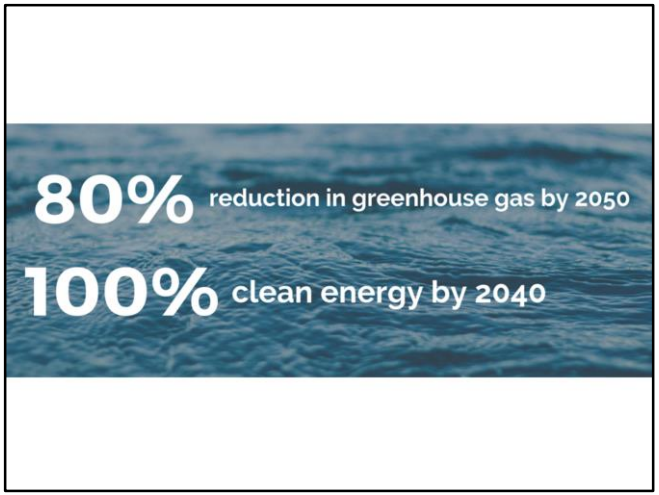
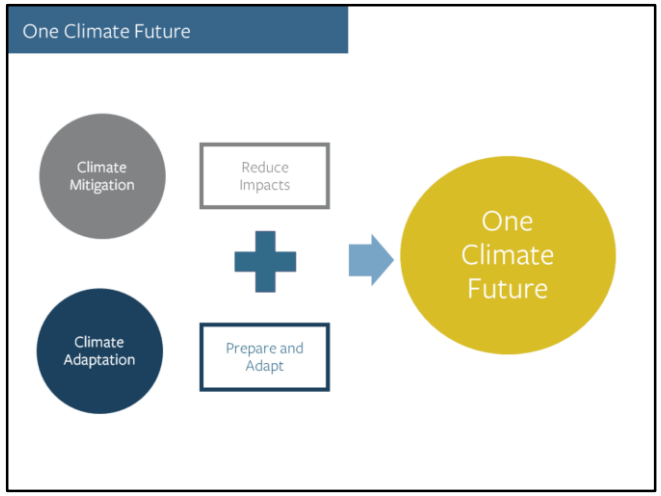

ONE
CLIMATE
FUTURE
Charting a Course for
Portland and South Portland
Lunch & Learn
October 25, 2019

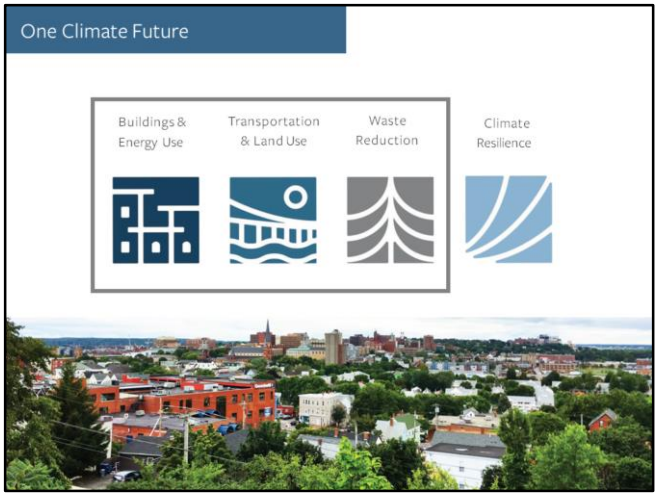


Both Cities have demonstrated leadership on climate policy at the local and state level. Last year, both Cities adopted ambitious climate action goals. Portland and South Portland will reduce community-wide emissions 80% by 2050 and use 100% clean energy in municipal operations by 2040. Following the Maine Youth Climate Strike Portland and South Portland will identify options to accelerate actions in the 2030 timeframe.

In order to chart a course towards these deep emissions reductions, both Cities joined forces to develop One Climate Future, a joint climate action and adaptation plan. This plan will identify near-term and long-term strategies that will help us reach our climate goals and strengthen the resilience of our communities. The vision for the plan is: Together, Portland and South Portland work to be inclusive, vibrant communities that provide opportunities for residents and businesses to thrive in a changing climate.

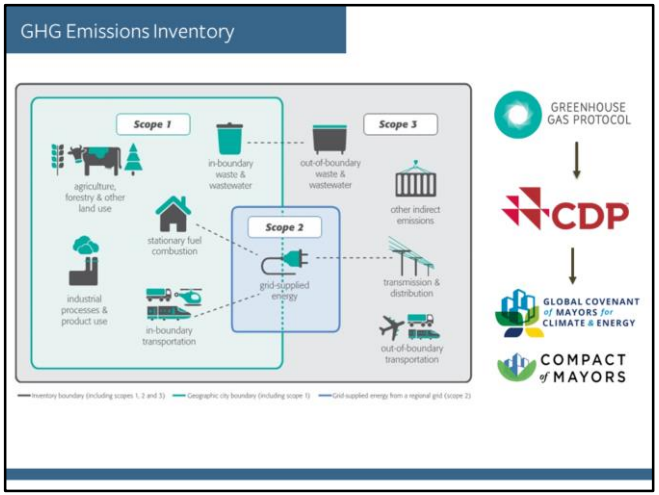


In the One Climate Future plan, we will consider both climate mitigation and climate adaptation. Climate mitigation means actions that we take amount of GHGs we are releasing into the atmosphere to slow down climate change. For example, this includes actions that reduce our building energy use and allow people to walk or bike instead of taking a gas-powered vehicle. Even with mitigation actions, adaptation is still necessary. We know there is a certain amount of change already locked in based on our past GHG emissions, so we need to prepare for those impacts- this is where climate adaptation comes in. This could include actions like making sure we have emergency preparedness plans and that new development takes measures to reduce the likelihood of flooding, among many others. By thinking about mitigation and adaptation together, we are making our community more resilient and equitable in the face of a changing climate.



The One Climate Future has four focus areas (Buildings & Energy Use, Transportation & Land Use, Waste Reduction, and Climate Resilience.) The emissions inventory focuses particularly on Buildings & Energy Use, Transportation & Land Use, Waste Reduction. Deep reductions and systematic change across all of these areas will be necessary to reach our climate goals.

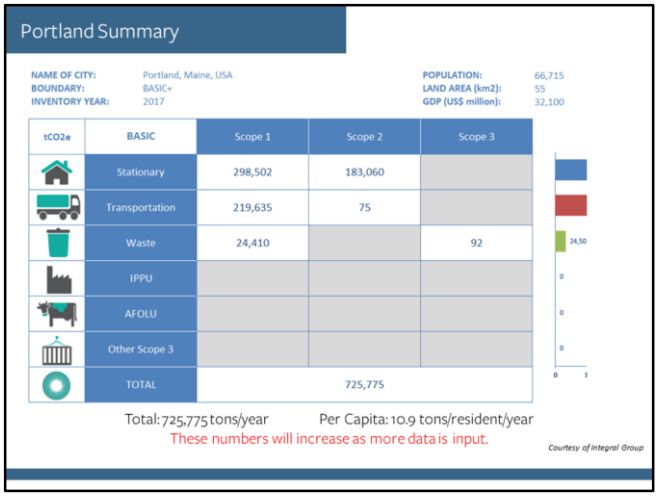
Our work began with completing community-wide greenhouse gas (GHG) emissions inventories. These inventories set a baseline for our emissions reductions using 2017 data from each City. From this inventory, we will know the magnitude of emissions of different sectors (residential, commercial, industrial, transportation) and sources (electricity, fuel oil, propane, natural gas, etc.) The data and analysis coming out of the inventory will inform the policies, programs, and strategies that will help the Cities' make deep reductions and achieve climate goals.



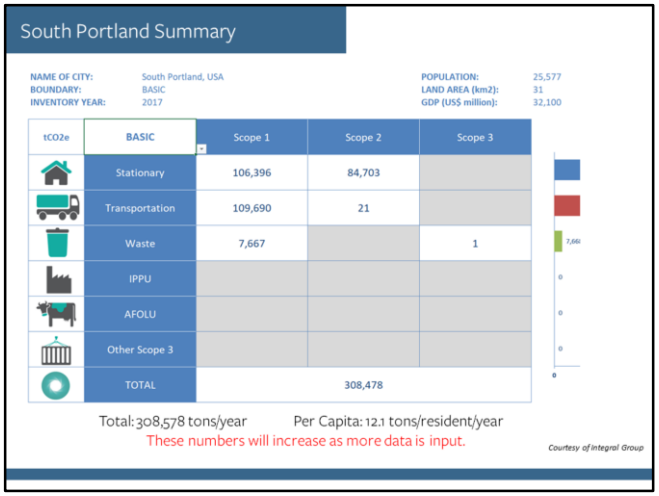
The Integral Group, a member of the team of consultants working on One Climate Future, developed the GHG emissions inventories using a standardized emissions accounting method (Greenhouse Gas Protocol and Carbon Disclosure Project) used by jurisdictions across the country and world. Both Cities gathered what is known as Scope 1, Scope 2, and Scope 3 data. Scope 1 emissions are produced within the boundary of the jurisdiction, for example, heating oil used by homes in Portland or South Portland. Scope 2 emissions are produced from grid supplied electricity. While the electricity is consumed within the boundary of the jurisdiction, the generation of that electricity happens externally. Scope 3 emissions are indirectly produced

from actions that occur within the Cities.

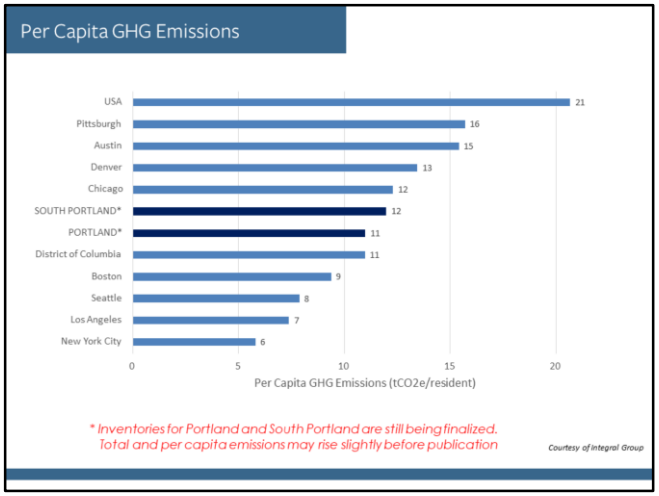
Note: Data in the following slides is preliminary.



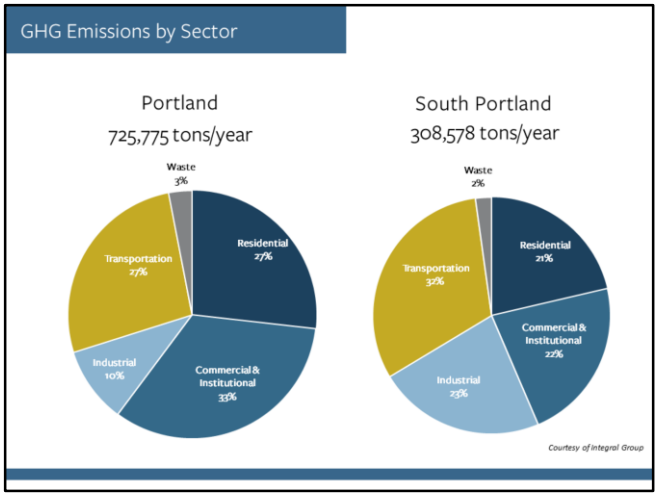
Portland GHG emissions summary. Stationary (building energy use) and transportation are the major contributors.



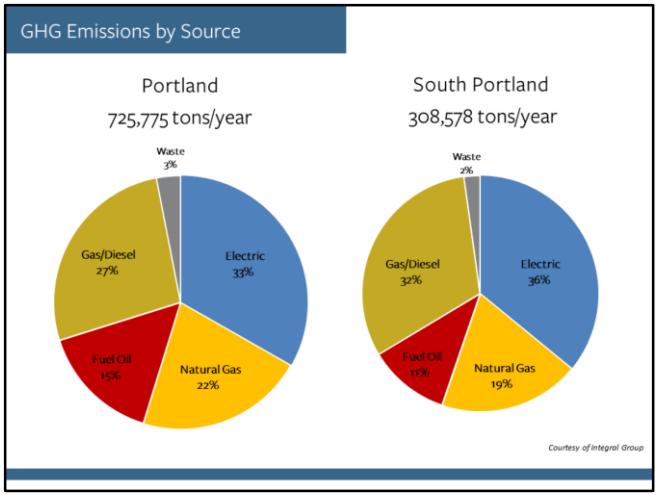
South Portland GHG emissions summary. Again, stationary (building energy use) and transportation are the major contributors.



How do Portland and South Portland's per capita emissions compare to other Cities around the country? Portland and South Portland are in the middle of the pack among other cities that have demonstrated leadership in sustainability around the country. High thermal energy demand, limited public transit systems in a largely rural state, and nascent renewable energy development increase the per capital emissions of our region.

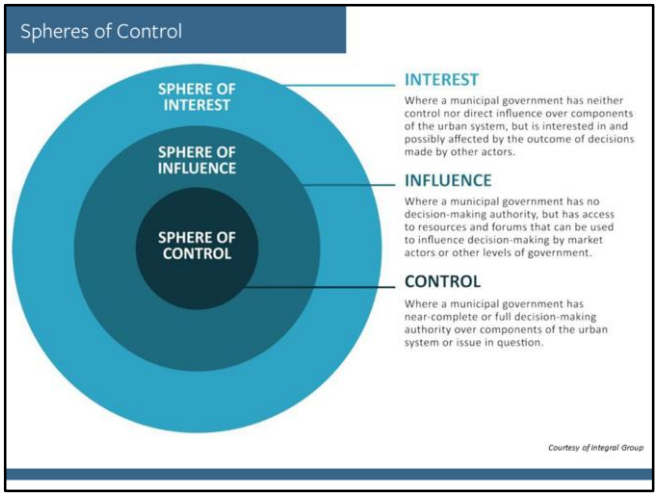


A few key takeaways: According to the GHG emissions inventory, the waste sector contributes 2-3% of total emissions; however this can be misleading. The GHG emissions inventory accounts for only emissions that result from the disposal of goods in our communities. Nonetheless, the manufacturing and transportation of the goods we consume within our jurisdiction generate emissions that are not included in the inventory. Building energy use (residential and commercial) contribute around 60% of all emissions. This is higher than average and largely due to the old building stock and cold climate that is characteristic of this region.

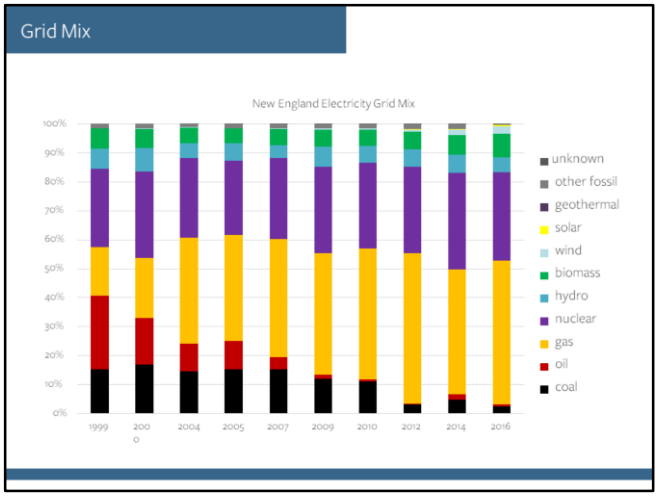


Another look at Portland and South Portland's GHG emissions, this time by the source of those emissions. In both Cities, we are still very reliant on fossil fuels for transportation and thermal energy use (gas/diesel, fuel oil, and natural gas.) In the coming years we will need to transition away from these fuel sources and towards electricity from renewable sources.

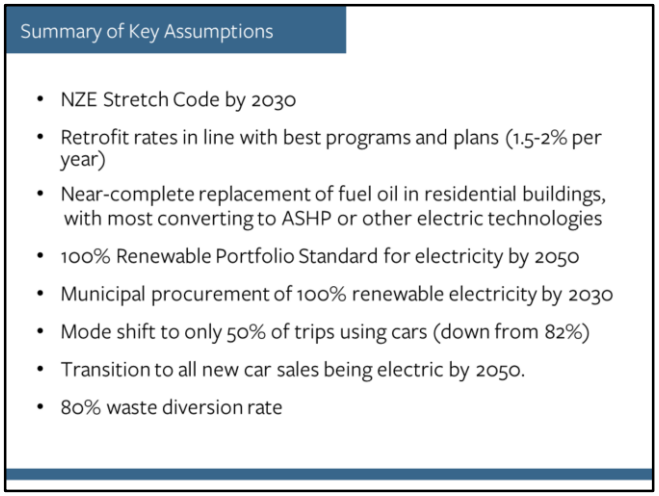
With this baseline data, we are working to develop an emissions reduction model that will help to chart a path towards our goals. The model will show the magnitude of emissions reductions associated with each of the planned actions across all of our focus areas (buildings and energy use, transportation, and waste.) As we start to put these incremental pieces together, we can see what is required to reach our goals. Throughout this process, we will work to find options and pathways to accelerated emissions reductions.



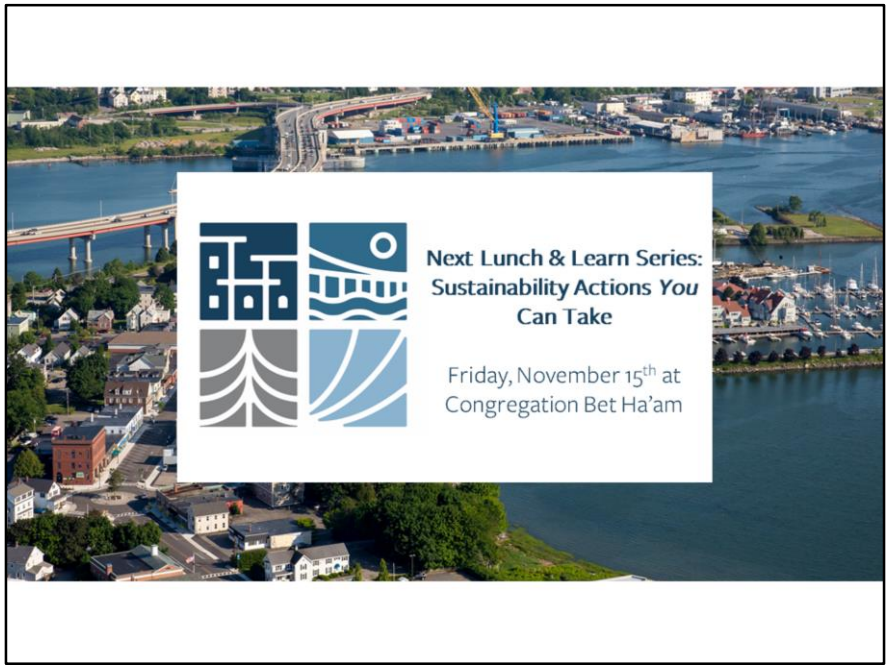
The actions and strategies considered in our emissions reduction model fit into one of three categories: Sphere of Control, Sphere of Influence, and Sphere of Interest. These categories describe how we can affect change in the years to come. In our Sphere of Control, the City has full decision-making power (zoning policies, municipal building efficiency, vehicle fleets.) In our Sphere of Influence, the City has no decision-making authority but can affect change through forums, testimony, and resources that influence policy or the markets (EV infrastructure, Maine solar policy.) In our Sphere of Interest, the City has no direct decision-making or influence authority and rather must remain informed of change that may happen at the state or federal level (vehicle fuel economy standards.)



Recently, we were able to influence Maine's new Renewable Portfolio Standard- serving as a concrete example of our Sphere of Influence. Over the past 15 years the grid moved away from fossil fuel generation and has become more renewable. However, compared to our peers in the region, we are still lagging behind. In the recent legislative session, Maine passed a bill that will require 100% renewable energy to supply the grid by 2050 and 80% by 2030. Our Cities gave public testimony encouraging lawmakers to support this bill in light of our ambitious climate action and clean energy goals. This transition to renewable generation will help the Cities reduce emissions from grid supplied electricity- and will have an even greater impact as we electrify transportation and heating systems.



In our emissions reduction model, there are a number of key actions or assumptions that we are making to set a roadmap to deep emissions reductions. These assumptions address our energy supply, such as the Renewable Portfolio Standard described in the previous slide, as well as transformative changes to our building, transportation, and waste systems. In the building sector, we will look to the adoption of a net zero energy stretch code by 2030 and deep energy retrofits in existing buildings. On behalf of transportation, we assume a significant mode shift that reduces vehicle miles traveled and the electrification of our vehicles. Mode shift is the transition out of cars and into other forms of transportation such as public transit, walking, and biking. Finally in waste reduction, we assume the increase of our waste diversion rates from 30-40% to 80% through changes across our waste hierarchy.



Join us at the next Lunch & Learn on Friday, November 15th at Congregation Bet Ha'am. We will discuss sustainability actions you can take right now as residents of Portland or South Portland. Lunch will be provided.