CITY PROFILE

As a city of 700,000 residents, Seattle is the largest city in Washington State, and one of the fastest growing cities in the United States. Seattle lies in the northwest corner of the United States between the Puget Sound and the Olympic Mountains to the west and Lake Washington and the Cascade Mountains to the east. Its access to natural and cultural amenities contributes to its recognition as one of the most livable cities in North America. Seattle has a diverse economy based on information and communication technology, maritime industry, manufacturing, aerospace, healthcare, clean technology, film and music, and tourism. The Seattle metropolitan area has a Gross Domestic Product of over $340 billion.

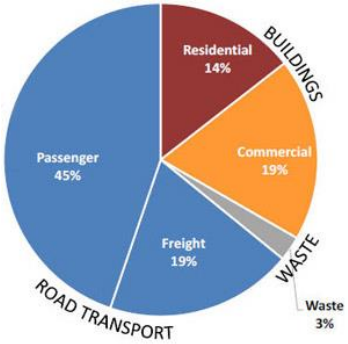
TARGETS

In 2011, Seattle adopted the goal of becoming carbon neutral by 2050. Two years later, the city council unanimously adopted the Seattle Climate Action Plan, outlining a comprehensive set of actions to put the City on the path to achieving carbon neutrality. To keep us on the path to carbon neutrality, the Climate Action Plan identifies the following 2030 targets for reductions in passenger vehicle and building energy emissions, the city's largest sources of emissions:

	2030 Targets
Passenger Vehicle Emissions	**82% reduction** from 2008 baseline
Building Energy Emissions	**39% reduction** from 2008 baseline
Combined Passenger Vehicle and Building Energy Emissions	**64% reduction** from 2008 baseline

EMISSIONS PROFILE

The City of Seattle completed its most recent community-wide greenhouse gas inventory for calendar year 2014, which assessed emissions from the transportation, buildings, and waste sectors. The City also annually reports emissions to the Carbon Disclosure Project. Between 2008 and 2014, total emissions declined 6% and per capita emissions 17% while the population grew 13%. The 2014 inventory estimated total emissions at 3.47 million metric tons of carbon dioxide equivalent (mtCO2e), or about 5.2 mtCO2e/person. The transportation sector accounted for nearly two thirds of the total emissions.



TOOLS

The Seattle Climate Action Plan provides a coordinated strategy for action that cuts across City functions and focuses on City actions that reduce GHG emissions while also supporting other community goals, including building vibrant neighborhoods, fostering economic prosperity, and enhancing social equity. While GHG emissions can be found in virtually every sector of the economy, the plan focuses on the largest emissions sources and where the City is uniquely positioned to have a significant impact: road transportation, building energy, and waste. These actions are summarized below.

TRANSPORTATION

Smart growth is the foundation of effective transportation policy, and Seattle's nationally recognized urban village strategy, adopted in 1994, provides the essential foundation for Seattle's climate-friendly transportation policies. The passage of the 2015 Levy to Move Seattle and the 2016 regional Sound Transit 3 levy, are accelerating and expanding investments in transit, bicycling, and pedestrian infrastructure and service. And, King County has committed to an all-electric bus fleet by 2040. The overall approach to reducing GHG emissions from transportation is to leverage changes in technology and our increasingly dense city to fundamentally change how people get around. The future of transportation is smart, shared, electric, and ultimately autonomous, and our policies are driving these changes in Seattle in ways that align with our goals to improve connectivity, health, and safety. We are implementing a coordinated strategy of:

- Expanding transit, bicycling, and pedestrian infrastructure and services,
- Expanding charging infrastructure to foster increased adoption of electric vehicles,
- Guiding growth to walkable and transit-accessible neighborhoods, and
- Providing price signals that reflect the true cost of driving and incentivize shared and electric transportation choices.

Highlights of recent transportation actions are provided below.

Transportation Choices

Local and regional investments in transit and bike and pedestrian infrastructure have led to significant reductions in single occupant vehicle (SOV) use in Seattle. The period when Seattle has experienced some of its most rapid growth, 2010-2017, has also seen significant progress in commuter mode shift toward more sustainable modes of transportation. During this seven-year period, downtown Seattle has added 45,000 jobs and become more residential, but only 2,255 new drive-alone trips have been added to downtown streets. The overall SOV mode share of commuter trips declined by 10 points to 25 percent and the share of transit trips has steadily increased from 42 percent to 48 percent. Meanwhile, walking to work increased 1.8 basis points to 7.7 percent and the bike share grew to over three percent.

Electric Vehicle Charging in the Right of Way

Visible and ready access to charging infrastructure is essential to expanding vehicle electrification. To meet that need, in 2017, a pilot program was initiated to permit the installation of publicly-available electric vehicle charging stations on non-residential streets in urban villages, urban centers, and commercial streets. To date, over 60 applications have been received from three applicants, including Seattle City Light, who installed the first station in February 2018. The pilot program has strict siting and data sharing guidelines, and applications are reviewed against criteria which will ensure alignment with City policy goals including supporting shared vehicle use and meeting travel needs not well-served by transit. Pilot program results will be reviewed in mid-2018.

Seattle City Light Charging Program

In response to customers' increasing desire for electric vehicles and to understand how best to manage the impact of vehicle charging on the electrical grid, Seattle City Light is designing and implementing two charging infrastructure pilot programs. The programs will expand public fast charging availability and support residential charging at home. Through the right of way charging pilot program described above, City Light is installing 20 public fast charging stations to increase access, while also ensuring that charging is distributed more equitably around the city. The residential program will offer customers access to in-home charging at a manageable monthly cost and is expected to launch in the fall of 2018. Pending legislation will determine if program funding will leverage a lease or incentive model.

Electrical Code
In 2017, the Seattle Electrical Code was amended to ensure new parking is built to facilitate future electric vehicle charging infrastructure. The code requires adequate electrical capacity to serve one electric vehicle charging station per parking space and that construction documents show the location of equipment and conduit for future installation of electric vehicles charging stations.

New Mobility Playbook
How we get around is undergoing a sea change, and Seattle is preparing for a transportation future that is shared, electric, and autonomous. As transportation becomes increasingly shared, active, self-driving, electric, and data-driven, Seattle is planning ahead to ensure the fast-paced changes in mobility help us create a safe, equitable, sustainable city serving our diverse needs. The 2017 New Mobility Playbook sets out a course for how Seattle will ensure that future of transportation in Seattle aligns with our city's goals and values and will position Seattle to encourage and guide innovation in transportation technology, reorganizing our streets to grow healthy communities and vibrant public spaces.

Shared Mobility Hubs
Seattle's Shared Mobility Hub program will aggregate transportation connections, travel information, and other mobility amenities into a seamless, understandable, and on-demand travel experience. The Seattle Transportation Department is developing a dense network of shared mobility hubs throughout the city, co-located with major transit facilities and in places where frequent transit services intersect. A key objective for shared mobility hubs is to advance the use of electric car share and ride hail vehicles by accommodating fast charging at or very near hub locations.

Municipal Fleet
Seattle was one of the first cities in the country to buy conventional hybrids (early 2000s) and the battery electric Nissan Leaf (2011), install hybrid systems on ambulances, and use a 20 percent biodiesel blend from sustainable feedstocks in all heavy-duty vehicles. The Green Fleet Action Plan guides the City's efforts to meet the goal to reduce municipal fleet emissions by 50 percent by 2025 by increasingly electrifying the fleet, using cleaner fuels when electrification is not feasible, increasing efficiency in how vehicles are used, and setting standards for vehicle procurement. The City's fleet includes over 200 electric vehicles and over 300 hybrid vehicles. Between 2013 and 2016, GHG emissions from the municipal fleet decreased by 11.5 percent and total fuel use decreased by five percent.

BUILDINGS
Seattle has long been a leader in the building sector, beginning in 1977 with Seattle City Light's focus on conservation, becoming the first city in the nation to adopt a green building goal for all new municipal buildings in 2000, and creating a LEED incentive program for private projects in 2001. In 2005, Seattle City Light's became the nation's first carbon neutral electric utility. And, in 2011, Seattle joined the 2030 District as a Founding Member, creating a model of public and private partnership committing to bold goals for new and existing buildings in the downtown district. While this is a strong foundation, we must increasingly rely on our carbon neutral electricity to decarbonize our new and existing building energy supply.

The overall approach to reducing GHG emissions has been to increase building efficiency and promote clean fuels through a coordinated strategy of:

- Measuring and sharing building energy use information to increase awareness and provide the information needed to make costs effective upgrades,
- Providing incentives, such as rebates and financing to help offset the upfront cost of efficiency investments and the cost of transitioning off fossil fuels, and

- Implementing strong codes for new construction and requiring ongoing evaluation and optimization of energy use.

Highlights of recent building actions are provided below.

Benchmarking

Adopted in 2010, Seattle's Energy Benchmarking Program (SMC 22.920) requires owners of non-residential and multi-family buildings (20,000 square feet or larger) to track energy performance and annually report to the City. The policy was updated in 2016 to make reported data publicly available to further increase awareness of building energy use and support real estate market transformation. It is estimated that Seattle's benchmarked buildings represent about two-thirds of citywide commercial and industrial square footage. The Benchmarking and Transparency policy is foundational to reducing energy use and GHG emissions – raising the awareness of energy consumption among building owners and managers enables opportunities to reduce energy use and save money. The data also helps the City track overall building energy use and emissions while informing energy efficiency policy and program development. Program staff assist building owners with compliance, ensure data quality is high, and connect customers to rebates and technical assistance. Seattle has an industry leading compliance rate of 99 percent each of the past four years. Since 2014, buildings benchmarking three consecutive years have demonstrated a 2.7 percent decrease in energy use.

Tune Ups

Adopted in 2016, the Building Tune-Ups Ordinance (SMC 22.930) requires commercial buildings 50,000 square feet or larger to identifying low- or no-cost building operations and maintenance improvements to improve energy and water efficiency. Compliance deadlines will be phased in by building size, beginning in early 2019. A Qualified Tune-Ups Specialist is required to complete the assessment, report to the City, and monitor implementation of operational and maintenance improvements. Examples of operational fixes include changes to thermostat set points, or adjusting lighting or irrigation schedules. Tune-ups also review HVAC, lighting, and water systems to identify needed maintenance, cleaning or repairs. These types of improvements typically reduce individual building energy use an estimated 10-15 percent. Across the entire commercial building sector, the tune-up mandate is expected to reduce energy use 5-8 percent and GHG emissions by 6-9 percent.

To demonstrate leadership, build capacity in the industry, and help reduce compliance costs, the city has committed (Resolution 31652) to meeting the Building Tune-Ups deadline one year earlier than required for private owners.

Tune-Up Accelerator

With funding from a Department of Energy grant, the City is implementing the Building Tune-Up Accelerator Program providing incentives for early compliance with the Tune-Ups Ordinance.
The Accelerator is a voluntary program for owners of mid-size buildings, those 50,000-100,000 square feet, to conduct a tune-up that meets the Seattle Building Tune-Up requirements in advance of when their building is required to comply (2020 & 2021). Building owners can receive Seattle City Light incentives for the tune-up and will be encouraged to go beyond a tune-up by conducting additional energy conservation measures. The University of Washington Integrated Design Lab is providing no-cost technical support and guidance for owners pursing more extensive energy upgrades. Participating energy service providers will perform building assessments and assist owners in meeting the tune-up requirements, as well as collect building characteristic data and work with owners to pursue additional energy-savings opportunities.

Oil Heated Home Conversion

The Oil Heated Home Conversion program provides incentives for homeowners to replace oil heating systems with clean, efficient, electric heat pumps. By partnering with a heat pump distributor, who provides matching

incentives, the program is converting 200 homes per year, while also influencing the home heating market so that electric heat pumps become a preferred heating system. Since its launch in July 2017, 135 homes have been converted with a GHG emissions savings of five MTCO2 per home.

Energy Code
Seattle's commercial energy code (which includes multifamily buildings four stories and above) is a national leader. Approaches implemented first in Seattle are typically later adopted at the state level and in other leading North American cities. An analysis of the 2012 Seattle Energy Code (SEC) found that commercial buildings meeting our code are, on average, 11 percent more efficient than those designed to the national standard, and the current code is approximately 20 percent more efficient. The 2015 SEC includes criteria that address emissions, by requiring either non-fossil fuel-based heating or more efficient windows. Seattle City Light provides an annual grant to Seattle Department of Construction and Inspections to help make possible the work to develop and implement Seattle's advanced code.

Priority Green
Seattle Department of Construction and Inspections provides expedited permitting for projects achieving green building certification and meeting minimum energy efficiency (15 percent better than code), water conservation, and indoor air quality criteria.

Zoning Incentives
Multiple zoning incentives are available to catalyze development that is more efficient than code:

- In certain zones, developers can access additional height, floor area or density by meeting the City's Green Building Standard. Director's Rule 20-2017 identifies the requirements, which include adhering to one of the building industry's green building certification programs and demonstrating that the project is 15 percent more energy efficient than code.
- The Living Building Pilot Program provides additional height and floor area for up to 20 projects that meet more extensive green building criteria, which includes achieving Living Building Petal Certification (with no on-site combustion of fossil-fuels), plus energy efficiency 25 percent better than code, and greywater and/or rainwater used for all non-potable water needs (e.g. toilet flushing, irrigation).
- Legislation is currently being proposed that would create a companion pilot program for re-development of up to 20 existing buildings. Projects would receive additional height and floor area if they meet standards consistent with the goals of the Seattle 2030 District, including 25 percent more energy efficient than code, no fossil-fuel for space or water heating, combined stormwater and potable water use 50 percent below the 2030 District baseline, and travel mode share percentages to the Comprehensive Plan standards for 2035.

Municipal Buildings
In 2011, the City updated its Sustainable Building Policy for City-owned buildings covering new construction and major renovations. In addition to the requirement to achieve LEED Gold certification, projects are expected to be 15 percent more energy efficient than the current code.

In 2013, the City adopted a Resource Conservation Management Plan (Resolution 31491), with the goal to achieve a 20 percent reduction in energy use across City-owned buildings by 2020 (2008 baseline). The Office of Sustainability & Environment manages the dedicated funding and works with individual capital departments to prioritize, develop and implement energy efficiency projects. The City is on track to meet the reduction goal, with a 12 percent energy use reduction through the end of 2016.