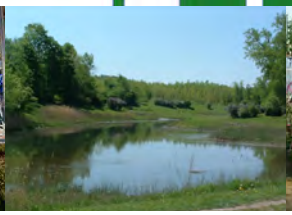
Syracuse Sustainability Plan

Syracuse
New York






A Component of the Syracuse Comprehensive Plan

SYRACUSE SUSTAINABILITY PLAN

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Bureau of Planning & Sustainability
Andrew M. Maxwell, Director
Owen Kerney, Deputy Director

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Consultation
Greg Michel, Sustainability Analyst

City Hall
233 East Washington Street
Syracuse, NY 13202

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Executive Summary

The Syracuse Sustainability Plan is part of the City of Syracuse Comprehensive Plan 2040, a policy document meant to guide the operations of City government in ways that preserve and enhance the local and global environment, reduce the City's energy costs, and improve quality of life for Syracuse residents.

The plan was preceded by over a year of research and assessment devoted to quantifying Syracuse's greenhouse gas emissions, and characterization of Syracuse's current state of environmental, social, and economic sustainability. The Bureau of Planning & Sustainability developed the plan with **extensive public input** from committees of local experts, inter-departmental City staff, stakeholders and community members.

The Sustainability Plan has overarching goals of reducing Syracuse's greenhouse gas emissions. Implementation of its five greatest-impact municipal recommendations is projected to **reduce the emissions from City operations by 40%** by the year 2020. City government has a lesser degree of control over community emissions, but through implementation of smart-growth principles in upcoming zoning revisions, partnerships in "Energy Challenges", and other measures, the City estimates that a **7% reduction in community emissions** can be acheived in the same time period.

The plan chapters are divided into **recommendations for the City**, and **suggestions for personal action** for citizens. Municipal recommendations focus on **feasible actions**. Many can be addressed by the City alone; some will require cooperation from citizens and community partners.

Recommended actions in the five topic areas of **Energy & Green Building, Education, Food Systems, Natural Environment,** and **Waste & Recycling** will be spearheaded by the Bureau of Planning & Sustainability, in collaboration with other City departments and partners. In general, the actions prescribed by the Sustainability Plan support one or more of the following goals:

1. **Reduce the volume and impact of energy consumption in the City of Syracuse.**
2. **Reduce negative impacts on the Onondaga Creek watershed.**
3. **Improve the City of Syracuse's local water, food and energy independence.**
4. **Reduce waste and increase recycling.**
5. **Improve quality of life for Syracuse residents.**

Implementation will be on-going from the time of Common Council approval, with additional public engagement, measurements, reporting, and public accountability all built into the process.

Advisory Committees

Energy & Green Building

Lonny Bornstein, Electrical Crew Leader, City of Syracuse Department of Public Works
Joe Branagan, Founder, Classic Cozy
Barry Carr, Coordinator, Clean Communities of CNY
Chris Carrick, Senior Planner, Central New York Regional Planning & Development Board
Paul Crovella, Instructor, Sustainable Construction Management, SUNY College of Environmental Science and Forestry
Mike Czarnecki, HVAC Specialist, City of Syracuse Department of Public Works
John Felleman, Professor Emeritus, Department of Environmental Studies, SUNY College of Environmental Science & Forestry
Rick Fedrizzi, President, CEO and Founding Chair, US Green Building Council
Jim Gladziszewski, President, Energy Automation Incorporated
Sam Gordon, Senior Planner, Central New York Regional Planning & Development Board
Diana Pardee Grater, Architect, Grater Architects, P.C.
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Andrew Jakubowski, Laborer, City of Syracuse Department of Public Works
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Steve Lloyd, Associate Director for Sustainability, Syracuse University
Jessica Maxwell, Syracuse Peace Council
Matthew Meaney, Senior Architectural Designer, C&S Engineers, Inc.
Greg Michel, Founder, EcoAha!
Carolyn Ramsden, Energy Planner, Central New York Regional Planning & Development Board
Todd Rogers, Certified Energy Manager, Energy Training Solutions
Sgt. David Sackett, Director of Fleet Management, City of Syracuse
Meg Shannon, Director of Building Maintenance and Operations, City of Syracuse Department of Public Works
Rick Smardon, Professor, Department of Environmental Studies, SUNY College of Environmental Science and Forestry

Education

Twiggy Billue, Program Coordinator, Onondaga Earth Corps
Pat Driscoll, Director of Operations, Say Yes to Education Syracuse Chapter
Hanah Ehrenreich, Project Manager, CNY Works
Chuckie Holstein, Executive Director, FOCUS Greater Syracuse

Advisory Committees *continued*

Education *continued*

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Greg Michel, Founder, EcoAha!
William Ottman, Acting Director of Curriculum and Staff Development and Science and Technology Coordinator, Syracuse City School District
Todd Rogers, Certified Energy Manager, energy consultant to Syracuse City School District
Sean Vormwald, Director of Sustainability, Onondaga Community College

Food Systems

Susan Adair, independent Program Evaluator
Janet Burke, Acting Director, City of Syracuse Bureau of Research
Patricia Clark, Assistant Professor and Director of African & African-American Studies, SUNY Oswego
Kathy Dischner, Multi-County Team Leader – Nutrition, Cornell Cooperative Extension of Onondaga County
Heather Hawkins, Locally-Grown Food Advocate, Green Hills Farm Markets
Paul Mercurio, President, Slow Food CNY
Sue Parker, Program Educator, Cornell Cooperative Extension of Onondaga County
Matthew Potteiger, Professor, Faculty of Landscape Architecture, SUNY College of Environmental Science & Forestry
Jonnell D. Robinson, Syracuse Community Geographer, Syracuse University; Syracuse Grows Board
Derek Simmonds, Community Educator – Food Systems, Cornell Cooperative Extension of Onondaga County
Evan Lee Weissman, Assistant Professor, Department of Public Health, Food Studies & Nutrition, David B. Falk College of Sport & Human Dynamics, Syracuse University
Mable Wilson, Board Member, Syracuse Grows

Natural Environment

John Camp, P.E., CPESC, CPSWQ, C&S Companies
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Doug Daley, Director, SUNY Center for Brownfield Studies
Khris Dodson, Save the Rain Educator, Communications and Program Manager, Syracuse Center of Excellence Center for Sustainable Community Solutions
Luke Dougherty, Neighborhood Planner, City of Syracuse Department of Neighborhood & Business Development
Matt Geitner, Government Affairs, C&S Companies
Yasmin Guevara, Environmental Planner, City of Syracuse Bureau of Planning & Sustainability

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Natural Environment *continued*

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Rebecca Klossner, Sustainability Coordinator, City of Syracuse Bureau of Planning & Sustainability
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Ed Michalenko, President, Onondaga Environmental Institute
Myron Mitchell, Distinguished Professor and Director of Council on Hydrologic Systems Science, SUNY College of Environmental Science and Forestry
David Nowak, Research Forester, USDA Forest Service Northern Research Station
Sara Jade Pesek, Program Development and Strategic Engagement, Syracuse Center of Excellence Center for Sustainable Community Solutions
David Sackett, Director of Fleet Management, City of Syracuse
Beth Smith, Management Analyst, City of Syracuse Water Department
John Trimble, P.E., LEED-AP, President, C&S Engineers, Inc.
Katelyn Wright, Land Use Planner, City of Syracuse Bureau of Planning & Sustainability

Waste & Recycling

Dave Davis, Superintendent of Sanitation, City of Syracuse Department of Public Works
Andrew Jakubowski, Laborer, City of Syracuse Department of Public Works
Rebecca Klossner, Sustainability Coordinator, City of Syracuse Bureau of Planning & Sustainability
Mark Lichtenstein, Executive Director, Syracuse Center of Excellence in Environmental and Energy Systems
Rachel May, Coordinator for Sustainability Education, Syracuse University
Mark Naef, Owner & President, Naef Recycling, LLC
Mary Beth Roach, Special Events Coordinator, City of Syracuse Department of Parks, Recreation, and Youth Programs
Tom Simone, First Deputy Commissioner, Department of Public Works
Lindsay Speicher, Director of Constituent Services, City of Syracuse – Mayor's Office
Sarah Stewart, Recycling Specialist, Onondaga County Resource Recovery Agency

Introduction

Purpose of the Sustainability Plan

The Sustainability Plan identifies recommendations for improving the sustainability of municipal operations, and for ensuring the resilience of the Syracuse community. The plan outlines a set of goals created in collaboration with local government, citizens, academic institutions, not-for-profit organizations, foundations, and businesses. Where practical, the plan also specifies measurable objectives to achieve this vision.

Sustainability is the practice of meeting the needs of today without compromising the ability of future generations to meet their needs. Traditionally, sustainability has focused on environmental stewardship and energy efficiency. Modern definitions of sustainability have expanded that focus to include elements of social, economic and environmental well-being. The City has chosen to use a definition of sustainability created locally by F.O.C.U.S. Greater Syracuse, which defines a sustainable community as "a place that provides a safe, healthy, high quality of life for current and future generations, incorporating a comprehensive approach to economic vitality, social equity, and environmental stewardship."

Early on a Tuesday morning at the Downtown Farmers Market in Clinton Square. One of three farmers markets in Syracuse, this one connects downtown residents and workers with fresh local and regional produce.

Guiding Principles

Uniqueness of Place: Syracuse is a unique place, and this plan is unique to Syracuse. It addresses challenges that are particular to Syracuse, and draws on local resources, programs, and partners for solutions.

Feasibility: An effective sustainability plan must be composed of feasible recommendations. The municipal recommendations chosen for inclusion in this plan are actions that the Bureau of Planning & Sustainability believes are feasible for the City government to undertake. They focus on reasonable, achievable changes to municipal operations, and initiatives that are within the City's purview. The plan also invites citizen participation. Separate sections have been developed to provide a range of actionable ideas for Syracuse residents to consider. Each interested reader is invited to decide for her- or himself which actions are feasible in her or his own circumstances, in order to practice a more sustainable lifestyle.

Efficiency: The plan's goals and recommended actions were formulated with concern for efficient use of energy and resources, as well as City government resources and staff time.

Quality of Life: Quality of life is determined by the community's collective health, happiness, security, material well-being, social engagement, and freedom. The foundation of the community's well-being is fulfillment of people's most basic needs. Many of the plan goals reflect the vision of creating equitable access to basic needs like nourishing food, clean air, and safe places for recreation, as well as better neighborhoods and quality of life.

The newly extended Onondaga Creekwalk links downtown to the shore of Onondaga Lake. The 2.6-mile trail opened in Fall 2011, and quickly became a popular and well-used recreational path.

Collaboration: Creation of a sustainable community is a task beyond the capacity of any given individual, not-for-profit, university, company, agency or local government. The five chapters of the plan were developed with the collaboration of five topic-specific advisory teams. Each team was comprised of local experts, non-profit representatives, and City personnel, with a broad range of relevant knowledge and a collective wealth

of experience. The advisory groups helped the City develop a plan that takes other local initiatives into account, and identifies potential partners for further collaboration.

Plan Development

The Sustainability Plan is one component of the Comprehensive Plan, a guiding policy document for the City. However, sustainability is not confined to one plan alone. It is a theme that runs through all recent updates to the Comprehensive Plan. Some important sustainability topics such as land use and transportation are minimally addressed in the Sustainability Plan. These topics are so vital to City planning that they are each given their own separate chapter in the Comprehensive Plan. At the time this sustainability plan is adopted, the City will also have prepared a new Land Use Plan, Neighborhood & Business Development Plan, Bike Plan, Historic Preservation Plan, and Public Art Plan for adoption. Other components of the Comprehensive Plan are Capital Improvement/Infrastructure, Transportation, Parks, and Economic Development.

The Bureau of Planning & Sustainability (P&S) used a collaborative process to develop the goals, objectives, and actions in the Sustainability Plan. As mentioned, dedicated advisory groups made up of local experts and City personnel met several times in 2011-2012 to develop each chapter of the plan. P&S staff then further refined the Plan with consideration for the feasibility of each recommended goal, objective and action. Next, the City released the Plan for public comment via the City website. P&S staff presented an overview of the plan for comment at all eight neighborhoods' "Tomorrow's Neighborhoods Today" meetings, one city-wide meeting, a public hearing in the Common Council Chambers, and as invited speakers at meetings of community groups. At these sessions, the City staff invited comments, further review, and on-going feedback.

Following the public comment period, the City's Sustainability Coordinator reviewed all feedback and evaluated it collaboratively with other appropriate staff for inclusion in the plan. The Bureau produced a revised draft, and invited the advisory groups to review it once more. The final revised Plan becomes an official part of the Comprehensive Plan upon approval of the Common Council.

The Comprehensive Plan is scheduled to be updated every five years. However, the component plans, including the Sustainability Plan, will be updated more frequently if needed, to be determined by the Director of Planning & Sustainability.

Plan Organization

The plan is organized in three parts. Part I gives a brief history of the City's progress toward sustainability, as well as a summary of the City's 2010 Greenhouse Gas Emissions Inventory Report and 12 Traits of Sustainable Communities Report, assessment tools used leading up to the creation of the Sustainability Plan.

Part II is comprised of five chapters, each focusing on distinct facets of sustainable communities. Chapter 1 focuses on Energy & Green Building, Chapter 2 on Education & Training, Chapter 3 on Food Systems, Chapter 4 on Natural Environment, and Chapter 5 on Waste & Recycling. Chapter topics were chosen based on their importance to creating a sustainable Syracuse. Each chapter is organized into recommendations for City municipal operations, and where feasible, recommendations for individual actions for Syracuse community members.

Part III, Implementation and Tracking, recommends implementation, tracking, and reporting procedures.

Relationship to Other Components of the Comprehensive Plan

The Sustainability Plan integrates with all other components of the Comprehensive Plan, particularly the Land Use Plan, the Transportation Plan, and the Bicycle Infrastructure Plan. When implemented, all of these plans will work in concert to create a more sustainable Syracuse and a better quality of life for residents.

Relationship to Other Local Sustainability Plans

The City's Bureau of Planning & Sustainability worked with the County's Office of the Environment, the Syracuse-Onondaga County Planning Agency (SOCPA), and the Central New York Regional Planning & Development Board (CNY RPDB) prior to and throughout the planning process. The City Sustainability Plan, the County Climate Action Plan, the SOCPA Sustainable Development Plan, and the CNY RPDB Regional Energy and Sustainability Plan have all been developed with collaboration and participation of all of these agencies' staffs.

Overarching Goals of the Sustainability Plan

In conjunction with the Mayor's 50-point Plan, two of the most important goals behind the development of the Sustainability Plan are to reduce Syracuse greenhouse gas emissions (carbon footprint) and reduce the City's energy consumption. Energy use reduction goals are elaborated in the Energy and Green Building chapter; carbon emissions reduction goals are below.

Municipal Greenhouse Gas Reduction Goal:

40% below 2002 levels

The Sustainability Plan focuses on reductions of municipal energy use and greenhouse gas emissions – those produced through City government operations and through the provision of City services. Analysis of the plan's five most effective GHG reduction strategies indicates that when these strategies are enacted, the City will reduce its GHG emissions 40% below 2002 levels.

Community Greenhouse Gas Reduction Goal:

7% below 2002 levels

According to the 2010 greenhouse gas emissions study, the Syracuse community greenhouse gas emissions are 53 times greater than those of municipal government. That represents a significant potential for reduction. The City set a goal of 7% for community greenhouse gas reductions, noting its limited ability to influence private behavior without mandating such change through legislation. However, through an on-going Energy Challenge program, updated CAFE standards for vehicle efficiency, and smart growth legislation, a 7% community reduction is predicted to be achievable and result in annual prevention of over 84,446 metric tons of carbon dioxide equivalent. That figure is more than double the total released through municipal operations in 2010, which was 29,493 metric tons. (All figures from the City's 2010 greenhouse gas emissions study).

The City's Land Use Plan and Bike Plan will also be instrumental in curbing community GHG emissions over the long term. Through its advocacy for higher residential densities adjacent to commercial corridors, more walkable neighborhoods, and increased infill development, the Land Use Plan strives to create a higher urban density with the potential to eliminate the need for some

car trips. The Bike Plan identifies potential routes for more on-street bike lanes and neighborhood greenways throughout Syracuse, which will help to reduce community greenhouse gas emissions by facilitating more bicycle commuting. Both plans strive to reduce the necessity of travel within the City by automobile, while enhancing health, aesthetics, and the quality of neighborhood life.

Toward a Sustainable Syracuse

The City of Syracuse is dedicated to the goals of promoting economic vitality, social equity, and environmental sustainability. Simultaneous efforts to achieve all these goals will improve the overall quality of life for City residents, and make the City a more attractive place for new residents. These efforts span decades of leadership, and extend beyond the City's administration to include partnerships with other public, private and not-for-profit entities.

After taking office in 2010, Mayor Stephanie Miner created the Bureau of Planning & Sustainability (P&S) which is tasked with advancing sustainability initiatives including, but not limited to, those pertaining to energy, clean air, clean water, stormwater management, smart growth, green building, natural resource protection, environmental advocacy and education, as well as interaction with local, state and federal agencies. Mayor Miner outlined six sustainability goals and strategies for achieving these goals in her "50-Point Plan" for city initiatives. The Mayor's sustainability goals are to:

- Reduce Syracuse's carbon footprint
- Reduce negative impacts on the Onondaga Creek watershed
- Reduce the volume and impact of energy consumption in the City of Syracuse
- Foment smart growth principles in the Syracuse metropolitan area
- Improve the City of Syracuse's local water, food and energy independence
- Improve Syracuse's air quality, especially in currently high-traffic areas

These goals build on community-wide efforts to better understand and create a more sustainable community, including:

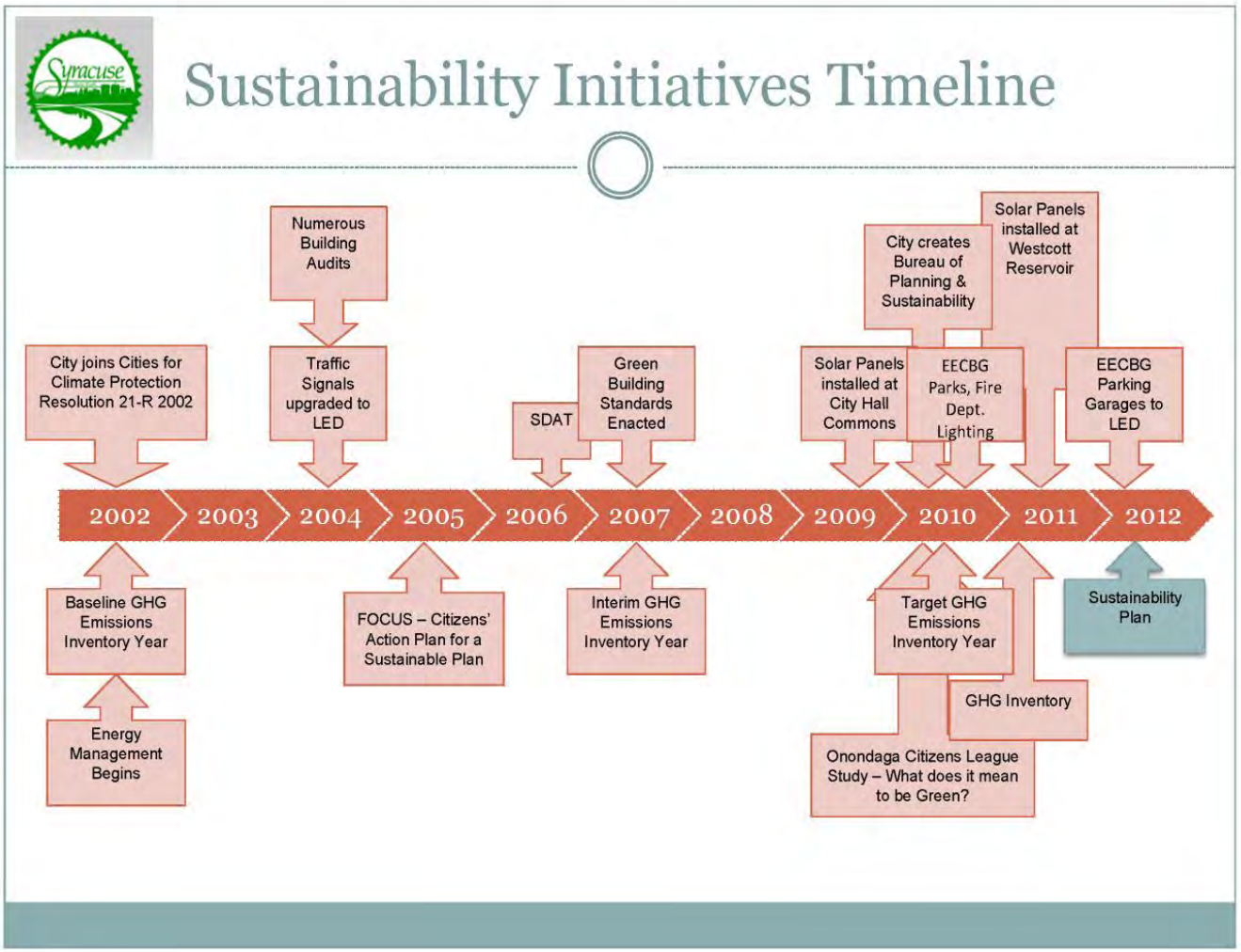
- F.O.C.U.S. Greater Syracuse's 2005 *Action Plan for a Sustainable Community*
- American Institute of Architects' 2007 *Sustainable Design Assessment Team Report*
- Citizens League of Onondaga County's *What Does It Mean to Be Green?* 2009-2010 Study Report

With an engaged citizenry, participation from the academic and not-for-profit communities, and municipal leadership, Syracuse has been recognized for its leadership in pursuing sustainability:

- The EPA named Onondaga County and Syracuse as one of its ten Green Infrastructure Partner communities in 2011, in recognition of their joint efforts in the progressive Save the Rain program;
- Syracuse received the 2004 EPA Environmental Quality Award in collaboration with Syracuse City School District;
- Syracuse received the Honorary Sol Feinstone Award for achievements in advancing the cause of the environment.
- Honorable mention, Siemen's Sustainable Communities program.

Sustainable Community Assessment

The conceptions of a sustainable city articulated by members of the Syracuse community over the years share several characteristics – healthy, safe, equitable, and economi-



cally viable. This may seem straightforward, but creating such a community is no simple task, and understanding how close a community is to meeting these goals while establishing priorities is an immense challenge.

Beginning in 2010, P&S engaged in an in-depth analysis of the City's baseline sustainability indicators in order to create a realistic plan for advancing sustainability. This was done in collaboration with ICLEI - Local Governments for Sustainability, an international organization which provides technical consulting, training, and information services to support local governments in the implementation of sustainable development practices, the State University of NY College of Environmental Science and Forestry (SUNY-ESF), the Central New York Regional Planning and Development board (CNY RPDB), and GreeningUSA, a Syracuse-based community sustainability advocacy group. Using a variety of national and local resources, the City sought to quantify its progress toward sustainability, as well as create a baseline for sustainable community indicators, and identify potential sustainability challenges and opportunities.

In the analyses, the City utilized two sustainability planning frameworks: ICLEI's 5 Milestones for Climate Mitigation, and GreeningUSA's newly-developed 12 Traits of Sustain-

able Communities Rating System. Both frameworks include these phases: 1) Sustainability Assessment, 2) Goal Setting, 3) Planning, 4) Implementation, and 5) Monitoring/ Evaluating Progress.

ICLEI's Five Milestones for Climate Mitigation

ICLEI—Local Governments for Sustainability (originally, International Council for Local Environmental Initiatives) is an international organization with a mission to help local governments with the environmental challenges and sustainability issues they are facing. ICLEI developed its Five Milestones and related tools as part of its Cities for Climate Protection campaign to assist local govenments in developing acheivable sustainability plans and monitoring their implementation progess. ICLEI's Five Milestones, as described on the ICLEI website, and Syracuse's progress toward each of them, follow.

Milestone 1. *Conduct a baseline emissions inventory and forecast. Based on energy consumption and waste generation, the city calculates greenhouse gas emissions for a base year (e.g. 2000) and for a forecast year (e.g. 2015). The inventory and forecast provide a benchmark against which the city can measure progress.*

Syracuse designated 2002 as its base year, the first year for which it has detailed data. The forecast year is 2020.

Milestone 2. *Adopt an emissions reduction target for the forecast year. The city establishes an emission reduction target for the city. The target both fosters political will and creates a framework to guide the planning and implementation of measures.*

The Bureau of Planning & Sustainability is establishing a goal of 40% reduction for City operations, and 7% for the community.

Milestone 3. *Develop a Local Action Plan. Through a multi-stakeholder process, the city develops a Local Action Plan that describes the policies and measures that the local government will take to reduce greenhouse gas emissions and achieve its emissions reduction target. Most plans include a timeline, a description of financing mechanisms, and an assignment of responsibility to departments and staff. In addition to direct greenhouse gas reduction measures, most plans also incorporate public awareness and education efforts.*

This sustainability plan constitutes the Local Action Plan. Most measures in the plan are policy measures, which recommended utilizing future City budgets and staff time in slightly different ways. Some measures, such as increasing renewable capacity, will require outside funding from grants. The main responsibility for implementation will lie with the P&S staff. Public engagement with citizens and stakeholders took place during the plan's development and will be ongoing throughout the implementation.

Milestone 4. *Implement policies and measures. The city implements the policies and measures contained in their Local Action Plan. Typical policies and measures implemented by CCP participants include energy efficiency improvements to municipal buildings and water treatment facilities, streetlight retrofits, public transit improvements, installation of renewable power applications, and methane recovery from waste management.*

The City of Syracuse will use this plan to facilitate energy efficiency improvements to municipal buildings, streetlight retrofits, and installation of renewable energy generation systems, among other objectives. The City does not control wastewater treatment facilities, waste management, or public transportation, which are administered by Onondaga County, Onondaga County Resource Recovery Agency, and CNY Regional Transportation Authority, respectively. However, the City does work cooperatively with

all of these partners to facilitate projects for the public good.

Milestone 5. *Monitor and verify results. Monitoring and verifying progress on the implementation of measures to reduce or avoid greenhouse gas emissions is an ongoing process. Monitoring begins once measures are implemented and continues for the life of the measures, providing important feedback that can be use to improve the measures over time.*

This plan contains recommended measurements and monitoring recommendations.

The Five Milestones are used around the world. As stated by ICLEI, "The five milestones provide a flexible framework that can accommodate varying levels of analysis, effort, and availability of data. This element makes the Cities for Climate Protection campaign both unique and innovative, by increasing its transferability amongst local governments. It is the breadth of this program that enables it to cross north/south, developed/developing, metropolis/town boundaries and that has made it successful worldwide. "

12 Traits of Sustainable Communities Rating

In 2010, the City of Syracuse agreed to beta-test the "12 Traits of Sustainable Communities" rating system developed by local advocacy group GreeningUSA. GreeningUSA developed the 12 Traits system to help communities measure their successes and shortfalls, recognize strengths and weaknesses, and to make sense of how to prioritize future initiatives in their effort to become more sustainable. The 12 Traits measure the sustainability of a community based on two distinct criteria, 1) measurable performance data and 2) progress on sustainability initiatives. It is structured to give credit for objective data that can be measured and tracked, as well as for the existence and progress of ongoing sustainability initiatives.

Out of 5040 possible points in this rating system, the City of Syracuse scored 2447, or a 48.5% overall sustainability rating. The program's developers set a minimum score of 40% as the requirement for distinction as a "GreeningUSA Sustainable Community," which the City of Syracuse achieved and was recognized for by the group in 2011.

The 12 Traits Rating System process revealed that Syracuse performs strongest in Local Economic Resilience, Public Health and Safety, Waste Material Management, and Local Culture, Arts and Entertainment. Areas identified as needing the most attention at that time included Water Related Infrastructure, Community Engagement, Land Use Planning/Resource Preservation, and Energy from Non Fossil Fuels. Other traits that were assessed were Government Leadership in Sustainability, Green Buildings and Housing, Quality Public Education, and Sustainable Transportation and Mobility.

The analysis of both performance data and sustainability initiatives indicated that there are many "low-hanging fruit" (i.e., low-cost measures that have a quick payback) opportunities to improve the community's overall sustainability. These opportunities, among others, have been considered by the Sustainability Plan Advisory Groups and are reflected in this plan.

City of Syracuse 2010 Greenhouse Gas Emissions Inventory

One widely-used sustainable community indicator is the greenhouse gas (GHG) emissions inventory.

The City of Syracuse took initial steps to quantify greenhouse gas emissions in 2000, in collaboration with the State University of New York College of Environmental Science and Forestry (SUNY-ESF). These early carbon foot-printing efforts, in conjunction with

Greenhouse Gases & New York

Greenhouse gases trap heat that would otherwise escape into the atmosphere, causing worldwide climate change. Prior to the industrial revolution, most climate change can be attributed to natural causes such as solar energy, volcanic explosions, and natural changes in GHG concentrations, but since that time, most climate scientists believe that human-caused greenhouse gas emissions from the burning of fossil fuels for vehicles, industry, buildings, etc. are taking average global temperatures and weather patterns into uncharted territory.*

Scientists project that in New York State these changes will lead to adverse effects to human health due to extreme heat, worsening air quality, and increase in vector-borne disease. Changes in climate are also likely to challenge our economy through impacts on fisheries, forestry, agriculture, and winter recreation. **

The greenhouse gases of most concern are carbon dioxide, methane, nitrous oxide, and fluorinated gases.

*National Research Council, 2010. Advancing the Science of Climate Change. The National Academies Press, Washington, DC, USA.

**Union of Concerned Scientists, 2007. Confronting Climate Change in the Northeast: Science, Impacts and Solutions.

energy efficiency efforts at the City, led to detailed tracking of City energy use in 2002.

In 2011, Bureau of Planning & Sustainability staff, students from SUNY-ESF, and a graduate intern through the CNYRPDB Climate Change Innovation Program collected data and conducted two separate GHG emissions inventories for the year 2010: one for Syracuse government operations and one for the broader community.

Government Operations GHG Emissions Inventory

In 2010, the City of Syracuse municipal operations accounted for 29,493 metric tons of carbon dioxide equivalent (CO2e), a 20% reduction from 2002 levels of 36,721. The primary contributor to municipal GHG emissions is the city vehicle fleet, followed by buildings and facilities, airport facilities, streetlights, and traffic signals.

Over the eight year period from 2002 to 2010 there were significant reductions achieved across almost all government sectors, most significantly with traffic signals, which were converted to LEDs in 2004. Over the inventory time frame, the City has upgraded much of its lighting and HVAC infrastructure in buildings, and steps were taken to reduce fleet size and vehicle miles traveled, also leading to significant reductions. Water delivery emissions remained constant across inventory years, while mobile and process fugitive emissions, attributed primarily to refrigerants in fleet and building cooling systems, had significant increases associated mostly with more detailed vehicle fleet data.

Under a business-as-usual scenario, by 2020, the City of Syracuse government emissions would reach 29,227 metric tons of CO2e. As the Mayor and Common Council have articulated in key strategy documents (Mayor Miner's "50 Point Plan") and legislation (Common Council Resolution 21-R-2002) the City is committed to reducing its impact on the environment and climate change. The Intergovernmental Panel on Climate Change, the leading international body on climate change science, asserts that developed countries need to reduce GHG emissions 25-40% below 1990 levels by 2020 and 80-95% by 2050 in order to avoid global warming beyond 2°C (3.6°F). Doing so could stabilize the climate and prevent catastrophic consequences on human and ecological systems.

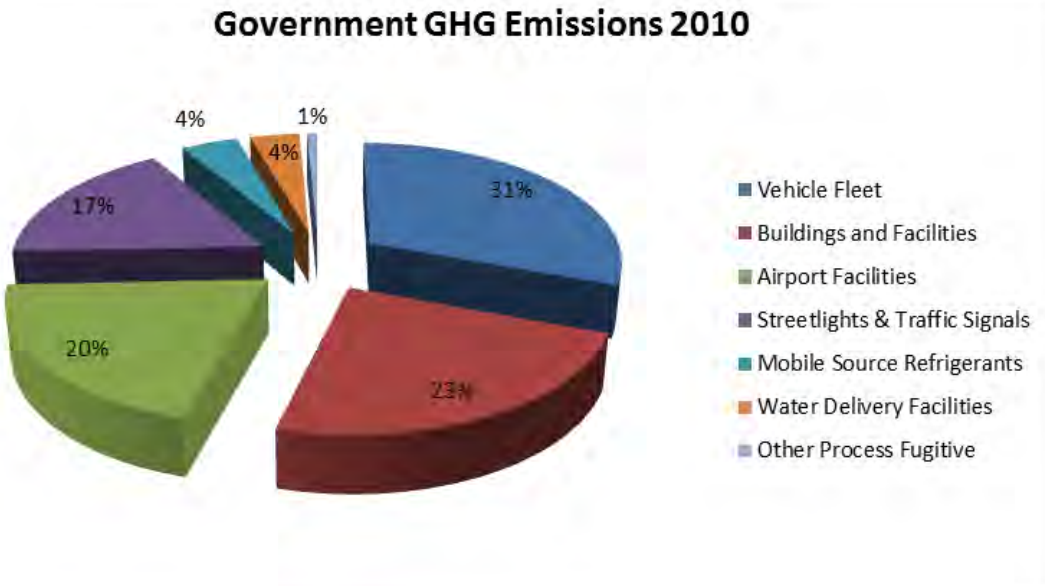
The City has made significant progress toward this aggressive goal set by the scientific community by achieving a 20% reduction from 2002 to 2010. Upon detailed review of actions outlined in this plan and their potential CO2e reductions, as well as discussion amongst Sustainability Plan contributors, the City has chosen a CO2e reduction target of 40% below 2002 levels by 2020. This acheivement would demonstrate that this global goal can be achieved at local scales. The City will also reassess its progress in achieving this goal in 2020, recalibrate reduction targets for 2030, and do so for each ten year period following, in a long term effort to reach emissions reductions supported by global climate science.

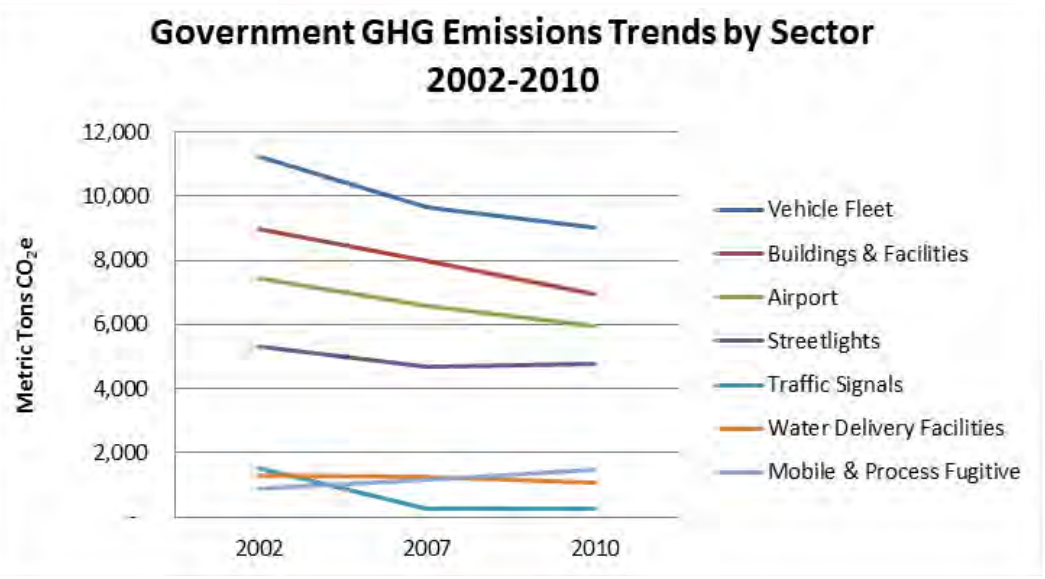
Government initiatives to reach GHG reductions will focus primarily on energy use in the City's vehicles, buildings and other infrastructure. Below is a list of emissions targets by government sector, followed by a list of action items identified in this plan to reduce the carbon footprint of government operations.

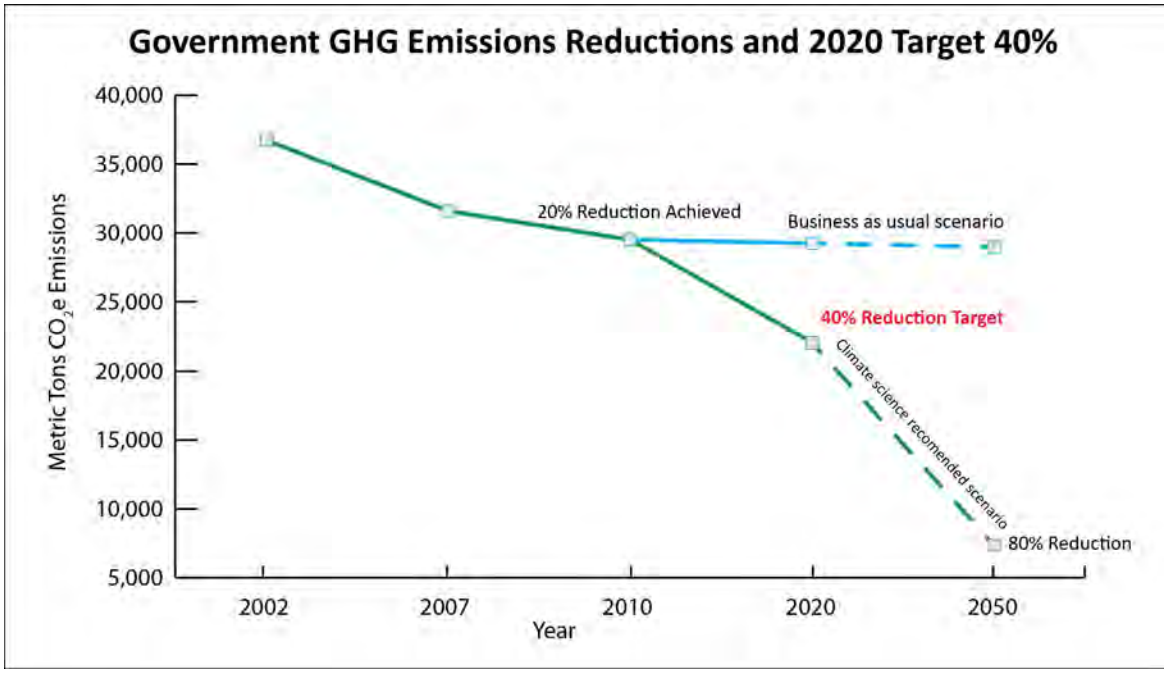
Summary of Government Climate Action Initiatives and Targets

2002 Baseline	2010 benchmark (20% reduced)	2020 target (40% reduction)	CO2e reduction required to achieve target
36,721	29,493	22,032	7,460

All figures in metric tons of CO2e (carbon dioxide equivalents).


Government GHG Emissions 2010
4%
1%
4%
17%
31%
20%
23%
Vehicle Fleet
Buildings and Facilities
Airport Facilities
Streetlights & Traffic Signals
Mobile Source Refrigerants
Water Delivery Facilities
Other Process Fugitive


Government GHG Emissions Trends by Sector
2002-2010
Metric Tons CO_2e
12,000
10,000
8,000
6,000
4,000
2,000
2002
2007
2010
Vehicle Fleet
Buildings & Facilities
Airport
Streetlights
Traffic Signals
Water Delivery Facilities
Mobile & Process Fugitive


Government GHG Emissions Reductions and 2020 Target 40%
Metric Tons CO_2e Emissions
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
2002
2007
2010
2020
2050
Year
20% Reduction Achieved
Business as usual scenario
40% Reduction Target
Climate science recomended scenario
80% Reduction

Summary of Government Climate Action Initiatives and Targets (cont'd)

Government Sector	2002 baseline (CO_2e)	2010 benchmark (CO_2e)	2020 target (CO_2e)	CO_2e reduction required to achieve target (CO_2e)
Vehicle Fleet	11,251	9,039	8,039	888
Buildings and Facilities	8,996	6,928	4,928	4,485
Airport Operations	7,439	5,961	- *	- *
Streetlights and Traffic Signals	6,852	5,020	4,470	1,898
Other Process and Fugitive Emissions	901	1,466	1,320	115
Water Delivery Facilities	1,282	1,080	972	77

All figures in metric tons.
*Airport operations will be assumed by the independent Syracuse Regional Airport Authority in 2013. Resulting emissions reductions in the City GHG inventory will not be counted toward reduction goals.

Facilities Climate Action Initiatives

- Development of an Energy Policy that creates building operation guidelines and behavioral norms around building occupant use
- Ongoing facilities energy monitoring
- Implementation of low/no-cost facility energy conservation measures
- Transition city street light inventory to more energy efficient technology
- Continue city parking garage lighting upgrades to LED
- Increase renewable energy capacity

Vehicle Fleet Climate Action Initiatives

- Development of a Green Fleet Policy that creates vehicle fleet operation guidelines and behavioral norms around vehicle operation and maintenance
- Anti-idling campaign
- Route optimization for municipal waste and recycling collection

Achievement of a 40% reduction below the 2002 baseline will require a concerted effort by all City departments and staff, the leadership of the Mayor and Common Councilors, and creative means to cultivate and dedicate funds to implement projects outlined here and in the chapters that follow.

Syracuse Community GHG Emissions Inventory

Total community GHG emissions for 2010 were 1,566,438 metric tons CO_2e, representing a 2% reduction in emissions from 2002 levels of 1,593,539. This total includes emissions generated through vehicle travel within city limits, energy and natural gas usage by all residences and businesses in the city, and emissions created through waste man-

agement.

Most significant community emissions reductions were achieved in the residential sector, which decreased 14% over the inventory timeframe. The transportation sector increased overall community emissions 11% during the inventory timeframe but started a significant decline in emissions from 2007 to 2010, associated primarily with increases in fuel prices and the national economic recession. Commercial emissions (which includes government facilities and rental properties with more than four units) had an overall 6% emissions reduction from 2002 to 2010, but showed an upward trend from 2007. Both waste and industrial sector emissions remained relatively constant throughout the inventory time frame.

Under a business-as-usual scenario, by 2020, the City of Syracuse would reach 1,632,172 metric tons of CO2e, or a 2.4% increase over 2002 totals . The IPCC GHG target reduction guidelines discussed above (reductions of 25-40% below 1990 levels by 2020 and 80-95% by 2050) should apply to broader community emissions as well as government operations. This presents a formidable challenge, given that emissions declined just 2% from 2002 to 2010, and that many of the behaviors that generate these emissions are beyond the operational control of any one government, agency, or private entity.

Upon detailed review of community actions outlined in this plan which the City does play a critical role in, and which stand to significantly impact the overall community carbon footprint, the City has chosen a CO2e reduction target of 7% below 2002 levels by 2020. The City will reassess its progress in achieving this goal in 2020, recalibrate reduction targets for 2030, and do so for each ten year period following, in a long term effort to reach emissions reductions supported by global climate science.

While the City has very limited operational control over broader community emissions, it is in a position to set policies that encourage sustainable behavior and provide leadership on this issue on behalf of its citizens, businesses and other community partners. Through collaboration with local and regional governments, institutions and organizations, such as Onondaga County, CNY RPDB, Syracuse University, SUNY-ESF and others, the City is committed to community-wide emission reductions.

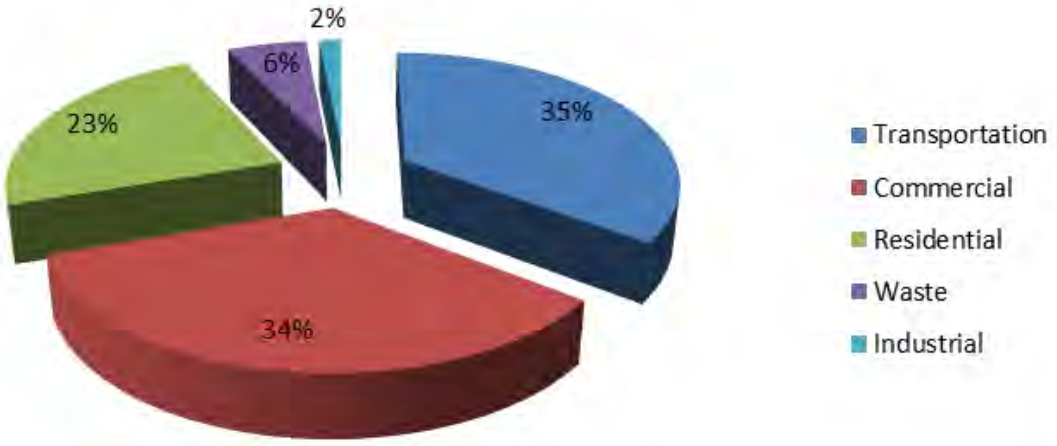
Government initiatives to reach community GHG reductions will focus primarily on land use and smart growth policies that lend themselves to more efficient and multi-modal transportation, denser development, and a reinvigoration of the urban core. The City will also partner with CNY RPDB and community members in a series of "Energy Challenges" designed to build community camaraderie around achievement of aggressive reductions in energy use and increases in efficiency in various sectors. Below is a list of emissions targets by community sector, followed by a list of action items identified in this plan to reduce the community carbon footprint.

Summary of Community Climate Action Initiatives and Targets

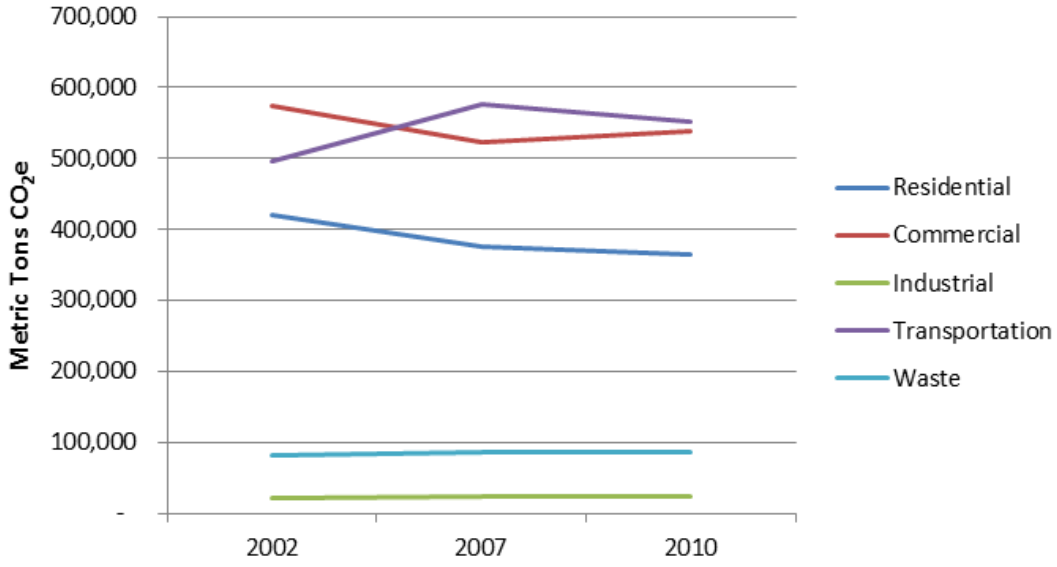
2002 baseline	2010 benchmark (2% reduced)	2020 Target (7% reduction)	CO2e reduction required to achieve target
1,593,539	1,566,437	1,481,991	84,446

All figures in metric tons.

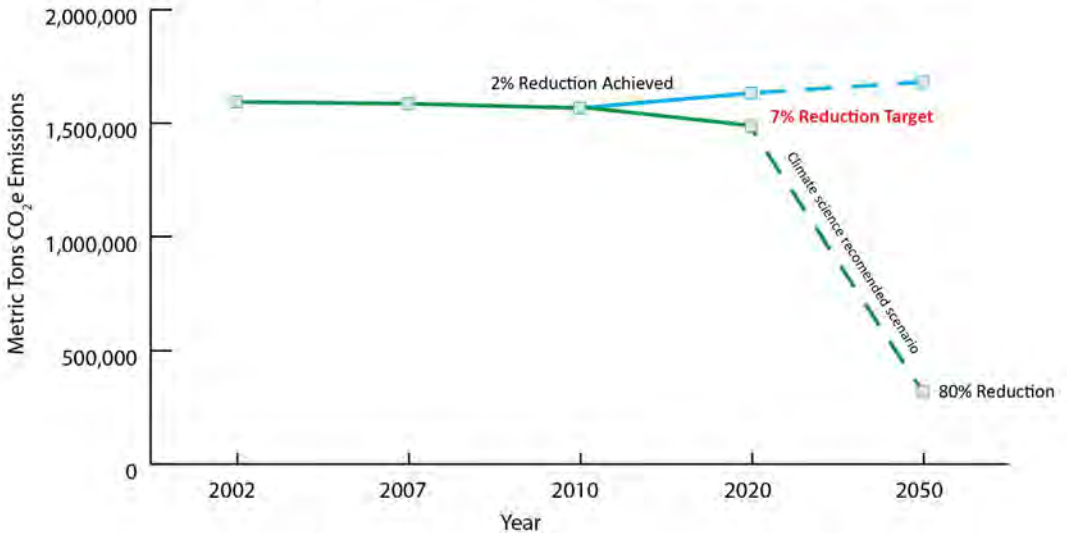
2010 Community Emissions by Sector*



Community Emissions Trend by Sector 2002-2010



Community GHG Emissions Reductions and 2020 Target 7%



Summary of Community Climate Action Initiatives and Targets *(continued)*

Community Sector	2002 baseline (CO2e)	2010 benchmark (CO2e)	2020 target (CO2e)	CO2e reduction required to achieve target (CO2e)
Transportation	497,123	552,943	530,825	22,118
Commercial	573,584	539,592	505,592	34,000
Residential	420,410	363,655	335,336	28,319
Waste	81,428	86,005	85,996	9
Industrial	20,994	24,243	-	-

All figures in metric tons.

Policy Climate Action Initiatives

- Land use plan that incorporates smart growth principles in coordination with County Sustainable Development Plan and regional efforts
- Incentives that encourage urban redensification

Energy Challenge Initiatives

- Residential Energy Challenge
- Commercial/Business Energy Challenge
- Government-owned facility Energy Challenge

Waste

- Expand recycling and composting

Achievement of a 7% reduction below the 2002 baseline will require strong leadership on the part of City government to build partnerships and collaboration across government entities and agencies, academic institutions, regional planning organizations, not-for-profits, and with citizens. Though many of the community initiatives are beyond the scope of the City's operational control, targets have been set and initiatives outlined in order to unite community efforts under a common goal of GHG emission reductions. It will take the combined strength, commitment and dedication of all stakeholders to implement projects outlined here and in the chapters that follow.

Definitions:

Adaptation: Adjustment or preparation of natural or human systems to a new or changing environment which moderates harm or exploits beneficial opportunities.

Mitigation: A human intervention to reduce the human impact on the climate system; it includes strategies to reduce greenhouse gas sources and emissions and enhancing greenhouse gas sinks.

(Source- EPA 2012: http://epa.gov/climatechange/glossary.html)

Climate Adaptation

While it is important for the City to minimize the impacts of climate change through aggressive climate action and sustainability initiatives, scientists conclude that communities will inevitably be impacted by climate changes that are already occurring. Impacts such as variations in the frequency and intensity of storm and drought events, which effect aging water, transportation and energy infrastructure, increased demand for public health services due to heat stress, and the introduction of foreign and invasive species to natural systems, agriculture, and forest ecosystems, are likely to affect the Central New York region as a result of climate change.

The City of Syracuse recognizes the importance of climate change adaptation efforts, in addition to the GHG mitigation and sustainability actions described in this plan. Adaptation requires planning proactively and preventatively to achieve a level of flexibility and preparedness in response to the varied impacts of climate change.

The City will endeavor to incorporate adaptation planning in its operations through several objectives:

- Build climate adaptation into existing planning documents, from emergency management to land use.
- Partner with City departments, local agencies, universities, not-for-profits, and businesses to build awareness of climate change, potential impacts, and areas for adaptation in the community.
- Establish climate adaptation strategies and implementation time frames, and build adaptation into existing municipal policies (such as zoning, development, and public safety).
- Consider the social, economic and environmental impacts of a changing regulatory environment and anticipate areas of vulnerability or compliance.

Community involvement is important feedback for local government, especially when it comes to operations and policy-making. Above, a crowd gathers for Mayor Miner's Summer Meeting in McChesney Park. Below, members of the Sustainability Plan advisory groups convene for an interim review of the plan's recommended goals and actions.


CHC

Energy and Green Building

Introduction

Solar panels installed on the south side of SUNY-ESF's Baker Lab produce electricity while shading the building in summer

A significant contributor to the quality of life in the City of Syracuse is access to affordable energy such as electricity, natural gas, and fuels such as gasoline and diesel. This energy powers the City's infrastructure, supplies our business and industry, lights our homes and offices, and heats our buildings. According to National Grid, in 2010 the community of Syracuse used 1.3 billion kilowatt hours of electricity and 93 million therms of natural gas[1]. In 2010, our cars, trucks and heavy duty vehicles consumed 7.6 trillion BTUs of energy as they burned gasoline and diesel fuel to move us back and forth to work, to transport goods and for travel[2].

To put energy use into perspective, the average Syracuse household utilizes 6045 kWh of electricity, 798 therms of natural gas and consumes 420 gallons of fuel per year[3]. Syracuse is 10% below the New York State average for electricity use[4] and 43% above average for natural gas use[5]. Although New York State is among the top two states for least per capita energy use[6], when compared with energy use in other countries, we are still far above global counterparts. While the use of this energy has led to the success of Syracuse as a cultural, economic and educational hub in New York State it also comes at a cost. The burning of fossil fuels for energy is the single largest contributor to climate-changing greenhouse gas emissions. Moreover, related emissions and effluents have other detrimental impacts to human health, water quality and clean air. Today the City struggles to clean up brownfield sites that suffer from various levels of petrochemical pollutants, and to keep fuel and other pollutants out of water bodies.

Kilowatt Hours: Utility companies bill customers for electricity usage based on the number of kilowatt hours consumed. A kilowatt hour (kWh) is a unit of energy equivalent to one kilowatt (1000 watts) of power expended for one hour. One 100-watt light bulb that is on for 10 hours is equal to 1 kWh.

Therms and Btus: Utility companies bill customers for natural gas usage based on the number of therms consumed. One therm is the equivalent to 100,000 Btu and one Btu is approximately the amount of energy needed to heat one pound of water one degree Fahrenheit.

Most energy in New York comes from nuclear power plants, natural gas, coal, hydro power and fuel oil. Other than hydro power, renewable energy from alternative resources remains minimal. Solar and biomass resources and other renewables each supply less than 1% of New York power. Wind energy supplies just 1%. While New York is ahead of the national average on percentage of electricity generated from renewable sources, thanks to its rich resource of hydropower, the state is still predominantly reliant on non-renewable energy resources.

While the City of Syracuse and greater Central New York region benefit greatly from readily available sources of non-renewable and some renewable energy, it is not likely that we can maintain this energy intensity over time. Energy experts generally agree that

1 National Grid. City of Syracuse Energy Use Data. May 9th, 2011.
2 Syracuse Metropolitan Transportation Council. City of Syracuse Vehicle Miles Traveled Data. July 22, 2011. Based on NYS DOT VMT modeling.
3 City of Syracuse. City of Syracuse 2010 Greenhouse Gas Emissions Inventory Report. December, 2011. Energy use per household calculate as proportion of total residential electric and natural gas consumption. Gallons of fuel reflects use of gasoline per household and includes fuel that may have been consumed by non-residents, businesses, government, etc.
4 U.S. Department of Energy. Energy Consumption in New York Homes. http://apps1.eere.energy.gov/states/residential.cfm/state=NY?print (accessed 9.7.2012)
5 Per capita consumption of natural gas in NY homes in 2005 was 21.7 MMBtu. In Syracuse it was 31.0 MMBtu (National Grid data).
6 U.S. Energy Information Administration. http://www.eia.gov/state/state-energy-rankings.cfm?keyid=60&orderid=1 (accessed 9.7.2012.)

the discovery of oil resources has reached a peak, and as our remaining resources dwindle and usage expands in developing countries, high prices and scarcity are inevitable. Likewise, other non-renewable resources that provide inexpensive energy, such as coal, natural gas and nuclear fuels, are all expected to reach their peaks in discovery and production, plateau, and then decline[7]. Each also has significant environmental and health related risks. This decline may take years to set in, but now is the time to develop a long-term strategy for reducing our reliance on non-renewable fossil fuel energy and building out our capacity to utilize renewable energy resources.

If we were to rely totally on renewable energy today, we would have to reduce our energy use by 81%. This is hard to imagine. Syracuse and the Central New York Region have the potential to significantly expand renewable energy such as solar, wind, biomass and geothermal, but we are a long way from being able to sustain current energy consumption. A smooth transition from our current levels of consumption to a level of energy use that is sustainable will be essential to the long-term vitality of Syracuse and the surrounding region. It will be critical to reduce consumption while also increasing supplies of renewable sources to achieve this long-term vitality. Proactive steps have already been taken in the City of Syracuse to begin crafting a more sustainable course throughout City government, and the broader community.

Energy Achievements

The City of Syracuse government has been successful in reducing its energy footprint since energy management began in earnest in the late 1990s. Between 2002 and 2010, electric energy use at the City decreased by 12% while natural gas use decreased by 18%[8]. During that same period the vehicle fleet went from consuming 698,575 gallons of gasoline annually to 558,097, and from 420,913 gallons of diesel fuel to 383,774 gallons[9]. There were 4281 gallons of CNG used in 2010[10], with no records for 2002. These reductions are the result of concerted efforts by City staff and community partners to reduce our energy footprint. Below are some measures currently in place at the City of Syracuse:

- Ongoing energy use monitoring in all facilities
- Building energy audits and implementation of energy conservation measures
- Traffic signals upgraded to energy efficient LED lights
- Street light upgrades from mercury vapor to high pressure sodium
- Fleet reduction and vehicle replacement with fuel efficient models
- Fleet fuel consumption database for benchmarking use
- Automated energy systems in major energy using facilities
- Installation of 11 kW solar PV system at City Hall Commons, and 50 kW solar PV system and 56 kW hydropower microturbine at the Westcott Reservoir
- Feasibility studies conducted on renewable energy at large City facilities
- Uniform Tax Exemption Policy incentivizing commercial green building as well as historic preservation, development in distressed areas, mixed used development and local job creation
- Development of Land Use Plan that espouses smart growth principles

The results for energy reductions at a community level are mixed. While there

7 Murphy, Pat. Plan C: Community Survival Strategies for Peak Oil and Climate Change. New Society Publishers, 2008.

8 Energy Automation, Inc.. 2002-2010 Summary Electric Compendium, 2002-2010 Summary Natural Gas Compendium, 2002-2010. March 2011.

9 City of Syracuse DPW. Data compiled by fleet management software for 2010 GHG Emissions Inventory.

10 City of Syracuse Purchasing Department.

were significant reductions for the residential (down 11%) and commercial sectors (down 5%) between 2002 and 2010, the industrial sector spiked up 29% and energy use for transportation increased 12%[11].

Community Energy Use, 2002 and 2010

	2002	2010
Electricity (kWh)	1,290,875,336	1,292,214,058
Natural Gas (MMBtu)	95,609,168	92,243,695
Daily Vehicle Miles Traveled (DVMT)	2,207,771	2,596,410
Gasoline (MMBtu)	5,786,406	6,385,682
Diesel Fuel (MMBtu)	6,796,685	7,620,718

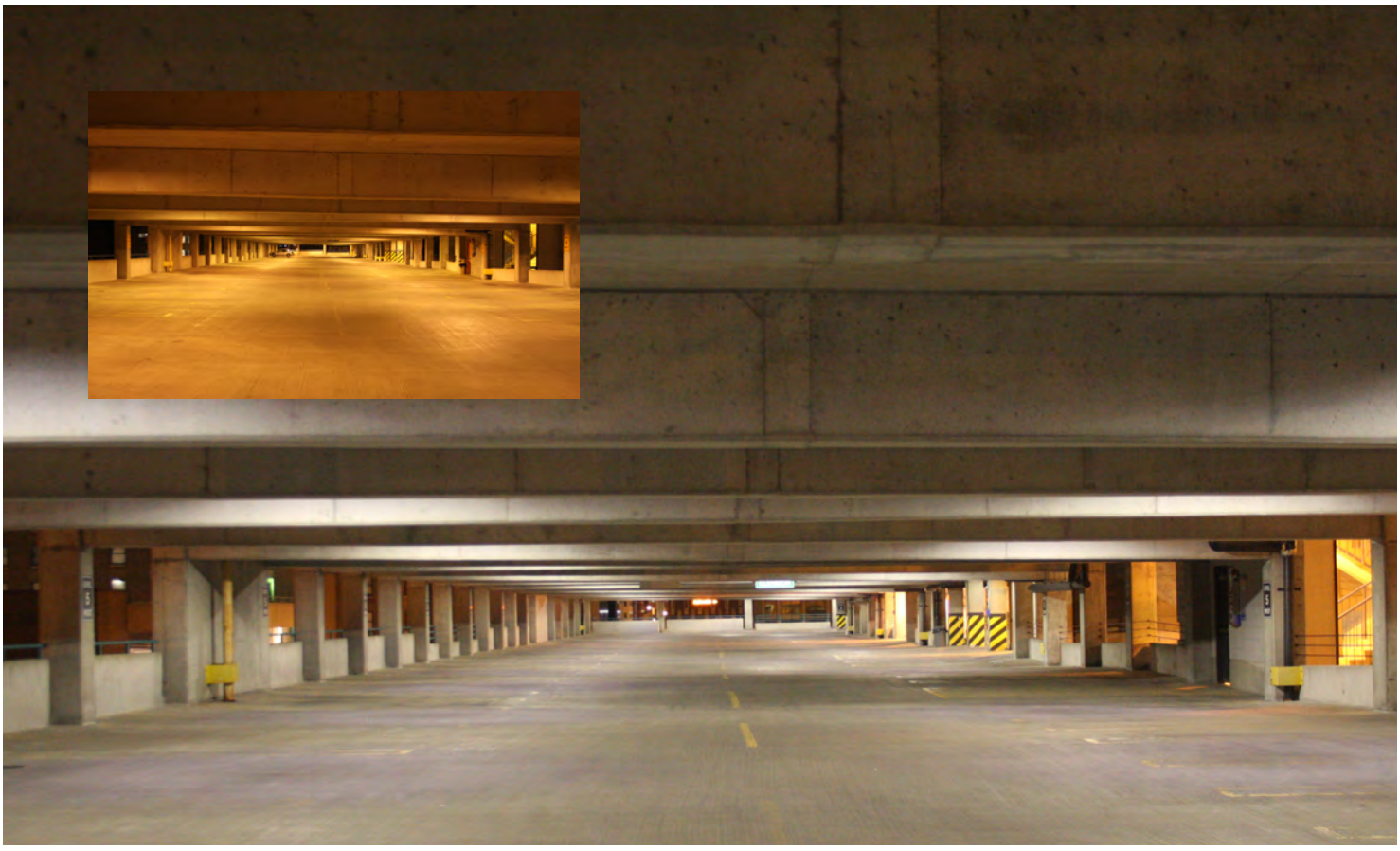
Goals

The goals and objectives of this chapter focus on the two key sources that comprise 99% of energy use in Syracuse – buildings and vehicles. Buildings in Syracuse account for roughly 64% of all energy consumption (13.8 trillion Btus) while vehicular travel accounts for 35% (7.6 million Btus) of our overall energy use[12].

These goals are:

1.1 Reduce energy consumption
1.2 Increase renewable energy capacity
1.3 Reduce the environmental impact of public and private buildings

The City of Syracuse has replaced lighting in four of its parking garages, upgrading to energy-efficient LEDs with the help of a Department of Energy grant. Shown is the new lighting in Harrison Garage, with old lighting inset. The City will save approximately $160,000 per year in energy costs as a result of the four upgrades.



11 City of Syracuse. City of Syracuse 2010 Greenhouse Gas Emissions Inventory Report. 12/2011.
12 Ibid.

1.1 Reduce Energy Consumption

Municipal Operations Objectives

1.1.1 Reduce city owned facilities' energy consumption 10% (over 2010 levels) by 2020

1.1.1.1 Create a municipal energy policy. While the City has long been advocating energy efficiency in its operations, there is no adopted policy that spells out specific energy performance criteria and protocols City-wide. Establishing an energy policy that dictates things such as temperature settings, overnight and weekend settings, demand control, etc. will support the City's facilities maintenance team in achieving further efficiencies from our buildings.

1.1.1.2 Create a project review process for major energy-consuming projects. A thorough review of plans by Engineering and Skilled Trades prior to the start of an HVAC, chiller, lighting or other energy-consuming installation can ensure that the project is engineered to the capacity needed, and not beyond. Right-sized projects save on future energy costs.

1.1.1.3 Create incentives for individual department performance, such as departments receiving a percentage of savings gained by energy efficiency efforts.

1.1.1.4 Create a City Sustainability Fund that is replenished by savings created through energy efficiency projects. Use the funds for priority energy projects as well as funding departmental projects based on proposals submitted to an energy team comprised of members of Facilities, Bureau of Planning & Sustainability and energy experts.

1.1.1.5 Complete facilities energy benchmarking and utilize for energy priorities. The City is in the process of compiling data on energy use from 2002 to present with data from all existing facilities and from comprehensive building audits. This data will serve as a guide for decision making around future energy conservation measures in facilities as well as for future capital investments. Make this data available to department heads, facility energy team members and building occupants, ideally in a computer dashboard format.

1.1.1.6 Create and implement a municipal street lighting energy reduction strategy. In 2010, street lighting accounted for 33% of all electric use at the City. It also represents the largest percentage of the City's utility bill. The City should work with National Grid and other community partners to develop a plan to transition street lights to a more energy efficient technology. The City is currently exploring a project to install LED light fixtures in 50% of its highest-wattage streetlights and in City-owned parking garages. (The 10% reduction target does not include streetlighting redutions, which will require cooperation from National Grid in establishing a tariff rate.)

1.1.1.7 Train appropriate City staff in green energy and building practices (solar installation, BPI certification, LEED, Certified Energy Manager, etc.)

1.1.1.8 Assess municipal buildings for daylight harvesting potential and install these photosensor-based systems where they will result in the

greatest energy savings. Retrofit windowless buildings (such as the DPW Mechanics' Garage) with skylights or windows for better working conditions and lighting energy savings.

1.1.2 Reduce city owned transportation fleet energy consumption 10% by 2020

1.1.2.1 Continue to improve fleet policy. Progress has been made regarding fleet energy use and emissions. Further improvements can be achieved by working with the fleet management team to adopt policies around energy efficient vehicle types, maintenance cycles, procurement, anti-idling and other practices.

1.1.2.2 Emulate best "green fleet" practices as identified by ICLEI (Denver, Ann Arbor policies). Prioritize fleet efforts in highest use fleet teams (police, sanitation, street cleaning, street flushing).

1.1.2.3 Conduct a fleet study. Conduct NYSERDA FlexTech or comparable study based on current fleet data to identify opportunities for improvement.

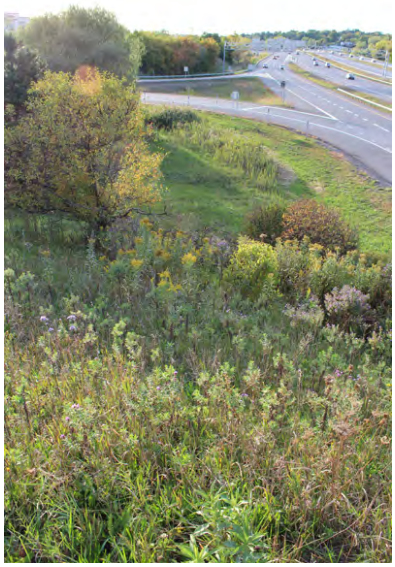
1.1.2.4 Route optimization: fully implement DPW route optimization recommendations for trash and recycling pick-up. Identify other opportunities for route optimization across departments.

1.1.3 Optimize greenspace manangement practices to reduce fuel use, labor and emissions

1.1.3.1 Allow some areas to grow naturally, switching to annual cutting to save on fuel and labor (example: Thompson Road on-ramp). In cases of annual cutting, time cutting before woody plants get too big for weed-eaters. In such areas, maintain regular cutting where necessary for safety (visibility) only.

1.1.3.2 Cut back on weeding and mowing in certain low-visibility areas.

1.1.3.3 Assess the feasibility of Zone Mowing, with shared equipment between DPW, City Schools, and the Parks Department stored (under cover) at four host sites, and used to mow all City, park and school district property in its vicinity. Each mowing shift should focus on one geographic area to reduce time spent on travel from site to site. Use maps to determine mowing zones which will reduce travel emissions, reduce lost productivity, and reduce expenses. As much as possible, coordinate equipment purchases to be from the same maker so that repair parts will be interchangeable.



The area around the I-690/ Thompson Road interchange is a candidate for reduced mowing, as is modeled on the Town of DeWitt side. An annual mowing program results in the appearance of wildflower meadows or naturalized wetland, depending on soil conditions.

1.1.3 Reduce the use of fossil fuels in community transportation through municipal policy

1.1.3.1 Encourage alternative modes of transportation by improving City infrastructure for multi-modal transportation that enhances appeal and safety for pedestrians, cyclists, and wheel chair users.

1.1.3.2 Improve walkability to schools through infrastructure improvements.

Smart Growth & Land Use Policies

The latest City and County development strategies are based on the principles of smart growth. As we design our communities to maximize energy and resource efficiency and grow in a way that our infrastructure can sustain, it becomes easier to live closer to work and school and to get around town on foot and by bicycle. As City, County and state policies are implemented and as community members reduce vehicle miles traveled and drive more fuel efficient vehicles, the community will see significant GHG reductions.

Reduction target:
22,530 metric tons CO2e

1.1.3.3 Utilize the concept of complete streets in City transportation projects.

The Complete Streets concept places pedestrian and bicycle needs on an equal basis with cars.

1.1.3.4 Encourage smart growth principles throughout the city and region through the City Land Use Plan. The City Land Use Plan promotes environmentally sustainable land use patterns, transportation options, site plans and construction practices. The plan will also inform future zoning code revisions.

1.1.3.5 Incentivize residential and commercial development to redensify urban core to reduce community's annual average vehicle miles traveled. Programs like Say Yes to Education, which offers the opportunity of a quality education and free college tuition for all graduates of Syracuse High Schools, and the City's current tax incentives for development of commercial properties, properties in distressed areas, and historic preservation provide some incentives to re-densify downtown and Syracuse neighborhoods. As more people choose to live and work in

Community Actions - What Can *You* Do?

Everyone

One of the most beneficial things you can do to reduce your personal energy use and greenhouse gas emissions is to live close to where you work. This can also be a remarkable boon to your personal finances. For an interesting local example of how much money (and carbon emissions) you can save by living in the neighborhood where you work, visit the Southeast University Neighborhood Association website at www.seuna.org. SEUNA's 2012 Spring Newsletter contains an in-depth and well-researched analysis of the yearly costs of commuting to a job on University Hill for three hypothetical residents of Baldwinsville, Strathmore, and the Univeristy neighborhood. When all driving-related costs are considered, the resident living in the neighborhood where she works saves $5,400 over the resident who drives from Baldwinsville. The study notes that a resident who walked to work could save even more: an estimated $7,000 per year.

Transportation is one of the biggest users of fossil fuels. If your job doesn't require you to use your car during the day, it might be practical to use Centro to get to and from work. You'll save on gas and car repairs, and you may find you prefer using your morning commute to read or answer e-mails instead of driving. In 2012, Centro Pass buyers paid $60 per month for unlimited rides.

Syracuse is in the process of installing more bike lanes and neighborhood greenways throughout the city, increasing safety and comfort for bicyclists. If you live within a reasonable distance of your job, consider bicycling to work when the weather allows. You'll save on gas, and get a workout done before the workday starts. One-way bicycle commuting is also possible, thanks to Centro's bike-rack-equipped buses. Make sure you wear a close-fitting helmet whenever you ride your bike.

Combine errands. A little bit of planning before you leave the house can save you time and gasoline. Think about the places you need to go, and the most efficient route to use. If one of your stops is far from the others, can the item you need there be obtained more conveniently nearby? Sometimes the cost of driving across town for a sale exceeds the actual savings. The American Automobile As-

sociation estimated in April 2012 that it costs 59.6 cents per mile to drive the average sedan, and 75.7 cents per mile for a four-wheel drive SUV.

Renters and Homeowners

There are many actions individuals can take in the home that will reduce energy use and costs. Consider whether some of the following actions are practical for you:

Consider joining an Energy Challenge (sponsored by NYSERDA and conducted by CNY Regional Planning & Development Board). This program provides a full energy-use assessment for your home, and provides specific recommendations tailored to your home and usage patterns. You can even make it a community effort by forming an Energy Challenge team with your friends, neighbors, or co-workers, and competing with other teams to achieve the greatest reduction in energy use.

Air conditioners are major users of electricity in the summertime. On many hot days, homes can be adequately cooled by using fans, and/or opening windows on opposite sides of your home for cross-ventilation. Another strategy is opening windows at night to let in the cool air, then closing windows and drawing curtains or closing blinds during the daytime to keep the air temperature cooler in your home.

If you will be buying an air conditioner, first determine how many cubic feet are contained in the area to be cooled (multiply length x width x height). For example,

Energy Challenges

Cities across the country have demonstrated great progress in reducing residential, commercial and government energy use through energy challenge programs that educate citizens about the benefits of energy efficiency, prepare them to implement energy efficiency upgrades, and engage them in a team-based structure to reduce energy use. In collaboration with CNY Regional Planning and Development Board and other community partners, the City of Syracuse will engage interested parties at facilities such as commercial and public buildings, parking lots, and homes to participate in energy challenges.

Reduction target:
8,000 metric tons CO2e

Solar panels installed on the roof of City Hall Commons.

would cooling a 1000-cubic foot bedroom for comfortable sleeping be sufficient? Or will your entire 10,000-cubic foot apartment need to be cooled? Then look for an air conditioner that is correctly sized for the space. Air conditioners which are "overpowered" for the area where they are installed will waste energy by turning on and off frequently. Look for an Energy Star rated model for more savings.

In the winter, make sure your storm windows are down, making a double layer of glass in all windows. A layer of plastic window film also helps prevent drafts and reduces heating bills. Apply weather stripping around doors where needed to block drafts. Set thermostats to the minimum temperature needed for you to feel comfortable. Many people find that 68 degrees is adequate for winter when warmly dressed. Night time temperatures can be a few degrees cooler.

Turn your water heater's thermostat down to 130 degrees F.

Be mindful of your everyday energy use. Turn lights off in unoccupied rooms and hallways. Consider using powerstrips to connect multiple electrical appliances, such as your television center, and turning the powerstrip off when the TV is not in use. This eliminates "phantom draw", the energy consumed by these appliances when plugged in but not in use. For more savings, limit television time to two hours a day or less, and turn TVs off when no one is watching. When performing household tasks, consider whether a non-electrical method would do, such as sweeping hard floors vs. vacuuming.

Replace indoor lightbulbs with compact fluorescents (CFLs). Though CFLs are more expensive than incandescents, they use approximately ¼ the energy and last many years longer. Replacing a single 60W bulb with a 14W CFL will result in $40 in savings over the life of the bulb.

Use water wisely. All water that goes down the drain must be treated at the County's Metro Wastewater Treatment Plant, which is the County's biggest user of electricity. Water normally wasted when running faucets before each use can be saved and used for watering plants or for cleaning. A brick or a water-filled half-gallon container placed in the toilet tank also reduces household water use (but is not necessary in newer, low-flush toilets).

The clothes dryer is a major consumer of energy in the home. Consider hanging laundry to dry, and using a short, air-only tumble in the dryer afterward if needed for softening. Drying clothes on racks indoors in the winter also helps to humidify your home, which eases breathing and makes the home feel warmer without raising the thermostat. Avoid small loads of laundry, if possible. Clothes washers operate more efficiently when used for full loads. When it's time to purchase a new washer, consider a front-loading machine – it will use much less water and operate more efficiently than a conventional top-loader, reducing your energy use and costs.

Homeowners

Have a home energy audit done to determine where your home's heating and cooling losses are. Use the results to make decisions about the best insulation options for your home. See the NYSERDA website for details of this free/reduced cost program.

Programmable thermostats make saving on heating a snap. These can be set to keep your home's temperature six to eight degrees cooler during periods you're not

there or while you're asleep, warming the house just before you arrive home or wake up.

Buy Energy Star appliances. If your refrigerator is more than ten years old, replacing it with an Energy Star model could save half the energy you use now.

Install water-saving showerheads.

Close off unused rooms when heating or air-conditioning is on, and shut the rooms' register vents.

Outside the home, consider planting evergreen trees on the north side of your home, where they will block cold winter winds. On the south side of your house, deciduous trees are a better choice. Their leaves will provide shade, cooling your home naturally in summer, and will drop in autumn, allowing sunlight to warm the house in the colder months.

The best way to reduce your energy footprint is to conserve first, implement energy efficient improvements second, and choose renewables third.

the City, it will have the effect of reducing overall community vehicle miles traveled.

1.2 Increase Renewable Energy Capacity

Municipal Objectives

1.2.1 Double municipal renewable energy generation capacity by 2020

The City currently has 61 kW of solar photovoltaic panels and 56 kW of hydropower microturbine capacity to generate renewable energy. The annual estimated generation from all facilities is 519,084 kWh.

1.2.1.1 Implement municipal renewable energy projects. The City has conducted studies identifying renewable energy opportunities for City owned facilities. These projects should be prioritized and funding sought to implement. Potential projects include additional solar PV at the Westcott Reservoir, DPW, Parks Department, and Police facilities and additional hydropower microturbines at the Westcott Reservoir.

1.2.1.2 Conduct renewable energy studies for all City facilities.

Community Actions - What Can *You* Do?

Consider joining National Grid's GreenUp program if it's affordable for you. GreenUp offers you several choices of regional renewable energy suppliers who produce electricity from wind, hydropower, or a combination. You can even choose the amount of your electricity supply you'd like to purchase from renewable energy suppliers, from 50% to 100%. Fully-renewable sources will typically add about $4 to $6 to a typical household's monthly electricity supply bill.

Go solar. If you own your home, and already upgraded it for maximum energy efficiency, going solar could be a reasonable next step. NYSERDA, the state's non-

profit Energy Research and Development Authority, offers incentives to homeowners who install up to 7 kW of photovoltaics (using approved installers). The incentive can be up to 40% of the homeowner's out-of-pocket costs. See www.nyserda.ny.gov for more information.

Create a community energy cooperative. Community energy cooperatives aggregate customers for reduced rates, as well as green power purchasing.

1.2.1.3 Invest in City-owned green power. Consider funding options, such as Gross Receipt taxes, that will provide long-term payback to the City and taxpayers for the purchase of renewable energy.

1.3 Reduce the Environmental Impact of Public and Private Buildings

Municipal Objectives

1.3.1 Apply green building principles to all City facility projects

According to the Greater Syracuse Association of Realtors, homes with green improvements typically sell faster and for more money.

1.3.1.1 Ensure implementation of green building legislation. The City currently has green building legislation that requires all new City-owned construction and significant renovations be implemented to LEED Silver standards.

1.3.1.2 Establish municipal green building operating and maintenance policies. Policies should be created for operating and maintenance that set guidelines to improve indoor air quality and health (relative to use of paints, cleaners, low/no VOC chemicals, etc.)

1.3.2 Incentivize residential and commercial green building practices

1.3.2.1 Promote current Uniform Tax Exemption Policy for commercial green buildings and explore other incentives such as expedited permitting, or mortgage recording fee exemption.

1.3.2.2 Promote existing incentives for green building practices in residential construction. Explore incentives such as expedited permitting, or a mortgage recording fee exemption for green building projects.

1.3.2.3 Make updates to the building code that will reduce the urban heat island effect in the city, such as requiring white-painted roofs or vegetated green roofs on commercial buildings.

1.3.2.3 Establish ordinances to encourage use of deconstruction practices, such as a code allowing for use of reclaimed materials in new construction and renovations (similar to Houston's Appendix R in building code)

1.3.2.4 Establish ordinances to allow safe greywater recycling/reuse practices.

1.3.2.5 Improve site design standards in future zoning ordinance revisions.

Measures of Progress

Reduced energy use in kWh or therms.
Number of green buildings (renovations and new construction)
Increase in renewable generation capacity

The green roof on this SUNY-ESF building reduces the urban heat island effect, absorbs stormwater, insulates the building, and reduces its heating and cooling costs.

Community Actions - What Can *You* Do?

Weatherize your home.

When performing renovations, re-use existing materials or donate them to a non-profit home-building organization (such as Habitat for Humanity's Re-Store) for re-use or re-sale.

Perform energy efficiency upgrades on your home's heating and cooling systems.

Chapter 2
Education & Training

Introduction

Education builds a foundation of knowledge and skills that paves the way for future careers and active civic engagement. Education also empowers individuals to be creative and productive, and lays the groundwork for vibrant local economies.

The Syracuse education system includes the core Syracuse City School District, numerous private schools, Syracuse University, State University of New York College of Environmental Science and Forestry (SUNY ESF), LeMoyne College, SUNY Upstate Medical University, Onondaga Community College, SUNY Oswego Metro Center, Bryant and Stratton and hundreds of community-based organizations and not-for-profit entities that offer supportive social services, after school and other specialized programming.

Like many rust belt cities, Syracuse faces challenges of aging infrastructure, a decreasing tax base, disinvestment in poor neighborhoods, high concentrations of poverty and crime, and vacant properties and land. It is within this community context that the education systems face great challenges. In 2010-2011, 72% of the student body in the Syracuse City School District was eligible for free lunch, while another 7% was eligible for reduced price lunch. This is an indicator that almost 80% of students in the district face financial challenges. The district also struggles with an 8% dropout rate and overall graduation rate of 51%. As new immigrants move into the community, there is also growing demand to be able to meet the needs of English as a second language (ESL) students.

Though the City School District and other schools face these challenges, the solutions to these problems are the community's greatest opportunity. The City and broader community are hard at work to overcome these challenges through programs like Say Yes to Education, a unique collaboration between Syracuse University, SCSD, Syracuse Teachers Association, the City of Syracuse, Onondaga County, Say Yes to Education, Inc., the American Institutes for Research, and a diverse group of Syracuse-area corporate, non-profit, and philanthropic organizations. The goal is to create breakthrough outcomes in urban districts. The program provides unique wrap-around services to children and families in the District and offers the promise of free college tuition for all. Say Yes sees the key to any sustainable community as quality education for all. As the City works on providing high quality education to populations with high needs, the School District has also been progressive in its efforts to green its curriculum and operations.

The Green SCSD was born out of the school districts' desire to incorporate environmentally themed initiatives within the school day at each grade level throughout all of the city schools, with the following goals in mind:

Youth volunteers from Onondaga Earth Corps celebrate completion of a raingarden on Tully Street, on Syracuse's Near Westside.

Raise a generation of environmental stewards to tackle the unique environmental issues associated with urban living and living with global climate change

To bring positive recognition to our schools
To stimulate a desire to learn through proactive hands-on environmental education
Promote green jobs
To save money with increased efficiency

Since 2008 SCSD has created "green teams" in all schools to support the District's green goals. These site based teams support various green initiatives such as recycling and composting and serve as the primary conduit for green communication and programming. Through green teams, all schools have also signed on to OCRRA's recycling pledge, which is a prominently displayed visual reminder that administration, faculty, staff and students sign and commit to upholding. Each year, OCRRA also provides hundreds of classroom recycling presentations and building consultations that help the SCSD, as well as private and parochial schools in the City, roll out and maintain good recycling programs. In conjunction with OCRRA's ubiquitous public education campaign, which includes informational brochures, decals, posters, web, radio, billboard and TV advertisements, these tools allow students to take the recycling lessons they learn at school and bring them home to share with their families.

In addition to these efforts, the District has begun integration of environmental concepts in curriculum in grades 2-4, as well as in Science, Technology, Engineering and Math related educational units such as Alternative Energy in collaboration with SUNY ESF. Through this partnership, the district also offers "ESF in the Classroom" – high school classes such as Environmental Writing and Global Environment. The District has also promoted green initiatives through green project mini-grants, Green Report Cards, and collaborated with the City on fuel optimization for school bus fleet.

The City has adopted LEED-Silver standards for all new municipal buildings and major renovations. The school district facilities are owned by the City of Syracuse, meaning that all major renovations of the City schools will be done to USGBC LEED Silver standards.

Education and the Sustainability Plan

In addition to education's traditional vital role to the sustainability of community, education and training will be vital to the success of the implementation of the entire sustainability plan. The accomplishment of goals in each of the chapters will hinge on how well the City and community partners can engage individuals, schools, organizations, and employees in participating in the objectives of this plan and taking individual and group actions. In many cases, acheivement of these goals will require people to try new things and change old behaviors.

Goals

2.1 Support the needs of the Syracuse City School District
2.2 Engage City residents and workers in creating a sustainable Syracuse
2.3 Pursue a green economy that improves the quality of life for all City residents

2.1 Support The Needs of the Syracuse City School District

Municipal Objectives

Although the City of Syracuse owns the school facilities, the school district

operates independently and is responsible for its own administration, operation, and curriculum development. However, the City of Syracuse can take an active role in making sure schools and their surrounding environments are well-maintained and safe.

2.1.1 Provide infrastructural support to City schools and surrounding neighborhoods to ensure healthy school environments and safe routes to school

2.1.1.1 Ensure that school facilities are healthy environments for children. Classroom windows should be transparent and operable. Prioritize city infrastructure improvements such as sidewalk repairs, green infrastructure, and traffic safety upgrades around schools. Work with housing partners to rehabilitate housing around schools. Treat schools and their surroundings as targeted neighborhood investment zones.

2.2 Engage City Residents And Workers in Creating a Sustainable Syracuse

Municipal Objectives

2.2.1 Integrate formal, informal, and workforce education to create a system of education for sustainability

2.2.1.1 Develop strategic, targeted outreach surrounding plan initiatives that require public cooperation, using City resources wisely and as necessary.

2.2.1.2 Identify a community agency or group of agencies that can coordinate community-wide education on sustainability.

2.2.1.3 Encourage the creation of a central hub for sustainability-related volunteer, service learning and internship opportunities in the community (United Way, Project ION, Onondaga County Public Library, etc.) that will link high school, higher education, informal education and workforce sectors.

2.2.1.4 Work with City Parks Department to integrate education for sustainability in Parks and Recreation summer and afterschool programming.

2.2.1.5 Facilitate the involvement of students, parents and teachers in sustainability projects as interns, as student teachers, as volunteers, and as experts.

2.2.1.6 Engage college students' and professors' expertise in expanding the community's capacity to educate for sustainability through scholarship in action.

2.2.1.7 Engage in partnerships with Syracuse University, LeMoyne College, SUNY-ESF, Onondaga Community College and other community organizations as necessary to advance local sustainability research and sustainability initiatives.

Hands-on learning: this bicycle teaches children about the amount of energy needed to power different types of lightbulbs.

2.3 Pursue a Green Economy that Improves the Quality of Life for All Syracuse Residents

Municipal Objectives

2.3.1 Facilitate Central New York's transition to a greener economy

2.3.1.1 Explore procurement practices that incentivize use of local businesses and labor as well as green businesses.

2.3.1.2 Facilitate the location and relocation of green tech/clean tech businesses in Syracuse.

2.3.1.3 Encourage partnerships and collaborations between CNY Works, Partners for Education & Business, government entities and youth employment programs to provide early opportunities for young adults to engage with not-for-profits and local businesses in the green job field.

Community Actions - What Can *You* Do?

Volunteer at a school, community center, or after school mentoring program.

Take advantage of educational services available in Syracuse. There are plenty of resources available locally for continuing education, ranging from SUNY Educational Opportunity Center for those needing GEDs and training in computer fundamentals, to University College of Syracuse University for those wishing to pursue part-time study toward an SU degree. Continuing education courses are also available through Onondaga Community College, SUNY-ESF, LeMoyne College, SUNY-Oswego Metro Center, and private technical and business schools. Don't overlook free and low-cost special interest classes available through BOCES and Cornell Cooperative Extension.

Learn more about your community's history by visiting the Onondaga Historical Association's museum on Montgomery Street, or by attending one of their fall Ghost Walks. The Erie Canal Museum on Water Street is also a great place to learn about life along the Erie Canal in the early 1800s and how the Canal shaped Syracuse's history and present-day layout.

Get involved in a community volunteer activity such as a tree planting, block blitz, day of service, etc.

Invite your colleagues, friends, or family members to participate in an energy challenge to learn about and practice energy conservation.

If you own a business, strive to hire locally.

Learn about and support local and green businesses with your purchasing dollars.

An Onondaga Earth Corps crew member teaches children about rainwater infiltration and watersheds.

Measures of Progress

Implementation of outreach focused on sustainability measures
Creation of central hub for integrating sustainability education
Neighborhood investments made in areas surrounding schools
School facility upgrades completed
Number of joint City/University projects

Food Systems

Introduction

Food sustains us. Every day, the population of Syracuse consumes over 387 tons of food, spending on average over a million dollars.[1] However, very few citizens and public officials are aware of where and how their food is produced, how far it travels, how it's distributed to markets in different parts of the city, who can or cannot afford to buy it, and what happens to the leftovers and waste at every stage. Like most cities, Syracuse's sustenance is dependent on a vast and complex system that is difficult to comprehend.

What we eat seems like a matter of individual consumer choice. Yet, before food even reaches the table, it has been influenced by the decisions made by farmers, distributors, grocery store managers and other businesses, food banks, and government at all levels. Each decision has consequences not only for our health but also for the health of the environment, energy consumption, the economy and social justice. However it is difficult to see the consequences of these decisions, especially as they are often made in a piecemeal, isolated fashion.

This plan outlines an approach to begin to coordinate these decisions within a comprehensive food systems framework. Food systems involve "the chain of activities and processes related to the production, processing, distribution, disposal and eating of food."[2] Each of these sectors is integrated with other systems of ecology, transportation infrastructures, housing, and land use. The overall goal of this section of the sustainability plan is to "connect the dots" in order to realize the potential for decisions across every sector of the food system to improve public health, the economy, and the environment.

Food System Issues

There is a growing public awareness of the problems of the conventional food system. Since the majority of Syracuse's food comes from this larger system, it shares many of the following issues with other cities:

Energy and Environment

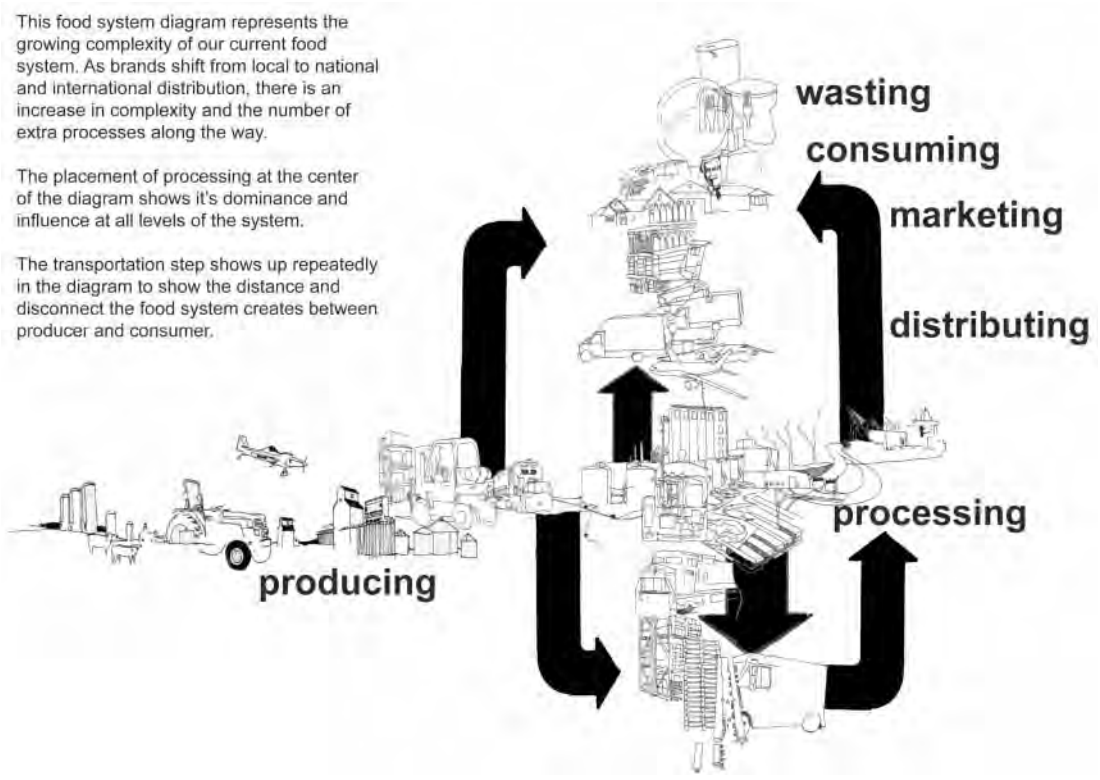
For most Americans, places of consumption are separated from places of production, resulting in long supply chains and increased "food miles." All sectors of the food system exhibit a strong dependence on fossil fuel; food related energy use as a share of the national energy budget has grown to an estimated 15.7 %.[3] Increasing costs and volatility of energy prices affect the price of food for everyone, from farmer to consumer.

Public Space

1 These figures are based on USDA estimates of average consumption. http://www.ersusda.gov/amberwaves/november05/findings/usfoodconsumption.htm

2 Raja, Semina. Branden Born, and Jessica Kozlowski Russel. *A Planner's Guide to Community and Regional Food Planning: Transforming Food Environments, Facilitating Healthy Eating.* American Planning Association (2008). p.3.

3 Canning, Patrick. *Energy Use in the US Food System.* USDA, 2010. (http://www.ers.usda.gov/publications/err-economic-research-report/err94.aspx)



Consolidation across sectors of the food system by private entities reduces public access to information and diminishes the power of the public in food system decisions.

Public Health

Diet related illnesses such as diabetes and hypertension in the general population have risen, with higher concentrations in low-income urban neighborhoods. Syracuse reflects the larger national paradox of "food insecurity," the lack of access to affordable food, and malnutrition from an over-abundance of unhealthy food choices.

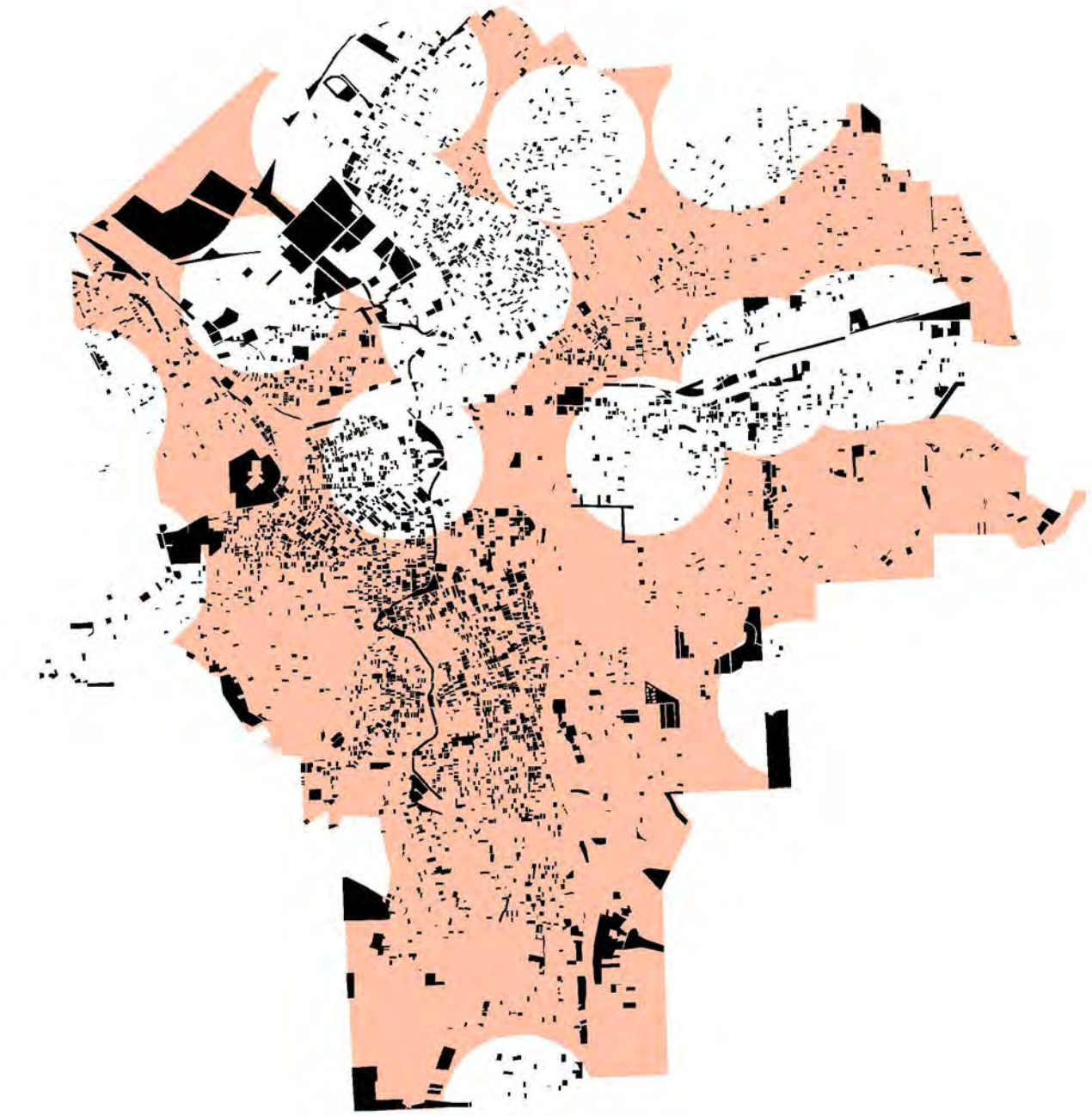
Food Access and Social Justice

Adverse public health patterns are linked to food access. Many neighborhoods lack grocery stores or other sources of healthy, affordable, and culturally appropriate food choices. The same neighborhoods with the highest rates of diet-related illnesses have been without full-service grocery stores for over 30 years and have a high frequency of corner stores and fast food outlets. A study conducted by Sandra Lane correlates the lack of full-service grocery stores in these areas with greater risk of low birth weight births.[4]

Urban Food Production

Community gardens and urban agriculture provide multiple benefits. In addition to growing fresh, affordable produce, they create productive public spaces often on formerly vacant sites. Syracuse has a small but growing network of community gardens compared to other cities of similar size. In the past these efforts have been limited by a lack of municipal support.

4 Lane, Sandra, et.al. "Structural violence, urban retail food markets, and low birth weight," *Health and Place.* 14 (2008). pp 415-423.



Food Deserts

Map of food access. Circles mark a one half-mile radius around full service grocery stores in the city. Because of the winter conditions in Syracuse this radius is smaller than the "food desert" definition used by the USDA: "To qualify as a 'low-access community,' at least 500 people and/or at least 33 percent of the census tract's population must reside more than one mile from a supermarket or large grocery store (for rural census tracts, the distance is more than 10 miles)."[1]

1 http://www.ers.usda.gov/data/fooddesert/about.html. Accessed April 30, 2012

Links with Regional Production and Processing

Syracuse is situated in one of the most diverse and productive agricultural regions of the Northeast, yet a very small percentage of that produce finds its way to urban consumers. Meanwhile the region's farms are struggling to sustain themselves economically. The loss of certain types of agricultural production, processing and local markets reduces the viability of the regional system and increases the vulnerability to national and global forces (energy prices, climate change).

The map illustrates the intensity of cultivation with the darkest areas the most highly cultivated agricultural areas. The map defines a potential "foodshed" for Syracuse highlighting productive areas within a two and a half hour driving radius of Syracuse.

Community-Based Food System Planning

The local community and the city of Syracuse have the potential to address these issues through coordinated programs, policy and plans. Currently there are many individual programs addressing particular issues. Some of these programs such as the Syracuse Hunger Project, Jubilee Homes' Urban Delights, and the mobile market initiatives by CNY Regional Market and Southside Interfaith organization have pioneered efforts to document and address food insecurity and develop new models for community-based alternatives. However, there is little coordination between projects, resulting in gaps as well as redundant overlaps which compromise their ultimate effectiveness. There is an opportunity to link these programs within a larger policy and planning framework.

Community food system planning at the municipal level involves the following characteristics:

- Provide a framework for linking food system sectors of producing, processing, distributing, marketing, consuming and recycling.
- Place-based systems integrated with local ecology, economy and social relationships.
- Sustainable systems that reduce energy inputs and environmental impacts across all sectors of the food system.

Increased pubic engagement and control in decisions that influence the system.
Re-building local systems as a stimulus for economic development.
Emphasis on social justice to ensure every citizen has access to healthy, affordable food.

Syracuse and Onondaga County established one of the nation's first models of food system coordination with the Onondaga Food System Council. While the council is no longer functioning, many of the issues and imperatives remain. This plan outlines the goals and actions to begin to develop a sustainable and socially just food system.

General Purpose

To improve the overall health of Syracuse community members by supporting adequate access to whole, fresh, nutritious, and culturally appropriate food.

Goals

3.1 Partner in the creation of a food system council to sustain municipal and community food initiatives
3.2 Restore local food system infrastructure by integrating area/regional food production, processing, distribution, and marketing as part of economic development plans
3.3 Increase urban agriculture in Syracuse
3.4 Increase access to whole food production pathways
3.5 Improve the overall diet of the city's population

3.1 Partner in the Creation of a Food System Council to Sustain Municipal and Community Food Initiatives

Municipal Operation Objectives

3.1.1 Partner with appropriate local agencies and non-profits to establish a local food system council with a food system coordination function.

3.1.1.1 Identify leadership from and representatives across various sectors of the food system as participants.

3.1.1.2 Ensure that the council has a mechanism for community input

3.1.1.3 The food systems council should provide a public information resource such as a website for local food system development. The website should also support community data collection.

3.1.2 Provide ongoing support for local food system initiatives on a program, policy and planning level.

3.2 Integrate Local Food Production, Processing, Distribution, and Marketing as Part of Economic Development Plans

Municipal Operationals Objectives

3.2.1 Implement policy recommendations from the Land Use Plan.

3.2.1.1 Review land use and zoning regulations and revise to help promote food production, processing, distribution, marketing, and post-consumption

initiatives.

3.2.1.2 Promote infill development that takes development pressure off the county's agricultural land.

3.2.2 Help promote the establishment and growth of food-related industries.

3.2.2.1 Look for ways to incentivize development of food enterprises by waiving, reducing or increasing fees, and other means.

3.2.2.2 Consider identifying an area to develop a food center where various food-related business can cluster.

3.2.3 Support new market strategies for different parts of the city.

3.2.4 Facilitate increased market opportunities for regional producers.

3.2.5 Promote public procurement of local/regional food.

Community Actions - What Can *You* Do?

Have you ever wondered how far your food travels to reach you? Those "food miles" from California lettuce, Mexican tomatoes, and imported cheeses add to the fuel usage and greenhouse gas emissions involved in producing what you eat. One simple thing you can do to reduce "food miles" is to buy food produced in Central New York. CNY farmers produce an abundance of vegetables, fruit, eggs, milk and even meat products that are sold at local farmers markets and retail grocery stores. When you buy locally produced food, you help support local producers and businesses. Your food dollars can be a significant boost for local business. A 2008 study found that every $100 spent on locally produced or processed food generated an average of $50 in additional activity in the local economy.[1] So…

In the summer and fall months, shop for produce at your neighborhood farmers markets. You'll get the freshest local fruits and vegetables available, often at lower prices than supermarkets can offer. Many Syracuse supermarkets also stock CNY produce seasonally - another place where your purchase can support CNY farmers.

Learn when the fruits and vegetables you use most are in season. This is the time when you can usually get the best prices at farmers markets and stores, and get the best-quality produce.

Stock up on local strawberries, blueberries, apples and other fruits at U-Pick farms during the height of the season. You'll get premium-quality fruit at affordable prices, and berries also freeze well for out-of-season use.

If you enjoy kitchen projects, consider buying local produce in bulk when it's in season and canning or freezing some to use the rest of the year. Sweet corn and bell peppers freeze well in plastic bags with minimal preparation. Canning requires more equipment, but can be cost-effective and rewarding. For free canning and freezing instructions, visit the National Center for Home Food Preservation website at http://nchfp.uga.edu/.

1 Study done by the non-profit group Sustainable Seattle, published at http://www.sustainableseattle.org/images/Programs/LocalFoodEconomyStudyLFE%20REPORT%20FINAL-2.pdf

Growers at the Southwest Urban Farm on Syracuse's Southside

Consider joining a community-supported agriculture program (CSA). These arrangements provide a weekly delivery of local farm produce to a drop-off point in your neighborhood in return for an upfront fee at the beginning of the season. This provides the farmer with funds to meet planting season expenses and provides you with the freshest (often organic) produce available all summer long.

Look for locally-produced products when you shop at grocery stores and wine shops. It's not hard to find locally made cheeses, sauces, breads, sausages, pretzels, soft drinks, wines, beers, and baking mixes.

Even when you spend a night out, you can support local producers. Most Syracuse bars and restaurants stock locally-brewed beers, some produced right in the City limits. Several restaurants are now sourcing local produce and meat, too.

3.3 Increase Urban Agriculture in Syracuse

Municipal Objectives

3.3.1 Encourage entrepreneurial urban agriculture.

3.3.1.1 Review and revise zoning regulations to allow for food production activities.

3.3.2 Integrate urban food production with stormwater control measures and enhanced biodiversity.

3.3.2.1 Where and when practical, plant edibles (e.g., fruit trees and bushes) in city parks in combination with green infrastructure projects.

3.3.3 Develop draft legislation on food production and entrepreneurial regulations.

3.3.3.1 Legalize beekeeping and backyard chickens (possibly with limitations such as licensing).

3.3.4 Facilitate public access to land and resources for community gardens and urban farms.

3.3.4.1 Create an inventory of city land for urban agriculture (availability and suitability).

This Save the Rain project at 701 Oswego Street incorporates rainwater storage infrastructure with a new community orchard on a formerly vacant lot. The raspberries, apples and peaches grown here will be freely available to the community for picking.

3.3.4.2 Allow use of portions of existing parkland for community gardens.

3.3.4.3 Provide city compost/mulch, water access, and hydrant keys to urban agriculture projects.

Measures of progress

Revision of zoning to allow selected small livestock.
Number of new City plantings incorporating fruit-producing trees and shrubs
Progress in inventoryingand mapping vacant land for urban agriculture

Community Actions - What Can *You* Do?

There's really only one way to get food fresher than you can get from a farmers market, and that's to grow it yourself.

If you have a sunny spot in your yard, plant a vegetable garden. It's a good idea to use containers or raised, boxed beds with purchased potting soil and a layer of woodchips and landscape fabric beneath, due to concerns about lead levels in urban soils. If you make your own compost from food and yard waste, the vegetable bed is the ideal place to use it to enrich the soil with the nutrients your plants will need.

To make the most use of limited garden space, consider vertical gardening. Vining crops such as tomatoes, pole beans, and peas take up less space when staked. Cucumbers and squash can also be trained to climb up wire netting instead of spreading on the ground, saving space for other crops.

Join a community garden. You can find out more about community gardens in Syracuse by contacting the non-profit Syracuse Grows (www.syracusegrows.org).

The Mobile Market brings fresh produce to neighborhoods that lack access to fresh, whole foods.

Farmers Markets in Syracuse

Three farmers markets are currently operating within the City of Syracuse:

CNY Regional Market
Thursdays & Saturdays*
2100 Park Street

Downtown Farmers Market
Tuesdays
Clinton Square

Westcott Farmers Market
Wednesdays
Westcott Community Center
826 Euclid Avenue

*The Saturday market operates year-round; all other markets are seasonal.

Consider purchasing vegetables in season from the non-profit Urban Delights stands. Urban Delights provides summer jobs to city teens and uses vacant city land to grow vegetables that are sold right in Syracuse neighborhoods.

3.4 Increase Healthy Food Access Throughout Syracuse

Municipal Objectives

3.4.1 Facilitate an increase in the number of access points to fresh food within walking distance of residential populations, especially full-service grocery stores in "food desert" areas.

3.4.1.1 Offer targeted economic development incentives for supermarkets to locate in food deserts.

3.4.1.2 Support organizations that assist corner stores with selling produce and providing more nutritious grocery offerings.

3.4.1.3 Support the creation of new farmers markets distributed throughout the city.

3.4.1.4 Support existing mobile markets by facilitating links with developed/organized distribution opportunities (e.g., city institutions, community centers, parks, more public housing developments, etc.)

Measures of progress

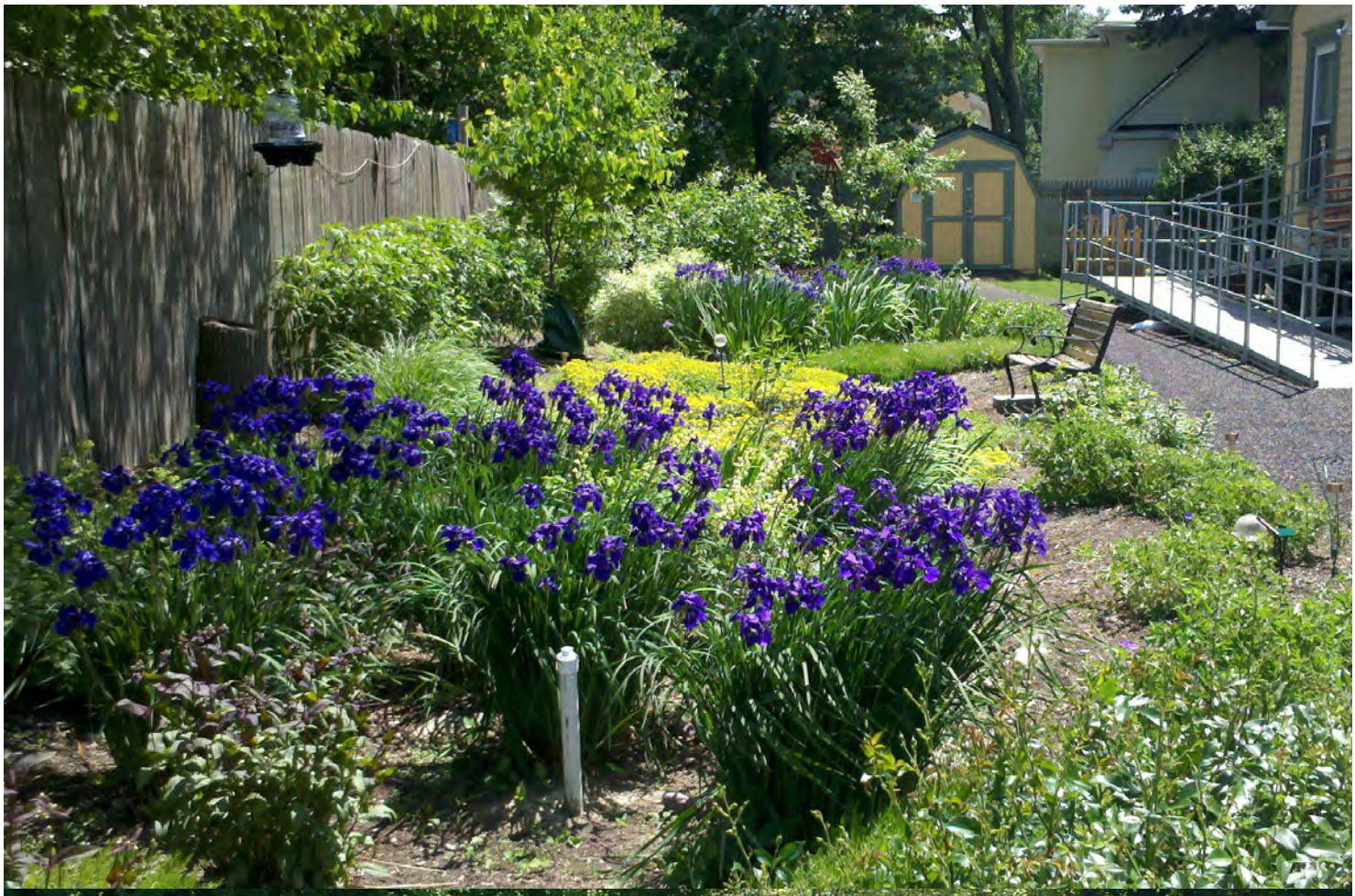
Reduction in percentage of Syracuse residents living in food deserts
Increase in number of weekly farmers markets
Number of new grocery stores opening in food deserts
Number of locations/people served by mobile markets

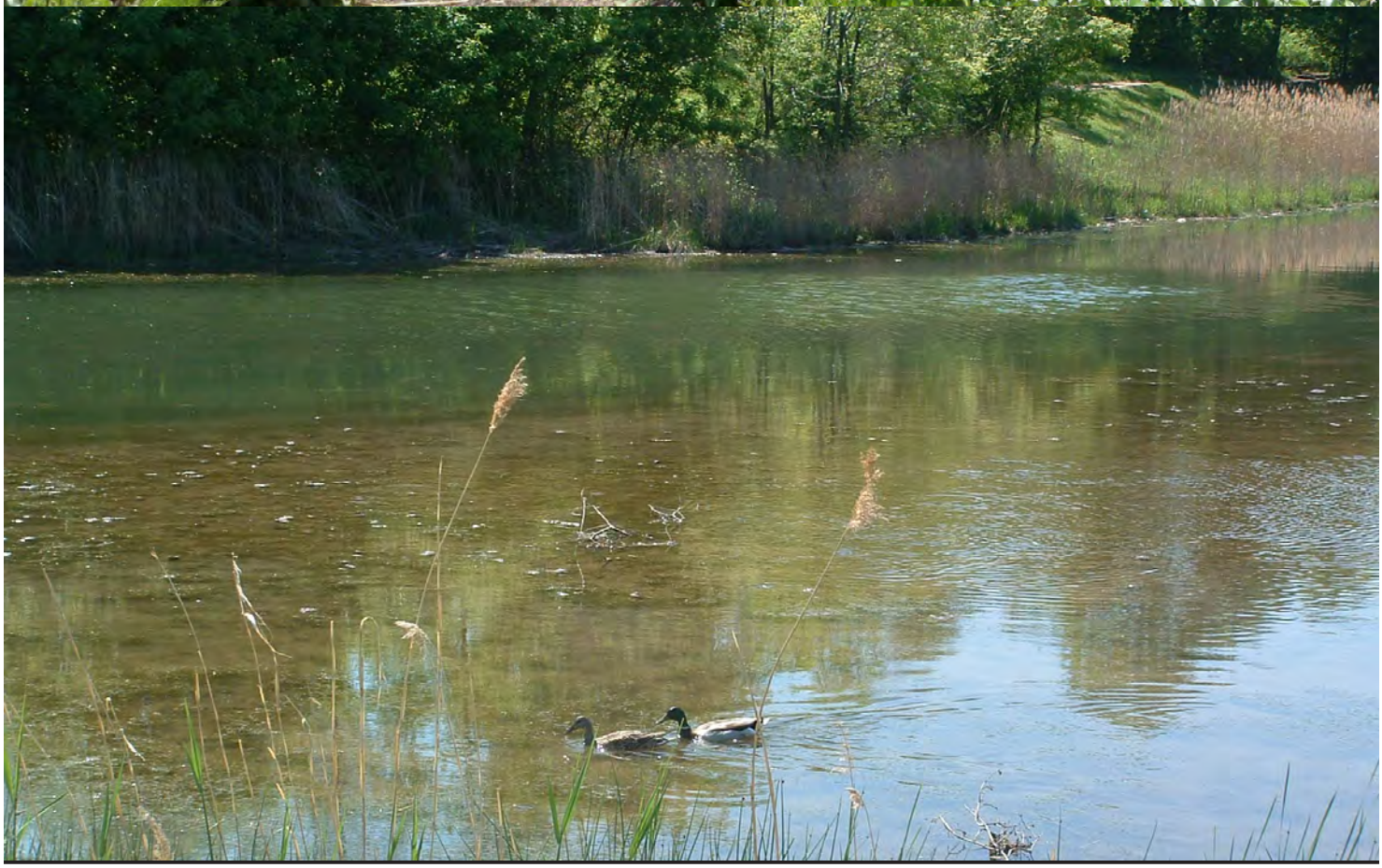
Community Actions - What Can *You* Do?

Many small neighborhood groceries in Syracuse stock a wide range of fresh vegetables, herbs, fruits, and even fresh fish. You can support the efforts of these small-business owners by buying produce at their stores. Syracuse's North Side is known for its abundant Vietnamese and Laotian groceries, as well as an increasing number of African and Carribean shops. The East Side is home to several well-stocked pan-Asian and Indian groceries on Erie Boulevard.

Support farmers' markets with your weekly business throughout the summer and fall. Besides fruits, vegetables, and herbs, farmers' market vendors often have local eggs, cheeses, yogurt, poultry and meats available. For ideas and advice on cooking with fresh seasonal produce, your local library's cooking section is a free and helpful resource.

Squash plants flourish at Stone Soup Garden on Syracuse's Near Westside.





Natural Environment

Introduction

Cities are habitats designed for people. People's twin needs for shelter and mobility shape the urban environment, resulting in the basic physical elements of every city – buildings and streets. Every city is also shaped by the geography and environment of its setting. With that, a complex interplay begins between a city's effect on its environment, and the environment's effect on the city.

The intersection of sustainability, cities, and the natural environment is an even more complex one, but we can think of it in three distinct ways. First, the "upstream": a sustainable city must protect the environment it depends on for the basic needs of its people – such as the source of its water, or the land where its food is grown. Next, the environment within: a sustainable city protects or works to improve its air quality, its soil, its vegetation and green spaces, keeping all of them in a condition that supports a healthy human population and high quality of life. Last, the "downstream": a sustainable city minimizes its impacts on the larger environment – its watershed, surrounding land, and atmosphere.

All three of these environments must be addressed for a Syracuse to be a sustainable city. Our city benefits from several notable initiatives that have been completed or are underway locally in the natural environment arena.

A rain garden on Tully Street.

Protection of the Skaneateles Lake watershed

For over 117 years, the primary water supply for the City of Syracuse has been Skaneateles Lake, a "Finger Lake" located approximately 20 miles southwest of the City. Its water flows to Syracuse through a gravity-fed system. Skaneateles Lake has exceptionally high water quality. In fact, it is one of the few large system surface water supplies in the country that is approved as an unfiltered water supply. In order to preserve and protect environmentally sensitive land that could otherwise become a source of water pollution, the City purchased conservation easements on 858 acres in the Skaneateles Lake watershed. Sellers agreed to limit activities that could be detrimental to water quality. Part of this program involves educating property owners about environmental stewardship. The purchase program is now complete, but restrictions on the land are perpetual. Properties are monitored on a schedule to make sure that owners are maintaining proper stewardship of their land[1].

Urban forestry program

The USDA Forest Service's Northern Research Station has a research work unit stationed in Syracuse which specializes in Urban Forests, Environmental Quality and Human Health. Researchers work to quantify urban forest structure, such as the number of trees and species composition; they determine how urban forest structure and its management affect air and water quality, carbon sequestration, air temperatures, and

The semi-naturalized Meadow-brook Detention Basin stores rainwater for gradual release after storms. It's also a popular spot for birdwatching.

1 City of Syracuse Water Department, Water Newsletter May 2012 (http://www.syracuse.ny.us/pdfs/Water/WaterNewsletter.pdf)

soil-nutrient cycling; and they develop appropriate vegetation management strategies and tools to improve urban natural resources stewardship, and consequently human health and environmental quality in urban and urbanizing areas. As a result of the work of the Northern Research Station, Syracuse has the most extensive urban forestry data of any City in the U.S. The NRS used this data to prepare the Syracuse Urban Forest Master Plan, which was published in 2001. Recommendations from the Master Plan are incorporated into this plan.

Creekwalk planning and construction

The City of Syracuse has undertaken the planning and construction of the Onondaga Creekwalk , a 2.6-mile trail along Onondaga Creek which connects downtown Syracuse with the shore of Onondaga Lake. The two newest portions connect downtown's Armory Square with Franklin Square, and connect the Inner Harbor to the lakeshore. Creekwalk use has increased dramatically since these new sections opened in Fall 2011, and the trail has already become a well-loved asset in the community. A second phase of the Creekwalk has undergone a feasibility study only. That phase would connect the existing trailhead in Armory Square to Kirk Park to the south. A third phase is in the conceptual stage, and would eventually extend the trail southward along the Creek to the southern boundary of the City.

Street tree ordinance

Syracuse has a street tree ordinance which requires that a written permit be obtained from the City Arborist before any tree is planted, cut or trimmed in the right-of-way. Any tree in the City right-of-way is the property of the City of Syracuse, and the Department of Parks & Recreation is authorized to remove, trim, or maintain it. More information about the City's current tree planting policy is available on the City's forestry website. A revised Street Tree Ordinance has been drafted, which has yet to undergo public review and Common Council approval. The draft as currently written would add new protections for trees, requiring that a new tree be planted somewhere in the City for each public tree or tree "of significant public benefit" that is removed. "Tree Banks" would be established in public parks to provide planting sites for property owners who cannot accommodate replantings on their own property.

Emerald Ash Borer

This Asian insect was discovered in the US in 2002 in Detroit, Michigan[2] and at the time of this writing has spread as far east as New Haven County, Connecticut[3]. All ash are threatened by EAB. In New York, it has already been found in Western NY, the Southern Tier and the Hudson Valley. The Syracuse Department of Parks & Recreation has a plan to gradually remove and replace ash trees over a decade and to spread canopy loss evenly across the public landscape. Under that plan all ash street trees will be replaced with non-susceptible species. The City will consider preserving ash in parks indefinitely if, following public outreach and further research, it is determined to be feasible. The City will inventory all street trees this summer (2012) and work with Cornell Cooperative Extension to assess ash resources on park property.

Save the Rain

Save the Rain is a County initiative that began in 2009, as a program to use sustainable systems to reduce the frequency with which flows of stormwater overwhelm the

2 US Forest Service, http://na.fs.fed.us/fhp/eab/

3 US Dept. of Agriculture, http://www.aphis.usda.gov/plant_health/plant_pest_info/emerald_ash_b/downloads/multistateeab.pdf

Native staghorn sumac growing wild along the Creekwalk turns shades of red, orange and gold in fall. The fruit of this shrub provides a high-value winter food source for birdlife.

wastewater treatment system, forcing releases of untreated sewage into Onondaga Lake. Onondaga County originally planned to address the problem using only "gray" infrastructure. Under the administration of County Executive Joanie Mahoney, the county developed a revised plan that included an aggressive initiative to use "green" infrastructure to reduce the amount of rainwater entering the wastewater treatment system. Save the Rain's Green Infrastructure Fund has been used to install green roofs on public and private buildings, and install porous pavement, bioswales and raingardens throughout the city. The program has also provided free rainbarrels and instructions on their use to Syracuse residents. Onondaga County is now recognized as a national leader in the use of environmentally sustainable solutions to reduce stormwater pollution.

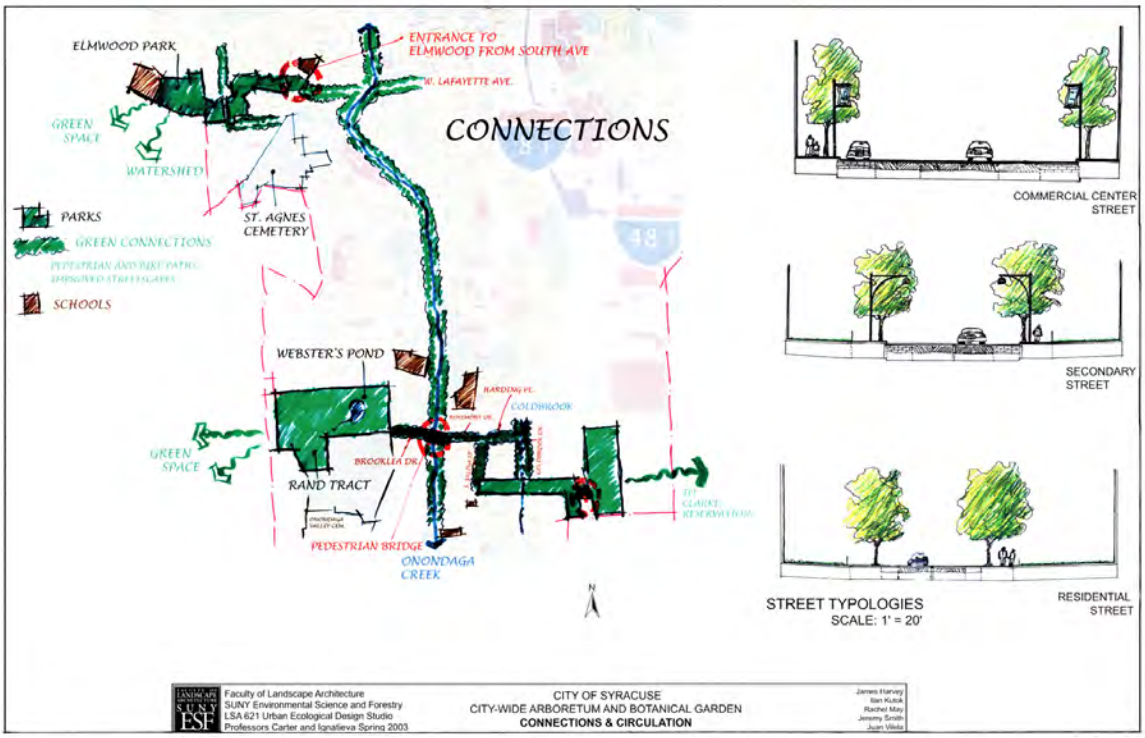
Goals

The Natural Environment portion of the Sustainability Plan recommends goals and actions to address environmental issues specific to Syracuse, and goals that the Syracuse community has identified for the local environment that would enhance quality of life.

4.1 Develop an open space network connecting Syracuse's parks and other public spaces with neighborhood greenways.
4.2 Improve the ecological and recreational value of the Onondaga Creek Corridor and tributaries
4.3 Increase tree canopy coverage throughout the City.
4.4 Protect Syracuse's watershed by utilizing green infrastructure for storm water management
4.5 Reduce Syracuse's urban heat island effect.
4.6 Encourage good ecological management on private property

Right

A conceptual plan for green corridors connecting parks and open space in the Valley neighborhood, created by landscape architecture students at SUNY-ESF.



Below

The Creekwalk entering Franklin Square below the Evans Street bridge.

4.1 Develop an Open Space Network Connecting Syracuse's Parks and Other Publicly Owned Greenspace

The City's park system and plots of undeveloped land have the potential to be a network of ecosystem patches and corridors, made up of woodland, meadow, wetland, and waterway habitats. A network of greenways which connect parks with public spaces and schools can provide more pleasant, greener places for Syracusans to walk, run, bike, and play at the same time as increasing biodiversity in the City.

Municipal objectives

4.1.1 Create a network of heavily planted neighborhood greenways linking public places, parks, and other greenspaces. Support ecological connectivity and integrate this network with trail and bikeway plans.

4.1.1.1 Choose parks and public spaces to link through greenway, and select the best routes to use as connector streets. Use streets which have bike lanes (or which are recommended for future bike lanes) to the extent possible.

4.1.1.2 Prioritize continuous plantings of diverse tree species along streets which connect city parks, aiming for continuous canopy.

4.1.1.3 Partner with SUNY-ESF and citizens groups to do an inventory of natural elements ("bio-blitz") in each park. Develop ecological goals for each park, which are connected to its neighborhood and district context.

4.1.2 Facilitate use of the network by residents as a recreational greenway system and as alternative transportation corridors by making the corridors pedestrian- and bike-friendly.

4.1.2.1 Prioritize sidewalk improvements along connector streets.

4.1.2.2 Ensure that bike lanes are well-maintained with regular street-sweeping and quick repair of rough, uneven or crumbling pavement.

Measures of progress

Number of neighborhoods analyzed to select the network's public places and streets
Pedestrian and bicycle-oriented improvements made in the network
Number of new trees planted annually throughout the green network

4.2 Improve the Ecological and Recreational Value of the Onondaga Creek Corridor and Tributaries

Several local plans developed through community input have identified goals of re-naturalizing the Onondaga Creek corridor and extending the Creekwalk. The Onondaga Creek Conceptual Revitalization Plan (OCRP) in 2009 supported this and other goals for the Onondaga Creek corridor. The Five-year Plans developed for each neighborhood by residents who attended Tomorrow's Neighborhoods Today meetings also show strong public support for more recreational trails throughout the City. The following initiatives are recommended for the urban portion of the Creek.

The Onondage Creek Conceptual Revitalization Plan also recommends reduction of the creek bank slope, which will increase access, safety, flood storage capacity. This action has the potential to reduce the size of the floodplain that includes certain residential sections of Syracuse's Southside and Near Westside. Daylighting tributaries (Furnace Brook, Kimber Brook, and Cold Brook) is another OCRP recommendation that would be beneficial to the creek as a habitat. Both measures are under the Army Corps' of Engineers jurisdiction.

Municipal objectives

4.2.1 Work to prevent pollution of the creek from runoff and combined sewer overflows. *(Also see Goals 4.3 and 4.4, which will help protect water quality in the creek.)*

4.2.1.1 Indentify, acquire and protect adjacent property in sensitive areas where it has the potential to mitigate or filter runoff entering the creek.

4.2.1.2 Investigate alternative de-icing methods for city streets and best management practices for salting.

4.2.2 Aim for continuous naturalized areas on both sides of the creek for floodwater control and wildlife movement. The shade of creekside trees also cools the water, which increases its oxygen content and makes better habitat for fish.

4.2.2.1 Aim to allow growth of a naturalized buffer of vegetation at least 25 feet wide between the water's edge and developed property wherever possible.

4.2.2.2 Maximize the buffer area between trail and shoreline.

4.2.3 Pursue extension of the Creekwalk trail, and participate in connecting it to new walking/biking trails

4.2.3.1 Develop a vacant land strategy which preserves vacant land along the creek.

4.2.3.2 Continue working to extend the Creekwalk to the south, and collaborating on efforts to extend the Loop the Lake trail on the lake's west shore, and the Erie Canal trail through the city.

Measures of progress

Length of creek examined to identify strategic parcels
Number or acreage of identified strategic parcels acquired
Length of creek frontage where a 25 foot naturalized buffer is established
Phases completed in planning and construction of trail connections and extensions

Recent studies in Japan concluded that people who spent time in forested areas experienced reduced blood pressure, pulse rates, and stress hormones.

Environ Health Prev Med. 2010 Jan;15(1):18-26. The physiological effects of Shinrin-yoku (taking in the forest atmosphere or forest bathing): evidence from field experiments in 24 forests across Japan. Park BJ, Tsunetsugu Y, Kasetani T, Kagawa T, Miyazaki Y. Source: Center for Environment, Health and Field Sciences, Chiba University, Kashiwa-no-ha 6-2-1, Kashiwa, Chiba, 277-0882, Japan.

4.3 Increase Tree Canopy

Trees beautify our neighborhoods while reducing the urban heat island effect through shade and transpiration. Trees also filter particulates from the air. In fact, childhood asthma rates are lower in urban areas that have the most street trees.[4] Trees have a positive correlation with property values[5], and a negative correlation with crime[6]. The City of Syracuse, through the Syracuse Department of Parks, Recreation and Youth Programs manages approximately 28,000 street trees and 10,000 park trees. The City street tree population has declined from a high of 41,000 trees in 1950. A recent urban tree canopy study conducted by the North Research Station estimates canopy cover to be 27%. Our goal is to maximize canopy due to the numerous environmental benefits they provide.

4 Lovasi, GS et al. *Children living in areas with more street trees have lower prevalence of asthma*. Journal of Epidemiology and Community Health, 2008 Jul;62(7):647-9. Epub 2008 May 1.

5 Donovan, GH and Butry, DT. *Trees in the City: Valuing Street Trees in Portland, Oregon*. Landscape and Urban Planning, 2010 Feb; 94(2): 77–83.

6 Austin, Troy et al. *The relationship between tree canopy and crime rates across an urban–rural gradient in the greater Baltimore region*. Landscape and Urban Planning, 2012 Jun;106(3):262-70.

New tree plantings are part of the County's Save the Rain program, which will plant 8,500 trees by 2018 for their ability to take up water from the soil – reducing soil saturation and runoff, and helping to prevent the overloading of our water treatment system after rainstorms.

Municipal objectives

4.3.1 Increase tree canopy cover to 30% by 2020 (Recomended by Urban Forestry Master Plan).

4.3.1.1 Increase tree plantings along sidewalks, in medians, and other right-of ways. Coordinate new tree plantings with capital improvement projects (sidewalks and other streetscape work).

4.3.1.2 Diversify plantings so that neighborhoods contain no more than 5% of any one species, no more than 10% from any one genus, and no more than 20% from any one family. Use species recommended by the Syracuse Urban Forestry Masterplan.

4.3.1.3 Prioritize planting of native species, within the diversity guidelines above.

4.3.1.4 City staff should continue to prioritize tree maintenance and management activities as recommended in the Urban Forestry Masterplan.

4.3.1.5 Prioritize tree plantings at bus stops to provide shade and shelter to public transportation users.

Visitors examine a green roof on the Syracuse Center of Excellence.

4.3.2 Increase street tree stocking to 60% in residential areas of each TNT area (Recommended by Urban Forestry Master Plan).

4.3.2.1 Utilize local urban forestry data to guide strategy in each neighborhood.

4.3.2.2 Prioritize neighborhood plantings by population and canopy coverage.

4.3.2.3 Update the urban forestry masterplan and entwine it with neighborhood planning.

Measures of progress

Number of trees planted per year vs. number removed
10-year survival rate of trees planted
Urban forestry data on change in tree canopy cover

Community Actions - What Can *You* Do?

Would you like a new street tree planted in front of your home? Street trees can be planted through two methods:

1) City Request Program: one tree per property is provided on a first-come first-served basis. Funds are limited. This program applies to Eastwood, Meadowbrook, the Valley, Outer Comstock and Brighton neighborhoods. Contact the City's Forestry Department at 473-4330.

2) Save the Rain Urban Forestry Program: This program applies to areas identified in the County Sewer Overflow Map. Contact the City's forestry department to see if your property is eligible.

Consider planting more trees on your property. You can actually reduce your home's energy use by planting evergreen trees to the north of your home to block winter winds, and deciduous trees to the south to shade your home in summer. Trees also reduce the amount of runoff leaving your property and provide habitat for birdlife. You can see a list of recommended tree species for Syracuse lawns on pages 21-22 of the Syracuse Urban Forestry Masterplan.

View of Water Street, just east of City Hall. A newly completed Save the Rain project added pervious parking lanes and curbside planting strips that absorb and store runoff directed from the street.

4.4 Protect Syracuse's Watershed by Utilizing Green Infrastructure for Stormwater Management

Since 1998, Onondaga County has been under an Amended Consent Judgment (ACJ) order by the Federal Courts to take steps to reduce the frequency of and/or eliminate combined sewer overflow (CSO) events, which release raw sewage into Onondaga Lake. These CSOs originate in the City of Syracuse, and reduce water quality in local creeks and Onondaga Lake. The County's Save the Rain initiative is a comprehensive stormwater management program which utilizes sustainable solutions such as green

roofs, tree plantings, permeable pavement, and raingardens to absorb rainwater and reduce the number of CSOs. The City of Syracuse will contribute to the effort by pursuing the following objectives.

Municipal objectives

4.4.1 Reduce amount of impervious surfaces.

4.4.1.1 Reduce amount of impervious surfaces on public land. Use pervious pavement instead of impervious pavement in public projects wherever practical.

4.4.2 Reduce runoff.

4.4.2.1 Install raingardens and bioswales on suitable public property to increase absorption and infiltration of rainwater.

4.4.2.2 Use stormwater-retaining tree pits when new trees are planted. Use porous (crumble-away) paving or other low-maintenance surface around trees, instead of tree grates which require frequent expansion to accommodate tree growth.

4.4.2.3 Inform developers of the City's stormwater management standards during initial developer contacts and pre-development meetings.

4.4.2.4 Prohibit harmful development of remaining sensitive areas, as prescribed in the Land Use Plan.

4.4.3 Reduce non-essential pressure on the wastewater treatment system

4.4.3.1 Develop greywater re-use and recycling guidelines (or an ordinance) to enable residents to safely divert more water from the treatment system.

Individual actions make a difference... a Syracuse family takes home a free rainbarrel after participating in a Save the Rain workshop at the Westcott Community Center. Each of these rainbarrels can keep up to 50 gallons of clean rainwater out of the sewer system during every rainfall.

Measures of progress

Number of gallons of storage capacity added per year, as calculated by Save the Rain or its program consultants.
Number of residential and commercial projects applying for GIF reimbursement per year
Calculated tax dollars the County saved on water treatment through stormwater diversion

Community Actions - What Can *You* Do?

Get a free rainbarrel from Save the Rain. At the time of this writing, Save the Rain is providing free rainbarrels to Syracuse residents who attend a rainbarrel workshop. A rainbarrel reduces runoff, and provides free water to use for watering lawns and plantings.

Visit www.savetherain.us for other ideas you can use to help keep stormwater from leaving your property, such as a rain garden or cisterns.

Avoid doing laundry or taking long showers during rainstorms, if possible. These heavy water use activities will add to the burden of rainwater carried by the sewer system, and could contribute to CSOs.

Catch and use the water that normally goes down the drain when you run household faucets before use. This water is fine for watering plants or cleaning.

4.5 Reduce the Urban Heat Island Effect

Numerous studies have shown that average temperatures are rising much faster in cities than in non-urbanized areas. This phenomenon is related to several factors: among them, the concentration of heat-absorptive surfaces such as asphalt, dark surfaces on building rooftops, a lack of trees, and emission of waste heat from vehicles and buildings. Measures taken to reduce the urban heat island effect not only reduce ambient temperatures, but reduce city-wide energy consumption by reducing air conditioning needs. Urban heat-island reduction can have long-lasting effects on community energy use.

Municipal objectives

4.5.1 Increase the number of trees in the city, especially in areas such as downtown with a heavy concentration of streets, pavement and buildings.

4.5.1.1 Continue to add shade trees to the City's most densely developed areas, where they will block sunlight from heat-retaining surfaces and cool the air through transpiration. Combine street tree plantings with other streetscape improvements.

4.5.2 Reduce the heat-absorptive surfaces on city rooftops.

4.5.2.1 Develop and implement building code requirements for white roofs or vegetated green roofs on flat-roofed commercial buildings and/or larger-sized rooftops.

4.7 Encourage Good Ecological Management on Private Property.

Syracuse can begin to foster a culture of ecological stewardship in the community by providing property owners with guidelines for making their properties ecologically sound and functional. Guidelines should include standards for rainwater capture, plantings that enhance biodiversity, retention of soil nutrients, proportion and type of hardscape materials, and non-toxic lawn and garden treatments.

Municipal objectives

4.6.1 Develop voluntary ecological property performance guidelines for private property.

4.6.1.1 Develop and draft guidelines for improving ecological performance of private property, setting tiered achievement standards. Include standards for rainwater capture, plantings that enhance biodiversity, retention of soil nutrients, proportion and type of hardscape materials, and non-toxic lawn and garden treatments.

4.6.1.2 Seek review by local landscape ecology experts and refine the guidelines and standards accordingly

4.6.1.3 Post the voluntary ecological property performance standards to the City's website. Offer implementation advice, cost analysis when feasible, and links to other sources of relevant information.

4.6.1.4 Include references to the ecological property guidelines and a link to them in other appropriate City communications.

4.6.1.5 Use portions of parks or public spaces as demonstration sites where good ecological management and Save the Rain measures can be exhibited for the public.

4.6.1.6 Recognize outstanding ecologically-performing properties on the City's webpage.

Measures of progress

The recommended measurement is completion of the actions listed above. The number of visits to the completed webpage may be recorded to gauge community interest, and voluntary reporting of achievements by private property owners (via the website) may be encouraged to gauge community response to this goal.

Green infrastructure as art... the Harris family with their new custom-painted rainbarrel outside the Westcott Community Center

Waste & Recycling

Introduction

Waste reduction is important to sustainability because waste represents an investment of energy that can be re-used or recovered. Examination of the community's waste and recycling systems is a fundamental part of reaching the City's sustainability goals.

Current Waste Management System

Pickup and Disposal

The city of Syracuse has a residential trash and recycling removal program consisting of weekly residential pickup, bulk pick-ups (2 cubic yards each), yard waste and construction debris collection. These services are included as an expense on the City property tax bill.

Waste is collected by sanitation crews consisting of DPW employees. The City owns 21 packers for trash collection, and nine 'Eager Beaver' haulers for recycling. Not all trucks are used at once, as the aging fleet is often in need of repair. Typically, of the available equipment, there are 15 trash packers and three recycling trucks being used on any given day.

Trash is brought to the Onondaga County Resource Recovery Facility, a waste-to-energy facility on Rock Cut Road in Jamesville operated by Covanta Energy, where it is combusted to generate electricity. Here, metal items are separated out with magnets for recycling. The City is charged a per ton tipping fee by OCRRA for its municipal solid waste transported to the facility. This means that the greater the amount of trash brought to the facility, the more the City pays in tipping fees. As a result of the combustion process, ash (a fraction of the weight of municipal solid waste) is generated and then transported, by OCRRA, to High Acres Landfill near Rochester, NY. Construction debris and large items are picked up by the City street cleaning crew and transported by the City DPW to Seneca Meadows Landfill, in Waterloo, NY, also resulting in a tipping fee paid by the City.

Recycling - A Source of Revenue for the City

Onondaga County currently has a Source Separation Law requiring residents, businesses and institutions to recycle a mandated list of materials, including paper, cardboard, aluminum cans, plastic bottles and #5 plastics. Recyclables (such as paper, cardboard, containers and others, as determined by OCRRA) collected curbside by 'Eager Beaver' trucks are brought to the Syracuse Recycling and Recovery facility in East Syracuse. This private company purchases, on a per ton basis, and then processes recyclables. Therefore, recyclables are currently a source of revenue for the City.

Televisions and other electronics are not included as an item picked up by Sanitation, and unfortunately many TVs and old computers end up on the curb, in vacant lots, and along Onondaga Creek due to illegal dumping and disposal. Such items that are

picked up by Sanitation are stored and palletized at DPW. Several local companies are interested in purchasing these electronics, but there is not yet an agreement for this. A company from Binghamton currently comes and picks them up at no charge. The City hopes to turn electronic items into a revenue stream in the future.

Residents are entitled to have 4 tires picked up curbside per year, which are then stored at DPW. Various companies will collect tires from DPW to use as filler, to make outdoor tracks, sandals, floormats, and other products. Tires are not allowed to be disposed of at OCRRA's waste-to-energy plant. There is potential for tires to be a possible source of revenue in the future, but for the time being, the City cannot store them, due to risk of fire (tire fires are very hot, dirty, and often uncontrollable). Tires are also items commonly dumped illegally (by both residents and garages). Additionally, scrappers will sometimes cut the rims out of tires, and then get rid of the rest on vacant lots illegally.

Yard Waste to Mulch

Yard waste is collected curbside during the months of April through October. It is collected following a quadrant schedule, with each quadrant having pickup one week per month. Yard waste is brought to DPW, and ground into mulch. The resultant mulch is given away free of charge. Leaves are also collected curbside beginning in November, and also turned into mulch.

Above :
An "Eager Beaver" recycling truck

Education

To educate residents on how to properly dispose of household waste, the City produces and distributes the "Guide to City Services" annually, that explains both rules and benefits associated with city services. Additionally, OCRRA provides significant community education on recycling and composting. OCRRA also supplies the blue recycling bins distributed to City residents, who, like all County residents, are required to recycle. If a resident incorrectly sets out their trash, recycling, or yard waste, the city has a number of ways to communicate and urge compliance, ranging from a sticker (supplied by OCRRA) placed on an improperly sorted blue bin to a formal citation from the Division of Code Enforcement.

Challenges

Available equipment and facilities, the cost of new equipment, and the deterioration of current supplies serve as limiting factors to the city's waste-handling capacities. Additionally, availability of staff, union agreements, titles (nonworking crew leaders in Sanitation) and the limits of the human body all act as challenges to modernizing current sanitation systems. Additional challenges facing the Syracuse community include a relatively hilly terrain, long and snowy winters, and a history of non-uniform waste containerization throughout the city.

Advancements

The first implementation phases of the new Integrated Property System software (IPS) have opened the door for greater efficiency in municipal operations, including

The quintessential OCRRA blue bin

sanitation. Through the automation of communications interdepartmentally, and between residents and departments, the City can achieve greater efficiency in producing workflows and getting things done to keep the city clean. Another advantage is partnership with other agencies such as the Onondaga County Resource Recovery Agency (OCRRA) and Onondaga County. OCRRA has provided support in tracking and increasing recycling rates through education and providing blue bins to DPW and residents, which has resulted in relatively high recycling rates as compared with other cities of similar size. The greatest assets to the waste and recycling systems in Syracuse are the involved and passionate community, lively neighborhoods, TNT, and active and organized community groups.

Initiatives

The city currently has several plans and initiatives related to waste and recycling in an effort to move towards more efficient and economical operations. The long term goal of the Sanitation Department is to move towards "tipper barrels" and electronic tipper trucks. This initiative will require outside funding for implementation, but will save the city money in the long term (decreasing the number of workers needed per crew, decreasing injuries and healthcare costs). The waste route optimization plan will place GPS devices in sanitation trucks and the trucks of superintendents to not only track the movement of crews, but also to ensure that the most efficient route is being followed during pick up. Additionally, there is currently discussion of holding staffed events for residents to drop off their electronics, perhaps four times per year, or even opening an electronics drop-off site. The current goal is to take as much material as possible out of the waste stream through reuse and resale to reduce tipping fees, and increase revenues.

To meet the following goals for waste and recycling, it will be necessary to collaborate with a variety of agencies, including neighborhood groups and associations, businesses, the Onondaga Resource Recovery Agency (OCRRA), the Syracuse City School District, the Syracuse Police Department, and Onondaga County.

Goals

5.1 Increase efficiency and effectiveness of existing municipal waste and recycling operations
5.2 Increase reuse and recycling of materials and minimize the production of waste
5.3 Reduce litter throughout city

5.1 Increase Efficiency and Effectiveness of Existing Municipal Waste and Recycling Operations

Municipal objectives

5.1.1 Reduce the production of waste and increase diversion of solid waste generated by city operations from disposal to 90% by 2050

5.1.1.1 Improve recycling policy at all City facilities. Implement a written, comprehensive recycling policy. Equip every office with the proper tools (containers, labels, etc.) and education (regular emails, information of policies upon hiring, etc.) for recycling, and instruct all operations and maintenance staff in separation and diversion of all recyclables from the waste stream. All employees will be expected to adhere to recycling policies. Look to OCRRA for assitance with office recycling as necessary.

5.1.1.2 Move towards use of electronic data in all city operations (this may include board packets for boards, commissions, and Common Council; replacement of paper-based internal systems with IPS, electronic payroll process and paystubs, increased space and speed for internal file sharing, etc.), and educate all employees on electronic filing, email, double sided printing, etc.

5.1.1.3 Establish and implement recycling policies and protocol for special and public events including festivals, outdoor concerts, ceremonies, etc. with clearly outlined duties and reporting requirements. We will work with the Department of Parks, Recreation, and Youth Programming, as well as OCRRA and ESF to develop and carry out these procedures. Support and encourage food waste composting at special events, working with partner agencies.

5.1.1.4 Examine the residential yard waste collection system and determine the most efficient and effective way to collect and process material, examining how and where processing is done, and evaluating the merits of all alternative options (such as contracting with OCRRA, etc.).

5.1.1.5 Integrate environmentally preferred clauses into bids and RFP's. Explore the feasibility of a policy including recycling and reuse of materials and construction debris as a requirement in all city operations and capital projects. Also explore requiring a plan for reuse and recycling of materials of contractors in RFPs for such projects.

5.1.1.6 Explore adding more specific language to the green purchasing ordinance for City Operations, and allowances for the City to purchase green and local products even if the company is not the lowest bidder (currently mandated by state law).

5.1.2 Explore and implement strategies for increasing efficiency of municipal waste management operations

5.1.2.1 Continue to move towards full implementation of the Waste Route Optimization plan.

5.1.2.2 Explore the feasibility of moving towards uniform residential trash containers. Such containers would be more secure, reducing the occurrence of unintentional litter, and ease the collection process for DPW workers. Lidded containers would prevent entry of rainwater, which would decrease the weight of trash workers must lift and also decrease weight-based tipping fees by an estimated $1000 per day.

5.1.2.3 In conjunciton with OCRRA, explore the feasibility of replacing blue bins with larger, lidded cans which would hold more recyclables, prevent rainwater entry, and prevent fly-aways.

5.1.2.4 Explore the feasibility of moving towards "tipper barrel" trash collection trucks, with either a tipper or electronic arm. This will decrease the number of employees needed per crew, improve crews' working conditions, and potentially increase allowable weight of residential trash. Also move from "eager beavers" to packers for more efficient recyclable collection.

5.1.2.5 Look for external funding for the purchase of containers and tipper barrel equipment (either for retrofitting existing trucks or purchasing new).

5.1.2.6 Continue to use and integrate IPS software into operations to coordinate departments and track operations.

5.1.2.7 Continue to improve and distribute instructions for disposing of household trash and recycling to residents and property owners.

5.1.2.8 Reexamine and improve sticker system informing residents of improper recycling set out. Implement a sticker system for illegal trash set outs.

5.1.2.9 Continue to pursue partnerships or business arrangements for reuse and recycling of unwanted materials such as electronics and tires.

5.1.2.10 Create a system to track residential trash, diversion and recycling rates throughout the city, and post results on the City website to encourage participation.

Measures of progress

Weight and percentage of materials diverted from disposal from city operations
Per capita solid waste
CO2e emission reductions
Amount of material used in city offices/operations (ex., how much paper is purchased)

Bales of recovered plastics at Syracuse Recycling and Recovery

Food waste from Syracuse University delivered to OCRRA's Amboy site for composting. The city does not currently have a food waste composting program, but such a program may be feasible.

5.2 Increase Reuse and Recycling of Materials and Minimize the Production of Waste

Municipal objectives

5.2.1 Divert 90% of solid waste in the Syracuse community from disposal by 2050

5.2.1.1 Create a plan to invest in and install combined trash and recycling stations in public spaces, parks and business districts, and formulate a realistic pickup plan and schedule defining department and agency responsibilities.

5.2.1.2 With the assistance of OCRRA, create a system for tracking disposal and recycling rates throughout the city and across sectors for all trash, recycling, yard waste and construction debris (and tires and electronics).

5.2.1.3 Support efforts to improve participation in residential and business recycling.

5.2.1.4 Pursue a study exploring the feasibility of developing and implementing a municipal food waste composting program. If feasible, develop pilot program for school district food waste and/or trial compostable waste program in one neighborhood. Support community efforts to develop independent and neighborhood food waste and composting initiatives.

5.2.1.5 Support and expand the current recycling system for residents.

5.2.1.6 Support future efforts to expand what is recycled in Onondaga County (determined by OCRRA and based on negotiations by MRF's and the market for materials)

5.2.1.7 Consider holding regular electronics and tire drop off events (i.e., explore cost and feasibility, find a purchaser or collector for the disposed materials, identify a suitable centralized location and a coordinator to organize the effort).

5.2.1.8 Work with Syracuse City School District and OCRRA to educate children from an early age about recycling, and encourage waste reduction and recycling measures in City Schools. Implement a recognition program for schools and programs that do an excellent job of waste reduction/recycling/litter pickup.

5.2.1.9 Continue and expand education efforts throughout the Syracuse community on proper waste disposal. Help implement and expand OCRRA's public education programs to expand recycling, reuse of materials, composting, etc.

5.2.1.10 Educate consumers in the Syracuse Community about product lifecycle analysis and making waste reducing purchases (looking for less packaging, longer lasting products, and reusable and recycled items). Use the City website to promote these types of informed buying decisions by the Syracuse community.

5.2.1.11 Explore incentives like instituting a charge or tax for plastic bags.

5.2.1.12 Take an active role in supporting Extended Producer Responsibility/Product Stewardship. Pass a memorializing resolution supporting

Extended Producer Responsibility Laws

These laws reduce a costly disposal burden on local governments and taxpayers by requiring manufacturers to accept responsibility for the products they make when the products reach the end of their useful life. EPR laws typically apply to products that contain hazardous constituents or are difficult to recycle, such as:

- Batteries
- Carpet
- Cellphones
- Electronics
- Fluorescent lighting
- Mercury thermostats
- Paint
- Pesticide containers

New York currently has two EPR laws: one requiring manufacturers to accept the return of post-consumer computers, tvs, and small electronics, which took effect in April 2011, and one requiring manufacturers to accept rechargeable batteries (through collection by retailers), which was passed in December 2010.

Extended Producer Responsibility (EPR) and encourage other NY cities to do the same. New York State laws advancing an EPR approach will reduce the cost burden on taxpayers and local governments to manage waste materials and require brand owners and manufacturers to accept responsibility for the management of post-consumer products, particularly those that are difficult to recycle, or contain hazardous constituents.

Measures of progress

Weight and percentage of materials diverted from disposal
Per capita solid waste
CO2e emission reductions
Number of new green companies opened or expanded and green jobs created within the city (to be tracked by NBD or CNY Works)
Reductions in specific items within city operations (i.e. reduction in paper usage could be linked to purchasing in offices due to education campaign)

Community Actions - What Can *You* Do?

Go on a "trash diet"! Before you throw something away, think about whether it can be recycled. You can now add #5 plastic tubs (such as yogurt and margarine tubs), phone books and softcover books to your blue bin, as well as #1 and #2 plastic bottles, glass bottles and jars, cans, paper, cardboard and aluminum foil. Detailed information on household recycling in Onondaga County can be found at Onondaga County Resource Recovery Agency's website. If in doubt about what to do with an item, check to see if the item is listed in OCRRA's database.

Food waste makes up 14% of the county's waste stream[1]. If you have a back yard, you can easily compost your household food waste, reducing your trash output and turning it into a rich fertilizer for plants. Leafy yard waste, grass clippings, brown paper bags, brown corrugated cardboard (in pieces), and paperboard egg cartons are also great additions to a compost pile. Your pile can be free-standing (which costs nothing) or contained by a bin. Make sure it is at least three feet from any structure. You can find basic instructions for back yard composting on OCRRA's website.

Do you frequently have to throw away food that is spoiling? It may be time to reassess the amount of food you buy or prepare. You'll save money and reduce waste.

When performing home renovations, re-use existing materials when possible or donate them to a non-profit home-building organization (such as Habitat for Humanity's Re-Store) for re-use or re-sale.

Take your plastic grocery bags back to the store for recycling. Better yet, use inexpensive, re-usable totes to carry your groceries home. If you are concerned about bacteria on your totes, launder them between uses, and store in a clean, dry place.

Household batteries can be taken to Onondaga County Wegmans or Green Hills stores for recycling.

Burnt out compact fluorescent lightbulbs contain a small amount of mercury, and shouldn't be put in the trash. Take these bulbs to Home Depot, Lowes, ACE or

1 According to OCCRA's September 2005 Waste Quantification and Classification study.

True Value Hardware stores for recycling. Broken bulbs have already released their mercury, and can be put in the regular trash.

Another way to reduce your trash output is to consider the amount of packaging in the products you buy, and try to choose products which have minimal or no packaging. Buying products in bulk is a great way to save money and reduce packaging waste.

Choose products that will be long-lasting over less-durable models.

5.3 Reduce Litter Throughout City

Litter is one of the most visible signs of a need to rethink waste and recycling. Whether real or perceived, litter indicates neglect, and degrades civic pride. The cyclical effect of litter: the more there is, the more that continues to be produced - sometimes called the "broken glass effect".

Municipal objectives

5.3.1 Reduce litter caused by City operations

5.3.1.1 Invest in sanitation equipment for optimal, litter-free collection (covered trucks, possibly combined trucks, packers for both trash and recycling pick-up)

5.3.1.2 Ensure trucks are properly covered when transporting trash and recycling both on highways

5.3.1.3 Require that each collection route be clean of litter after pickup. When daily route is completed early, assign laborers follow-up on litter clean-up on same route they collected.

5.3.2 Continue to keep parks and streets litter free

5.3.2.1 Continue to make routine litter pick up in parks and on vacant lots a priority of city departments

5.3.2.2 Encourage community stewardship of parks and public spaces, making it as easy as possible for the community to participate in and organize community clean-ups. Assist whenever possible in providing supplies, permission, etc., and continue to work with groups to get trash from clean-ups picked up in a timely fashion. Consider investing in additional supplies and equipment that can be used for cleanups. Work with Adopt-A-Highway, community court, and other litter pickup/prevention groups and initiatives to keep the community clean.

5.3.2.3 Educate and re-educate residents on the appropriate ways to dispose of trash, recycling, and other unwanted materials (TV's, tires, construction debris, etc.).

5.3.2.4 Increase enforcement efforts through codes and DPW, but when someone is not in compliance; focus on education as well as enforcement (enhanced sticker system, notices, etc.)

5.3.2.5 Create incentives/rewards for residents that do a great job of keeping their property clean (ex. "Curb appeal" award)

Henninger High School Students complete a litter clean up in Lincoln Park on Earth Day, 2012

5.3.2.6 Hold City/OCRRA led workshops on waste and recycling. Explore the possibility of providing free trash bins to residents that participate as an incentive.

5.3.2.7 Work with community policing to find strategies for decreasing occurrences of illegal dumping, and address the messes made by scrappers going through trash at the curb/dumping unwanted material.

5.3.2.8 Standardize waste collection receptacles and method (see Goal 1)

5.3.2.9 Continue to use IPS to maintain coordination between all departments. Strengthen communication between departments to minimize inefficiencies that lead to waste and litter. Make communication between code enforcement (illegal/improper set-outs, dumping, etc.) and DPW a priority.

5.3.2.10 Work with the District Attorney's Office to coordinate community service and litter pickup, particularly when the community service has been ordered as a result of littering.

5.3.2.11 Litter can be effectively trapped close to the side of highways (where it can be quickly and easily collected by city crews) by allowing grass to grow to meadow-height at the road edge. Consider reduced mowing where appropriate.

Measures of progress

How much trash and debris is collected during routine and special litter pick-ups by weight

The number of calls placed to DPW and logged on IPS for illegal set outs/dumping/trash filled lots, etc.

The number of reported community and neighborhood clean-ups

Instances of illegal dumping with actual police intervention

Community Actions - What Can *You* Do?

Make sure your trash is well-bagged on trash day, and won't be caught by the wind.

Put your recyclable paper in a brown paper bag, or place it in the bottom of a blue bin with another blue bin (holding your recyclable containers) on top. This lessens the chance that your papers will blow away before they are collected.

Filter-tipped cigarette butts are made from a material that doesn't biodegrade, so they accumulate when dropped on the ground. If you smoke, stub out your cigarette and place it in an appropriate receptacle to avoid littering. Fortunately, there are now numerous cigarette butt receptacles in public spaces throughout the City, particularly in Armory Square.

Pick up litter that lands in your yard as soon as you notice it. Litter-free front yards go a long way toward neighborhood beautification and pride.

If you have time, occasionally volunteer to clean litter from a park or stretch of curbside in your neighborhood. This doesn't have to be an organized effort – one person with a few minutes to spare can make a noticeable difference. Be sure to wear gloves when picking up litter.

Make it a social engagement. Recruit your co-workers, neighbors and friends as volunteers for OCRRA's Annual Earth Day Litter Cleanup. Find out more at http://www.ocrra.org/programs_earthday.asp.

Lead by example. Pick up litter in your neighborhood when and where people are outside and can see you. If others are inspired to do the same, the whole neighborhood will benefit.

Implementation & Tracking

Sustainability Plan Implementation

Strong government and community leadership, civic participation and ongoing progress assessment will be needed to continue the momentum of the initiatives outlined in this plan. The responsibilities, commitments and methods for measuring the successes and challenges of this plan are outlined here to serve as a means of staying accountable and on target to achieve the City's sustainability goals.

The Bureau of Planning & Sustainability will have overall responsibility for the implementation of the Sustainability Plan, and for coordinating the involvement of all municipal departments, including the Sustainability Plan Implementation Team. The Bureau will also be responsible for developing community partnerships and opportunities to implement community goals outlined in the plan.

Sustainability Plan Implementation Team

Throughout the development of the Sustainability Plan, the City has worked with five advisory teams, each with expertise in various aspects of sustainable communities, reflected in each chapter of the plan. Upon completion of the plan, the City will shift its focus from planning to implementation and convene a Sustainability Plan Implementation Team with five subcommittees, one representing each chapter of the plan (Energy & Green Building, Education & Green Jobs, Food Systems, and Natural Environment). At a minimum, groups will convene quarterly to discuss progress, identify funding opportunities, address any challenges, and outline objectives for the coming quarter.

Progress Tracking, Measurement & Accountability

The City conducted a thorough review of its sustainability initiatives and environmental data as part of its sustainability analysis leading up to the development of this document. The goals and contents herein are based on these analyses as well as on community input and expert feedback. As the plan is implemented, the City will maintain the same analytical, transparent process to track and measure progress, and to ensure a high level of accountability. Public involvement with stakeholders and citizens will be ongoing throughout the implementation phase.

Method of Progress Tracking	Description	Frequency
Sustainability Indicators Data Collection	Collection of key data such as facility and vehicle fleet energy use, renewable energy generation, etc.	Ongoing
Sustainability Project Savings Posts	The BPS will post sustainability project descriptions and known or calculated savings or other desired outcomes on its website for public access.	Ongoing
Sustainability Plan Annual Progress Report	Compilation of annual accomplishments for Sustainability Plan initiatives	Annual
GHG Emissions Report	Data will be collected and analyzed on an ongoing basis with a report featuring a full GHG emissions analysis every five years (government operations & community)	Five years
Community Sustainability Rating Analysis	The City will conduct a sustainability analysis every five years using a credible community sustainability rating system to assess its progress.	Five years

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Education

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Waste & Recycling

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