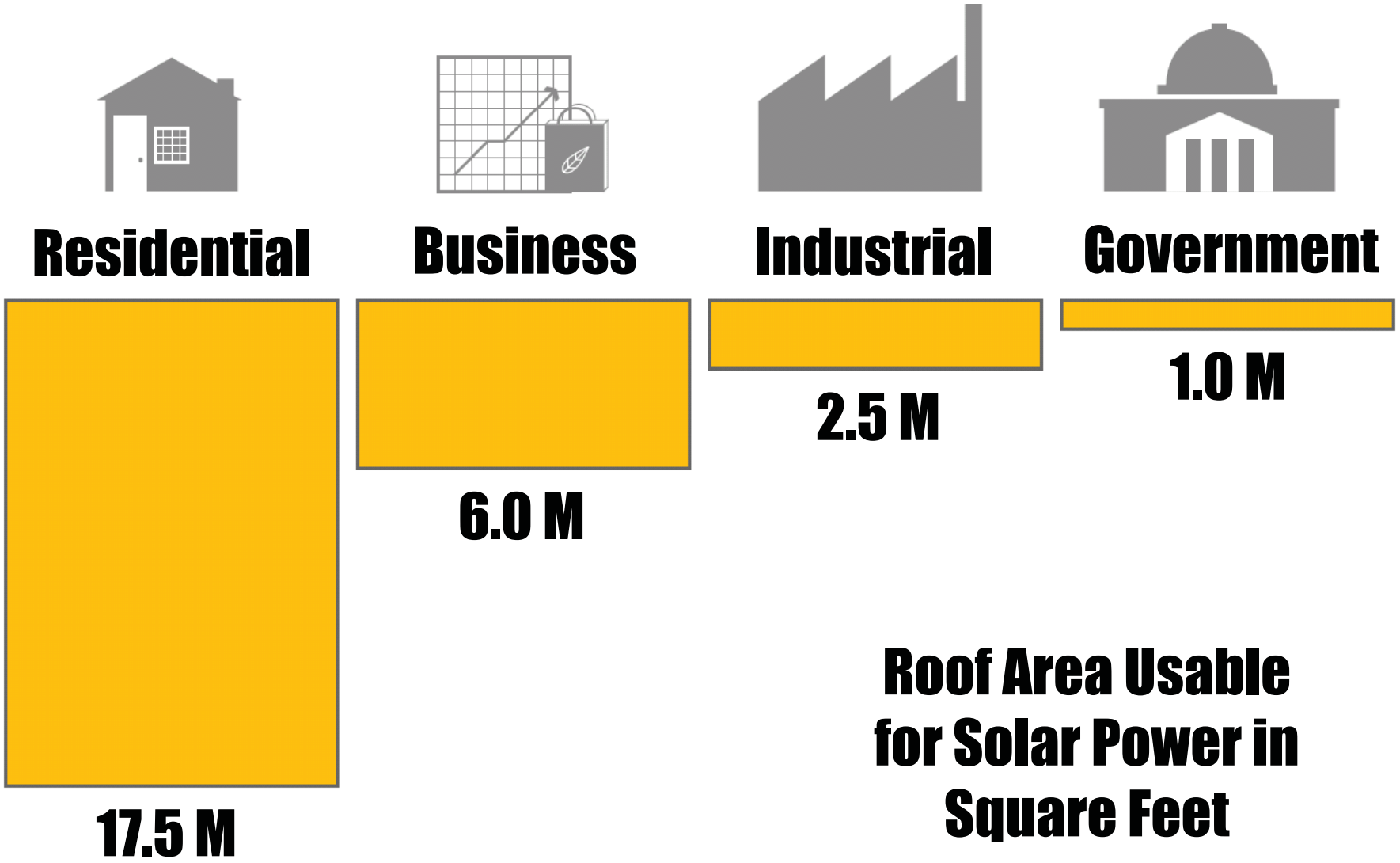
- Conservation
- Efficiency
  - Retrofits
  - New Construction
- New Technology
- Availability of Resources

Meeting the Goals

- Electricity – 60% of Target
- Transportation – 32%
- Land Use and Urban Form – 6%
- Waste Management – 1%
- Water Resources – 1%

Solar Panel Example

1. Estimate rooftop availability
2. Assume % participation
3. Calculate energy generated
4. Convert electricity reduction to GHG reduction
5. Determine impact on 2007 baseline
6. Calculate cost


Residential
Business
Industrial
Government
17.5 M
6.0 M
2.5 M
1.0 M
Roof Area Usable for Solar Power in Square Feet

15% Participation

Customer	%GHG Reduction from 2007 Total	Price ($)	$/metric tons CO_2e reduced
Commercial	0.6%	$29.6 M	$150
Industrial	0.2%	$8.8 M	$150
Residential	1.2%	$109.0 M	$300
Government/Civic	0.1%	$8.1 M	$250
TOTAL	2.1%	$155.7 M	$212

Remaining Schedule

- Draft Greenprint and Comprehensive Plan Amendments – 12/10
- Steering Committee – 01/11
- Council Presentation – 02/11
- Public Outreach – 01/11 to 03/11
- Open House –03/11
- Adoption and Amendments – 04/11

Council Direction

- GHG Inventory Summary
- GHG Reduction Targets
- Primary Strategies