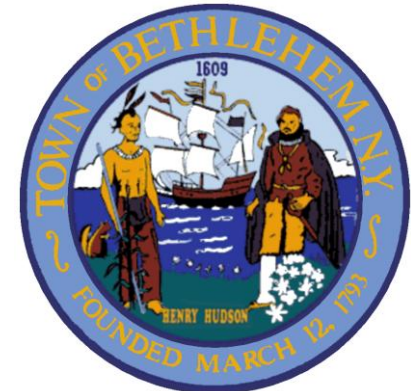


Presentation on Bethlehem's Participation in the NYS Climate Smart Communities Program





Overview

- NYS Climate Smart Communities Program
- Town of Bethlehem Climate Smart Communities Profile
- Sustainable Bethlehem Initiative
- Climate Smart Communities – Capital Region Pilot Program





NYS Climate Smart Communities (CSC) Program

The goal of the CSC Program is to:

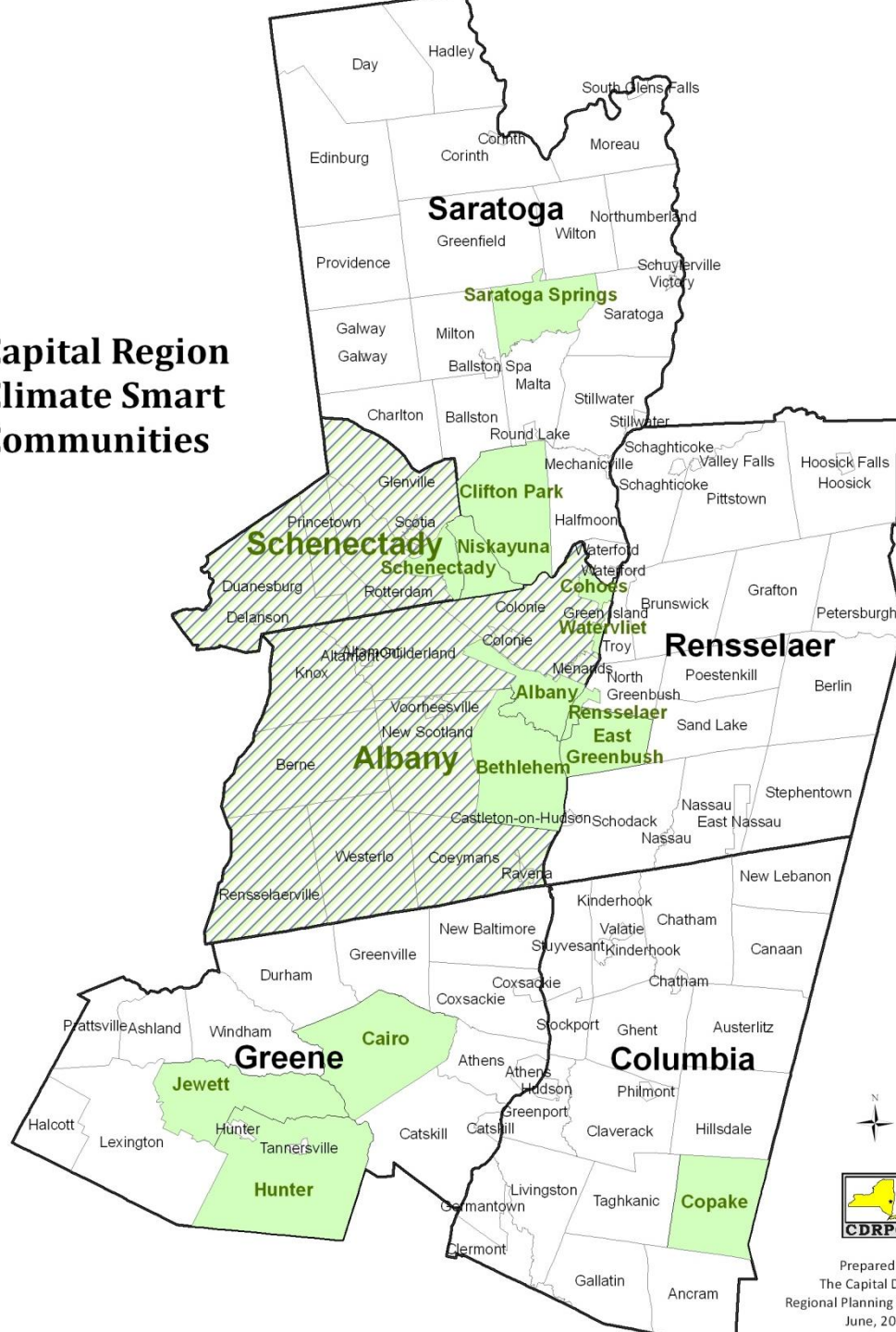
- Reduce greenhouse gas emissions
 - Prepare for the impacts of climate change
 - Save taxpayers money
- Climate Smart Communities Pledge – outlines 10 elements of voluntary climate mitigation and adaptation action
 - 16 Capital Region Local governments signed pledge
 - Bethlehem Town Board signed pledge – April 2009

Sponsored by:





Capital Region Climate Smart Communities



Prepared by:
The Capital District
Regional Planning Commission
June, 2012



Climate Smart Community – Bethlehem Profile

Sustainable Bethlehem

Pledge Element 1: Pledge to Combat Climate Change by Becoming a Climate Smart Community

Action	Status	Description
Adopted CSC Pledge	Completed	The Town of Bethlehem adopted the Climate Smart Communities Pledge in 2009.

Pledge Element 2: Set Goals, Inventory Emissions, Move to Action

Action	Status	Description
Community and Government GHG Inventory	Completed	The Town of Bethlehem completed its GHG inventory in 2012 for the baseline year 2010.
Energy Management and Land Use Plan	Completed	This Plan was developed to address the GHG inventory results and includes prioritized energy management and land use policy recommendations.



Sustainable Bethlehem

Climate Smart Community – Bethlehem Profile

Pledge Element 3: Decrease Energy Demand for Local Government Operations

Action	Status	Description
Conducted Energy Studies	Completed	Two energy studies were conducted at the wastewater treatment plant to look at aeration and energy efficiency through installation of variable speed blowers to regulate air introduction in the process.
Training for Employees	Completed	VHB and Novus Engineering conducted a training on climate, energy and sustainability issues for Town employees. Sixteen staff members attended the March 2012 training. Attendees received an Energy Training Participant Guide.
Conducted an Energy Audit	Completed	Novus Engineering conducted an energy audit of 11 municipal facilities including Town Hall, water /wastewater treatment plants, sewage pump stations, highway and DPW garages. Recommendations were prioritized by payback period and ranged from replacing windows, replacing lighting, weatherization and building envelope upgrades, etc.
Variable Frequency Drives Installed	Completed	Variable frequency drives have been installed on most of the motors throughout the Town. Replacement of aged VFD's is on-going at the Dinmore Road Well Field.

Climate Smart Community – Bethlehem Profile

Pledge Element 3: Decrease Energy Demand for Local Government Operations (cont'd)

Action	Status	Description
WWTP Aeration Improvements	Completed	Based on the energy studies, the Town implement an aeration system improvement project using a variable speed compressor to deliver air based on demand. This project significantly reduced electricity consumption and costs, saving over \$50,000 per year..
Lighting Improvements – Town Hall	Almost Completed	Using a National Grid energy conservation program, the Town is implementing a lighting retrofit project in Town Hall to reduce electrical consumption by approximately 70,000 kWh per year.
Lighting Improvements – Highway Garage	Pending Approval	Using a National Grid energy conservation program, the Town is considering implementation of a lighting retrofit project at the Highway Garage to reduce electrical consumption by over 40,000 kWh per year.



Climate Smart Community – Bethlehem Profile

Sustainable Bethlehem

Pledge Element 4: Encourage Renewable Energy for Local Govt. Operations

Action	Status	Description
Solar Panels on Parks and Recreation Facility	Completed	The Town installed 30kW solar panels on the Elm Avenue Parks and Recreation Facility with financial support of a grant from NYSERDA.
Hydroelectric Generation Study	On-going	Conducting a study of two water system pipelines to see if hydroelectric generation is viable.
Anaerobic Digestion Study at WWTP	Completed	As part of a facility master planning study, the Town concluded that anaerobic digestion is not a currently economical solution to reduce solids and generate renewable energy.

Pledge Element 5: Realize Benefits of Recycling and Other Climate Smart Solid Waste Management Practices

Action	Status	Description
Electronics and Household Hazardous Waste Days	Completed	The Town of Bethlehem hosts electronics and household hazardous waste collection days.
Recycling Program	Completed	The Town of Bethlehem has a community recycling program.



Climate Smart Community – Bethlehem Profile

Sustainable Bethlehem

Pledge Element 6: Promote Climate Protection Through Community Land Use Tools

Action	Status	Description
Land-Use Review for Sustainability	Completed	Bethlehem reviewed its land use policies for sustainability and identified recommendations including parking requirement changes, open space conservation, and creating walkable communities.
Bicycle and Pedestrian Committee (active since 2009)	Completed	Vision, Mission and Goals address a 5-E approach to Bicycle and Pedestrian Planning – Engineering, Education & Enforcement, Encouragement and Engagement. They created a Bicycle and Pedestrian Priority Network in 2010 and implemented a local signed bicycle route. The committee created educational materials, and a maintenance manual to ensure safe and accessible sidewalk conditions for pedestrians and roadway conditions for bicyclists.
Green Infrastructure Matrix	Completed	To assist the development community in implementing required water quality improvements, the Town Engineering Division evaluated and developed a matrix of acceptable green infrastructure stormwater treatment practices under various development conditions.

Climate Smart Community – Bethlehem Profile

Pledge Element 7: Plan for Adaptation to Unavoidable Climate Change

Action	Status	Description
WWTP Upgrades	Completed	The Town conducted a vulnerability assessment of the WWTP. The study considered potential flooding conditions, increased wastewater flows, etc. These climate considerations were included in the facility master planning process.
Electrical System and Control Repairs	Completed	Following damage to controls and electrical equipment resulting from Hurricane Irene, the Town raised some of the structures and electrical panels above 100-year flood elevations to maintain operation at the Dinmore Road well field.
Stage III Dam Repairs	Completed	Following damage from Hurricane Irene, the Town implemented improvements to the dam facilities including a larger spillway meeting current design standards and debris booms to improve the resiliency of this critical raw water impoundment.

Climate Smart Community – Bethlehem Profile

Pledge Element 8: Support a Green Innovation Economy

Action	Status	Description
Incorporate climate protection and sustainability into economic development plans. Encourage work force training and public education for energy efficiency and renewable energy	Not Addressed	

Pledge Element 9: Inform and Inspire the Public

Action	Status	Description
Sustainable Bethlehem Website	Completed	A website was created to educate and engage the community in realizing the sustainability commitment the Town has made. www.sustainablebethlehem.org



Climate Smart Community – Bethlehem Profile

Pledge Element 10: Commit to an Evolving Process

Action	Status	Description
Capital District Regional Sustainability Plan	Completed	Erik Deyoe participated on the Executive Committee, chaired the Climate Adaptation Technical Committee, and participated on the Water Resources Technical Committee on behalf of the Town of Bethlehem. Rob Leslie participated on the Transportation Technical Committee.
Stormwater Coalition of Albany County	Completed	Bethlehem is a charter member of the Stormwater Coalition of Albany County: http://www.stormwateralbanycounty.org/
Capital District Bike and Pedestrian Task Force	Completed	The Capital District Transportation Committee has a Bike and Pedestrian Task Force. Rob Leslie participates on this committee by attending monthly meetings. http://www.cdcmpo.org/



Bethlehem Energy Management, Greenhouse Gas Inventory and Bicycle and Pedestrian Program

NYSERDA Grant - 2012

- Greenhouse Gas (GHG) Inventory
- Public Awareness and Communications Strategy
- Energy Project Prioritization
- Bike and Pedestrian Program
- Land Use Review



Sustainable Bethlehem

www.sustainablebethlehem.org

What is a GHG Inventory?

A greenhouse gas (GHG) emissions inventory is an assessment of...

- Energy consumption
- Leaks or releases of GHGs (for example, leaked refrigerants or deployed fire suppressants)
- Biological and chemical processes
- Solid waste disposal

....and the resulting GHG emissions

Types of GHG Inventories

Community Inventory

- GHGs emitted within the geographical boundary of the Town

Government Operations Inventory

- GHGs from municipal operations only
- Subset of community inventory, but GHGs are calculated separately

Bethlehem Government GHG Inventory

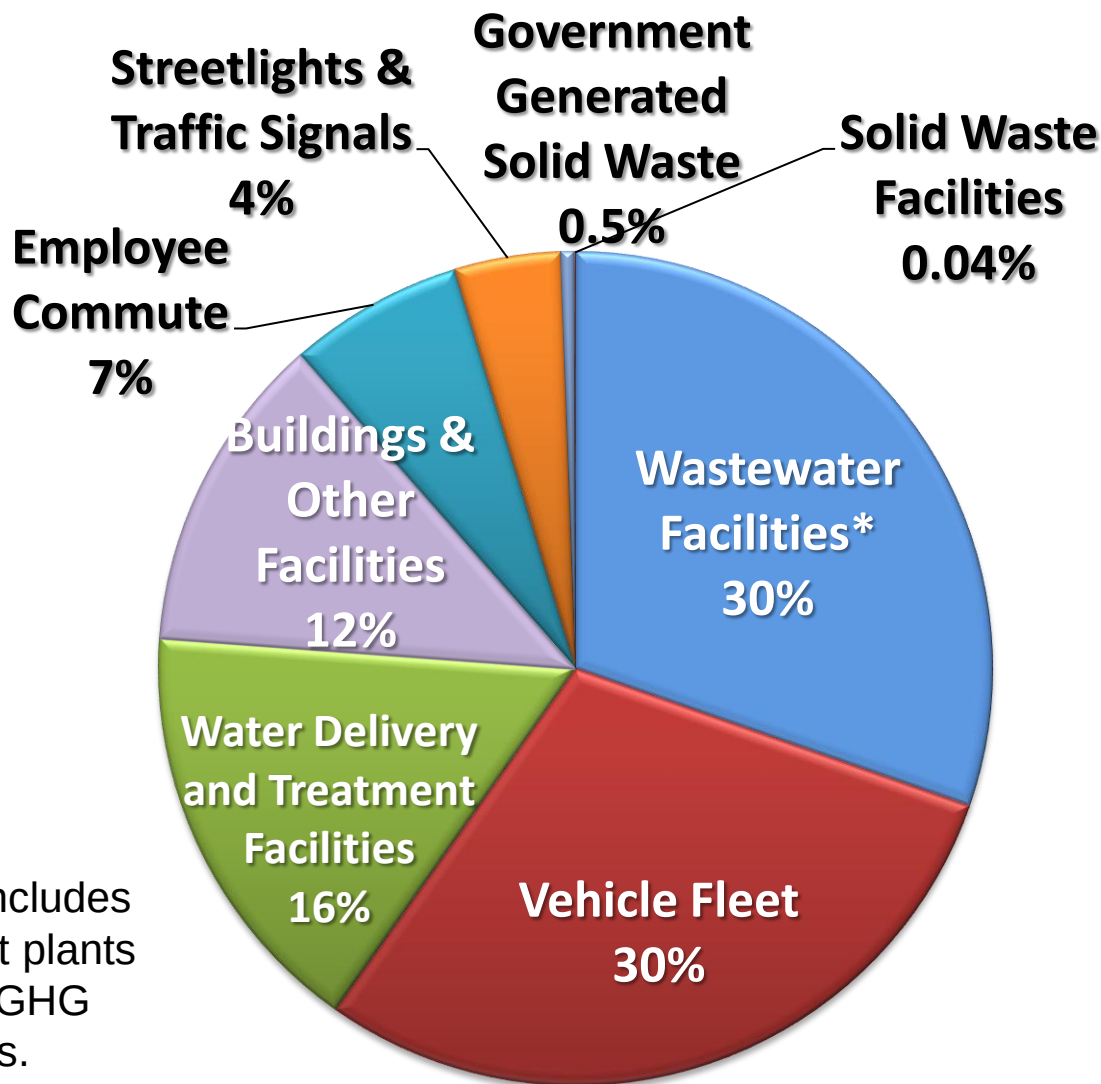
- GHG emissions calculated using the Local Government Operations Protocol (LGOP)
 - National standard
 - Defines GHG sources, methods, and reporting sectors, specifically for local governments
- 2010 selected as baseline year for Bethlehem

Bethlehem 2010 GHG Emissions by Sector

Total GHG Emissions = 5,541
Metric Tons CO₂e

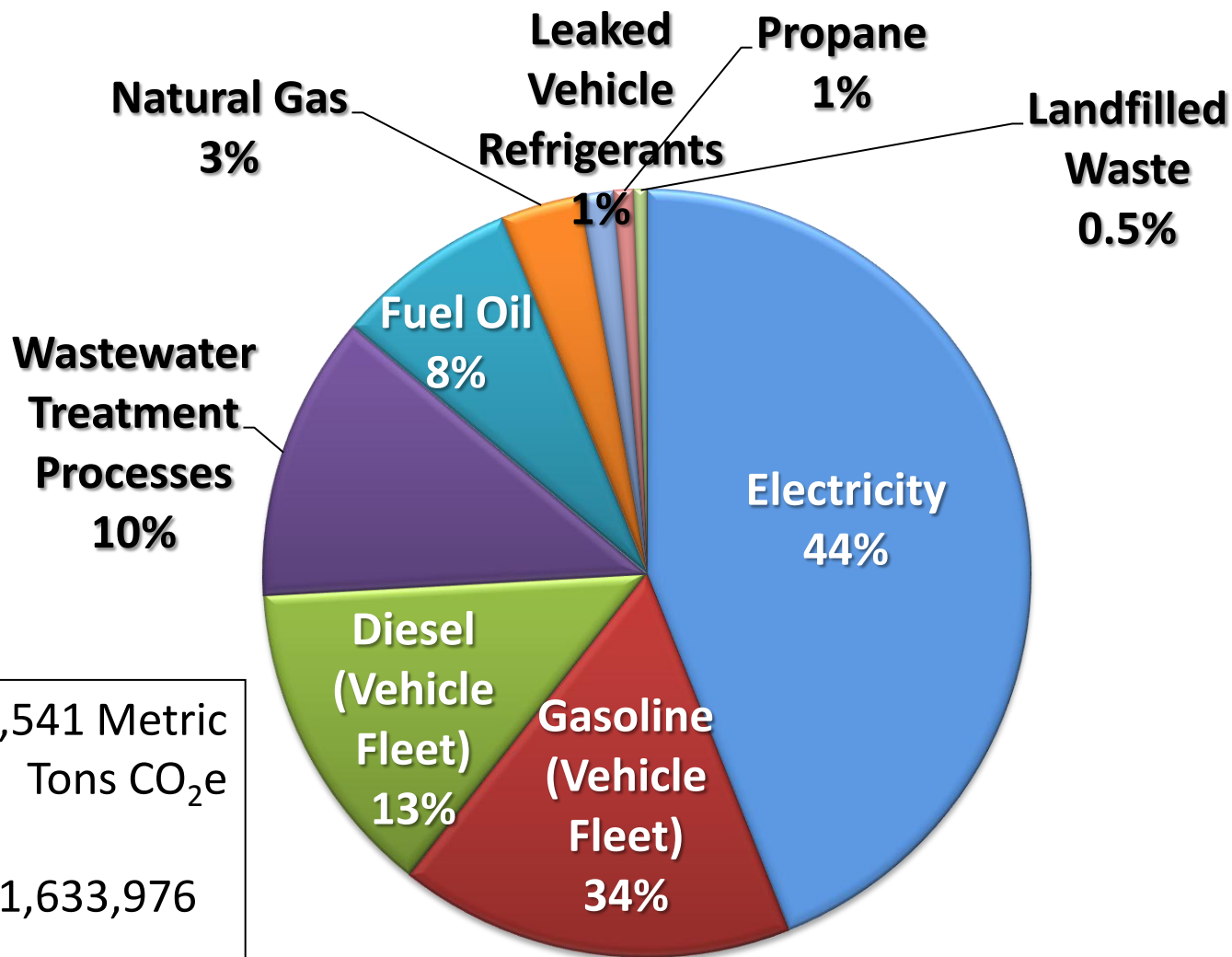
OR

The carbon sequestered by
142,077 tree seedlings
grown for 10 years



*The Wastewater Facilities sector includes energy use at wastewater treatment plants and pumps, as well as non-energy GHG emissions from treatment processes.

Bethlehem 2010 GHG Emissions by Source



Total GHG Emissions = 5,541 Metric
Tons CO₂e

Total Energy Costs = \$ 1,633,976



Land Use Review Recommendations

Conservation Subdivision

- Establish a degree of usable open space
- Incentivize achieving green building criteria (e.g. density)

Zoning Law

- Revise height exemption section to include solar panels and other renewable energy technology
- Revise parking requirements
 - Update to reflect current national parking standards
 - Provide both Minimum and Maximum parking rates
 - Allow reductions in parking spaces for sites located in developed areas (Hamlet) and/or along bus transit routes



Bicycle and Pedestrian Program

- Vision, Mission, Goals based on 5-“E” approach to Bicycle and Pedestrian Planning
 - (Engineering, Enforcement and Education, Engagement and Encouragement)
- Bicycle Month Event Preparation Guide
- League of American Bicyclists Traffic Skills 101 Course
- Walk and Bicycle Friendly Community Applications
- Bike Route Pilot Project – Delmar Route
- Bicycle and Pedestrian Infrastructure Maintenance Manual



Climate Smart Communities – Capital Region Pilot Program

Capital District Regional Planning Commission (CDRPC) –

- Recipient NYSERDA grant to manage the Climate Smart Communities Pilot Program in the Capital District
- Provide technical support and guidance to the 16 communities within the six-county region that have taken the pledge
- CDRPC and its consultant team of VHB and Climate Action Associates, will serve as:
 - Strategic planning agents to empower local governments,
 - Connect local govt's with financial and technical programs, and with each other,
 - Offer training assistance and consistent tracking and reporting of successes and barriers to addressing the ten CSC pledge elements.



Climate Smart Communities – Capital Region

The Capital District CSC Pilot Program includes:

- Greenhouse gas (GHG) inventory, which will calculate emission for each of the 126 communities in the region
 - Providing a baseline for gauging progress;
- Development of community profiles that summarize the actions taken to address the CSC pledge elements;
- One-on-one community meetings, which will lead to the development of customized service strategies for each CSC.



Climate Smart Communities – Custom Service Strategy for Bethlehem

CLIMATE PROTECTION ISSUE TO BE ADDRESSED

- 2005 Comprehensive Plan Recommendation: **Encourage the use of Leadership in Energy and Environmental Design (LEED) standards.**
- Draft Local Waterfront Revitalization Program (LWRP) Recommendation: **Develop incentives for new buildings to meet LEED ratings.**

CLIMATE SMART COMMUNITY SERVICE RECOMMENDATION

- Develop a program to encourage green development in Town.

PLEDGE ELEMENT TO BE ADDRESSED

- Pledge Element 6: Promote Climate Protection Through Community Land Use Tools

DELIVERABLE – (March 2013)

- Language for the recommended green development initiative.
 - Best Practices/Code Updates
 - Recommended steps to working with developers at the time of development applications



Questions/Comments



Sustainable Bethlehem

