Sustainable Gresham Initiative

Gresham Buttes, © Bruce Forster

Internal Operations & Facilities Sustainability Plan

CITY OF GRESHAM • 2011

Acknowledgements

This plan was prepared with support from:

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Communications

The City responds to increased traffic by implementing measures such as police officers patrolling on bikes, and installing "smart" traffic signals that improve traffic flow and reduce exhaust emissions from extended idling at intersections.

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Executive Summary

The Sustainable Gresham Initiative is a broad action plan, supported by the Mayor and Gresham City Council, to ensure the City of Gresham and the community is prepared for the challenges of today and the opportunities for tomorrow. The Sustainable Gresham Initiative is a call to community members, businesses, organizations and local government to join in a multi-phased strategy to pave the path towards a more resilient, enhanced city that meets the resource needs of today without compromising the ability of future generations to meet their own needs.

A coordinated approach to sustainability optimizes return on investment, elevating the entire organization's performance capability and ensuring the best use of public dollars and resources.

The City formally committed to advancing sustainability in 2007 with Mayor Shane Bemis' signature of the US Mayors Climate Protection Agreement. The Sustainability Policy, passed by City Council in 2009, provides the guiding sustainability principles for the City. This effort, coupled with a 2009 greenhouse gas assessment for City operations and facilities, laid the foundation for the Sustainable Gresham Initiative.

Sustainability requires the wise and efficient use of resources. Local government carries a significant responsibility as steward to the community and its resources. As the first phase of the Sustainable Gresham Initiative, the City has adopted this Internal Operations and Facilities Sustainability Plan to build on our sustainability successes to date in a coordinated, strategic and systematic manner, and to gain even greater operating efficiencies citywide.

As a strategic vehicle, sustainability integrates environmental stewardship, fiscal responsibility and risk management to drive the city towards optimized performance.

The City is already a sustainability success story in many areas. Strategic investment has paid off with awards and recognition garnered regionally and nationally for green projects. But to date, these efforts have come from individual City departments and not through a unified effort. A coordinated approach to sustainability optimizes return on investment, elevating the entire organization's performance capability, and ensuring the best use of public dollars and resources.

Key City Operations and Facilities Goals:

80% Reduction in City Greenhouse Gas Emissions by 2050
100% Renewable Energy by 2030
City Operations Zero Waste by 2020
Ongoing Protection of Natural Resources Including Water Quality/Availability and Habitat
Toxin Reduction and Eventual Elimination

The plan's key goals and commitments are established by Council and provide overall direction for City action. Implementation of the plan, including specific recommended action items and targets, will be carried out by the City Manager and will require coordinated effort by staff in the months and years to come. In addition to general implementation of the plan, commitments include development of a Green Fleet & Fuel Policy, an Energy Management Plan and Sustainable Purchasing Policy and Guidelines.

Prior to implementation, each target will undergo a cost/benefit analysis and evaluation of resource constraints, staff capacity and expected time frame. Contrary to the assumption that sustainability measures equate to cost, the proposed goals and targets have been carefully considered for their cost savings potential. Recommended targets proposed for 2012 primarily focus on shifts in routine behavior through engaging employees as active contributors in advancing sustainability. Additional proposed measures that do bear a cost have designated outside funding sources or will be implemented only if outside funding is secured. Continuous improvement and cost savings will be tracked and announced through an annual report.

In addition to significant financial savings for the City, full implementation of all sustainable measures in this internal plan will bring multiple benefits to the community. Reducing the City's fuel use eliminates pollutants that negatively impact the community's air and water quality. Increasing energy conservation, transitioning to renewable energy and reducing waste in the landfills lessens greenhouse gases in the atmosphere. Transitioning away from toxins better protects the health of staff and visitors to our facilities. Ongoing protection of natural resources on publicly owned land ensures assets valued across the community are safeguarded for future generations.

Future phases of the Sustainable Gresham Initiative will address opportunities to increase alignment of Capital Improvement Projects with the City's sustainability goals, embed sustainability within the Community Development Plan, and develop, in collaboration with residents, a community-wide sustainability plan to advance sustainability across the community.

The Sustainable Gresham Initiative positions the City as a leader and role model in the community, and the Gresham community as a key contributor to advancing Oregon to the forefront of sustainability. Under this umbrella approach we will work together to preserve, promote and enhance our local assets, strengthen our communities, value our wonderful natural surroundings and empower all of us to contribute to and benefit from a thriving, healthy and sustainable city.

Key Commitments:

Develop an **Energy Management Plan**

Develop a **Green Fleet and Fuel Policy**

Develop **Sustainable Purchasing Policy and Guidelines**

Left: Transportation crew applying a surface seal –a cost saving maintenance strategy.

Above: One of Gresham's neighborhood parks. © Nancy J. Smith

Introduction

The City of Gresham has demonstrated its commitment to protecting the environment and advancing sustainability through a range of efforts. In 2007, Mayor Shane T. Bemis signed the US Mayors Climate Protection Agreement, aligning Gresham with cities across the nation that recognize the need to confront environmental concerns. In 2008, the City Council formed the Natural Resources and Sustainability Committee (NRSC). The NRSC, with assistance from Council and City staff, drafted the City's first Sustainability Policy, adopted by the City Council in 2009.

In 2009, the City Council requested the development of a Sustainability Plan to further advance the City's commitment. While the City has implemented a variety of sustainability related projects, it recognized it could best benefit from a unified plan across departments that maps the vision and direction toward a Sustainable Gresham.

Sustainability touches all sectors of the community. It plays a role in our choice of travel options, the food we buy and consume, and the energy we use in our homes and places of work. To ensure an inclusive planning process and to encompass all aspects of sustainability, it was determined the plan should be approached in phases. This first phase of the Sustainable Gresham Initiative addresses the City's internal operations and facilities, with specific greenhouse reduction targets to be met while enhancing City operations and practices. This plan focuses on near term goals for 2012 while establishing a time frame for actions through the year 2050.

Subsequent phases of Sustainable Gresham will focus on the built environment and community engagement. Many of the City's Capital Improvement Projects (CIPs) already incorporate sustainability components. But outlining a citywide approach to CIPs would ensure consistent alignment with the City's sustainability goals. Land use and transportation planning are key to ensuring that development evolves according to current and future needs. An additional phase will pursue strategies to better embed sustainability in the Community Development Code, land use practices and transportation planning.

Of equal importance is the engagement of the Gresham community in planning and practicing sustainability principles. The City supports the creation of a Community Sustainability Plan and will work, in collaboration with residents, on the development of a community-wide effort. Over the next few years these community components of Sustainable Gresham will be completed, to be combined with the internal plan, to create a comprehensive plan for a sustainable city.

We, as a City, have a responsibility to prepare for future environmental and financial challenges, mitigate the negative impacts of our operations and growth, and serve as a role model for others in the community. Residents have a role to play in determining and actualizing an appropriate vision for their community. It will be through the commitment and combined efforts of local leaders, residents, the business community, and City staff, that these recommendations will be realized for Gresham.

Beech Street, Gresham's first green street, wins National American Public Works Association award for its innovative design to minimize impacts to the environment.

diversified energy strategy
Wastewater Treatment Plant

The City's Wastewater Treatment Plant used to be the second largest purchaser of energy for City operations. But starting in 2005, the WWTP initiated a strategic diversified approach to becoming energy independent. The first step was the installation of a 400 kw cogenerator to transform the onsite digesters' methane gas into electricity, (saving $260,000 a year in avoided electricity costs and providing 54% of the plant's energy needs). In 2009, the Pacific Northwest's largest ground mount solar array was installed, providing 7% of the plant's energy needs. Energy efficiency measures were also implemented, further reducing the overall energy demand of the plant by 6% since 2005. With the installation of a FOG (fats, oils and greases) -to-methane energy project and potential addition of a micro-hydro turbine, to be powered by the outflow from the plant, the WWTP could reach its energy independent goal by 2016. These projects would save a combined $500,000 in avoided electricity cost.

Top: The cogenerator converts methane gas into electricity, saving $260,000 each year.

Center and bottom: In 2010 the City installed one of the largest ground mounted solar arrays in the Pacific Northwest. It provides an estimated 8% of the annual power for the plant.

Foundation

Defining Sustainability

Sustainability has many definitions. In Gresham, we understand it to mean:

Meeting the needs of the present without compromising the ability of future generations to meet their own needs.

Published in 1987 by the United Nations World Commission on Environment and Development Report, Our Common Future (Bruntland Commission), this definition provides the clearest outline of the task at hand.

Concern regarding our ability to "meet the needs" derives from global statistics on ever-expanding industrialization, natural resource depletion, overpopulation, habitat disruption, degradation and loss, pollution (air, water, land), endangered species, water and food supply, scarcity and desertification, and human caused impacts on our atmosphere. There is a broad spectrum of scientists who support the idea that human activity is contributing to the increase of carbon dioxide in the atmosphere which is leading to a warming climate. This warming condition in turn contributes to shifts in precipitation, snow pack, fire frequency, hurricanes, tornadoes and extreme weather events. In response to the scientific community's consensus, mayors across the country, including Mayor Bemis in 2007, signed on to the U.S. Mayors Climate Protection Agreement (MCPA). The agreement acknowledges the fact that the "United States of America, with less than five percent of the world's population, is responsible for producing approximately 25 percent of the world's global warming emissions." The agreement urges local governments to enact measures to reduce greenhouse gas emission levels by 7% below 1990 levels by 2012. Like most signatories to the MCPA, the City may not meet this goal by 2012 but remains dedicated to reducing emissions.

Curbing greenhouse gas levels should be central to sustainability planning. Climate action planning is critical to abiding by our commitment to future generations. However, the foundation for sustainability encompasses more than just climate concerns, it connects three dimensions, or the Triple Bottom Line (TBL): environmental stewardship, economic balance and community enhancement. These core areas provide the base needed to maintain a healthy, livable city. Therefore, the City has chosen to take a holistic approach to sustainability planning and will address the TBL throughout the implementation of the Sustainable Gresham Initiative.

Sustainability Policy

In 2009, the City Council adopted the Natural Resources and Sustainability Council Advisory Committee's Sustainability Policy, providing the foundation for the development of a Sustainability Plan. The policy states:

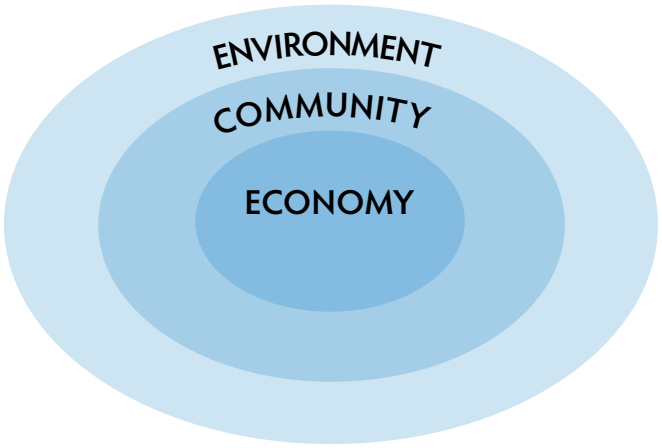
"The City of Gresham will strive to design and deliver services that:

- Support a stable, diverse and equitable **economy.**
- Promote **community** health and well-being, outdoor recreation, cultural awareness, and encourage learning.
- Protect and improve the quality of the air, water, land and other natural resources by reducing human impacts and increasing public awareness of the valuable services the **environment** provides."

Sustainability Policy Guiding Principles

The following guiding principles are key to the successful incorporation of sustainability in decision making and in City actions:

- Approach problems from a systems perspective, defining mutually supportive economic, social and environmental goals and objectives.
- Incorporate a long term and global perspective of human activities and environmental conditions when making decisions and establishing policies.
- Account for the social and environmental costs and benefits, as well as making explicit the inherent value of the natural environment.
- Exercise caution in public policy when there are threats of serious or irreversible environmental or public health damage.
- Align regulations, fees and taxes to encourage the widespread adoption of best practices.
- Inspire and promote public action to help Gresham achieve this vision and sustainability goals.



The three aspects of sustainability are interlocked: economy is part of community, and community is part of the environment.

Left to right, from opposite left: Planting rain gardens in the City Hall parking lot.

Main City Park is one of the many parks in Gresham.

The City received a grant to make bike helmets available to residents.

Maintaining an irrigation system at a park.

External Forces – Impact & Preparedness

Sustainability planning provides an opportunity to best address the challenges local governments face. In addition to existing barriers and threats, the City of Gresham will need to recognize and prepare for a number of new, near term challenges. The City has already managed accelerated population growth but will need to respond to the expected regional growth (one million by 2030) and the impact this will have on resources. Diminishing and increasingly costly fossil fuel supplies will impact the organization from an operational and fiscal standpoint. Near term potential regulatory framework could require local governments to better contain emissions. And climate change has been recognized as one of the most significant challenges we will face this century.

The science behind climate change begins with an understanding that the earth possesses the natural ability to process greenhouse gases. But with the addition of man-made greenhouse gases, primarily through the use of fossil fuels, (and coupled with the impacts of deforestation and ice cap melt), we have moved beyond the earth's natural "carrying" capacity.

Carbon dioxide is the greenhouse gas of primary concern, due to the unnaturally excessive volume released into the atmosphere. As carbon dioxide levels increase, alterations to our climate increase as well. Using data from as early as 1880, both the National Oceanic and Atmospheric Administration's National Climatic Data Center and the National Aeronautics and Space Administration (NASA) report that 2010 was the warmest year ever recorded. The new finding follows NASA's announcement, based on data from 5,000 weather stations around the world, that 2000 to 2009 was the warmest decade since reporting began in the 1880s.

To better understand what climate change will mean locally, Oregon's Global Warming Commission has forecasted the following regional impacts:

> *Scientists expect average temperatures in the Pacific Northwest will continue to rise in response to global climate change, by at least 1.5° F and as much as 2.7° F by 2030 and 5.4° F by 2050. These projected increases are likely to result in longer growing and fire seasons (and more fuel for fires), earlier animal and plant breeding, a longer and more intense allergy season and broad ecosystem disruption. Lower summer precipitation and earlier peak stream flow will mean less water available for summer use, the risk of higher and more intense flooding, and decreased water quality due to higher temperatures, pollutant concentration, and increased salinity in coastal areas.*

This internal plan guides the City to be proactive and to convert these threats into key opportunities for our operations. In order to do so effectively, we need to recognize our role as both a contributor to the threats and as a responder to prepare for these current and future scenarios.

Left: Bull Run headwaters. Gresham's water mostly comes from the Bull Run watershed in the Mt. Hood National Forest. Right: Bull Run dam.

As a contributor, the first action is mitigation – the need to reduce our damaging contributions in terms of our carbon emissions, pollution emissions, wasteful energy and resource use, and dependence on fossil fuel. Reducing our energy, fuel and water demand and shifting away from fossil fuels increases resiliency to uncertain resource rates and availability. It also protects the City against near term potential regulatory controls on carbon emissions and increased regulatory control on other pollutants.

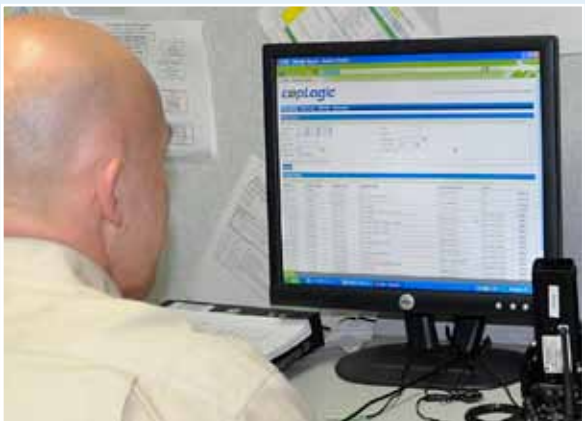
The second action is preparedness – how prepared is the City to meet these challenges? What provisions can be supported today to protect against near term and long term threats? Is the City prepared to manage emergency response to extreme weather events, such as the 107 degree heat wave experienced in 2009? What investments can be made today to buffer the organization from, for example: fire threat to the Bull Run Watershed; health impacts due to increased instances of heat illness; vector- and water-borne disease; respiratory distress; increased stream runoff in spring; decreased flows in summer; and shifts in vegetation and wildlife associated with rising temperatures?

By increasing efficiencies and wisely using resources, the City saves precious public funds and City services can better respond to these future scenarios. A proactive approach for internal operations expands the role of the City as steward and protector of resources used by the broader community.

City snowplow during the 2008 storm.

saving money & reducing emissions
Police Department Online Reporting

In October 2010, the Gresham Police Department implemented an online reporting system. For five non-emergency crimes, including theft and vandalism, the public can now go online to file a police report. Use of this innovative software provides the community with convenience and efficiency in reporting while ensuring police have sufficient capacity to respond to emergency related calls. Reducing the onsite response also reduces fuel and maintenance costs for the police, reduces vehicle emissions in the community, and improves customer service. Since the program was recently implemented, one can infer the potential savings by looking at a city of similar size that has used the system for a year: Federal Way, Wash., (pop. 90,000). In 2009, their police department had 1964 online reports, saving 2,946 hours in staff time. For Gresham, this would equate to an estimated annual savings of $150,000.

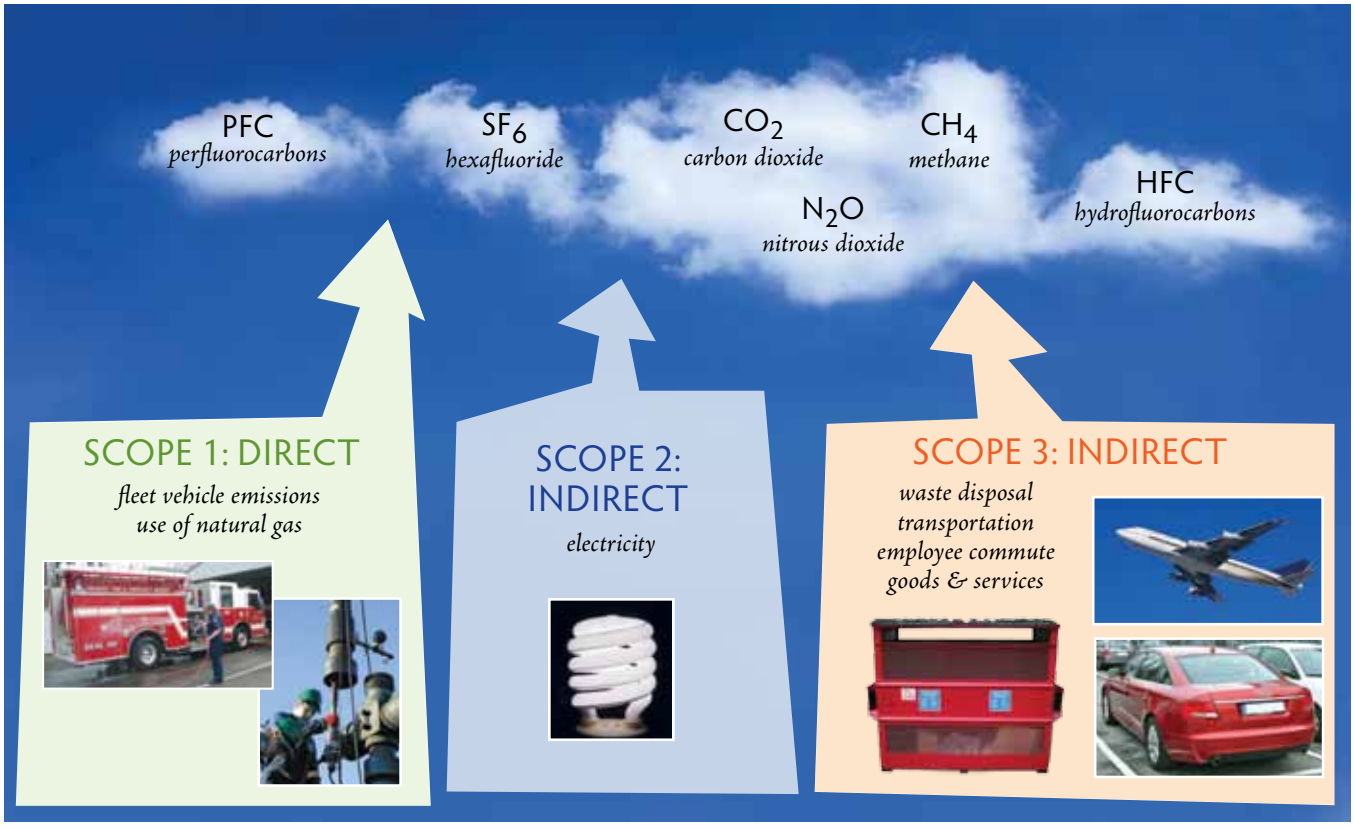


Greenhouse Gas Emissions Inventory

The City needed to better understand its own contribution of greenhouse gasses that result from ongoing City operations and facilities. In 2009, with the assistance of the Good Company, a Salem based sustainability consulting firm, and along with five other public entities in the state, the City conducted an inventory for all City related greenhouse gas emissions. The resulting City of Gresham Greenhouse Gas Emissions Report, attached as Appendix A, identifies all City related emissions, according to their type of source, or "scope". Scope 1 are direct source emissions that originate in Gresham including fleet tail pipe emissions and use of natural gas within the City's boilers. Scope 2 are indirect emissions associated with the production of electricity purchased by the City. Scope 3 are all indirect emissions including: waste to landfills, business travel, employee commute, and most significantly, emissions associated with the goods and services we purchase.

Drawing from the most recent and complete set of data for year 2008, the City's greenhouse gas emissions were determined to be 28,700 MTCO2e (Metric Ton of Carbon Dioxide Equivalent). Of this total, 5% are Scope 1; 39% are Scope 2; and 56% are Scope 3 emissions.

The findings of this report provide the critical baseline for establishing appropriate targets in this sustainability plan. It should be noted that while Scope 3 emissions typically account for the majority of emissions associated with public sector operations, the City is relatively unique in fully accounting for Scope 3 emissions in our inventory process.

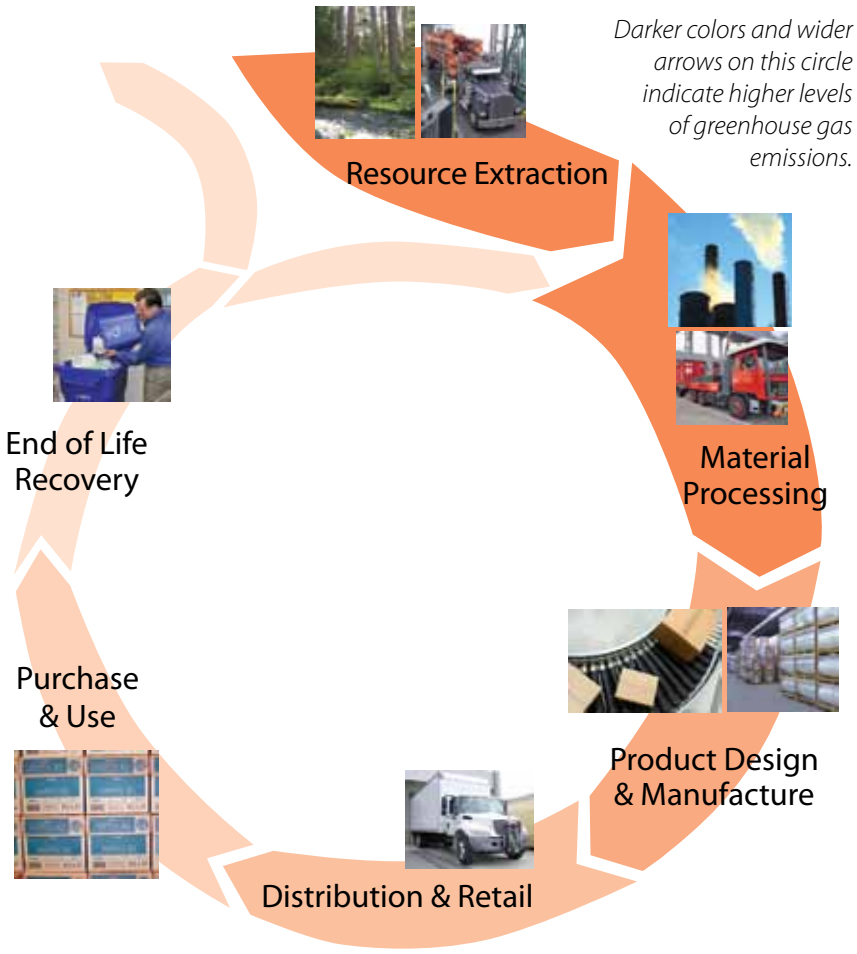


The decision to include Scope 3 emissions reflects our commitment to fully understanding our contributions to climate change as well as our ongoing efforts to reduce them.

SCOPE 3 INDIRECT EMISSIONS: GOODS & SERVICES

Scope 3 includes indirect emissions associated with the goods and services we purchase, such as paper.

Following are examples of emissions associated with the life of paper, from extraction to production, use and disposal.

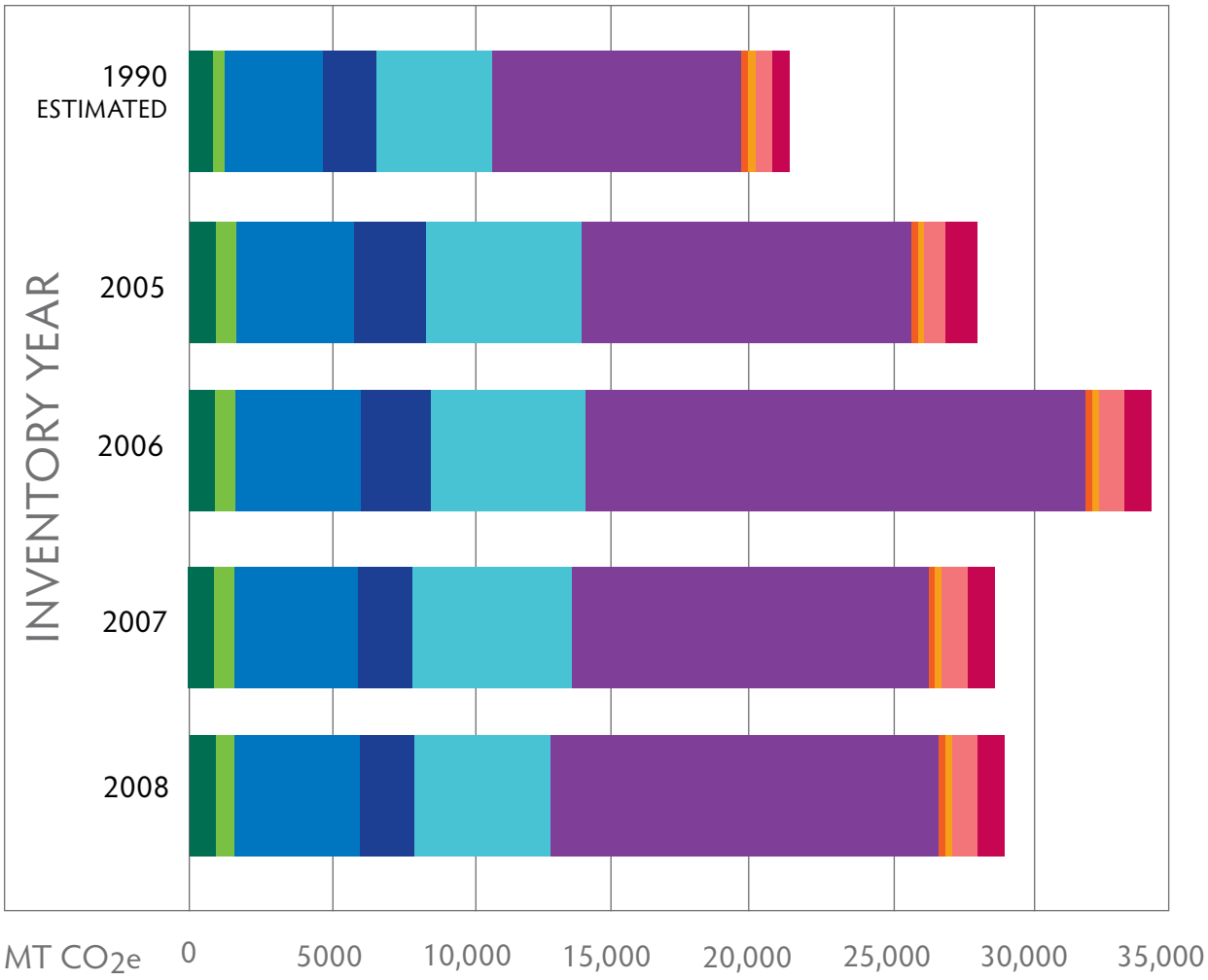


Darker colors and wider arrows on this circle indicate higher levels of greenhouse gas emissions.

GOODS & SERVICES PURCHASED BY THE CITY INCLUDE:

- Asphalt
- Computers
- Concrete/cement/aggregate
- Heavy equipment
- Engineering services
- Exterior light bulbs
- Fuel
- Dog food (K9 Unit)
- Paper/ink
- Pipe/infrastructure materials
- Postage
- Public safety dispatch
- Uniforms
- Vehicles

City of Gresham Greenhouse Gas Emissions 1990 - 2008



SCOPE 1
- Natural gas - City buildings
- Gasoline - City fleet

SCOPE 2
- Electricity - Street lights
- Electricty - City buildings
- Electricity - WWTP & pump stations

SCOPE 3
- Goods & services
- Business travel
- Solid waste
- Water purchase
- Employee commute

MAJOR IMPACTS

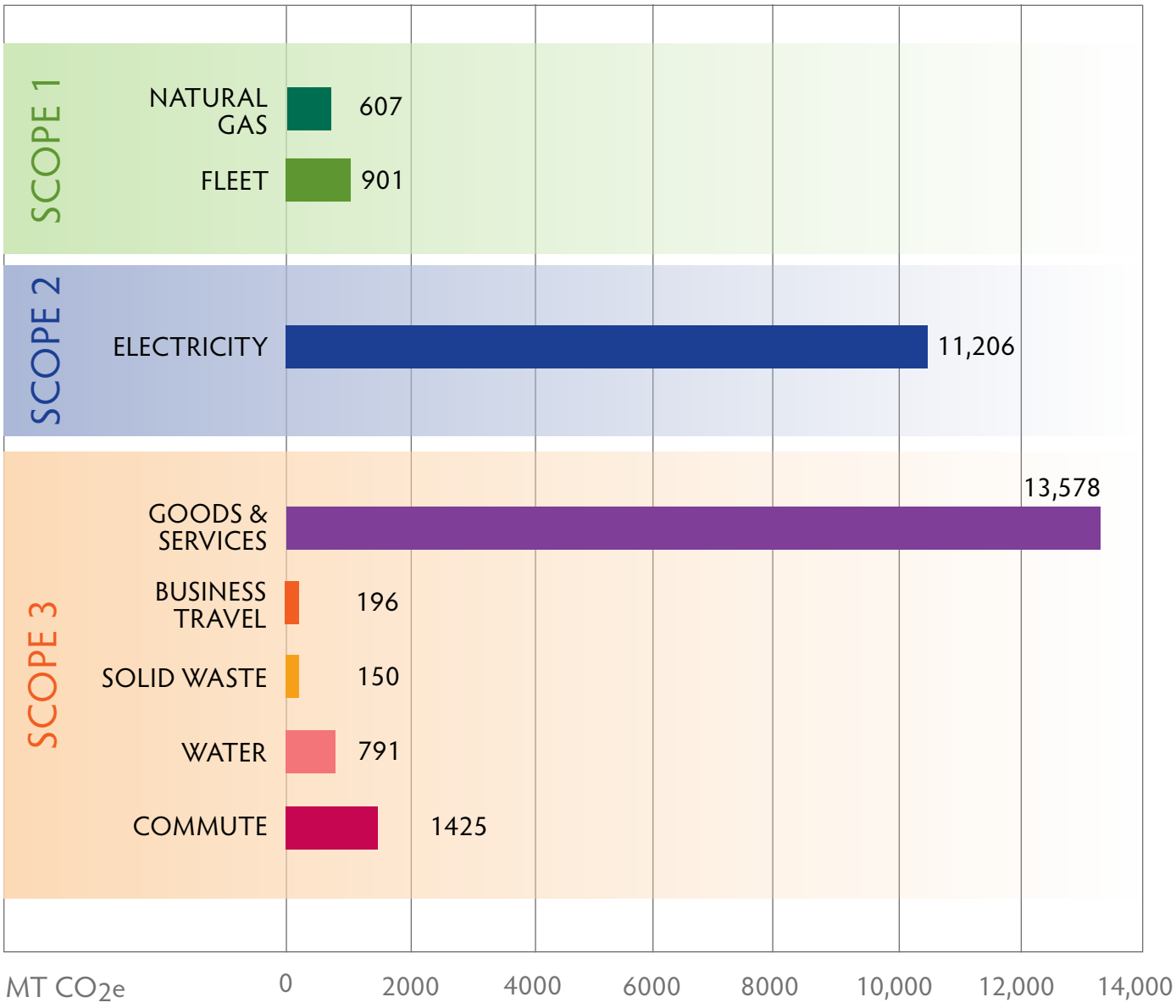
1990 - Best estimate on square footage and number of employees

1990 to 2005 - Population growth

2006 - Capital Improvement Projects increased

2008 - Greater data tracking

2008 City of Gresham Emissions



What is MT CO2e ?
Metric tons of carbon dioxide equivalent.

A carbon dioxide equivalent is the unit used to report greenhouse gas emissions or reductions. Greenhouse gases are converted to CO2e by multiplying emissions by their respective global warming potential. The CO2e provides a standardized value for reporting and comparing greenhouse gas emissions.

Fiscal Responsibility

Practicing sustainability helps identify waste reduction opportunities. They ensure public resources can be applied where best needed while strengthening the organization's resiliency to inevitable increased costs in energy, fuel and water rates. From an economic standpoint, it's the fiscally smart thing to do.

The City is small and lean enough for strategic investments to pay off if done in a deliberate fashion. Instead of planning to spend ever increasing amounts of public resources on rising energy costs, strategic investment in conservation, waste reduction and renewable energy projects will save us far more than our initial investments.

"The implementation of a coordinated sustainability plan will ensure that we are operating with all of the rights shades of green: doing what's best for the environment, while improving the bottom line."

– Mayor Shane T. Bemis

The coordinated implementation of additional sustainability action items – energy efficiency and fuel efficiency in particular – will result in significant cost avoidance in the coming years. For example, if the City were to purchase 30% less electricity in 5 years, that equates to an accumulative cost savings of over $2 million and an additional $400,000 saved each year thereafter (at today's energy prices). Add renewable energy generation into the equation and the savings increase exponentially.

Below: Drilling the Cascade Well System.

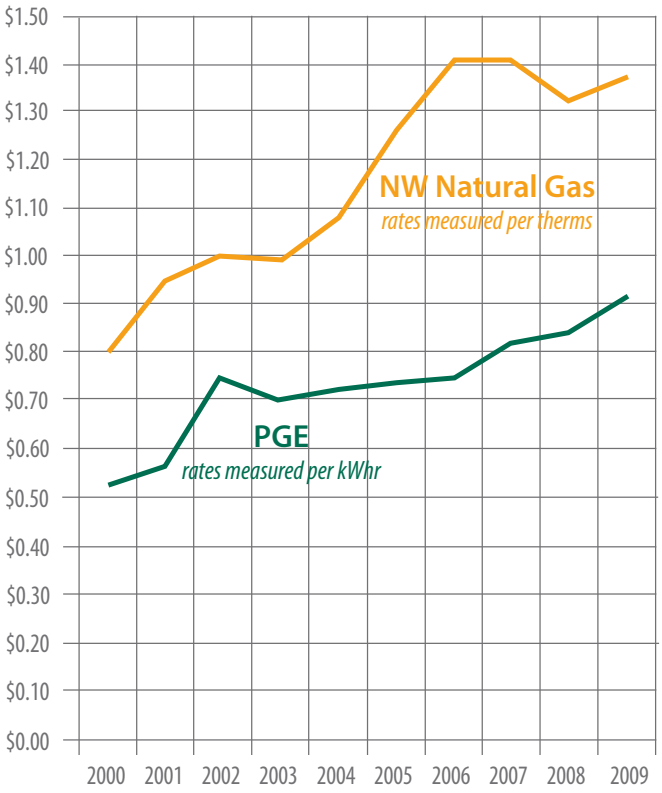
Public and private sector organizations that have made investments in energy management are recognizing significant benefits. Neighboring Gresham Barlow School District saves $1.6 million a year simply through increased vigilance of its energy usage. This savings equates to supporting 26 teachers for the district. Providence Health System initiated a comprehensive energy management system across all of its Oregon facilities, saving an estimated $1.1 million annually. Mt. Hood Community College completed building improvements that provide an estimated annual savings of $240,000. The City of Portland has implemented a range of energy efficiency measures since 1991. Cumulatively this has saved Portland over $37 million, with an average annual savings of over $4 million.

Gresham's Wastewater Treatment Plant is an in-house example of significant return on investment. The Wastewater Treatment Plant chose to invest in a cogeneration turbine at an initial cost of $1.3 million ($930,000 in City resources, the rest in Energy Trust of Oregon) incentives and Oregon's Business Energy Tax Credit. The cogenerator paid for itself within 5 years and saves $260,000 annually in electricity costs with a significant reduction in GHG emissions.

The 2010 installation of the $17 million Cascade Well System, a joint groundwater supply system, is another example of sustainable investment. The wells offset high summer demand, reducing the water purchased from Portland Water Bureau. This will save the City an estimated $5 million in avoided cost to Portland through Fiscal Year 2010/11 and ensure Gresham residents have a sufficient supply to meet their annual average daily demand in the event Portland's water supply is shut down temporarily.

While direct cost savings are fairly visible, indirect cost savings and non-economic benefits should also be assessed and valued in City operations. For example, sustainability projects should be valued in terms of reduced vehicle wear and tear; maintenance and labor; extended replacement cycles; community health and wellness; and habitat protection. These benefits would otherwise bring a cost to the City if not provided through such measures.

As public servants to the broader community, the government has an obligation to ensure the appropriate use of public resources. When we adhere to the third leg of the triple bottom line – economic balance – sustainability provides an effective vehicle for succeeding in this commitment.



PGE and Northwest Natural Gas rates have both risen more than 70% between 2000 and 2009.

Source: Oregon Public Utility Commission
2009 Oregon Utility Statistics

quick return on minimal investment
City Hall Retrofit

In 2009, the City embarked on an energy management retrofit of City Hall. The first phase was completed with the installation of new software, installation of upgraded computerized modules for the major mechanical components and replacement of ventilation boxes on the 3rd floor. In the spring of 2011, the second phase will be completed, replacing ventilation boxes on the 1st and 2nd floor.

The total cost for the building's retrofits are $148,000. The Energy Trust of Oregon is contributing a 25% incentive, providing $37,000 in cost reduction to the City. This leaves a final net cost of $111,000. But projected energy savings will be $48,000 per year, therefore providing the City with a return on investment in less than 2.5 years and ongoing savings each year after.

Top and bottom: Staff can better monitor energy use with new panel and air flow sensors.

Internal Community: Organizational Improvement Commitment

The third dimension of sustainability is the community or social component, defined within this plan as organizational improvement. Implementing sustainability measures necessitates employee involvement – to make changes in their day to day practices, to make decisions that align with the sustainability goals, to assist in the reduction in waste of time and materials, all providing economic and environmental benefits to the organization.

"A key component of sustainability is cooperation and collaboration by all employees, across all departments, to gain capacity and ensure the success of the entire organization."

– Erik Kvarsten, City Manager

Valuing employees as contributors is key, but the social component is much broader than increasing engagement of the City workforce. It includes supporting a culture of meaningful participation and continuous improvement, workplace enhancement, and physical well being supported through healthy indoor environmental quality. These benefits in turn strengthen staff interface with residents and increase fair, effective and efficient delivery of services, procurement and public involvement.

As an organization, the City benefits from providing an inclusive, supportive work environment for employees to advance their own abilities, collaborate on common goals, projects and objectives both within and across departments, and meaningfully engage in the work they do. Ongoing support for internal employee teams, such as the Workplace Improvement and Green Teams is important; their effectiveness will be maximized as they continue to collaborate.

Physical well being is equally important. "Increased evidence shows that indoor environmental conditions substantially influence health and productivity."* Energy efficiency projects proposed for City owned facilities will greatly enhance the workplace environment. Additional actions range from "greening" offices with air purifying plants to reducing toxins within the workplace.

Internal community elements will be embedded into all sustainability actions, including our implementation of key commitments towards achieving the City's sustainability goals.

** Health and Productivity Gains from Better Indoor Environments and Their Relationship with Building Energy Efficiency, LBNL, Berkeley, CA*

Left to right: Fire staff recycle. Employees compost at City Hall. Employees participate in the annual Bike Challenge Month.

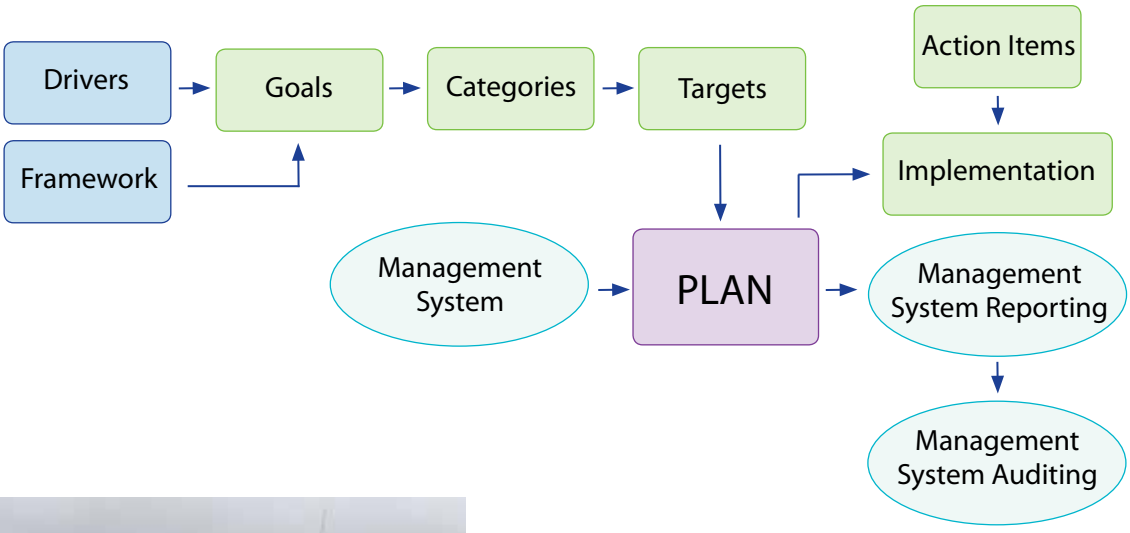
Internal Plan Development

Plan Components

In January 2010, a Sustainability Work Group formed with representation from multiple City departments and was tasked with evaluating the City's current practices and outlining appropriate sustainability strategies and goals.

The Work Group developed the Internal Operations and Facilities Sustainability Plan, based on the review and evaluation of best practices from jurisdictions around the country, recommendations from sustainability experts in the region, assessment of action vs. inaction in key areas, and commitment to the Triple Bottom Line, (environmental stewardship, economic balance and community enhancement). Additional considerations for drafting the plan were financial constraints and opportunities; economic development opportunities; technological opportunities and constraints based on assessed benefits, risks and cost; the opportunity to build on current sustainability efforts by City departments; and the results of the 2009 City Commute Survey, the 2009 Greenhouse Gas Assessment and the 2010 Sustainability Survey.

The internal plan identifies opportunities to advance the City's own sustainability performance through establishing key goals. These goals will be achieved through implementation of critical key commitments and targets, clustered by category. Key commitments are mini-roadmaps to guide the City toward meeting the key goals.



Left: City Hall's white roof reflects the hot sun, helping keep internal temperatures down. Skylights light three flights of stairs in two stairwells inside City Hall.

Framework

Defining a framework ensures the internal plan has an overarching vision, one that builds on the Sustainability Policy's guiding principles while clarifying what commitments the City, as an organization, should strive for.

The proposed framework for the City is as follows:

The City of Gresham will:

Serve as a leader by increasing operational and economic efficiency, reducing waste, and ensuring equity and effective collaboration, thereby strengthening the City's role as public servant to the broader Gresham community.

Elevate the organization's performance through a strategic and systematic approach, using sustainability as the guide.

Commit to the Triple Bottom Line: environmental stewardship, economic balance and community enhancement.

Protect and improve natural resources within Gresham, including air, water, open space and ecosystem services, and increase public awareness of the valuable services they provide.

Reduce and ultimately eliminate the use of fossil fuels and toxins that compromise our air, environment and community health.

green technology brings cost savings

LED Streetlight Pilot Project

The 7,500 streetlights across Gresham are the number one energy user for City operations. The City is pursuing opportunities to reduce this energy demand. In 2009 the City initiated a pilot project with PGE, installing 26 LED (light emitting diodes) streetlights. The best available data to date indicates that LEDs provide a 67% energy savings over conventional lighting and last five times longer. As technology improves, so does the return on investment for LED street lighting. Converting all of the City's streetlights to LED would save roughly 3000 MTCO2e and an estimated $180,000 every year.

LED streetlight (left) versus traditional streetlight (right) shows brighter and whiter light. PNNL photo.

Outcomes

The Work Group has identified beneficial outcomes with implementation of the internal plan. These include:

- short and long term savings to the City;
- a healthier work environment for employees;
- increases in efficiency (*energy efficiency, fuel efficiency, water efficiency and/or staff efficiency/ productivity*);
- waste reduction; and
- assistance with employee attraction and retention.

Implementation of recommendations will enhance the City's ability to attract green industry to the area, protect local ecosystems on publicly owned land and reduce the City's impact on natural resources. Protection of natural resources in turn increases the City's capacity and resiliency to fluctuations in pricing and availability. A proactive approach to sustainability also strengthens the City's resiliency to economic downturns and natural disasters. Collectively these measures help avoid the potential cost of inaction, given the likelihood of rising fuel and energy prices over the next 40 years and increased regulation of greenhouse gases and pollutants.

These outcomes will be formally tracked through an accounting system that recognizes and, when possible, quantifies improvement. Annual auditing of progress, (detailed later in the plan), will be coupled with a communication strategy to convey sustainability successes in a way that is informative to citizens.

lower construction & maintenance costs

Green Streets

Since 2006, the City has improved several of its existing roadways, adding bike lanes, travel lanes, vegetated medians, and rain gardens. Green streets are used to manage stormwater from the new and existing impervious surfaces. They reduce the pollution and damaging effects of high flows to local water resources such as Johnson, Kelly, and Fairview creeks. Porous paving materials allow stormwater to infiltrate in the ground, benefitting nearby plants and reducing the volume of runoff in the stormwater system. Green street designs also cost less for construction and long-term maintenance than traditional street and stormwater management designs (such as underground filtration vaults or large ponds). In total, Gresham's Green Street projects manage stormwater from approximately 14 acres of impervious surface, and reduce stormwater runoff by more than 10 million gallons per year.

Installing a rain garden at the Center for the Arts Plaza.

Goals, Commitments & Targets

Key goals were determined by the identified environmental and fiscal drivers. Key goals dates are set by evaluating the City's current commitments in each area, technological advancements and ease of actualization. Key commitments are planned projects to ensure the achievement of the key goals.

KEY GOALS:

1 80% Reduction in City Greenhouse Gas Emissions by 2050

RECOMMENDED TARGETS:

2012: Generate renewable energy onsite
2012: Implement "no-idling" mandate
2015: Implement energy efficiency building and lighting retrofits (street, traffic, parking lots)
Ongoing: Increase fleet's overall fuel efficiency
Ongoing: Decrease annual fossil fuel usage
Ongoing: Transition to electric and renewable fuels
Ongoing: Increase employee participation in greenhouse gas reduction measures

The international scientific community recommends that developed countries commit to an 80% reduction of current greenhouse gas emissions by 2050 to slow the acceleration of carbon dioxide emissions and to avoid the worst potential climate impacts. Based on Gresham's emissions inventory, the internal plan will commit the City to reduce its greenhouse gas emissions by 80% by 2050, with 2008 as the baseline year. There will be interim targets of 2% reduction below 2008 level per year; 20% reduction by 2020; 40% reduction by 2030; and 60% reduction by 2040. Reducing our emissions by 80% by 2050 is consistent with commitments of other regional entities including Metro, Multnomah County, Portland, and Clackamas County, as well as other jurisdictions around the country.

Only recently have greenhouse gas emission inventories included emissions embedded in goods and services purchased by organizations. Previous focus was primarily on reducing emissions in transportation and energy usage, Scopes 1 and 2 accordingly. Recognizing that Scope 3 emissions comprise 56% of the City's total emissions, the City will address all three scopes of emissions. Including Scope 3 positions Gresham in the forefront of municipalities committed to reducing their greenhouse gas emissions. While the commitment will be to reduce the total emissions by 2% each year, near term efforts will focus on Scope 1 and 2, where impact is more precisely measurable and the City can take advantage of "low hanging fruit" solutions in energy efficiency and renewable energy opportunities. Subcategories of Scope 3, including commute practices, business travel and waste, will also be addressed in the near term. But Scope 3 primarily comprises emissions associated with materials purchased for Capital Improvement Projects and other City purchased goods and services. As additional green products become available the City will take a more aggressive stance on reducing emissions in this area.

2 100% Renewable Energy by 2030

RECOMMENDED TARGETS:

2012: Develop financing mechanism for energy efficiency projects
2012: Implement energy conservation measures
2012: Generate renewable energy on site
2015: Implement energy efficiency building and lighting retrofits (street, traffic, parking lots)
Ongoing: Increase employee participation in energy conservation measures

By 2030 the City will aim to have maximum energy efficiency in all facilities, and with all office electronic appliances and to be producing renewable energy at multiple sites. For the outstanding energy demand not met through attainable energy efficiency measures, it will purchase renewable energy. The City has already initiated a number of energy efficiency projects to reduce electricity demand in its facilities. With federal stimulus funds, it will install solar panels at City Hall. Implementation of additional energy efficiency projects and increased availability of renewable energy will facilitate the City meeting this goal.

3 Zero Waste in City Operations by 2020

RECOMMENDED TARGETS:

2012: Develop Capital Improvement Project (CIP)Triple Bottom Line tool
2015: Ensure CIP and demolition waste is recycled/repurposed
Ongoing: Increase employee participation in recycling and waste reduction efforts

The Zero Waste approach reframes the focus on consumption to encompass the whole system from resource extraction and manufacturing of goods through distribution, use and disposal. This goal will guide the City toward sustainable purchasing on the front end and repurposing, recycling and reusing on the back end. Waste to landfill is an indication of inefficient use of resources. Zero Waste planning drives decisions toward greater efficiency and cost avoidance.

4 Ongoing Protection of Natural Resources *(including water quality and availability, and habitat)*

RECOMMENDED TARGETS:

2015: Develop a stormwater management retrofit plan for all City properties to reduce flow and pollutants
Ongoing: Incorporate native and drought tolerant plants and irrigation reduction strategies into City projects
Ongoing: Implement water conservation measures

Protecting Gresham's natural resources (including water quality and availability, and habitat) on publicly owned land will be achieved through action items that address onsite stormwater management, increase native vegetation for habitat, reduce/eliminate the use of pesticides, and conserve water.

5 Toxin Reduction and Eventual Elimination

RECOMMENDED TARGETS:

2012: Assess and review current toxins and educate all staff on safety and alternate options
Ongoing: Annually review pesticides applicators list and select less toxic substitutes where possible
Ongoing: Biannual training in Integrated Pest Management to reduce use of toxins

Reducing and eventually eliminating toxins protects water, habitat and wildlife and the health of employees and community. Decreasing certain petroleum-based toxins also reduces the City's dependence on fossil fuels.

KEY COMMITMENTS:

Develop an Energy Management Plan

Supports Goals 1 and 2

The Energy Management Plan will provide a comprehensive strategy to reduce the City's energy usage through advanced energy management techniques and staff education to achieve 100% renewable energy by 2030. This strategic approach will strengthen the City's resiliency to increases in electricity and natural gas rates, ensuring cost savings in the near and long term.

Develop a Green Fleet & Fuel Policy

Supports Goals 1, 2, 4 and 5

The Green Fleet & Fuel Policy will provide a comprehensive approach to reducing the City's dependence on and use of fossil fuel. Additional gains from the policy will be the reduction of maintenance costs, extension of the vehicles' replacement cycle, and benefit to local air quality.

Develop Sustainable Purchasing Policy and Guidelines

Supports Goals 3 and 5

The Policy and Guidelines will build on the 1996 "Buy Recycled" Purchasing and Waste Reduction Policy and 2010 Resolution 3015 City Purchasing Opportunities for Local Businesses program, providing a comprehensive approach to purchased goods and services.

Top to bottom:
Staff monitor City Hall's ventilation system.

Charging electric vehicle at City Hall.

Fleet Maintenance received an Ecological Business Certification from Oregon DEQ and Northwest Automotive Trades Association.

Employees can find reusable office supplies in the SWAP room rather than having to purchase new ones.

Implementation

Plan Management

The success of a sustainability plan can only be measured by the actions that follow. From a project management perspective, there are techniques and tools to facilitate successful implementation of the internal plan's recommendations, ensuring long term viability of the program and benefit to the organization. Plan implementation is the responsibility of the City Manager and will include:

- Integrating internal plan key elements into the Council Work Plan
- Prioritizing action items
- Identifying staff and department commitment to proposed action items
- Employing a management system for annual tracking of accomplishments and evaluating progress
- Evaluating the benefits of engaging an outside auditor to ensure progress stays in alignment with commitments
- Tracking continuous improvement and savings on a quarterly basis
- Producing an annual report
- Annually revising the internal plan

Some of the broader internal plan elements are to be incorporated in the next Council Work Plan. These include the Green Fleet and Fuel Policy, Energy Management Plan, and Sustainable Purchasing Policy and Guidelines.

Ownership of individual targets will be the responsibility of those individuals, service areas, departments or work groups designated by the City Manager, with support from the Sustainability staff. Prior to implementation, each target will go through a cost/benefit analysis and evaluation by responsible departments regarding resource constraints, staff capacity and expected time frame. If need be, additional internal or external support will be secured with assistance by the Sustainability staff.

Sustainability staff will manage the following:

- Identify and pursue funding opportunities
- Assist responsible parties with implementation of action items
- Facilitate ongoing staff participation in Work Group
- Coordinate staff sustainability training, involvement and evaluation of internal plan progress
- Track annual progress, collect data on emissions, fuel, resource usage
- Communicate progress to internal and external committees
- Produce an internal plan annual report
- Revise and publish the internal plan annually

Left to right: Transportation staff paint stripes on street. Staff recycle paper, metal and plastics. Watershed Americorps team helps clean a stream.

Annual Reporting

Each action item under the internal plan will include specific indicators to assist with tracking the impacts of each measure. These indicators could potentially become part of the City's performance measures.

To ensure accountability to the City's commitments the City will use a management system (MS). The MS provides assessment of impact, identification of benefits and recommendations for improvement for each of the proposed action items. The MS will include a spreadsheet for ease of tracking data annually, a specified date for review by an outside auditor and a template to assist with annual internal plan updates and revisions. It will be the responsibility of the Sustainability staff to oversee the collection of data.

To best assist the City with aligning its progress with the internal plan's commitments, the use of an outside auditor should be considered. Based on best management practices from other jurisdictions, an outside auditor can assist the City with managing commitments, avoiding uncompleted obligations, and ensuring that allocated funds are used to maximum benefit/gain.

The annual audit will inform revisions for the internal plan. A report of the findings will be published and made available to the public. The annual report will also highlight sustainability projects the City has advanced that year.

Each year a revised version of the internal plan will be released, highlighting key targets for that year, updating recommendations based on new opportunities and constraints and outlining the ongoing commitments for the City.

Calendar Year	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2010	Form Work Group	Develop Internal plan	Present draft Internal plan	
2011	Adopt Internal plan	Implement Commitments		
2012	Collect Prior Year Data Modify Internal plan Publish Annual Report	Implement Commitments		

Annual review schedule, based on calendar year

Sustainability Work Group

The Sustainability Work Group will continue with representation from all City departments. Participants may rotate annually, dependent on involvement in multi-year or "special projects", where specific expertise would be valuable. Commitments would include monthly meetings to address implementation of action items, review of greenhouse gas emissions reduction, information sharing with individual departments, annual auditing and revisions of plan, and completion of the annual report by end of the first quarter of each calendar year.

Communication

Internal

This plan is asking for a cultural and organizational change which means its success depends on support from all employees. Developing a plan to communicate with staff will help them understand why the City is making this commitment, their role in the plan and how the plan affects their work. Educating and involving employees may also provide valuable input that could enhance the plan.

Employee communications should focus on three central components:

- Defining sustainability and what it means to their jobs and the value it provides to the organization and the public
- Engaging employees in the plan's components
- Implement and continuously communicate refinements, changes and successes

External

Once significant work has gone into engaging employees, the work of telling the City's "sustainability story" can begin in earnest. This work will include developing key messages that are very similar to the messages developed for staff but focus on stewardship of resources and value provided to the community.

Implementation

City Communications will work with staff assigned to implementing the Sustainable Gresham Initiative on the internal and external plans.

Left: Solar panels charge batteries that power a crosswalk's flashing lights.

Right: New aeration diffusers will increase efficiency of the wastewater treatment process.

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