

Seattle Climate Action

April 2018



City of Seattle
Mayor Jenny A. Durkan



City of Seattle

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ACKNOWLEDGEMENTS

Seattle Office of Sustainability & Environment
Seattle Department of Transportation
Finance and Administrative Services
Seattle Public Utilities
Seattle City Light
Seattle Department of Construction and Inspections

Letter from the Mayor

April 4, 2018

Here in Seattle, we don't wait for others to tell us what our future is going to look like - we create it. We have led the world in aerospace technology, are home to the fastest computers and the cloud, and are pioneering developments to help cure for cancer. And when faced with the challenge of climate change, Seattle is again ready to stand up and lead.

In 2017, when President Trump removed the U.S. from the Paris Climate Agreement, the City committed to upholding the pollution reduction targets in the Agreement. We know that we are already seeing the impacts of climate change, from wildfires that choke our air to more intense storms that flood our streets. And we know that these impacts are not experienced equally. Around the world, and right here in Seattle, communities of color and lower income communities disproportionately experience climate change.

In response, we must lead with bold solutions that reduce pollution while strengthening our economy and ensuring that the benefits of a clean energy economy are shared throughout our city. Even as our city continues to grow, we must move beyond incremental change and fundamentally reshape our building and transportation systems for a fossil fuel-free future.

Seattle has never shied away from confronting challenges, which is why our City will act and do what is right even in the face of such failure from our President. The actions included here won't be easy and will require all of us to work together to get the details right. But I know that when Seattleites put their minds together and resolve to change the world, absolutely nothing can stop us. We can ensure that our City and planet thrive for our children and all future generations.

Sincerely,

Mayor Jenny A. Durkan



Seattle City Light/K. Kennedy

| Background

In 2011, the Mayor and City Council adopted a bold climate protection goal for our community to become carbon neutral by 2050 and directed the creation of a plan to meet the goal (Resolution 31312). The resulting 2013 Climate Action Plan (CAP) provided a coordinated strategy aimed at reducing GHG emissions while also supporting other community goals, including building vibrant neighborhoods, fostering economic prosperity, and enhancing racial and social justice. The 2013 CAP included a slate of near-term actions – many of which were completed by 2015 – and more broadly defined longer-term strategies to achieve carbon neutrality by 2050.

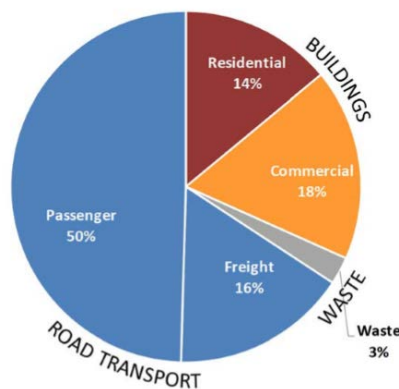
In response to the Trump administration's withdrawal of support for the international Paris Climate Agreement last year, the City Council adopted Resolution 31757, affirming Seattle's commitment to the goals established in the Paris Agreement, and directing the Office of Sustainability & Environment (OSE) to identify the actions necessary to do our part to limit warming to 1.5 degrees Celsius. The resulting actions, developed under the leadership of Mayor Durkan, reflect a tipping point in the transition to Seattle's zero emissions future. They are designed to move beyond incremental change and fundamentally reshape our building and transportation systems for a fossil fuel-free future.

| Greenhouse Gas Emissions

A review of Seattle's greenhouse gas (GHG) emissions since 2008 reveals mixed results. While emissions are not declining quickly enough to meet our goals, overall, total GHG emissions compared to 2008 declined six percent, while population grew 13 percent, and per person emissions declined 17 percent (Figure 1). The decline in per person emissions reflects the effectiveness of national standards and local initiatives in increasing how efficiently we use energy, in both the transportation and building sectors. However, while Seattleites are relatively GHG-efficient compared to the nation, state, and county, the modest decline in total emissions highlights the imperative that we fully transition our growing city to a zero-emissions energy supply.

Road transportation made up two thirds, 66 percent, of Seattle's core emissions in 2014. Most of these emissions (50 percent of total emissions) were from passenger vehicles (cars, light duty trucks, SUVs and buses), with the remaining from medium- and heavy-duty trucks. Energy used to heat, cool, and power buildings accounted for about one third of emissions, with that total split between residential and commercial buildings. Waste management contributed three percent to total emissions. (Figure 2) Emissions attributed to buildings has declined from about 40 percent in 1990 and 2008 to about 33 percent in 2014.

Figure 2. 2014 Seattle greenhouse gas emissions by sector



Changes in emissions since 2008 include:

- Total road transportation emissions declined two percent and per person emissions declined 12 percent due to a combination of more fuel-efficient vehicles and fewer vehicle miles travelled per person as we have increased transit service and walking and bicycling infrastructure.
- Total building energy emissions declined 13 percent and per person emissions declined 23 percent as a result of lower building energy use, particularly for residential buildings due to lower energy use as our codes became more stringent and incentives spurred efficiency gains. Commercial energy use has also begun to decline, but much more slowly.
- Emissions from waste management remain a relatively small component of Seattle's GHG emissions. Total waste emissions declined 14 percent and per person emissions declined 23 percent, primarily as a result of reductions in the annual amount of waste landfilled.

The pace of reductions between 2008 and 2014 helps us better understand our progress to date and the gap to our goals. Passenger transportation emissions declined an average of 0.5 percent per year since 2008. To achieve the 2030 goal of reducing passenger transportation emissions 82 percent, Seattle would have needed to reduce emissions from passenger vehicles an average of 7.5 percent each year from 2008 onwards. Building emissions declined an average of 2.3 percent per year since 2008, which is on track to meet the goal of reducing emissions 39 percent by 2030 (2.2 percent per year). However, between 2012 and 2014 the pace of building emissions reductions has slowed to an average of 2.1 percent, and an analysis of anticipated reductions based on a current business-as-usual approach shows emissions in 2050 only 12 percent below 2008 levels.¹

Emissions from waste management remain a relatively small component of Seattle's GHG emissions (three percent). These emissions declined 14 percent between 2008 and 2014. Because emissions in the waste sector represent a small share of total emissions and have been declining due to a highly effective program of actions in support of Seattle's zero waste goal, this action agenda focuses on the transportation and building sectors.

While the 2014 GHG Inventory shows some encouraging trends, it also demonstrates that there is more work to be done to meet our climate goals. Total building emissions are declining but that trend will slow without decarbonization policies, and transportation emissions have been relatively unchanged over the past few years. The gap between per person total and total emissions reflects the impact of growth and clearly demonstrates that we cannot achieve our goals solely by being more efficient with our resources. Efficiency remains an important strategy to reduce waste and free up clean and carbon neutral electricity to provide the heat and power needed for our growing city; however, we must rapidly transition away from fossil fuels to zero emissions energy in our cars, trucks, buses, and buildings.

¹ *Building Energy Use Intensity Targets*. Ecotope, Inc. for Seattle Office of Sustainability & Environment. March 2017.

Recent Climate Actions



Recent policies and programs provide a strong foundation on which to build the next generation of climate actions. Much progress has been made in improving the efficiency of energy use in the transportation system and buildings. Below are highlights of ongoing climate work. These actions reflect the strong commitment of the community, elected officials, and staff across City government to climate action.

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 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 pursuing 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.

Seattle City Light Energy Efficiency Programs

Seattle City Light offers a diverse set of energy efficiency programs to address residential, commercial, and industrial facilities. These programs contribute to the City's carbon reduction goals and preserve and extend the benefits of Seattle City Light's carbon-neutral hydro system by deferring the need for new generating capacity. These energy efficiency savings account for approximately 11% of our current resource portfolio.

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:

- Currently, developers can access additional height, floor area, or density in certain zones 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.

Near-Term Climate Action Priorities



Guided by the 2013 Climate Action Plan and a review of recent emissions trends and climate actions, we have identified a suite of near-term priority actions, which will help the City remain on track to meet our climate protection goals. These actions alone will not be sufficient to meet our targets; however, they are the essential next steps which will allow us to make substantial progress and will lay the foundation for continued progress.

The actions are transformative, helping us leverage emerging technology and Seattle City Light's clean, carbon neutral electricity to meet the needs of our rapidly growing city. When fully implemented, they will significantly reduce emissions and catalyze an even broader suite of actions over the coming years. It is essential that we implement these actions in the near term to meet the challenge and realize the opportunities of a climate-friendly future. The actions are presented below and summarized in Table 1. Some of these actions will be implemented immediately, while for others we will explore implementation or funding options over the next year with an aim for implementation soon after.

TRANSPORTATION

Two-thirds of Seattle's GHG emissions result from road transportation. Additionally, transportation-related fossil fuels are a significant source of air pollution, particularly impacting people of color who are more likely to live near roadways and other pollution sources. As Seattle rapidly grows, policies must aim to rapidly replace fossil fuel vehicles with fully electric options and move single occupancy trips to shared transportation. The overall strategy is to increase active and shared transportation (including biking and transit), accelerate car, bus, and truck electrification, and improve the efficiency of the roadway system to reduce idling and unnecessary driving.

Improving mobility through pricing

Announce that the City will develop and release a strategy to address congestion and transportation emissions through pricing, coupled with investments in expanded transit and electrification in underserved communities.

Research suggests that the most effective strategy for reducing GHG emissions and generating the revenue needed to support transportation alternatives is to put a price on the use of city streets through congestion pricing or some other method of pricing transportation externalities. Road pricing reduces travel times, increases travel reliability, encourages alternatives to single occupant vehicle trips, and improves safety. The Seattle Department of Transportation is preparing a study to investigate possible pricing schemes and how pricing would address an impending congestion challenge being created by tolling in the Highway 99 tunnel, a growing population, and rapid expansion of shared vehicle transportation and urban freight. A successful and just program would support better transportation and mobility access in low-income neighborhoods, as well as pedestrian, bicycle, and transit facilities and services, in addition to transportation demand management programs.

Electric vehicle readiness ordinance for new construction

Pass a new electric vehicle readiness ordinance in 2018, which will ensure new construction or renovation of parking structures is built with electric vehicle infrastructure.

The most cost-effective time to build charging stations and provide the electrical infrastructure for future charging stations is during initial site development. Seattle's codes currently include limited requirements (primarily requiring electrical panel capacity and identifying pathways to accommodate future wiring) that

support future electric vehicle charging stations. Requiring new construction to build charging stations and provide the electrical wiring needed for future stations will increase the adoption of electric vehicles and save substantial costs for future charging station installation.

Charging station network map & strategy

Release map of optimal distribution of charging infrastructure in 2018.

While Seattle is one of the top US markets for electric vehicles, charging availability and convenience is a significant barrier to widespread adoption. An effective and just distribution of charging stations is critical to realizing the goal of 30 percent of light duty vehicles being electric by 2030, and to support electrification of professional fleets. With significant private sector interest in deploying charging stations across Seattle and the region, a charging station network map which demonstrates the City's strategy and outlines our technical and policy preferences (such as electric grid capacity, race and social justice outcomes, and electrification of shared fleets) will foster the most effective distribution of charging stations and help deploy private investment. The map will guide public and private investment in the network, based on a set of criteria, with a specific focus on equitable distribution of the city receiving significant public benefit when private entities lease space in the right of way. In developing the map, Seattle will work with regional partners with the goal of creating a network that recognizes how people move in and out of the city.

Ride share and taxi fleet electrification

Work with community and business stakeholders to develop recommendations for making all new for-hire vehicles in Seattle electric.

The way people move themselves and goods around Seattle is changing rapidly and, as we continue to advance the percentage of trips taken by transit, bicycle, or walking, we must ensure that new mobility services, such as for hire vehicles, use clean energy to power their trips. As people of color make up a significant number of the operators of these vehicles, it is critical that we work in collaboration with transportation services companies, drivers, and environmental and social justice organizations to ensure that policies meant to accelerate the use of electric vehicles in new mobility are just across the economy.

The city will work with these stakeholders to create recommendations on how to electrify shared vehicle fleets, determine a year after which all such vehicles must be electric, and prepare for the City to begin permitting only electric vehicles for for-hire use.

Green Fleet Action Plan update

Create a new Green Fleet Action Plan, by the end of 2018, to accelerate the electrification of the municipal fleet and phase out fossil fuel use in municipal vehicles.

The City is a leader in fleet electrification with over 200 plug-in electric vehicles, hundreds of conventional hybrid vehicles, and the largest government-owned electric vehicle charging hub. Continued fleet electrification requires a shift in the acquisition and fueling of vehicles and vehicle infrastructure. Electric vehicles have resulted in substantial fuel savings for the city, but they require upfront investment in charging infrastructure. The Green Fleet Action Plan will outline a strategy for infrastructure and vehicle deployment as well as identify pathways for heavy duty electrification, in conjunction with key city departments and with emergency management considerations.

GHG EMISSIONS ASSESSMENT

The single largest obstacle to realizing our climate goals is that the price of fossil fuels does not reflect the true cost of carbon, which is realized in increasing threats to our health, polluted air and water, and damage to property and infrastructure. These costs are disproportionately borne by communities of color and low-income residents. The City of Seattle does not currently have a city-wide policy for tracking the carbon impacts of policies or projects, which limits our ability to fully understand the cost or savings related to carbon emissions.

Assess GHG Emissions Impact of City decisions

Issue an Executive Order directing City departments to assess the GHG emissions impact of City plans, policies, and major investments.

City policies, plans and major investments have wide reaching and long-term climate impacts. However, the City lacks a systematic way to assess the GHG emissions associated with major City actions, and to consider the cost of those emissions during the planning process. Creating such a system would help the City make better decisions in the short-term and be prepared for future financial impacts, such as carbon pricing. The Mayor will direct the Office of Sustainability & Environment to work with departments to define the types of projects to assess, the assessment method, and how to account for the broader costs of carbon, by October 2018.

BUILDINGS

Building energy use represents one-third of Seattle's GHG emissions. Since 2005, the city has benefitted from Seattle City Light's carbon neutral electricity. City Light offers a clean and climate-friendly alternative to fossil-fuel gas and oil. Seattle has been a leader in reducing building emissions, including one of the nation's strongest energy codes, a program requiring owners of larger buildings to provide benchmarking data to the city and an aggressive tune-up program. There is still, however, more to be done to address buildings still reliant on fossil fuels and in need of efficiency upgrades, and to ensure future buildings have a positive impact on the city's emissions. To accomplish these goals, policies will first aim to spur actions through incentives and other measures, as well as leading efforts in City-owned buildings, with specific requirements when needed.

Washington State tiered residential energy code

Adopt a tiered state residential energy code that can be adopted by cities.

Cities are currently only able to adopt a commercial energy code in Washington state, while the state controls the residential version. Seattle and other municipalities are interested in a tiered residential energy code, which would allow them to adopt an incrementally higher standard. State legislation would be required directing the State Building Code Council, which Seattle is a member of, to develop the tiered code. Higher tiers could also be used as the base State code in the following code cycle. Legislation to allow for tiered energy codes will be a priority for the City of Seattle in the 2019 legislative session.

Establish new 2030 Challenge pilot for 20 upgraded, high performing projects by 2025

Create pilot program offering additional height and floor area incentives for significant upgrades in energy and water use, and transportation efficiency.

A new pilot will offer additional height and floor area incentives for up to 20 major renovations in urban centers outside the International District. Projects would receive the incentives in exchange for cutting energy and water use well below code, including no use of fossil fuels for heating. The plan additionally

calls for increasing the incentives for the existing Living Building Pilot, and adjusts penalties in line with the 2030 Challenge.

Incentive-driven 2030 performance standards for commercial and multifamily buildings

Provide programs and incentives to spur improved energy efficiency and reduced carbon emissions, backed by a minimum performance standard beginning in 2030.

Energy use in existing commercial and large multifamily buildings represents approximately 55 percent of the city's building emissions, making a reduction in energy use and emissions in these buildings is critical to meeting our climate goals. Leading up to 2030, the city will work with building owners through incentives, technical assistance and other programs to help them become voluntary early adopters of the standards, and would then phase in performance requirements beginning in 2030. These programs would include, the existing Tune-Up Accelerator and Benchmarking market outreach, City Light's new Pay for Performance incentive, and the proposed 2030 Challenge High-Performance Existing Building Pilot, as well as additional opportunities. This action would build on existing work, including Benchmarking and the Building Tune-Up mandate.

City Light Whole Building Pay for Performance (P4P) Programs

Scale Pay for Performance efforts and pilot an innovative utility program exploring Energy Efficiency as a Service in up to 30 buildings to unlock greater levels of energy efficiency depth at scale.

To address the "hard to reach" energy savings, Seattle City Light is developing programs specifically aimed at enabling greater levels of energy efficiency depth in buildings. Whole building programs, such as Pay for Performance and Energy Efficiency as a Service (EEaS) are two approaches to increase energy savings in commercial buildings. Incentive payments are made over time based on measured energy savings and allow participants to bundle multiple projects and measures, across capital, operational & maintenance, and behavioral improvements.

Seattle City Light will pilot Energy Efficiency as a Service (EEaS), which is explicitly designed to help participants overcome the split incentive barrier in commercial buildings, where there is little motivation for a building owner or investor to finance deep energy retrofits whose benefits accrue to tenants. EEaS lets investors finance projects with a predictable return, owners generate a new revenue stream, and tenants occupy productive and energy efficient spaces. The pilot will leverage the lessons learned from a prototype at the Bullitt Center.

Improve municipal building energy efficiency and reduce carbon emissions by 2025

Double existing budget allocation for reducing energy in municipal buildings from 2012-2015, with a goal of reducing energy use by 40 percent.

City-owned buildings comprise four percent of commercial building area of the city. The City will lead the way toward performance standards by aiming to reduce energy and emissions from our own building portfolio. Building on existing efforts to reduce energy use 20 percent by 2020, the City will double its budget allocation from 2021 to 2025, and set a new target to achieve an overall 40 percent energy and carbon emissions reduction in municipal buildings by 2025.

Oil to heat pump conversion

Propose recommendations to mayor to convert 18,000 homes from heating oil to an electric heat pump

OSE will propose recommendations to the mayor aimed at accelerating the transition of 18,000 homes from heating with oil to an electric heat pump, and adequately serving those unable to finance the switch alone. Recommendations will include a financing plan to support low-income residents, as well as a combination of public and private incentives to spur action. Accomplishing this switch will reduce heating costs and minimize the threat of leaking tanks.

Conclusion

The decision to withdraw the United States from the Paris Climate Agreement puts the health, wellbeing and very survival of people across the world at risk. It is imperative that cities across this nation step up and take meaningful climate action in the absence of federal leadership. By taking action, we are not only responding to the existential threat of climate change, but also making our local communities stronger, healthier, and more economically resilient.

Seattle is committed to meeting the goals of the Paris Climate Agreement. As we embrace our future as a large and rapidly growing city, we will make the choices necessary to care for our community, our economy and the planet today and for the future. Action at this scale requires a whole-city response, and a response that centers race and social justice; therefore, we will move these strategies forward in partnership with our residents, businesses, and civic organizations, with a focus on partnering with communities of color, Native peoples, immigrant and refugee communities, and low-income residents.

The near-term actions described in this strategy reflect the magnitude of the challenge before us. Doing our part under the Paris Climate Agreement requires that we transform both how we move around, how we heat and power our buildings, and where our energy comes from. Seattle City Light's clean and carbon neutral electricity is key to de-carbonizing Seattle's transportation and building systems, and we will increasingly leverage this invaluable resource to meet the needs of our growing city. These actions will not only result in significant GHG emissions reductions, but also position Seattle to continue to build this work as we become a global leader in defining what it means to be a climate-friendly city.

Table 1: Near Term Action Agenda Summary

Action	Description	Emissions Reduction Potential ²
TRANSPORTATION		
Improving mobility through pricing	Develop a strategy to address congestion and transportation emissions through pricing, coupled with investments in expanded transit and electrification in underserved communities.	Transportation Emissions: 8-12% Total Emissions: 5.5-8% (depends on price and other factors)
Charging station network map & strategy	Map the optimal distribution of charging infrastructure and develop a strategy to support the build out of the system through public and private investment.	Enabling Strategies: Convenient access to charging facilitates EV adoption. Impact by 2035 of meeting the 30% EV by 2030 goal: Transportation Emissions: 11-21% Total Emissions: 5.7–10%
Electric vehicle readiness ordinance for new construction	Ensure new construction or renovation of parking structures is built for EV infrastructure.	
For-hire fleet electrification	Work with stakeholders to develop recommendations for making all new for-hire vehicles in Seattle electric.	Enabling: For-hire vehicles account for an increasing percentage of vehicle trips in Seattle.
Green Fleet Action Plan update	Update the city's Green Fleet Action Plan to accelerate the electrification of the municipal fleet and phase out fossil fuel use in municipal vehicles.	Transportation Emissions: 1% Total Emissions: < 1 %
CARBON PRICING		
Assess GHG emissions impact of City decisions	Implement climate impact analysis into city planning and project data.	Enabling: Makes carbon impacts transparent & priced.
BUILDINGS		
Oil to heat pump conversion	Develop program and funding strategy to incentivize conversion of oil heated homes to electricity.	Building Energy: 2-3% Building Emissions: 8-9% Total Emissions: 2-3%
2030 District Pilot	Pilot will offer significant additional height and floor space incentives for up to 20 major renovations in urban villages outside the International District.	Estimates to be determined.

² The emissions reduction estimates shown for road pricing are from a 2014 citywide baseline. Emissions reduction estimates for the 30% EV goal assume the annual emissions reduction impact of 30% EV by 2035 compared with 1% EV. All other building energy reductions are from a 2008 baseline.

Washington State tiered residential energy code	Adopt a tiered state residential energy code that can be adopted by cities.	Building Energy: 2-3% Building Emissions: 3-4% Total Emissions: 1-2%
Incentive-driven 2030 performance standards for commercial and multifamily buildings	Provide programs and incentives to spur improved energy efficiency and reduced carbon emissions, backed by a minimum performance standard beginning in 2030.	Building Energy: 20-21% Building Emissions: 17-18% Total Emissions: 5-6%
Improve municipal building energy efficiency and reduce carbon emissions through 2025	Extend and expand municipal building energy efficiency program, with increased funding to achieve deeper reductions in energy use and carbon emissions.	Building Energy: 1 % Building Emissions: 1% Total Emissions: < 1%
Pay for Performance and Energy Efficiency as a Service	Implement City Light programs targeted at entire commercial buildings using incentives.	



Seattle