

Appendix 9

Salem Climate Action Plan

CITY COUNCIL WORK SESSION

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September 20, 2021





Project Context



What's at stake?

The changing climate impacts us in the form of:

- Floods
- Drought
- More extreme heat days (above 90° F)
- Wildfires
- Hazardous air quality from wildfires
- Extreme winter events

Impacts of climate change are not experienced equally

“Human influence has warmed the climate at a rate that is unprecedented in at least the last 2000 years.” - Intergovernmental Panel on Climate Change, 2021.



50%

Reduce Salem's greenhouse gas emissions by 50% by 2035

0%

Become carbon neutral city by 2050

CLIMATE ACTION PLAN GOALS

In October 2020, City Council adopted the following goals as part of the Salem's Climate Action Plan:

1. By 2035, Salem's greenhouse gas emissions shall be reduced to 50% of the citywide greenhouse gas emissions from the baseline year of 2016, and
2. By 2050, Salem should be carbon neutral.



WHAT IS SALEM'S CLIMATE ACTION PLAN?

A plan to:

- Achieve Climate Action Plan Goals for reducing greenhouse gas emissions (**mitigation**)
- Help the Salem community prepare for climate change (**adaptation / resiliency**)
- Identify and recommend actions to prioritize for implementation
- Identify key partners for implementation

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Where are we in process?





Public Engagement

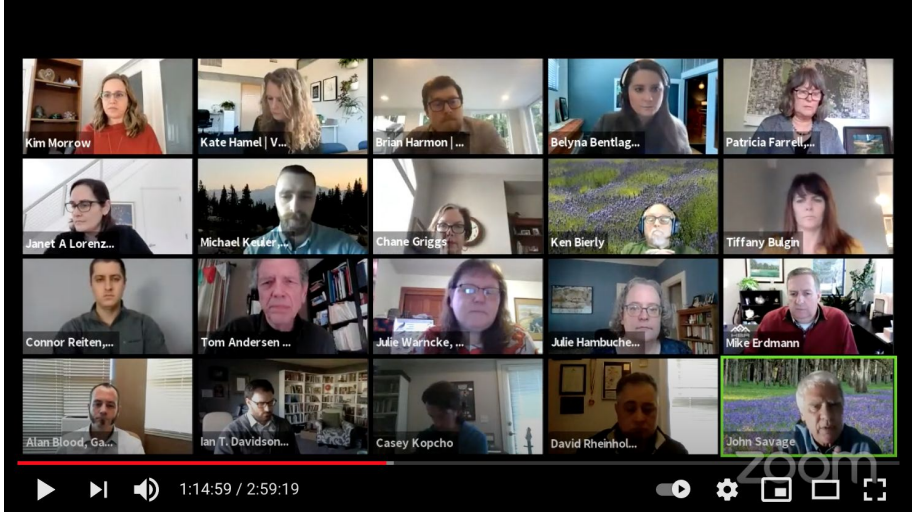


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Climate Action Plan Task Force

Representatives from transportation, commercial, residential, environmental advocacy, economic development, energy, education, communities of color, food supply, public health, homebuilders, and others

- 33 community representatives
- 3 City councilors (Andersen, Gonzalez, & Nordyke)
- Plus 5 City staff



See Attachment 1 in Staff Report for full list of Task Force members.

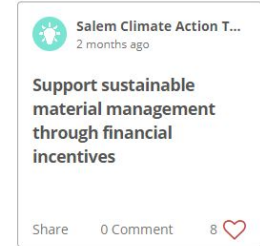
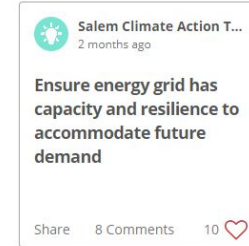
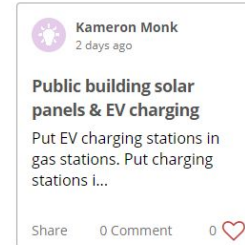
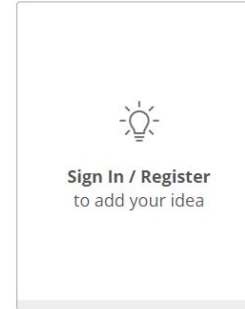


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Community Participation

The following is a list of community participation/opportunities:

- Initial community survey
- Envisioning a resilient Salem activity
- Strategy ideas brainstorming activity
- Strategy ideas ranking survey
- Strategy development feedback activity
- Surveys, focus groups, and meetings with targeted communities
- Review draft Climate Action Plan



SalemClimateActionPlan.com/Get-Involved

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Project Outreach

The following is a list of outreach strategies:

- Community presentations and forums (32)
- Presentations to City Boards and Commissions (6)
- Attending community events (6)
- Radio interviews (3)
- Weekly public services announcements over radio
- Weekly social media posts
- Salem Connection, City's weekly e-newsletter
- Distributing project handouts and surveys (English and Spanish) at community events
- Documenting and posting of all meeting materials, meeting recordings, and pertinent studies on project website



Salem's GHG Emissions Sources

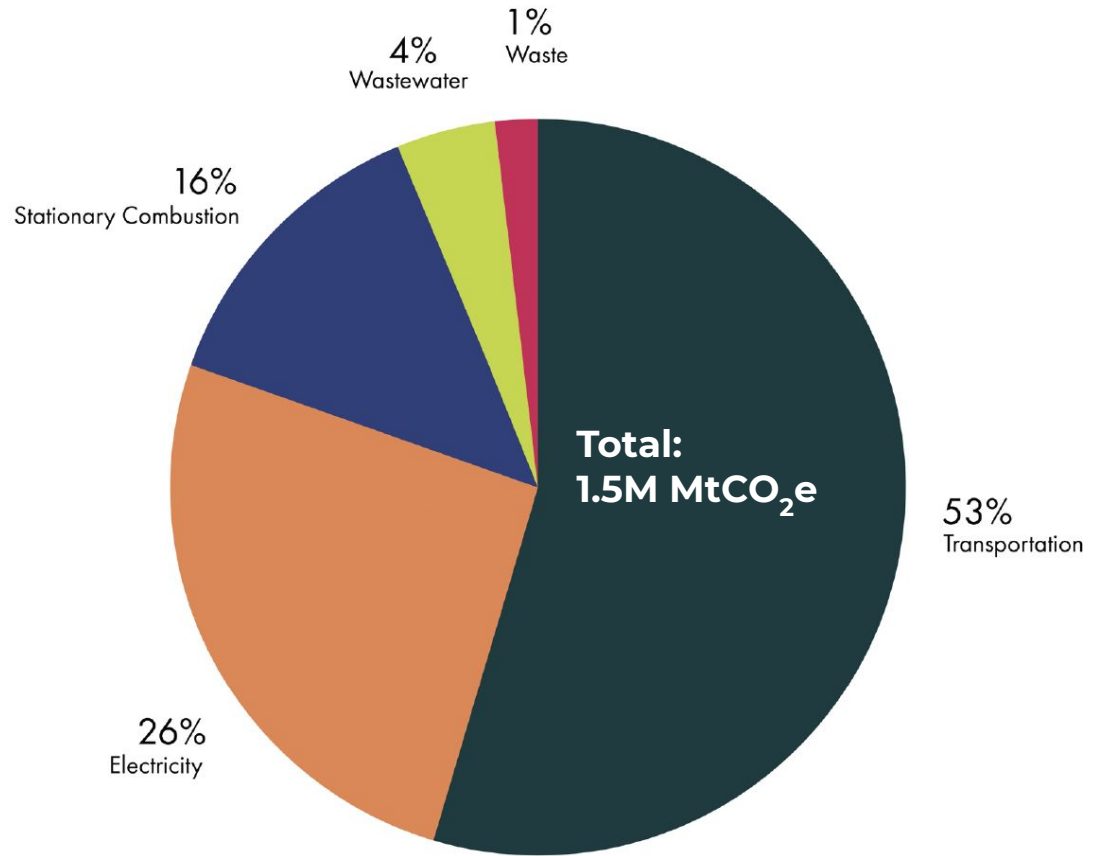


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Where do Salem's Emissions Come From?

2016 SECTOR-BASED GREENHOUSE GAS INVENTORY

- Largest source of emissions is transportation
- Second-largest is electricity generation
- Third-largest is stationary combustion, i.e., natural gas usage





Increasing Resilience, Reducing Emissions, and Building Equity





ACTION AREAS

The strategies in the Climate Action Plan are organized around the following Action Areas:

1. Transportation & Land Use
2. Energy
3. Economic Development
4. Natural Resources
5. Community
6. Food System
7. Materials & Waste

See Attachment 2 of Staff Report for a complete list of the strategies.

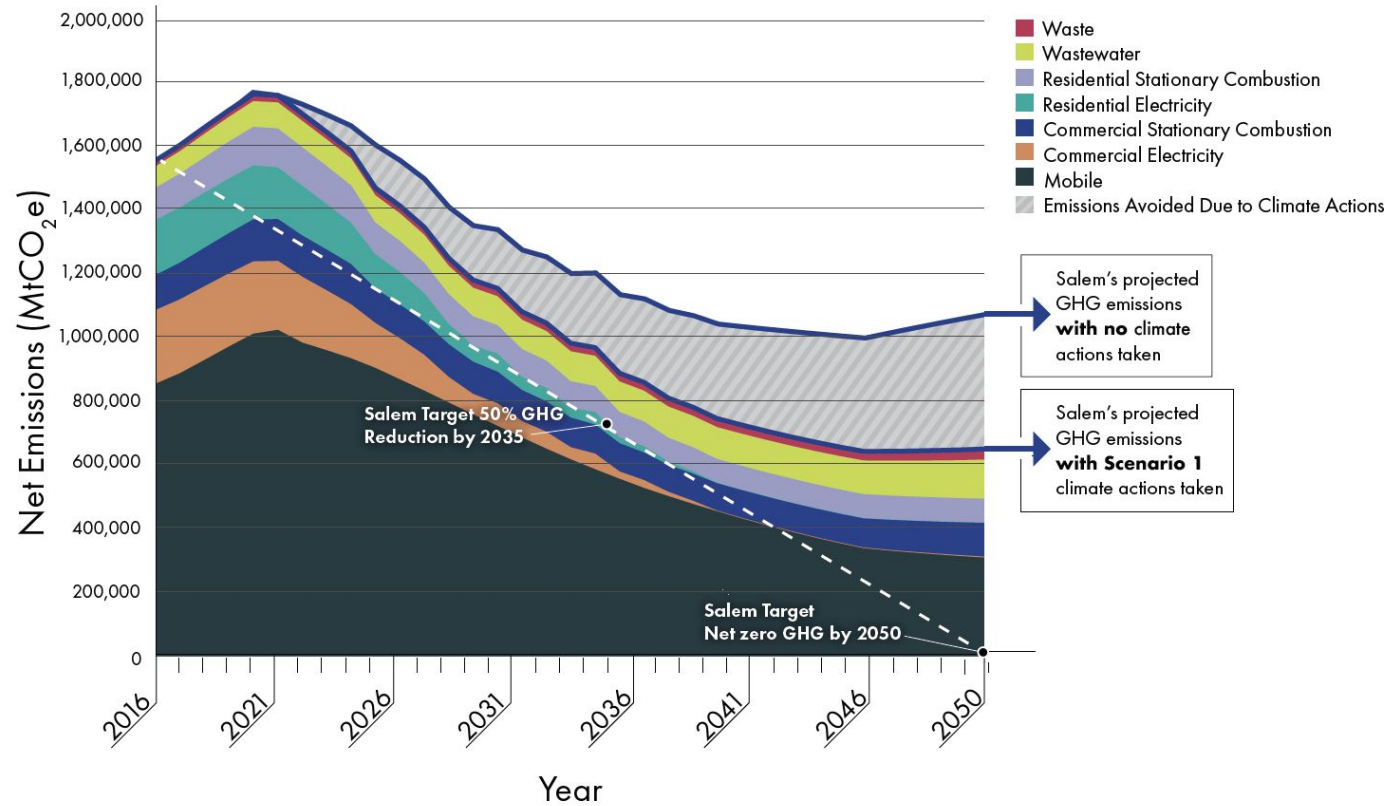




Greenhouse Gas Emissions Forecasts



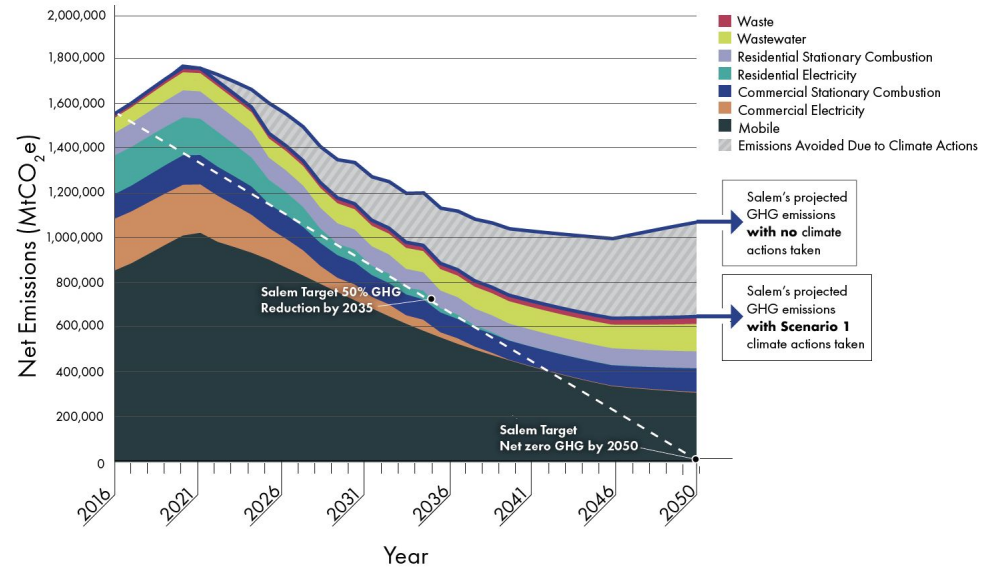
SCENARIO 1



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What is required to achieve Scenario 1?

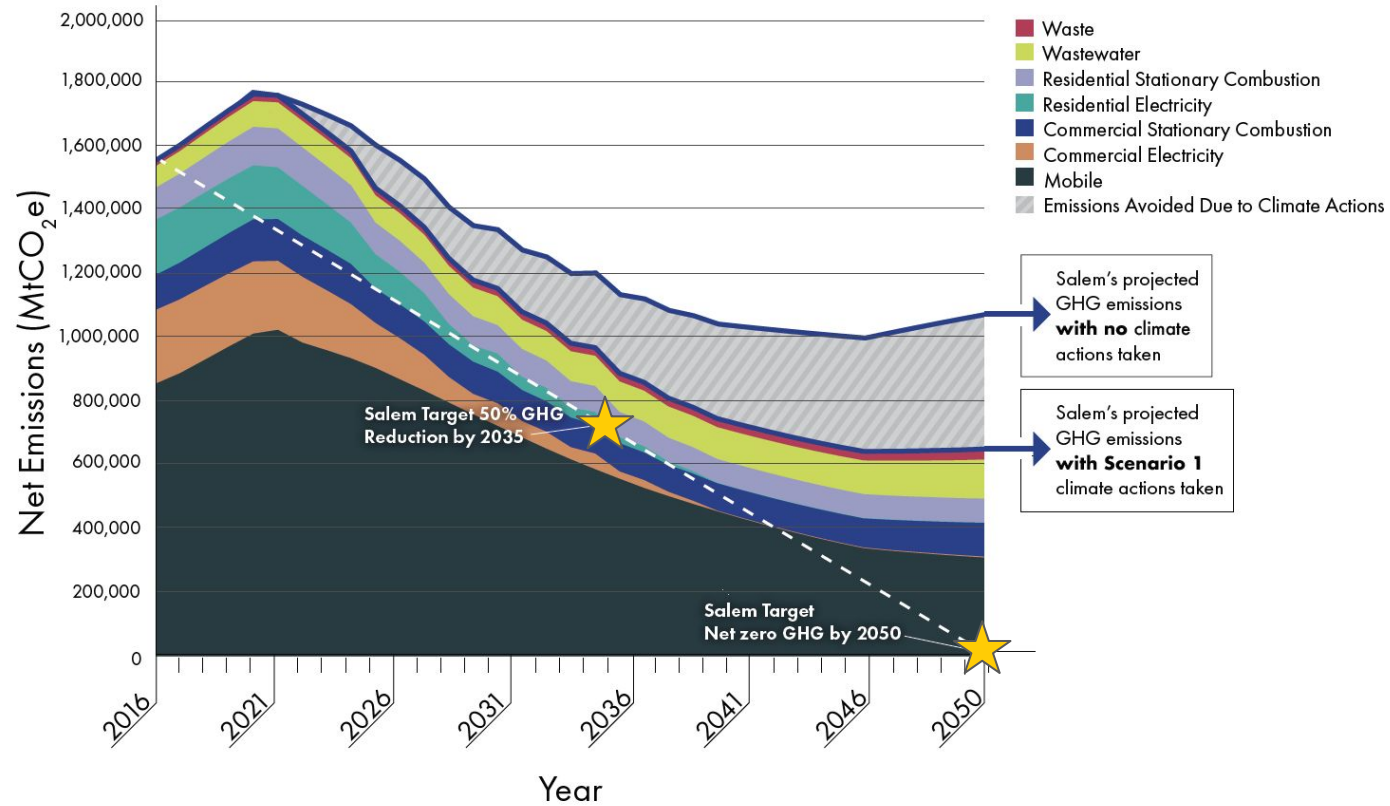
1. Double the rate of electric vehicle (EV) adoption
2. Quadruple the rate of transit ridership
3. Double the rate at which residents use biking and walking
4. Transition to a zero-emissions bus fleet
5. Reduce the amount of passenger vehicle traffic coming into and out of Salem by 40%
6. Reduce the amount of traffic within Salem by 10%
7. Halt all growth in natural gas emissions
8. Improve building efficiency by an average of 10% by 2050
9. Maximize onsite solar
10. Maximize carbon sequestration of plants and trees



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SCENARIO 1 RESULTS

- 40% net reduction in emissions by 2035
- 58% net reduction in emissions by 2050



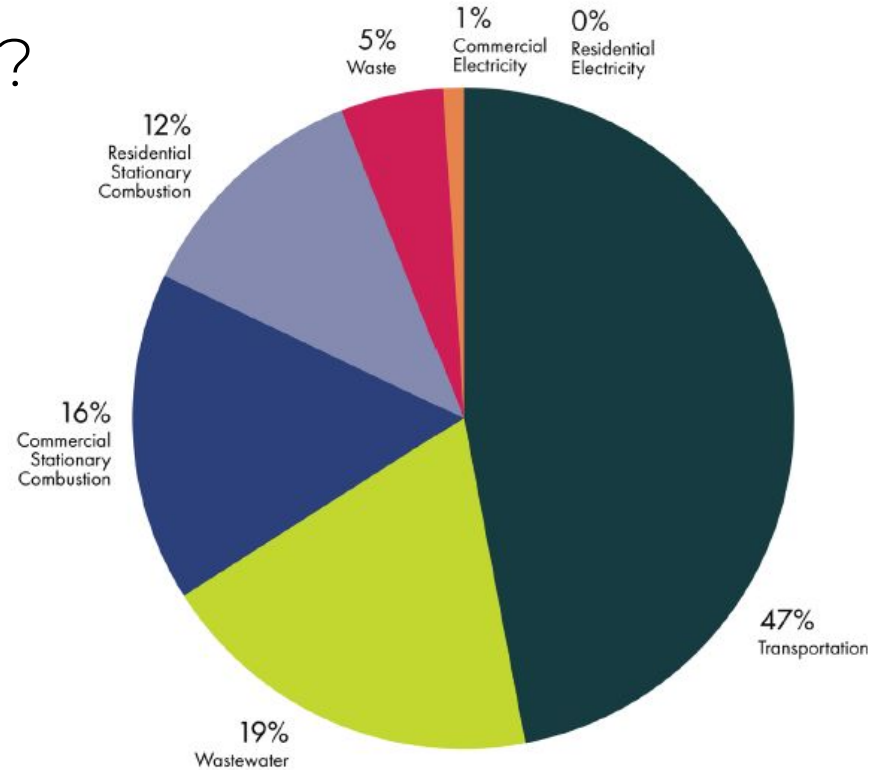
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Why wasn't the target met?

BREAKDOWN OF REMAINING GHG EMISSIONS IN 2050

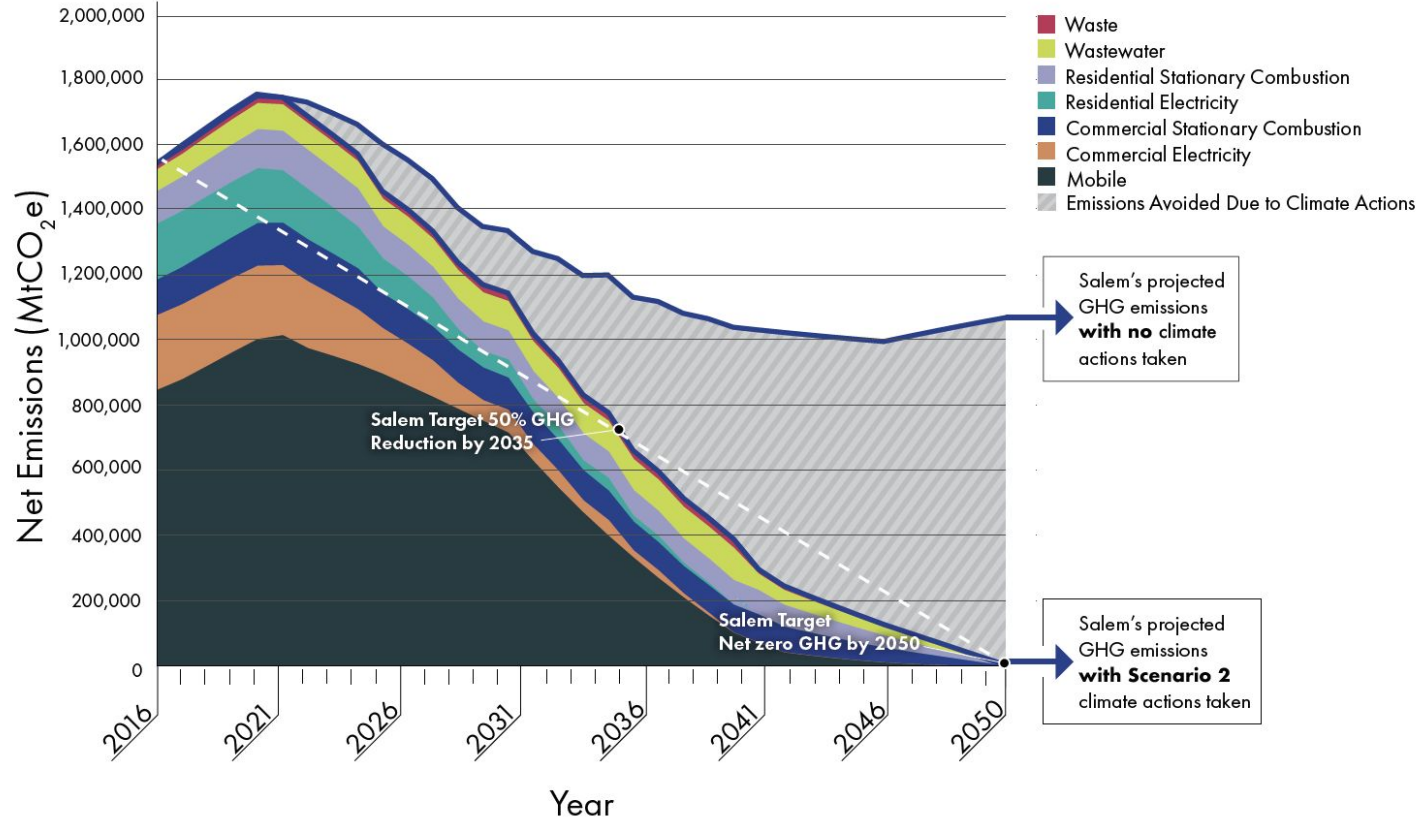
Several types of emissions will be challenging to eliminate.

- Transportation emissions from internal combustion engines will constitute nearly half of remaining emissions
- Natural gas emissions will constitute nearly one-third
- Wastewater will constitute 19%



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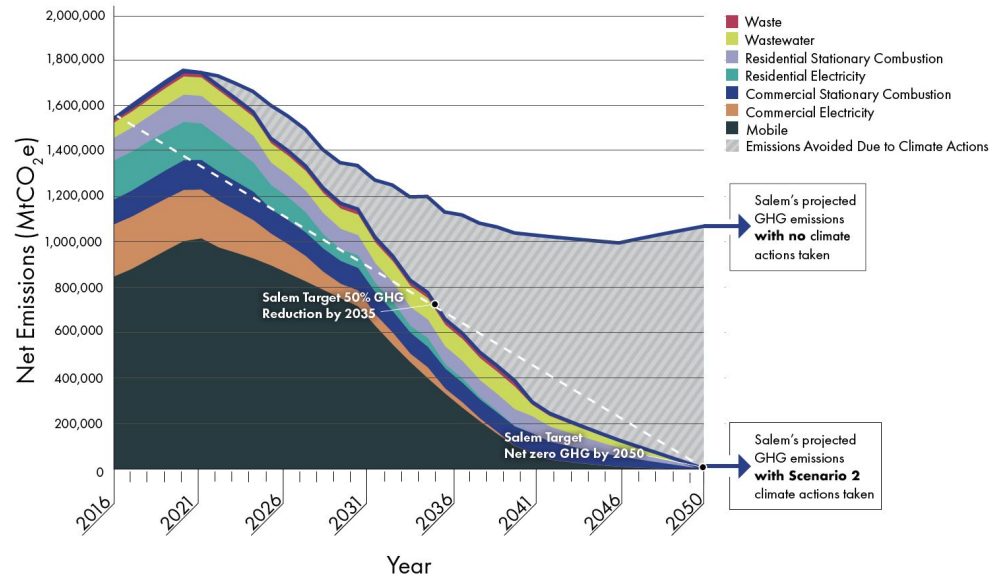
SCENARIO 2



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What is required to achieve Scenario 2?

11. Halt the entry of non-resident internal combustion engine traffic
12. Halt the entry of internal combustion engine heavy trucking
13. Halt internal combustion air traffic
14. Ensure a 100% renewables-only electricity grid
15. Remove all fossil fuel-derived natural gas systems in the built environment
16. Remove all other building fossil fuels (e.g. propane, diesel) in the built environment
17. Achieve zero waste through circular economy, compost, recycling
18. Capture all wastewater emissions
19. Halt all septic emissions by requiring locations on septic to join centralized wastewater treatment



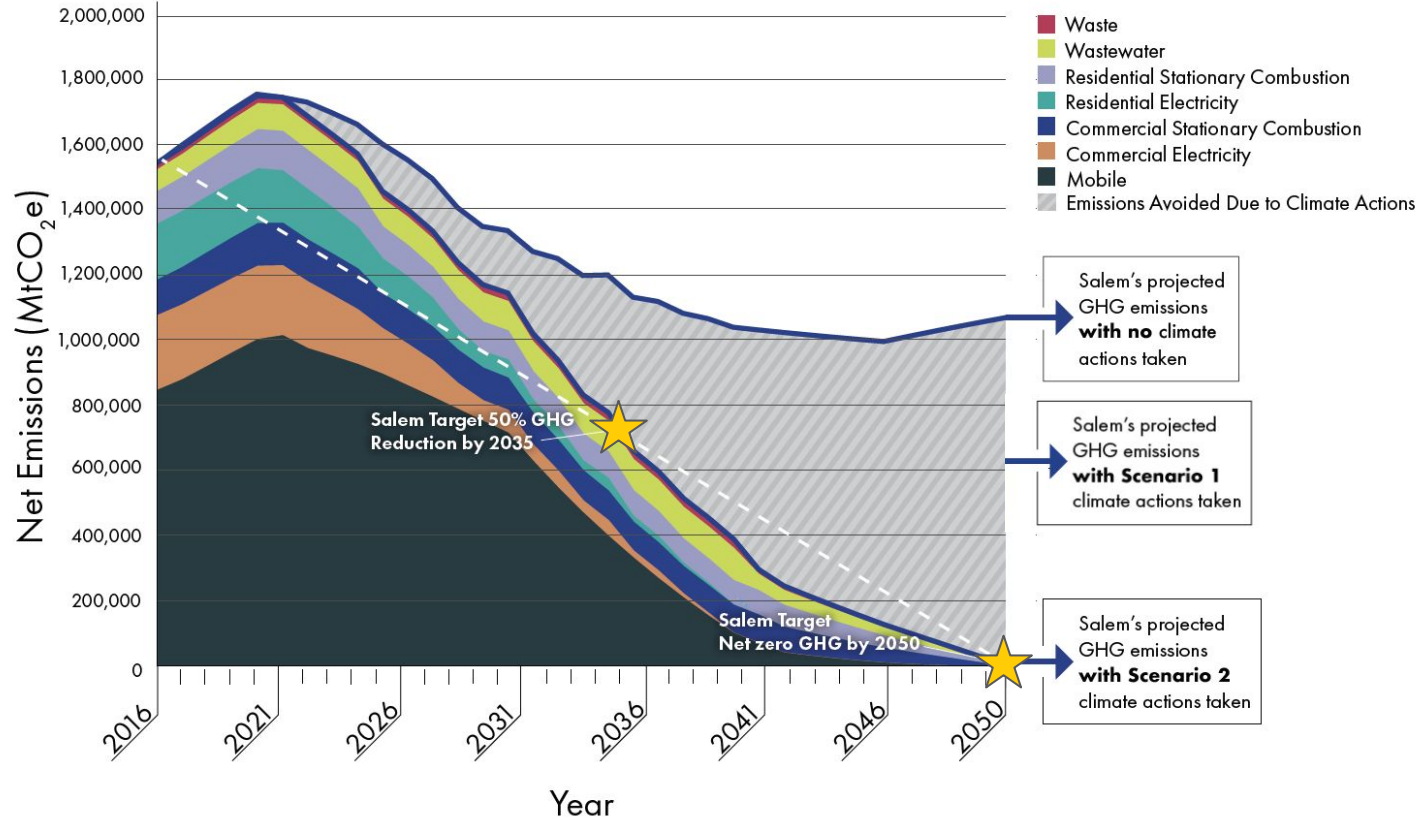
Assumptions Modeled in Scenario 2

1. Double the rate of electric vehicle (EV) adoption
2. Quadruple the rate of bus ridership
3. Double the rate at which residents use biking and walking
4. Transition to a zero-emissions bus fleet
5. Reduce the amount of passenger vehicle traffic coming into and out of Salem by 40%
6. Reduce the amount of traffic within Salem by 10%
7. Halt all growth in natural gas emissions
8. Improve building efficiency by an average of 10% by 2050
9. Maximize onsite solar
10. Maximize carbon sequestration of plants and trees
11. Halt the entry of non-resident internal combustion engine traffic
12. Halt the entry of internal combustion engine heavy trucking
13. Halt internal combustion air traffic
14. Ensure a 100% renewables-only electricity grid
15. Remove all fossil fuel-derived natural gas systems in the built environment
16. Remove all other building fossil fuels (e.g. propane, diesel) in the built environment
17. Achieve zero waste through circular economy, compost, recycling
18. Capture all wastewater emissions
19. Halt all septic emissions by requiring locations on septic to join centralized wastewater treatment

Appendix 9

SCENARIO 2 RESULTS

- 57% reduction in emissions by 2035
- Net zero emissions by 2050



What about purchasing carbon offsets?

CARBON OFFSETS ARE ACTIONS TAKEN TO COMPENSATE FOR THE EMISSION OF GHGs

Neither scenario includes carbon offsets

- The cost of carbon offsets currently ranges from about \$6 - \$15 per MtCO₂e
- Scenario 1 shows close to 600,000 MtCO₂e remaining in 2050
- It would cost the City \$3.9M - \$9.7M per year to offset that amount



Keys to Implementation





KEYS TO IMPLEMENTATION

The following strategies will be needed to ensure the success of the Climate Action Plan:

1. Hire an FTE coordinator to lead implementation and provide funding for the person and program
2. Establish a working group to guide community-wide implementation
3. Prioritize equity
4. Regularly communicate with Salem residents, businesses, and others
5. Track and report emissions at regular intervals
6. Update the Climate Action Plan every five years



High-Impact GHG Reduction Strategies



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High-Impact GHG Reduction Strategies

ENERGY

The following strategies could have a high impact in reducing emissions.

- Create **energy benchmarking and transparency** policies and reward building owners who improve building energy efficiency.
- Develop a comprehensive program to help residents and business owners **weatherize buildings** and improve energy efficiency, with a priority emphasis on properties with low-income renters.
- Provide incentives for new construction that is **all-electric**.
- Implement an incentive program for residents and businesses to **switch from natural gas appliances** to all-electric models.
- Implement policies to **reduce natural gas usage**, such as requiring all-electric new construction, prohibiting fossil fuel usage in new construction, and/or banning the use of gas and oil in residential appliances.

High-Impact GHG Reduction Strategies

TRANSPORTATION

The following strategies could have a high impact in reducing emissions.

- Expand **public transit** infrastructure in Salem with a focus on equity-based access.
- **Increase urban density** along the core transportation network.
- Incentivize Salem area employees to shift from driving alone to **using alternative forms of transportation**, including carpooling, walking, biking, and transit. Where possible, increase work from home options.
- **Charge for city-controlled parking** using a model intended to reduce parking in the central business district to 70-80% of supply.

Where are we in process?



Council Discussion





in partnership with





Staff Report

File #: 21-323
Version: 1

Date: 9/20/2021
Item #: 2.a.

TO: Mayor and City Council
THROUGH: Steve Powers, City Manager
FROM: Peter Fernandez, PE Public Works Director

SUBJECT:

Salem Climate Action Plan Work Session

Ward(s): All Wards
Councilor(s): All Councilors
Neighborhood(s): All Neighborhoods
Service Area(s): Safe Community; Welcoming and Livable Neighborhood; Good Governance; Natural Environment Stewardship

SUMMARY:

A City Council work session on the Salem Climate Action Plan is scheduled for September 20. To assist City Council in advance of the work session, this report summarizes the project approach, progress to date, and implementation strategies to meet the City’s Greenhouse Gas reduction goals.

ISSUE:

Salem Climate Action Pla.

RECOMMENDATION:

Information only.

FACTS AND FINDINGS:

Salem began developing its Climate Action Plan (CAP) in August 2020. In October 2020 Council established two goals:

1. Reduce Salem’s Greenhouse Gas (GHG) emissions 50% from 2016 levels by 2035; and

2. Be carbon neutral by 2050.

Verdis Group, a consulting firm specializing in climate action planning, was hired to assist in developing the CAP. A 33-member Task Force was established with a broad cross-community representation (Attachment 1). The Task Force has conducted five workshops that focused on vision, vulnerability, GHG forecast modeling, strategy development, and strategy priorities. The public has been engaged and informed throughout the process via online activities, public presentations, community events, radio interviews, public service announcements, and social media posts. Information was provided in both English and Spanish.

Salem is vulnerable to climate change impacts, including flooding, drought, excessive heat days (days with temperatures over 90 degrees Fahrenheit), and wildfires in the region. These impacts can cascade, disrupting transportation, agricultural production, food supplies, and public health.

People of color, residents living in poverty, seniors, children, and people who work or live outdoors are impacted disproportionately by extreme weather. The CAP includes guiding equity principles to assist with implementation across the community.

To reach the goals set by Council, the Task Force, consultants, and residents of our community worked together to develop a variety of strategies for both GHG reduction and community resilience. Over 170 strategies in seven different action categories have been proposed (Attachment 2). Action areas include transportation/land use, energy, natural resources, economic development, materials and waste, food, and community/equity. The drafted strategies are still open for refinement and new strategies may be added. Each strategy is qualitatively assessed for GHG reduction potential, cost, lead agency, co-benefits, and timeframe for implementation.

A detailed, triple bottom line (social, environmental, financial) benefit-cost analysis was undertaken for ten strategies that have the City as the lead implementation agency and have high GHG reduction impacts. These ten strategies were selected by the three Councilors serving on the Task Force. The analysis showed that three of the 10 strategies had a positive benefit-cost ratio. These strategies were increasing parking fees, improving building weatherization, and expanding the urban tree canopy (Attachment 3). The benefit-cost ratios of the other selected strategies were more nuanced due to variables such as rates of adoption by Salem residents.

The next step in developing Salem's CAP is to prioritize the strategies based on their impacts on reducing GHG emissions; the City's ability to undertake the actions as a municipal government; and the ability to fund and staff the actions. Many of the strategies rely on partnerships with other organizations, such as Cherriots, Portland General Electric, and Energy Trust of Oregon.

Implementing Salem's CAP has a long timeframe; therefore, it will be essential to actively monitor progress towards the goals. The CAP should be considered a roadmap toward a desired future. This roadmap will need to be updated and amended to address emerging technologies, as well as changing state and federal regulations and initiatives. Priorities for implementation may shift over time and the CAP should be adjusted to stay current and maintain progress.

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File #: 21-323
Version: 1

Date: 9/20/2021
Item #: 2.a.

Reducing GHG emissions will require many actions by the City, businesses, nonprofits, partner organizations, and residents. Based on recent GHG forecast modeling it will be difficult for the City to reach the 2035 and 2050 goals without making significant changes in regulations, policies, practices, and behavior.

BACKGROUND:

Work on the Salem CAP began in August 2020. To date, five Task Force workshops have been held, and a final, sixth workshop is planned for October 27. In October, the Task Force meeting will focus on plan implementation.

All Task Force meetings are recorded and materials from the meetings are posted on the project website under the heading "project resources" at:

[.<https://salemclimateactionplan.com/project-resources>](https://salemclimateactionplan.com/project-resources).

Work on the Salem CAP is being closely coordinated with the Our Salem Comprehensive Plan update. Both plans will influence development and transportation patterns in the City, and both have the ability to reduce GHG emissions.

The goal is to present the final draft Climate Action Plan to Council on December 6 for approval.

Robert D. Chandler PhD, PE
Assistant Public Works Director

Attachments:

1. Salem Climate Action Plan Task Force Members
2. Proposed Strategies for Salem Climate Action Plan v.16
3. Benefit-Cost Analyses for Ten Climate Action Plan Strategies