

Portland, South Portland plan to fight against climate change

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By Kelley Bouchard

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In less than 100 years, strolling from shop to shop along Commercial Street in Portland or running with your dog on Willard Beach in South Portland could become something folks did in the old days.

Based on the latest tidal trends, the National Oceanic and Atmospheric Administration predicts that by the year 2100, those areas will be under at least a foot of seawater at high tide on a calm day. Add a little wind and weather and accelerated glacial melting, and the sea level in Casco Bay could rise as much as 6 to 10 feet in the same period.

STEPS SO FAR

Portland and South Portland have approved several measures in recent years that aim to increase environmental sustainability and reduce carbon dioxide production. These are a few:

- Plastic foam food packaging bans
- 5-cent shopping bag fees

- Municipal solar farms
- Initiatives to reduce waste
- Pesticide-use bans
- Electric car-charging stations
- LED streetlight conversions

Under this grim scenario, Willard Beach would disappear, showing up once in a while as a narrow strip of sand at extreme low tides. The indomitable brick buildings on Commercial Street, which harken to Portland's shipping heyday and draw tourists to the Old Port, would be gone.

Also gone would be the Gulf of Maine Research Institute, a modern building at 350 Commercial St., where Gayle Bowness works as the science education program manager. She heads the institute's effort to prepare Maine's coastal communities for sea level rise, along with the inland communities that are dependent on them.

"Everything will look very different," Bowness said. "Especially buildings along Commercial Street. It's a visual that has a real, visceral impact, beyond talking about the average temperature increasing a few degrees."

As the Atlantic begins to claw back waterfront that was filled in and built on in recent centuries, and reclaim both gentle and rugged natural features of Maine's fabled rocky coast, municipal officials in Portland and South Portland are taking note and taking action.

Preparing for sea level rise is just one aspect of a proposed joint venture by the neighboring cities to develop climate action and adaptation plans that would be designed to reduce greenhouse gas emissions by 80 percent by 2050.

The plans would mirror the goals of the 2016 Paris Climate Change Agreement, which called on countries around the world to reduce carbon emissions by at least 80 percent by 2050 and limit the global average temperature rise to less than 2 degrees above pre-industrial levels.

While both cities have adopted municipal climate action plans in recent years, leading city departments to reduce their carbon footprints, the new plans would include residential, commercial and industrial sectors.



A truck plows through water on Marginal Way in Portland after a higher-than-average high tide flooded parts of East Bayside in November. *Staff photo by Ben McCanna*

“We all need to be involved, in every sector of the community,” said Troy Moon, Portland’s sustainability coordinator. “We need everyone at the table to figure out how we do this.”

In broad terms, the plans would aim to reduce waste in all aspects of everyday life; increase energy efficiency at home, in government buildings and in the workplace; promote sustainable transportation options throughout the region; and prepare for the various impacts of climate change.

Julie Rosenbach, South Portland’s sustainability director, acknowledged the challenge of building community-wide support for and engagement in the new plans.

“We’re going big,” Rosenbach admitted. But rather than focus on the doom and gloom of climate change, she said, “we’re going to address people’s daily needs and concerns.”

FIRST IN THE NATION

Over the next 18 months, Portland and South Portland, Maine’s largest and fourth-largest cities, aim to hire a consultant, form committees, hold community meetings, perform technical analyses and draft final plans for each city.

They hope to split the \$220,000 cost of a consultant and technical work, which means each city council must approve a \$110,000 budget item this spring for the collaboration to go forward.

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If they get the go-ahead, this would be the first time that two cities in the 185-member Urban Sustainability Directors Network have collaborated in developing climate action plans, Rosenbach said.

Moon and Rosenbach already have experience working together, most notably in developing municipal solar farms on the cities' capped solid waste landfills.

Support for the new initiative is expected to be strong – though maybe not a slam dunk – on both sides of Portland Harbor.

“I think this process will allow us to address climate change from a more regional perspective, and I’m excited about the prospect of what the two cities can accomplish together,” said Portland City Councilor Spencer Thibodeau, chairman of that city’s Sustainability and Transportation Committee.

“It’s a really exciting and critical proposal,” said South Portland City Councilor Susan Henderson, whose house in the Knightville neighborhood is a few steps from Portland Harbor.

“The devil is in the budget details,” Henderson continued. “We have so many competing demands for funding. I think we must address climate change. Sadly, not everyone feels the same urgency.”

Portland City Manager Jon Jennings and South Portland City Manager Scott Morelli agreed that it makes sense for the cities to share the cost of a consultant and align plans to reduce carbon dioxide production. The heat-trapping gas, released through human activities such as deforestation and burning fossil fuels, is considered the primary culprit in rising global temperatures and sea levels, according to the Union of Concerned Scientists.

How will rising sea level affect Casco Bay by 2100?



A few years ago, both city councils signed onto the Mayors National Climate Action Agenda. Last year, as the Trump administration withdrew the United States from the Paris Agreement, the 1,219-member mayors' group declared continued support for the global accord.

“In the absence of leadership from Washington, (we) will pursue ambitious climate goals, working together to take forceful action and to ensure that the U.S. remains a global leader in reducing emissions,” the mayors' group announced. “Together, we will remain actively engaged with the international community as part of the global effort to hold warming to well below (2 degrees) and to accelerate the transition to a clean energy economy that will benefit our security, prosperity and health.”

ACHIEVEMENTS

In recent years, Portland and South Portland have jostled for leadership on several initiatives to increase environmental sustainability. Each city has approved a 5-cent fee on single-use shopping bags, a ban on plastic foam food packaging, a pesticide-use ban and a program to benchmark or measure utility use in large commercial and residential buildings.

Other efforts include buying municipal electric cars and adding public charging stations, piloting a curbside food recycling program for biomass power generation, converting street lights to energy-saving LED bulbs and ending the purchase of bottled water for city offices and events.

The two cities maximized their buying power when they negotiated mutually beneficial terms to have Portland-based ReVision Energy build tandem solar farms on the cities' capped landfills.

South Portland began operating its 2,944-panel facility in October. It's expected to generate 1.2 million kilowatt-hours of energy per year, or roughly 12 percent of the electricity used by the city's municipal and school buildings.

Portland must address ventilation and structural issues at its capped landfill before ReVision can install its 2,800-panel array, likely sometime later this year, Moon said. It also would generate 1.2 million kilowatt-hours of energy per year. That's 3 percent of Portland's municipal use, or roughly enough to power City Hall and Merrill Auditorium.

Completing the facility would be a significant step toward fulfilling Portland's goal to have all municipal departments operate entirely on renewable energy by 2040.



Darcy Prock wades through water to get to her car on Marginal Way after a higher-than-average high tide flooded parts of East Bayside, including Somerset Street near Whole Foods, in 2017. If climate change predictions hold true, Bayside would be underwater at high tide in 2100. *Staff photo by Ben McCanna*

Under the solar farm contracts, each city will purchase the electricity from ReVision at rates higher than market prices for the first six years, before being able to buy the solar equipment outright for nearly \$1.6 million.

In the long run, the cities anticipate saving money – and possibly making money – because they’ll generate their own power rather than purchase it from the grid.

MAPPING ENERGY USE

Exactly what would be in the climate action and adaptation plans remains to be seen, Moon and Rosenbach said.

As participants in the Mayors National Climate Action Agenda, the cities have pledged to develop a community greenhouse gas emissions inventory, set near- and long-term targets to reduce emissions and develop a climate action plan aligned with those targets.

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To gauge the amount of energy being used by residents, businesses and industry, the cities would work with GridSolar, an alternative energy consulting firm in Portland, to develop a detailed map documenting energy use across each city. The firm recently did a similar

mapping project on the Boothbay peninsula, as part of an effort to meet the energy needs of residents and businesses without installing new power lines.

GridSolar's study would help each city determine the best ways to curb energy use and emissions and the best locations to establish renewable energy production, including solar and thermal technologies. GridSolar would have to work with the Maine Public Utilities Commission and utility companies to access energy consumption data.

Moon acknowledged that energy mapping might be politically challenging, just as benchmarking was when each city adopted programs to measure energy consumption in larger buildings.

"But if we can do this modeling here, it can be adopted by cities across the country," Moon said.

The climate action and adaptation plans would further the cities' efforts to reduce waste production, move away from fossil fuels, improve public transportation and promote construction of high-performance buildings.

That last goal is especially important in a state that not only has some of the oldest housing stock in the nation, but also is primarily dependent on petroleum products for home heating.

Whatever Portland and South Portland do now to roll back carbon emissions and slow climate change, it likely won't prevent the rising tides predicted by NOAA, said Gayle Bowness of the Gulf of Maine Research Institute. The goal at this point would be to keep sea level rise from getting any worse than expected.

"We've already locked ourselves into what's going to happen," she said. "With just a foot of sea level rise, we're going to see 100 high tides of 12 feet or more each year."

A high tide of 11.8 feet is flood stage on Portland's waterfront docks, and the city is experiencing about 10 of those per year already, she said.

Despite such dour predictions, Moon and Rosenbach hope residents, business owners and others will join them in drawing up meaningful plans that will help both communities prepare for and perhaps mitigate what's coming.

"Resiliency doesn't have to be competing with development," Rosenbach said. "It can be working with development."

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