SEATTLE CLIMATE PROTECTION INITIATIVE PROGRESS REPORT 2009

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LETTER FROM THE MAYOR

It's hard for me to believe nearly five years have passed since I launched Seattle's Climate Protection Initiative in the winter of 2005. So much has changed, but our progress has remained constant. I'm pleased to report Seattle's greenhouse gas emissions in 2008 were 7% below 1990 levels, meeting our Kyoto Protocol target.

In 2005, the Kyoto Protocol established the international framework for reducing climate pollution. It became law in 141 countries, but not in the United States. I was frustrated that there was no progress in climate policy at the federal level. So I decided that Seattle, leading by example, would commit to reducing climate pollution by the amount called for in the pact. And, since I knew acting as one city alone was not enough to bring real change, I set my sights on convincing 141 other U.S. mayors to join me in making that commitment by signing the Mayors' Climate Protection Agreement.

Today, more than 1,000 mayors, from cities in all 50 states and representing 87 million Americans, have signed on to the agreement. Across the nation, mayors have taken significant steps to reduce climate pollution in their cities. And they have inspired action on climate policy in Washington, D.C.

This 2009 progress report spotlights some of the City's significant climate protection advancements. From developing a plan for pedestrian infrastructure, to creating incentives for residential green building, to installing energy-efficient light bulbs door-to-door, the City has worked to solve climate change on all fronts.

As this report also shows, our total greenhouse gas emissions are well below 1990 levels, a remarkable fact considering our city has grown about 16% since 1990. And per person, our carbon footprint has shrunk a whopping 20% from 1990 levels. That is an achievement of which we should all be proud.

We know that people who live in cities have lower carbon footprints than households in rural and suburban areas. Therefore, making cities a place where people want to live and raise their children is of paramount importance. In this, Seattle has experienced tremendous success. People want to move here, to set down roots, to become one of us. And we welcome them.

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Our popularity, of course, comes with climate challenges. In essence, we have raised the bar on ourselves. From 2005 to 2008, we grew by roughly 24,000 people. Since each individual has a carbon footprint, the population increase makes it more difficult to successfully meet Kyoto targets. By 2012, we hope to attract more people to live in Seattle, raising the bar even higher.

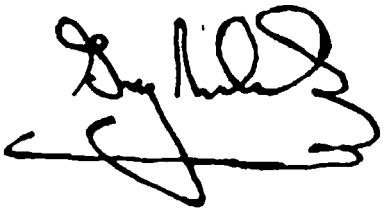
About 40% of Seattle's greenhouse gas emissions, the largest single source, come from cars and trucks on our roads. Reducing climate pollution from road transportation is our greatest challenge and requires our boldest solutions. In Seattle, we've changed the definition of transportation to include bikes, pedestrians, and transit in addition to cars and trucks, and we've invested in giving our residents transportation choices—miles of new bicycle lanes, expanded bus service, and a new streetcar line.

In 2009, we opened the region's first light rail line from downtown Seattle to the Sea-Tac Airport. As Sound Transit board chair, I pushed for and helped pass a $17.8 billion ballot measure to extend the light rail line north, east, and south. By 2023, 85% of the jobs and 70% of households within the three-county Puget Sound region will live near rail transit. This will change how we travel and where we live.

We've put Seattle on the forefront of the movement toward zero-emissions electric vehicles, entering into partnerships that will bring the latest car and charging technologies to Seattle. Electric vehicles are a particularly promising solution here in Seattle, where City Light's investments in conservation, renewable energy, and carbon offsets have made us the first major electric utility in the nation to be carbon neutral.

Five years after I launched the City's climate efforts, it's clear to me that Seattle's commitment to climate protection is bigger than any one mayor, bigger even than City government. It's a commitment by each of us to do our part to create a brighter future for our children. We must think big, take risks, demand action from our governments, and take individual action in our homes, our businesses, and our communities. I'm proud of the achievements of the City's Climate Protection Initiative, but I know so much more is possible. Our future depends on what we do today, and, if future generations are to commend us, we must not delay.

Sincerely,



GREG NICKELS

TRANSPORTATION CHOICES, COMPACT COMMUNITIES

Creating transportation choices and building livable neighborhoods

Like cities throughout the United States, Seattle doesn't have room for more streets. As a result, increasing our transportation choices means shifting our focus to one of moving *people and goods* rather than *vehicles*. The retrofit of our transportation system is necessary to not only accommodate expected growth in jobs and people, but also to reduce our carbon footprint. Road transportation, at 40% of the community's carbon footprint, is the largest source of climate pollution in Seattle, and its emissions are still above 1990 levels.

The combined challenges of accommodating growth and stopping climate change mean we need to provide people with real alternatives to driving. If fewer people drive alone, then it's easier for transit, goods, and services to move. Expanding light rail, improving walking and biking conditions, building a streetcar network, and supporting bus and rapid transit are all ways Seattle is shifting away from the car as our central transportation method. Among the successes in 2009: Pedestrians have better marked and brand new sidewalks; improvements and additions to bike lanes now mean the city has 201 miles of lanes catered to bicycles; bus ridership has increased; and tens of thousands turned out when the Sound Transit light rail officially opened for business.

Walking the walk

Seattle is consistently recognized as one of the nation's safest and most accessible cities for walking. But that doesn't mean there isn't room for improvement, especially in a climate that is often rainy and dark, and where the topography can interfere with visibility. In its aspiration to be the most walkable city, Seattle adopted the Pedestrian Master Plan in 2009, the first citywide action plan focused on the oldest form of getting from here to there. Seattle's Pedestrian Master Plan identifies the areas of greatest need—those

PROJECT SPOTLIGHT

WALKING SCHOOL BUSES

The wheels on the bus now go *clip clop clip*, as kids throughout Seattle are hoofing it to school through the Walking School Bus program. Walking groups—created either informally among neighbors, or more officially through a school—enable kids who would otherwise take the bus or be driven to class to walk instead. Among the benefits: an enhanced sense of community, exercise, and, of course, reduced emissions. Seattle's Safe Routes to School program supports the program by offering grants and pedestrian flags, and by making the routes safer through improvements like flashing beacons and crosswalks.

places where conditions are most difficult and where people need to be able to walk the most. The City is already working on projects outlined in the plan, such as re-marking 700 crosswalks with stop bars, adding 40 new pedestrian countdown signals, and improving school zone signage.

Sidewalks are a critical piece of the safety and comfort of a pedestrian's world, and Seattle remains committed to expanding its network of sidewalks. In 2009, the Seattle Department of Transportation improved six routes to school, repaired 22 blocks of sidewalk, and built 25 *new* blocks of sidewalk.

PROJECT SPOTLIGHT

CHALK WALK

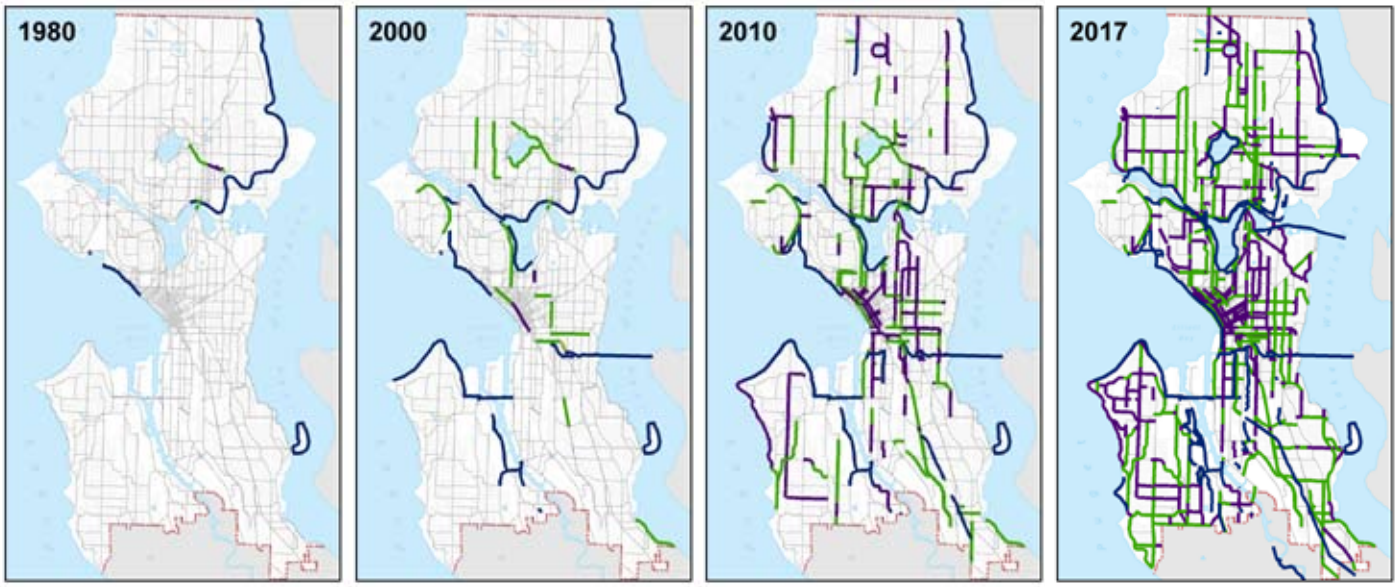
We are paying more attention to creating public spaces that are inviting and memorable, knitting together communities so that people will choose to walk or bike when traveling to nearby destinations. Creative public spaces encourage pedestrians to engage with their surroundings firsthand, and a new sidewalk art project takes that principle even further by encouraging passers-by to literally get their hands dirty. The sidewalk next to Morgan Junction Park now sports a series of stamped and stained concrete picture frames. Anyone with an artistic urge is invited to fill the space within, creating "masterpieces" to share with neighbors. The project, titled "Salon," was created by the artists SuttonBeresCuller, built by Department of Transportation street maintenance crews, and supported by the Morgan Junction community. Public spaces like this one invite casual conversation, foster social interaction, and nurture a neighborhood's identity.

Making biking easier

Biking has long been a favored transportation option for Seattleites. The Seattle Bicycle Master Plan, set into motion in 2007 and set to be completed in 2017, has identified 38 actions designed to build on that enthusiasm, actions that will make Seattle the best community for bicycling in the United States.

In 2009, the City implemented important components of the Master Plan, all of which make biking easier, safer, and more popular. There are now 201 miles of bike facilities citywide. Over the last three years, Seattle has added 92 miles of bike lanes and shared lane markings, 34 miles of signed bike connections, and 5.2 miles of trails. Improvements include the addition of a section to the Burke-Gilman Trail along Shilshole Bay to Golden Gardens Park, the design of the "Missing Link" section of the trail in Ballard, the addition of a section to the Duwamish Trail, the completion of the Interurban Bikeway, and connectors to both Magnuson and Genesee parks. By 2017, the Bicycle Master Plan calls for Seattle's bike system to more than double in size, stretching 450 miles. As biking conditions continue to improve, so will cycling's appeal for those who would otherwise drive a car.

SEATTLE'S BIKE NETWORK GROWTH



PROJECT SPOTLIGHT

12TH AVENUE BIKE RACK

Avoiding the hunt for a place to park a car is a strong incentive to ride a bike instead. To make sure cycling remains convenient and safe, the City has added to the network of on-street bike parking, and is rolling out new racks that can hold between eight and fourteen bikes. 12th Avenue is a recent and popular recipient of a new rack, and the Department of Transportation continues to solicit suggestions for additional locations. To share ideas about where the next rack should go, e-mail bikeracks@seattle.gov.

Creating a great atmosphere for bicycling requires more than just adding bike lanes. A full-picture approach also involves making it easier to find your way around the city by bike, training people on how to bicycle safely, and educating drivers so that they're more aware of cyclists. The Seattle Department of Transportation is adding pavement markings called Bike Dots along select bicycle routes as a way-finding tool; painting green bike lanes at potential conflict points where vehicles' and bicycles' paths cross; and working in collaboration with Cascade Bicycle Club and Norton Arnold to implement BikeSmart, a program that encourages more people to ride their bikes, and ride them more safely. The improvements are working. Recent survey results show that between 2007 and 2009, there was a 15% increase in biking.

Adding transit options

Sound Transit reached a milestone in 2009 with the opening of light rail. The rail service is a critical link in connecting pieces of Seattle's public transportation options, helping knit together various transit modes in the regional pursuit of one seamless network. On its opening weekend in July, 92,000 passengers boarded the 14-mile rail line. And on December 19, just in time for the holiday rush, light rail will extend all the way to Sea-Tac Airport, making it a lot easier for travelers to get to downtown Seattle. By 2023, light rail is planned to stretch at least 55 miles, reaching

PROVIDED BY SOUND TRANSIT

north from Seattle to Lynnwood, extending east to Redmond, and traveling south to Federal Way. During weekday peaks, trains already run every 7½ minutes—making light rail a convenient and reliable option for commuters—and are planned to run more frequently in the future.

At the same time residents celebrated the opening of light rail, Seattle's Department of Transportation directly improved bus options, further tightening Seattle's transportation network by focusing on routes that connect with light rail. Seattle bought almost 10,000 hours of bus service in 2009 and leveraged its purchase with a match program from King County Metro. These bus service purchases—almost half of which are focused on the City's zero-emission, quiet electric trolley bus network—are key components of making critical routes more frequent and reliable. The City aims to have a network of transit service that runs every 15 minutes or better, 18 hours a day, 7 days a week on corridors that connect neighborhoods with active business centers. This year's bus improvements are part of a three-year plan that, thanks to funding from the voter-approved Bridging the Gap transportation levy, will equal 10 buses running 12 hours per day 365 days per year. As a result, more people are riding the bus. Each weekday, an average of 300,000 people board King County Metro's buses in Seattle. This is an increase of more than 20% since 2005 and 8% since 2007.

PROJECT SPOTLIGHT

ELLIOTT AVENUE TRANSIT LANE

To make the bus an even more attractive option for many commuters, the City created transit lanes on Elliott Avenue and 15th Avenue West. Buses transporting passengers between Ballard and downtown no longer have to idle in traffic, making the commute speedier and more reliable. Riders are raving about the new service.

The corridor is heavily used by transit. There are six Metro bus routes that use this corridor, which on average carry more than 16,000 passengers a day.

During peak commute times, about 25 buses per hour—or approximately one bus every 2½ minutes—use the dedicated lanes.

These improvements are among the first of many funded by the Bridging the Gap levy. Similar improvements are being designed in other busy transit corridors to neighborhoods including West Seattle, the Rainier Valley, and the University District.

CLEAN FUELS, CLEAN FLEETS

Increasing fuel efficiency, new vehicle technology, and use of biofuels

Since greenhouse gas emissions from Seattle's cars and trucks comprise the lion's share of our carbon footprint, the problem cannot be addressed by adding improved transportation options alone. Sometimes it's necessary to drive, and when we do get behind the wheel, our footprint should be as light as possible. Seattle's efforts in 2009 have been two-pronged: We have grounded our commitment to electric vehicles (EVs)—set to arrive in significant numbers in 2010—and the infrastructure they require; and we have taken measurable steps to reduce the emissions of our current fleet. On both fronts, we have been rewarded with competitive grants that will continue to keep Seattle one of the few regions in America leading the charge for clean fuels and fleets.

Making Seattle "plug-in ready" for electric vehicles

A Seattle where a significant number of plug-in electric cars populate the streets is no longer a far-off dream, but rather just around the corner. This year, the Mayor signed an agreement with Nissan North America that paved the way for the Seattle area to be one of the first markets to receive the Nissan LEAF. The LEAF is an all-electric car that, when it's available in late 2010, will be able to travel up to 100 miles between charges. Nissan's model is just the beginning; industry experts expect as many as a dozen plug-in electric models to be available by 2012.

Plug-in electric cars are an exciting step forward in vehicle efficiency, especially here in Seattle, where the vehicles will be powered by the clean hydropower of Seattle City Light. In fact, if the average Seattle car owner made the switch to electric, it would avoid between three and four metric tons of carbon emissions annually.

The City is working hard to ensure that our community is "plug-in ready" when electric cars arrive. Along with just four other regions in the United States (the others are Portland, San Diego, Phoenix-Tucson, and Tennessee), the Seattle area was selected by the U.S. Department of Energy to be part of the largest EV demonstration project in U.S. history. The region will receive up to $20 million of investment for the EV infrastructure, which will support the development of approximately 2,500 charging stations and ensure that at least 1,000 Nissan LEAFs are sold to area residents. The City of Seattle received an additional $500,000 from DOE for installation of electric vehicle charging stations at city-owned properties.

DRIVING DOWN COST & EMISSIONS

What does it take to drive 10,000 miles?

	25 MPG Sedan	Electric Vehicle
COST	$1,140*	$190**
GHG EMISSIONS	3.6 metric tons	0 metric tons

* Based on $2.85 per gallon.

** Based on 2009 City Light residential electricity rates.

Fuel reduction and green fleets

Driving down fuel usage was a mainstay message in 2009, as Mayor Nickels made agreements with all City department directors to reduce their fuel use and charged the City's six largest fuel users (the fire and police departments, the Seattle Department of Transportation, Seattle City Light, Seattle Public Utilities, and Seattle Parks and Recreation) to reduce their fuel consumption by 3% for the year. Though the percentage

may seem modest, it translates to 80,000 gallons of fuel citywide and represents a significant shift in the way departments consider their consumption. One division, SDOT Horticulture, accomplished particularly significant fuel reductions through tactics such as minimizing unnecessary idling, taking the smallest possible vehicle to do the job at hand, and employing flexible schedules so that crews stayed out longer during the day, decreasing the number of return trips to multiday jobs.

Fuel reduction is only part of the answer, and Seattle is dedicated to taking advantage of all cutting-edge ways to reduce emissions from transportation. In 2009, the City earned a four-star rating (out of five stars) from Evergreen Fleets, a certification program that recognizes fleets for making smart, environmentally responsible choices. The City was the highest rated fleet to receive certification from the program. To accomplish this rating, Seattle piloted new types of biodiesel, held itself to strict environmental standards when purchasing new vehicles, and implemented strategies to reduce fuel consumption, such as those used by SDOT Horticulture. Overall, City vehicles reduced their greenhouse gas emissions by 13% in just a one-year period, eliminating more than 3,000 metric tons. The City is also nationally recognized, having recently been ranked the #7 Government Green Fleet in North America by the 100 Best Fleets initiative.

PROJECT SPOTLIGHT

WASTE-GREASE AS BIODIESEL

Greasy fries may just have a role in helping the environment.

Although there are many different sources used to make biodiesel, waste grease—the discards from frying, fat trimmings, and other waste—is the, err, cleanest source, at least in terms of carbon emissions. Restaurants, food processors, and grocery stores in the area discard their greases and fat trimmings to a company called General Biodiesel, who then process the waste into fuel. In 2009, Seattle started a pilot program to test waste-grease biodiesel, using up to 500 gallons a month in select vehicles. That number is now increasing to 3,000 gallons a month, and will be dispensed out of City-owned fuel tanks. Among the benefits of waste-grease biodiesel is the fact that it produces 80% less emissions than petroleum diesel.

PROJECT SPOTLIGHT

FUEL DUEL

The biggest loser will be the winner in a competition between Seattle Parks and Recreation and the Seattle Department of Transportation. Beginning in August 2009, the two departments launched a four-month competition to see which could reduce its fuel consumption by the greatest percentage. Among the winnings is a wooden plaque with a golden nozzle, passed back and forth to each month's winner before it takes up permanent residence with the contest's overall champion. As of this writing, the competition is ongoing. In the first three months, both departments reduced their fuel usage by more than 12% compared to the same period last year. The Parks Department, which currently holds a slight edge, has alone saved more than $10,000 in fuel costs.

Parks Department employee proudly displays the Golden Nozzle.

CLEAN ENERGY, EFFICIENT BUILDINGS

Enhancing the energy efficiency of Seattle's homes and businesses

Energy use in residential and commercial buildings accounts for 20% of Seattle's carbon footprint. In an effort to be the nation's prime example of building green, the City has set the goal of increasing the efficiency of existing buildings by 20%, while simultaneously raising the energy performance of new buildings. The efforts on this front have necessarily been both broad and narrow, from pioneering a home energy rating system to going door-to-door to install fluorescent light bulbs.

Throughout its efforts, the City has looked to deepen the level of energy efficiency investments, while keeping an eye toward making them available to everyone—regardless of income or whether they benefit a renter or a homeowner. You cannot preach what you do not practice, and so Seattle has also turned an eye inward, looking to see where the City's own buildings can be made more energy efficient.

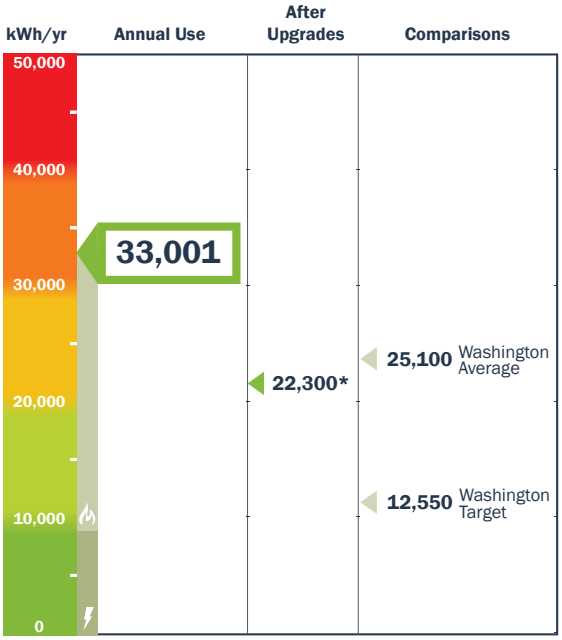
Increasing energy efficiency of homes and businesses

Put aside for a moment the energy habits of a homeowner and consider the home itself: If an owner fires up the furnace, how efficient is the structure at retaining and spreading that heat? Seattle is leading the effort to make rating the energy performance of homes a part of the way the housing market does business.

Thanks to a pilot program through Seattle City Light and Puget Sound Energy, subsidized audits will be available to 5,000 homeowners. Their homes will receive an

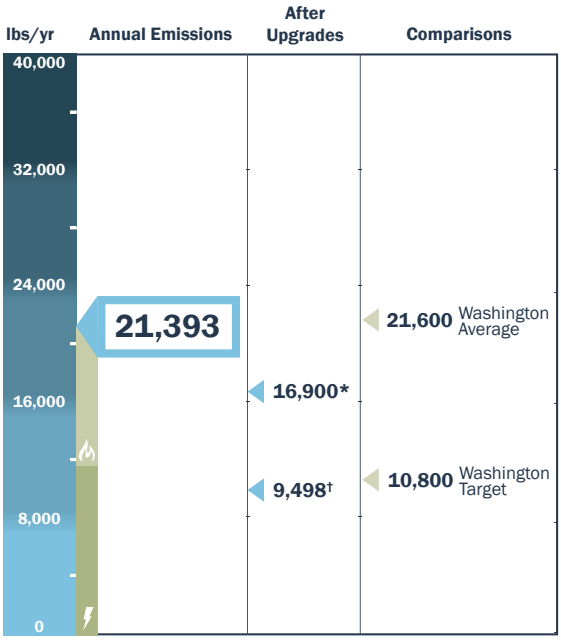
EXCERPT FROM SAMPLE ENERGY PERFORMANCE SCORE REPORT

Energy Use



*See Recommended Upgrades

Carbon Emissions



*See Recommended Upgrades
†With energy from renewable sources

Energy Performance Score (EPS) that indicates how a home's energy use and carbon emissions stack up against Seattle's averages and goals. Homeowners will see ways they can reduce their score (in this case, lower is better). They'll also receive a specific list of recommendations for improving their home's performance and cutting costs.

The City is striving to make the EPS system an important factor in the real estate market. We're working with the Multiple Listing Service to include the EPS as standard information, thereby creating a framework for buyers and sellers to use when they value a home.

Energy-efficient improvements do require upfront investment, and though they save money over time, often the initial expense feels prohibitive. The City of Seattle wants to make going green affordable for residents. To that end, Seattle will work with financial institutions to manage a pool of public and private capital, and finance loans for energy efficiency retrofits.

Seattle's focus on improving existing buildings is not limited to residential structures. The Mayor proposed, and City Council is poised to pass, legislation requiring commercial and multifamily property owners to look at their energy use. The legislation provides that, beginning in 2010, commercial buildings larger than 50,000 square feet and multifamily buildings with more than 20 units must measure and disclose their energy use to the City and to any prospective tenant, buyer, or lender. The pending legislation has a timetable for expanding the disclosure requirement to include smaller buildings in 2011 and 2012.

Promoting green building

While residential building projects are often subject to traffic jams in the permitting process, there's now an express lane. Green Q shortens the lines for those who are committed to building green and energy-efficient homes. If a project is designed to the 2006 Seattle Residential Code, it can apply for the program. Qualifying projects—which must be no more than 2,400 square feet—receive priority intake appointments, 50% faster initial plan review with no extra permit fees, application and review assistance from staff trained in green building strategies, and public recognition. For more information, see www.seattle.gov/dpd/GreenQ.

PROJECT SPOTLIGHT

DOOR-TO-DOOR EFFICIENCY

One of many obstacles to energy efficiency is that people wait for their old light bulbs and showerheads to stop working before they incorporate new, more efficient ones. The Direct Installation Program, piloted in 2009, is a community-based program that takes action *now*, by literally knocking on doors. The program recruits and trains field staff—giving priority to disadvantaged youth, veterans, and displaced workers—to go door-to-door, replacing old bulbs with compact fluorescent light bulbs (CFLs) and inefficient showerheads with low-flow showerheads. Of the over 400 knocks answered, 70% resulted in some type of action, where the respondents either welcomed the field staff inside to switch out bulbs and showerheads, or signed up to receive more information about how to make their home more energy efficient. Bolstered by the success of the pilot, Seattle City Light is in the process of developing a scaled up program 20 times the size of the pilot, which will knock on the doors of 20,000 residences in 2010.

MOONTOWN FOUNDATION

Investing in energy-efficient City facilities

Just as the City is promoting green building and improvements in the community at large, in 2009 the City also took a look at its own facilities. The buildings that comprise the civic center—Seattle City Hall, Seattle Municipal Tower, and Seattle Justice Center—underwent energy audits. The good news is that the audits found that the buildings are operating efficiently overall, but the review also identified opportunities to adjust current building systems to reduce energy and water consumption.

Still ahead, energy audits of 33 additional City facilities managed by Seattle Center, the Parks Department, and the Fleets and Facilities Department.

The Southwest Community Center provides one example of how facilities upgrades can make a big difference. Thanks to a lighting retrofit and gas-saving measures, the community center reduced its carbon footprint dramatically in 2009. Seattle Parks and Recreation oversaw the effort to replace underwater lights with LEDs, and to install mechanical units so that lights don't run at night or when the space is unoccupied. All told, the lighting retrofit avoids 160 metric tons of carbon dioxide per year. Improvements such as pool coverings and efficient boilers and toilets reduced an additional 150 metric tons of greenhouse gases.

PROJECT SPOTLIGHT

5TH AVENUE N. PARKING GARAGE

The largest green roof in the Northwest now sits in the shadow of the Space Needle. The Seattle Center's 5th Avenue N. Garage, which boasts a 1.5 acre living roof, received a LEED® Gold certification by the U.S. Green Building Council this year, the only parking structure to receive a Gold rating. The four-level structure, which houses state-of-the-art energy-efficient equipment, has a sedum-covered living roof, which helps reduce polluted water runoff while offering a home for birds and insects. Natural light pours into the top floor from skylights above, and a generous entry plaza and storefront help to enliven the surrounding streets.

LARA SWIMMER, 2009

PROJECT SPOTLIGHT

SEATTLE MUNICIPAL TOWER ALIGHTS

The Seattle Municipal Tower is shining a little bit brighter thanks to an upgrade of its lighting system. A complete overhaul began in June 2009 in order to reduce costs and avoid electrical consumption by 40%, or over a thousand metric tons of greenhouse gas.

WASTE REDUCTION

Lowering the climate impact of the stuff we consume

Small, simple steps and a collective effort have made a large impact in limiting Seattle's waste. After years of being a nationwide leader, Seattle's recycling rate leveled off at about 40% in 2003. Alarmed by this trend, Mayor Greg Nickels set a goal for Seattle to hit 60% by 2012. The news in 2009 is promising: Seattle boasted a recycling record and further expanded its recycling and food waste services. The effort is one that reaps great rewards; for every thousand pounds of newspapers recycled, for example, we can avoid two metric tons of carbon emissions.

Citywide recycling rate hits 50%

Seattle set a new city record when its recycling rate hit 50%. With increased recycling and less solid waste generated last year, Seattle reduced the amount of garbage shipped to a landfill in Oregon by 36 metric tons. It was Seattle's fifth straight year of increased recycling, credited to programs such as expanded solid waste services, free recycling for small businesses, and prohibiting recyclables in the garbage. The 50% marker also speaks to the collective effort of Seattleites in making recycling part of our culture, a trend that has not been lost on advertising campaigns; a popular commercial for Pemco Insurance references the "Relentless Recycler" as a Northwest personality profile.

Expanded recycling and food waste services

The recycling rate is expected to keep climbing, in part because of improvements to residential services that began in March 2009. The city made recycling much easier with the announcement that glass and plastics can be collected together. But the end to separating glass bottles and jars is just one piece of an expanded program; items once left off the recyclable list, such as deli trays, aluminum foil, and plastic plates and cups, are now eligible for pickup. Further, electronics, used motor oil, and bulky items (which might otherwise be too difficult to carry to recycling) can now be collected using special services. To lower the impact the logistics of recycling demands, Seattle's waste haulers—Waste Management and CleanScapes—use low-emission trucks that run on compressed natural gas, dramatically reducing key pollutants in neighborhoods.

On the food waste front, Seattleites can now throw all food scraps, from fish to bone, in the food and yard waste cart for weekly pickup. In fact, all single-family residents who don't compost their food waste at home *must* subscribe to food and yard waste collection service. Cedar Grove Composting, Seattle's contractor, takes that waste and turns it into Earth-friendly, all-natural soil amendments. In a fitting loop of resources, when gardeners use this recycled compost, they help their garden thrive while avoiding greenhouse gas emissions that contribute to climate change. For every thousand pounds of food scraps composted, we avoid more than a metric ton of carbon emissions.

SEATTLE RECYCLING RATES 2003–2008

ADAPTATION

Planning for the likely impacts of climate change

The concentration of greenhouse gases in the atmosphere today means that even if we dramatically decrease climate pollution, Earth will continue to warm through the end of the 21st century. So while lowering our collective footprint is a critical piece in minimizing the impacts of climate change, we also must adapt to the changes that are inevitable. The City is in the process of developing a climate impacts preparedness kit of sorts, incorporating adaptation strategies like natural drainage, drought-tolerant plants, and heat response plans. In 2009, the City continued to prepare for climate impacts by enhancing its research efforts, increasing its collaboration efforts with other organizations, and developing new tools to improve our reading of the world around us. Armed with extensive data and forecasting, Seattle can make better decisions about how and where to allocate its resources.

Analyzing water supply

The nation's best climate scientists predict that by 2040, the Northwest will see a significant reduction in snowpack, which will likely have serious implications for managing our water resources. Water conservation is a critical piece of Seattle's response, and so Seattle Public Utilities (SPU) plans to reduce water usage by 15 million gallons a day by 2030. Another critical piece is making operational adjustments, such as refining minimum reservoir levels so that our system can continue to meet demand with less water.

Adjusting to sea level rise

In 2009, Seattle Public Utilities gained a better understanding of what the global threat of sea level rise may look like in Seattle. Using analysis completed by the University of Washington's Climate Impacts Group, SPU developed maps depicting sea level rise scenarios at two time periods: 2050 and 2100. The maps can be used by City departments when making capital investments, developing new facilities, or creating land use policies and plans in potentially affected areas of the city.

PROJECT SPOTLIGHT

PARKS ADAPTIVE IRRIGATION TECHNOLOGY

The irrigation systems at Seattle parks are smarter than they've ever been. Timing and responsiveness are the emphasis; whereas in a traditional irrigation system, clocks are set so that the grass is watered at the same time each afternoon, 65 of Seattle's park sites have schedules that change each day according to environmental conditions. And 30 sites are even *more* responsive, as they're equipped with rain sensors. If it starts to rain, the sensor responds, and irrigation halts. The system is a very literal example of adapting to the environment in real time. We save precious water by not using it when it's raining anyway, and we ensure that we can provide that water during dry spells, when it's needed most.

Parks irrigation rain sensor

COMMUNITY ENGAGEMENT

Helping residents and businesses lower their carbon footprint

Seattleites know that climate change action is not just the purview of political officeholders. Daily decisions and commitments on each of our parts make a measurable, important difference. The City aims to support Seattle residents and businesses in their ongoing efforts. The City has provided access to one of the most comprehensive carbon footprint calculators available, which links directly to a customized action plan. Dedicated volunteers can receive training on becoming a Carbon Coach, to pass on climate-friendly tools and techniques to members of their community. And through rallies and street parties, everyone can find new ways of connecting with one another, celebrating successes, and collectively voicing commitment for the future.

Business and residential carbon footprint calculators

Calculating the carbon footprint of a Seattle residence or business got much easier in 2009. Seattle Climate Action Now and the Seattle Climate Partnership, both programs of the City's Office of Sustainability & Environment, joined forces to develop online residential and business carbon footprint calculators that look at energy use, transportation, waste, and materials. (Most calculators look only at energy use and transportation.) Once users log on to the Web-based program, they can see a listing of what information they need to have on hand before commencing. Then they're led interview-style through a series of questions, including such specifics as (in the case of the residential calculator) the size of their garbage cans and the amount they spend on meat per week. Users can track their results over time, determining if their carbon footprint is decreasing from year to year. To use the business calculator, visit: http://scp.co2challenge.com. To use the residential calculator, visit http://seattle.co2challenge.com.

PROJECT SPOTLIGHT

SUMMER STREETS

Free of cars, streets themselves became a prime attraction over the summer of 2009. Celebrate Seattle Summer Streets opened up streets to pedestrians and bicyclists, offering people a way to celebrate their neighborhood's unique personality and the pleasures of a nonvehicular afternoon. Participants could shop, cycle, stroll, and generally enjoy their community from a different viewpoint. Each event was organized by a local organization, and spanned the city from Rainier Valley to Greenwood and from Ballard to Alki. Providing places to play encourages connection among neighbors, allowing communities to come together for a common goal, whether that goal is organizing around climate change or simply seeing a street in a new light.

PROJECT SPOTLIGHT

CARBON COACHES

Carbon Coaches are citizen volunteers trained to educate and inspire their friends and neighbors to reduce carbon emissions from transportation, home energy use, waste, and materials purchasing. During a 15-hour training course over six weeks, these volunteer ambassadors learn tools for measuring carbon footprints, the most effective ways to reduce emissions, and how to inspire others to take action. At the end of the course, Carbon Coaches are charged with conducting outreach projects in their community and motivating at least 30 fellow residents to do their part to help Seattle reach its climate protection goals. The debut session produced 31 graduates in November 2009, all of whom have already developed outreach plans and started engaging with the public.

PROJECT SPOTLIGHT

SEATTLE SPELLS 350

More than 5,200 events worldwide recognized International Climate Awareness Day on October 24, 2009. The effort was organized by 350.org, a campaign dedicated to inspiring action on climate change. In Seattle, residents turned out in the hundreds to highlight the number 350—the parts per million of carbon dioxide in the atmosphere that will stabilize the earth's climate (the current level is 385). On top of the Fisher Pavilion at Seattle Center, more than 700 people joined to form the numbers 3, 5, and 0 while pledging to do at least three things to reduce their carbon footprint. Earlier in the day, a few miles north, members of Sustainable Ballard arranged squash into a 350 formation to signify the need to "squash" global warming.

JAY DOTSON PHOTOGRAPHY

MEASURING PROGRESS

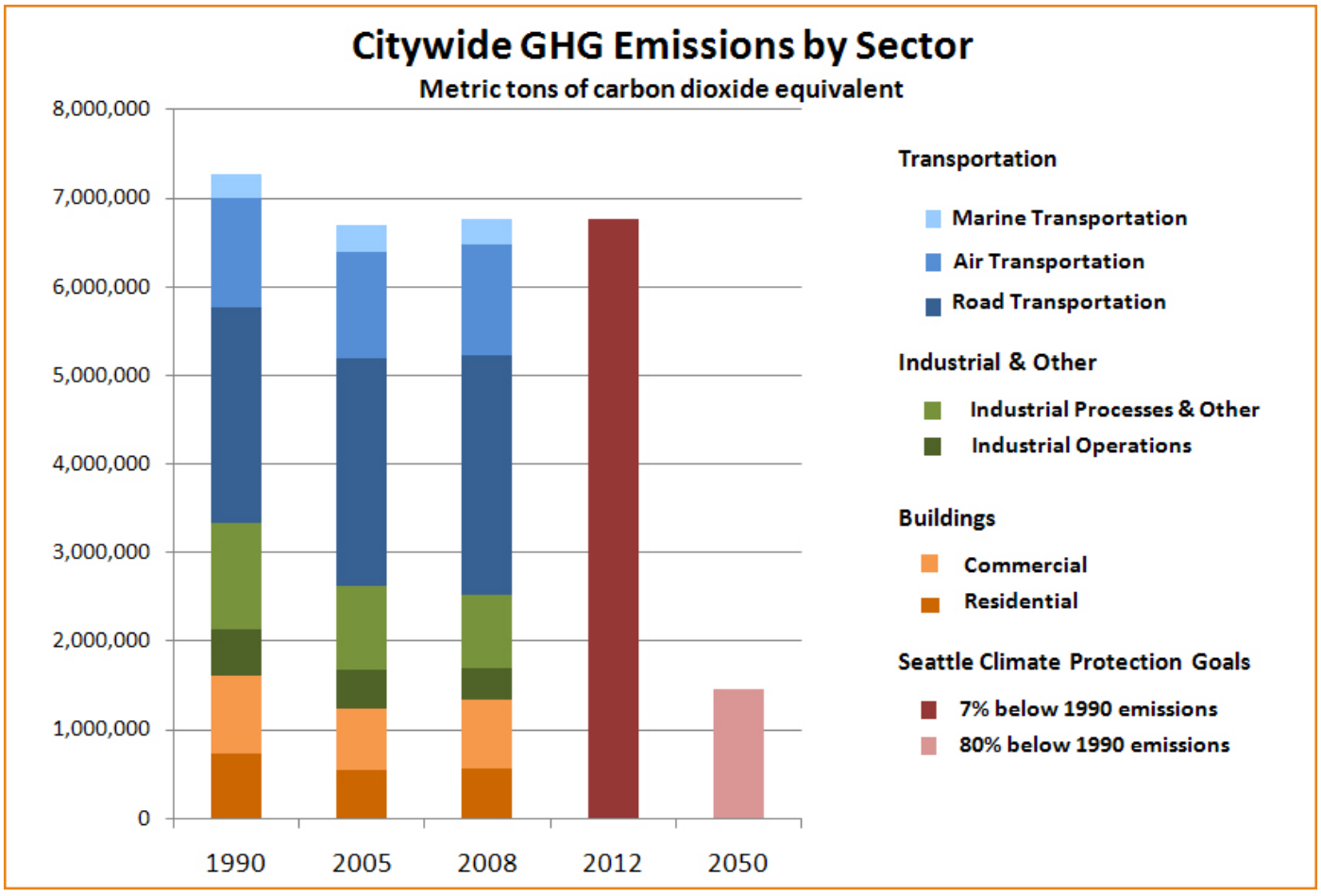
Gauging the road traveled and the road ahead

2008 SEATTLE COMMUNITY GHG INVENTORY

An inventory of the citywide greenhouse gas (GHG) emissions is our primary method of gauging progress toward Seattle's near-term and long-term goals of reducing climate pollution. The inventory measures the GHGs produced by Seattle's main emission sectors: transportation, buildings, and industry. The inventory also helps us identify the sectors where emissions are declining and where we need to take further action.

This year, the Office of Sustainability & Environment completed an inventory of the Seattle community's 2008 GHG emissions. The 2008 inventory is part of a commitment on the part of the City to measure the community's carbon footprint every three years. The last community inventory reported 2005 emissions. Highlights from the 2008 inventory as are follows:

In 2008, citywide emissions met the reduction target of the Kyoto Protocol. Our 2008 GHG emissions are 7% below 1990, and if emissions stay at the same level over the next three years, we will achieve our 2012 goal. Holding emissions to 2008 levels will be challenging as our city continues to grow in population and bounces back from the economic downturn. As evidence of the challenge ahead, Seattle's emissions increased approximately 80,000 metric tons from 2005 to 2008, owing in large part to growth in



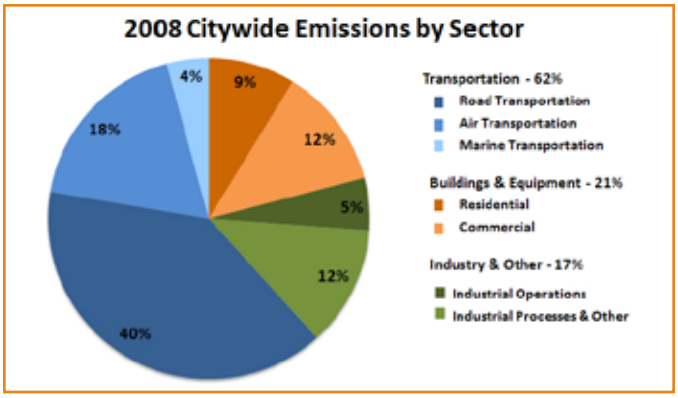
population and building, stagnant transportation emissions, and a particularly cold winter.

Since 1990, Seattle's population has grown roughly 16%, yet total emissions have dropped 7%. The combination of population growth and emissions reductions means that on a per person basis, we've made significant strides in lowering our carbon footprint. Seattle's per capita emissions—total emissions divided by total population—have declined 3% from 2005 and are now an impressive 20% below 1990 levels. In fact, if Seattle's 2008 GHG emissions were still at 1990 per capita levels, our carbon footprint would be more than 1.6 million metric tons—or 25%—higher than it is today.

Transportation emissions remain Seattle's biggest challenge. Transportation is the only sector in Seattle for which GHG emissions are still increasing, at roughly 7% above 1990 levels. Road, air, marine, and rail travel make up nearly two-thirds of Seattle's total 2008 emissions. The largest share of transportation emissions are from the cars and trucks on our roads, which comprise 64% of total transportation emissions. Although passenger vehicle fuel efficiency has increased approximately 9% since 1990, passenger vehicle miles traveled have outpaced our efficiency gains, rising roughly 16%. But there is some promising news on the transportation front: Per capita transportation emissions have declined 7% from 1990, and even road transportation emissions have dropped 4% per capita.

Per Capita GHG Emissions by Sector*	1990	2005	2008	% change 1990-2008
TRANSPORTATION	7.6	7.1	7.1	-7%
Road	4.7	4.5	4.5	-4%
Marine & Rail	0.5	0.5	0.5	-10%
Air	2.4	2.1	2.1	-13%
BUILDINGS	3.1	2.5	2.5	-21%
Residential	1.4	1.1	1.0	-28%
Commercial	1.7	1.4	1.4	-15%
INDUSTRY & OTHER	3.3	2.5	2.0	-40%
Operations	1.0	0.8	0.6	-40%
Processes	2.0	1.5	1.3	-37%
Waste	0.3	0.2	0.1	-59%
TOTAL PER CAPITA	14.1	11.6	11.3	-20%

** metric tons of carbon dioxide equivalent (CO2e)*



Seattle's buildings are continuing to move toward cleaner energy and fuels. Emissions from energy consumed by Seattle's residential and commercial buildings have decreased by 9% since 1990. The most significant reductions have come from residential buildings, in part because of a substantial shift from oil to natural gas as a home energy source. In addition, Seattle City Light's investments in energy conservation and electricity from renewable sources have helped the utility to move away from natural gas- and coal-derived electricity, significantly reducing the carbon intensity of Seattle's building energy. And City Light offsets its remaining electricity emissions by investing in carbon reduction projects, effectively zeroing out the carbon footprint of electricity in Seattle.

Achieving Seattle's 2050 goal will require systemwide change. To meet our 2050 goal, we need to reduce emissions by roughly 5.3 million metric tons. In 2009, the Office of Sustainability & Environment conducted an analysis of reduction potential in Seattle's emission sectors. The analysis concluded that achieving our long-term GHG goals will require local, state, and national actions that are an order of magnitude more aggressive than what is being implemented today. Reducing emissions 80% below 1990 levels over the next 40 years will require a new way of thinking about how we power our buildings, transportation, and industry.

First and foremost, we need a federal cap and trade program to create market incentives to reduce carbon emissions. A comprehensive cap and trade program is an essential component of a national carbon reduction program and is needed for cities, like Seattle, to achieve carbon reduction goals.

We will also need a paradigm shift in our transportation

planning. We will no longer be able to simply estimate increased demand due to population growth and then plan to meet that peak demand with increased capacity. We will have to use our road resources more efficiently. As we plan our transportation infrastructure and build a system to move people and goods, we must prioritize GHG reductions. And for the vehicle trips that need to take place, we will have to shift our fuel source away from fossil fuels to non-food-based biofuels and green Seattle City Light electricity. The electrification of our transportation system in Seattle is perhaps the greatest opportunity for carbon reduction over the next decade.

We will continue to need energy to power the heating, cooling, and lighting of our built environment. Yet we need to use energy more efficiently. By 2030, new buildings should emit no carbon. We can achieve this through better energy codes and use of district energy systems, solar energy, and micro-wind turbines. The buildings already standing should be retrofitted so that we stop wasting money and energy. A simple-to-understand rating system for homes and office buildings—like MPG for vehicles—should be widely adopted so that consumers make wise investments in their homes and businesses. And comprehensive energy assessments, or audits, should become as commonplace as structural inspections during the purchase of homes.

Many of the tools we will use to meet our 2050 carbon reduction targets have not been developed yet. New technologies in renewable energy, efficiencies, and waste reduction will drive innovation in slowing global warming. This 2008 Seattle community GHG inventory, however, provides a framework for the challenges ahead, as we make progress in meeting our 2012 goal and show leadership in substantial carbon emission reduction by 2050.

The full report of the 2008 Seattle Community GHG Inventory is available at: www.seattle.gov/climate

GHG Emissions by Sector*	1990	2005	2008	% change 1990-2008
TRANSPORTATION	3,947,000	4,062,000	4,242,000	7%
Road	2,440,000	2,566,000	2,707,000	11%
Marine & Rail	278,000	300,000	291,000	5%
Air	1,229,000	1,196,000	1,244,000	1%
BUILDINGS	1,609,000	1,411,000	1,470,000	-9%
Residential	735,000	606,000	613,000	-17%
Commercial	874,000	805,000	857,000	-2%
INDUSTRY & OTHER	1,720,000	1,413,000	1,200,000	-30%
Operations	524,000	463,000	366,000	-30%
Processes	1,019,000	853,000	749,000	-26%
Waste	177,000	97,000	85,000	-52%
GHG OFFSETS		-216,000	-143,000	
City Light Offset Purchases		-216,000	-143,000	
TOTAL EMISSIONS	7,280,000	6,670,000	6,770,000	-7%

** Metric tons of carbon dioxide equivalent (CO2e) rounded to the nearest thousand. Totals rounded to nearest ten-thousand. Sums may not equal due to rounding.*

2012 Goal - 7% below 1990:	6,770,000
2050 Goal - 80% below 1990:	1,460,000

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