



White Salmon City Council Workshop

A G E N D A

March 19, 2025 – 5:00 PM

119 NE Church Ave and Zoom Teleconference

Meeting ID: 824 5005 4367

Call In: 1 253 215 8782 US (Tacoma)

Zoom Link: <https://us02web.zoom.us/j/82450054367>

I. Workshop

Background Materials

- A. Summary of Version Changes
- B. February 5, 2025, Version – Green House Gas Emission Reduction Plan
- C. February 5, 2025, Future Recommendations Report with Edit Notes
- D. Overview of Plan Edits
- E. January 15, 2025, Version – Green Housse Gas Emission Reduction Plan

II. Adjournment

File Attachments for Item:

A. Resolution 2024-12-604 Green House Gas Emissions Reduction Plan

The **FINAL** version of the White Salmon Emissions Reduction Plan differs from the **DRAFT** in several key ways:

1. Refinement of Priority Recommendations

- The **FINAL** version softens the language of some recommendations, changing direct commitments (e.g., "City to commit to...") to "**Consider incorporating...**" or "**Consider adopting...**" for several measures.
- Some recommendations have been **moved to a separate Future Recommendations Report**, rather than being included in the core plan.

2. Revised Governance and Implementation Language

- The **FINAL** version emphasizes **seeking grant funding** for various initiatives, such as increasing staff support and piloting renewable energy projects.
- The **timeline classifications (Immediate, Short, Medium, Long-term)** remain similar but are **less prescriptive**, making recommendations more flexible.

3. Expanded Acknowledgments and Leadership Information

- The **FINAL** version includes an **Acknowledgements section**, listing City Council members, staff, and contributors.
- Mayor **Marla Keethler** and City Council members are explicitly listed in the **FINAL** version.

4. Added References to Other City Planning Efforts

- More emphasis is placed on **aligning with other city planning documents**, including:
 - The **Water System Plan** (updated in 2023, adopted in 2024)
 - Acknowledgment of operational efficiencies, such as an **energy audit for public facilities**.
- The **FINAL** version integrates these references to show a more cohesive planning approach.

5. Shift in Building and Transportation Requirements

- The **DRAFT** recommended **mandatory** green building standards for City facilities and large residential projects.
- The **FINAL** version **softens** these to recommendations, **removing specific percentages** (e.g., EV-ready parking space minimums) in favor of general sustainability best practices.

6. Revised Water and Energy Goals

- The **FINAL** version **reiterates** commitments to **water system modernization** and drought resilience improvements.

- It references securing **funding for Mainline Phase IID & IIA** and using **supervisory control and data acquisition (SCADA)** systems for leak tracking.

7. Clarification of Future Climate Planning

- The **DRAFT** indicated a **Climate Action Plan in 2025**.
- The **FINAL** version removes the explicit timeline but maintains that a future **comprehensive Climate Action Plan** will follow.

Summary

This further revised version refines the January draft by:

- including additional priority recommendations and shifting from **direct commitments to more flexible recommendations**;
- expanding alignment with other city initiatives, and incorporating acknowledgments of leadership and contributors;
- using **less prescriptive** language in **priority recommendations**, allowing for greater adaptability.
- and broadening **timeline classifications (Immediate, Short, Medium, Long-term)** to remain similar but **less prescriptive**, making recommendations more flexible.



COUNCIL REPORT



Business Item



Consent Agenda

Needs Legal Review:

Yes, completed

Meeting Date:

February 5, 2025

Agenda Item:

Resolution 2024-12-604 Adopting the Greenhouse Gas Emissions Reduction Plan (GhGERP)

Presented By:

Marla Keethler, Mayor
Jim Ransier, CityLab Chair & Council Member

Action Required:

Review and action on Resolution 2024-12-604 Adopting the Greenhouse Gas Emissions Reduction Plan (GhGERP).

Motion for Business Item / Proposed Motion for Consent Agenda:

Motion to approve Resolution 2024-12-604 Adopting the Greenhouse Gas Emissions Reduction Plan.

Background of Issue:

The City Council received a presentation on the Greenhouse Gas Emissions Reduction Draft Plan at their May 15, 2024 City Council Meeting, as well as a revised version presented at the January 15 City Council meeting. This updated version reflects feedback from the council at their previous meeting, as well as previous feedback from legal and staff throughout the process that had not been incorporated into the prior version.

Previous substantial changes to the version considered on January 15 consisted of:

- a short-list of priorities as a standalone section,
- single-family detached housing structures under 1,750 sq. ft. are exempt (as are non-single family non-detached dwellings,
- funding recommendations embedded within that list, and
- addition of a water meter reading base station at City Hall as a priority recommendation.

This final version further refines the January draft by:

- including additional priority recommendations and shifting from direct commitments to more flexible recommendations,
- expanding alignment with other city initiatives, and incorporating acknowledgments of leadership and contributors,
- using less prescriptive language in priority recommendations to allow for greater adaptability,
- and broadening timeline classifications (Immediate, Short, Medium, Long-term) to remain similar but less prescriptive, making recommendations more flexible.

The Future Recommendations Report, previously an appendix (January), is now a separate document outside Resolution 2024-12-604, intended to complement the GhGERP. It includes additional recommendations beyond the Priority Recommendations in the plan. This mirrors the approach taken with the Transportation System Lite Plan (Ordinance 2023-08-1148), where the Jeff Speck Walkability Report was not formally adopted or incorporated into the Ordinance but was published and is a public resource.

Explanation of Issue:

The City of White Salmon faces significant environmental and socio-economic challenges associated with climate change, including rising temperatures, extreme heat events, wildfires, and impacts on air quality. These hazards pose immediate and long-term risks to the health, safety, and livelihoods of residents, businesses, and ecosystems. Despite efforts to address climate change, gaps remain in infrastructure, policy, and community preparedness, particularly for vulnerable populations who are disproportionately affected by these issues.

The proposed GhGERP provides specific, prioritized recommendations for realizing the City's commitment to mitigating greenhouse gas emissions and enhancing community resilience. This plan outlines actionable goals and strategies to meet emissions reduction goals established by the City's Climate Crisis Resolution. Adoption of this resolution facilitates grant funding opportunities for the City and establishes a roadmap of recommendations for achieving sustainable, equitable, and community-driven climate action for White Salmon.

Council Options:

City Council has the following options available at this time:

1. Accept the Staff Recommendation.
2. Revise the Staff Recommendation.
3. Other action as desired by council.

Fiscal Analysis:

There are no Financial Implications.

Diversity Equity Inclusion & Stakeholder Analysis:

The GhGERP explicitly integrates equity as a core principle, recognizing that vulnerable communities in White Salmon, including low-income households, communities of color, seniors, and individuals with disabilities, are disproportionately impacted by climate hazards. Furthermore, the GhGERP builds on foundational assessments such as the Community Energy Usage Assessment and Social Vulnerability Index data, ensuring that proposed strategies are evidence-based and tailored to White Salmon's unique context. This alignment reinforces the City's readiness to transition from planning to implementation while maintaining accountability and transparency.

In addition to a Climate Vulnerability Assessment and a Scope 1-2 Greenhouse Gas Inventory, the GhGERP's development contemplated the results of a Community Climate Action Survey conducted by CityLab, capturing resident concerns and priorities. While demographic data collection was limited, the survey provided valuable insights into areas of concern, such as wildfire risk and heat events. Ongoing efforts should aim to elevate the voices of vulnerable groups, as well as key stakeholders such as White Salmon's Public Works Department, local businesses, community organizations, and others.

Policy & Plan Implications:

The GhGERP aligns with and builds upon White Salmon's existing policy and planning framework, ensuring coherence across multiple initiatives and regulatory commitments.



By embedding the GhGERP within this robust planning framework, the City ensures a holistic approach to sustainability that leverages synergies across policies. The GhGERP strives to operationalize the City's climate commitments and also strengthens its ability to secure funding, partnerships, and public support for initiatives that align with regional and state sustainability goals. Moreover, the plan's alignment with these foundational policies ensures a smooth transition from planning to action, bolstering accountability and measurable progress over time.

**RESOLUTION NO. 2024-12-604
CITY OF WHITE SALMON**

**A RESOLUTION OF THE CITY OF WHITE SALMON ADOPTING
THE WHITE SALMON GREEN HOUSE GAS EMISSION REDUCTION PLAN**

WHEREAS, the City Council adopted Climate Crisis Resolution 2021-03-517 on March 3, 2021;
and

WHEREAS, the White Salmon City Council recognizes the urgent and growing threat of climate change, including its impacts on public health, the local economy, and the environment; and

WHEREAS, the United Nations Intergovernmental Panel on Climate Change (IPCC), representing over 2,500 climate scientists and thirty years of research, has concluded that global warming caused by greenhouse gas emissions as a result of human activities is one of the most pressing challenge facing the world today; and

WHEREAS, the IPCC's Sixth Assessment Report (2023) found a greater than 50% chance that global temperature rise will reach or surpass 1.5°C between 2021 and 2040 across studied scenarios; and

WHEREAS, cooperating governments throughout the world have adopted emission reduction targets and programs to keep global warming well below the 2°C increase, in an effort to reduce the catastrophic impacts of climate change and ultimately sustain all life on Earth; and

WHEREAS, the White Salmon City Council recognizes the substantial efforts of the White Salmon CityLab Board in developing a plan for the council to review associated with the important efforts to reduce greenhouse gas emissions.

NOW THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL FOR THE CITY OF WHITE SALMON, WASHINGTON as follows:

Section 1.

The White Salmon Greenhouse Gas Emissions Reduction Plan, attached hereto as Exhibit A and incorporated herein by reference is hereby adopted and approved.

ADOPTED by the City Council of the City of White Salmon, Washington, at a regularly scheduled open public meeting thereof this 5th day of February, 2025.

Marla Keethler, Mayor

Attest:

Approved as to Form:

Troy Rosenberg, Deputy Clerk

Shawn MacPherson, City Attorney



Greenhouse Gas Emissions Reduction Plan

City of White Salmon, Washington

February 5, 2025

Acknowledgements

CityLab Board Members & Community Contributors:

- Jim Ransier, Chair & Councilor
- Ben Giant, Councilor
- Kate Bennett, Project Lead
- Barbara Hayman
- Steven Woolpert
- Alexa Schmidt
- Peter Fink
- Ruth Olin
- Kalama Reuter

City of White Salmon Elected Leadership:

- Mayor: Marla Keethler
- City Councilor, Position 1: Patty Fink
- City Councilor, Position 2: David Lindley
- City Councilor, Position 3: Jason Hartmann
- City Councilor, Position 4: Jim Ransier
- City Councilor, Position 5: Ben Giant

City of White Salmon Staff:

- Troy Rayburn, City Administrator
- Stephanie Porter, Clerk/Treasurer
- Erica Castro Guzman, Associate Planner
- Andrew Dirks, Public Works Director

Consultants

- Facet

Table of Contents

Acknowledgements	2
Table of Contents	3
Executive Summary	4
Priority Recommendations	5
Overview	6
Glossary	7
Background.....	9
Timeline of Sustainability Commitments in White Salmon.....	9
Alignment with City Planning Documents	11
Community Survey on Climate Change.....	16
Climate Vulnerability Assessment.....	18
City Scope 1 and 2 GHG Emissions Inventory.....	21
White Salmon Community Energy Usage Assessment.....	23
Advancing Equity	25
Vulnerable Communities in White Salmon	25
Equity-informed Climate Action Planning.....	27
Next Steps	29
Appendix 1: ClimRR Climate Projection Report.....	31
Appendix 2: White Salmon Climate Action Survey.....	33

Executive Summary

Climate change presents a significant challenge to White Salmon, with increasing threats such as wildfires, extreme heat, and severe weather. Without a tailored approach, our city remains vulnerable. Yet opportunities are right in front of us - we need only to reach out and take them.

In 2021, White Salmon City Council passed a Climate Crisis Resolution committing to certain sustainability goals, including pursuing a target reduction in municipal net greenhouse gas emissions of at least 45% by 2030 and 100% by 2050. Later that year, the City established the CityLab Board, composed of City Council members and public volunteers, to drive these initiatives.

This Greenhouse Gas Emissions Reduction Plan ("Emissions Reduction Plan", "Plan") marks the first phase in a series of risk-management tools developed by that group, intended to equip White Salmon for potential environmental and economic changes from global climate shifts. The Plan focuses primarily on immediate, urgent actions for emissions reductions, in the form of prioritized recommendations and proposals. Key priority areas outlined in this plan include transportation



electrification, water conservation, green building practices, and working with the community's major electricity users to improve efficiencies.

The Emissions Reduction Plan also aims to lay a foundation for integrating resilience and sustainability into City planning, representing a crucial step in a broader strategy to strengthen our community against climate change. This Plan is intended to be

complemented by a future, comprehensive Climate Action Plan that accounts for climate change adaptation and risk mitigation, including community vulnerabilities to wildfire; green infrastructure; nature-based solutions; and community engagement; as well as strategies that are critical to achieve White Salmon's climate action goals but have longer timelines for execution.

Sustainability, by definition, is the ability to meet current needs without jeopardizing future generations' ability to do the same. This Plan outlines a roadmap for White Salmon to fulfill our present needs and protect our treasured corner of the planet, while ensuring a resilient future for generations to come.

Priority Recommendations

The following are priority recommendations-as to the first courses of action for emissions reductions, for consideration by the City and City Council of White Salmon. Additional recommendations, as well as explanatory context, can be found in the Future Recommendations Report, also published by the City Lab Board and seen as a complement to this adopted plan.

Section	Recommendation	Term	Other
Facilities and Buildings	Consider incorporating green building and sustainability best practices in the design and renovation of City-owned facilities, including prioritizing energy efficiency, low-impact development, sustainable landscaping, and other environmentally responsible construction and renovation strategies in alignment with recognized standards and recommendations.	Short term	
Facilities and Buildings	Incentivize development of residential housing that addresses the City's affordability goals and sustainability goals. CityLab recommends LEED Silver Certification OR EPA Energy Star Certification requirements for all residential new construction over 1,750 square feet.	Short term	
Transportation	Consider Transportation Impact Fee for all new construction to finance multi-modal and transit improvements.	Short term	
Transportation	Consider an electric-vehicle first policy for City municipal police and/or public works fleet.	Short term	Seek grant funding
Governance	Seek grant funding to increase staff headcount to support implementation of emission reduction initiatives.	Short term	Seek grant funding
Water	Prioritize water leakage identification and repair in the water system, including replacement of Rheingarten Park Irrigation system, replacement of the water main line, and a meter reading base station at City Hall to facilitate daily (as opposed to monthly) leak alarms.	Immediate-Long term	Seek grant funding
Energy Independence and Resilience	Pilot renewable energy and battery backup system to ensure resilient City government operations for emergency preparedness and develop a plan to expand the pilot to more buildings, with prioritization for the Booster Station.	Long term	Seek grant funding

Governance	Conduct a comprehensive Climate Action Plan, accounting for green infrastructure; nature-based solutions; community vulnerabilities to wildfire, drought, and other extreme weather events; and other topics excluded from the scope of the present report.	Long term	Seek grant funding
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Overview

The Emissions Reduction Plan is intended to be integrated into a broader sustainability planning framework, and function as a first step in assisting the City in furthering climate action. This plan contains the following sections:

1. Background: This section shares a background of climate action in White Salmon, the impending impacts of climate change on the community, and an inventory of City emissions, community energy use, and resident attitudes towards climate action planning.

We need to do more, now.
Instead of “we need to do this by 2030.”

*White Salmon City Resident
2023 Community Climate Action Survey*

2. Advancing Equity: This section identifies vulnerable groups that may be disproportionately affected by climate change impacts and provides guidance for centering those groups in climate action planning.

3. Strategic Focus Areas: The strategic focus areas of this plan are Facilities and Buildings, Energy Resilience, Transportation, Water, and Governance.

These subsections include a discussion of current challenges and opportunities for emissions management in each focus area. Each section includes 5-10 recommended actions, including those priority recommendations listed on page four of this report, for emissions reductions associated both with A) City operations, and City-owned and -operated facilities, and B) transportation, housing, and other activities of the White Salmon community.

Actions are prioritized based on their relative impact and ease of implementation. The impact of an initiative is gauged by its effectiveness in furthering White Salmon's emissions reduction goals. Ease of implementation refers to the presence of barriers (financial, social, technological, etc.) impeding successful execution.

These sub-sections also include:

- Performance metrics for annual reporting on the aforementioned actions.
- Recommendations for further action in future climate planning documents; and
- Recommendations to ensure that the costs of the required mobilization do not unfairly burden those economically or socially disadvantaged and that the realized benefits of a more just and sustainable future accrue to all.

4. Next Steps: This section focuses on the next steps following this report, and emphasizes the priorities for City Council’s consideration in climate action planning.

Glossary

Adaptation

Climate change adaptation is the process of adjusting to the effects of climate change. These can be both current or expected impacts. Adaptation aims to moderate or avoid harm for people, and is usually done alongside climate change mitigation. It also aims to exploit opportunities.

Climate Action Plan

A climate action plan is a framework document for measuring, tracking, and reducing greenhouse gas emissions and adopting climate adaptation measures. These documents are used as a framework to guide administrative bodies in addressing the impact of climate change in their communities.

Infill Development

The term “infill development” refers to building within unused and underutilized lands within existing development patterns that already have water, waste, and transportation infrastructure in place, typically but not exclusively in urban areas. Infill development is critical to accommodating growth at low cost for local government and redesigning our cities to be environmentally- and socially-sustainable.

Intersectionality

Intersectionality is a sociological analytical framework for understanding interconnected nature of social categorizations such as race, class, and gender as they apply to a given individual or group, regarded as creating overlapping and interdependent systems of discrimination or disadvantage.

Mitigation

Climate change mitigation is action to limit the greenhouse gasses in the atmosphere that cause climate change. Greenhouse gas emissions are primarily caused by people burning fossil fuels such as coal, oil, and natural gas.

Nature Based Solutions

Nature-based solutions are the sustainable management and use of natural features and processes to tackle socio-environmental issues. These issues include, for example, climate change, water security, food security, preservation of biodiversity, and disaster risk reduction.

Resilience

Climate resilience is a concept to describe how well people or ecosystems are prepared to bounce back from certain climate hazard events. The formal definition of the term is the "capacity of social, economic and ecosystems to cope with a hazardous event or trend or disturbance."

Background

Timeline of Sustainability Commitments in White Salmon

The Emissions Reduction Plan builds off the City's existing foundation of climate action. These efforts are primarily thanks to dedicated stakeholders who are and will continue to be central in supporting the implementation of the measures outlined in this plan.

2021

Climate Crisis Resolution (Resolution 2021-03-517): City Council adopts resolution committing the City to an emissions reductions goal aligned with the Paris Climate Agreement, and to take mitigative and adaptive action to address climate change in our community.

2022

CityLab Board: City council forms CityLab board, to serve as accountability and advisory body on core aims as outlined in the City comprehensive plan, and in particular, key visioning documents adopted by the city council: the Climate Crisis Resolution and the Diversity Resolution (Resolution 2019-06-489).

Water System Modernization: City successfully funds Mainline Phase I project to replace and improve mainline water delivery from Buck Creek water source.

2023

Community Climate Action Survey: CityLab completes a survey on citizen concerns about climate change and desired city government actions.

Fleet electrification: City acquires one gas hybrid vehicle for police fleet.

Housing Action Plan and land use code ordinance: City Council adopts a housing action plan and updates to land use codes (Ordinance No. 2023-12-1155) that facilitate sustainable, infill housing development in White Salmon.

Water System Plan: City submits complete Water System Plan to state for final approval.

2024

Climate Vulnerabilities Assessment: This assessment is an evaluation (further detail below) of the risks and vulnerabilities that White Salmon faces due to climate change, and identifies potential impacts of climate change to understand how these changes may interact with existing social, economic, and environmental conditions.

Scope 1 and 2 GhG Inventory for City Operations: This report (further detail below) is a fundamental component of the City's

efforts to understand and minimize its contribution to climate change.

2024 cont.

Emissions Reduction Plan: This plan identifies initial priority areas for emissions reductions at the City, residential, and business level, and outlines strategies and initiatives to mitigate climate change impacts, and offset emissions associated with city operations.

Water System Modernization: City completes Mainline Phase I project; secures funding for drought resilience improvements as part of Mainline Phase IID; finalizes funding for Mainline Phase IIA improvements to prepare for construction in 2025. City installs Supervisory Control and Data Acquisition system to more efficiently track water leaks and emergencies across entire system.

Water System Plan: State accepts and approves Water System Plan; plan adopted by council.

Operational Efficiencies: City completes energy audit of public facility housing Public Works and Fire Department operations.

Alignment with City Planning Documents

The city has many approved planning documents, and there is value in aligning, where possible, with those documents. The proposed emissions reduction plan is designed to align with existing planning documentation for the City, and provide direction for future and forthcoming city planning documentation. Key documents include:



Comprehensive Planning The Environmental & Critical Qualities section of White Salmon's [2040 Comprehensive Plan \(2021\)](#) directly aligns with our emissions reduction goals, laying a solid foundation for sustainable development in White Salmon. Through targeted policies and objectives, this section addresses key areas of concern including energy use, greenhouse gas emissions, and infrastructure resilience, thereby providing a roadmap towards a more sustainable and climate-resilient community.

GOAL E/CA-4: Address climate change by working towards reducing greenhouse gas emissions, increasing energy efficiency, and improving infrastructure resiliency in White Salmon.

- Policy E/CA-4.1: Reduce the reliance on fossil fuels and incorporate renewable energy sources, when appropriate, in municipal operations.
- Policy E/CA-4.2: Implement a resource-conservation approach for managing and developing City-operated facilities that aims to reduce energy and water usage and facility costs.
- Policy E/CA-4.3: Develop infrastructure for, and promote the use of, transportation modes that reduce the use of fossil fuels, such as biking and walking.
- Policy E/CA-4.4: Increase the resiliency of critical infrastructure through monitoring, maintenance, planning, investment, and adaptive technology.



Capital Plan The [6-Year Capital Facilities/Capital Improvement Program \(2023\)](#) presents a host of projects that enhance the city's infrastructure. Certain projects also offer support to our emissions reduction commitments. For instance, transportation capital projects such as the reconstruction of roadways with added sidewalks and paths for pedestrians and cyclists encourage eco-friendly modes of transport. With a focus on sustainable development, these projects collectively contribute to a greener, more resilient White Salmon:

- **Parks, Recreation, & Public Facilities Capital Projects** such as the installation of modern, efficient irrigation systems in our parks contributes to the plan by minimizing water waste, reducing the energy required for water transport and treatment, and encouraging the growth of healthy green spaces that absorb carbon dioxide.
- **Transportation Capital Projects** such as road reconstructions with sidewalks and paths encourage walking and cycling, directly reducing vehicular emissions.
- **Water System Capital Projects** such as upgrades to water mains and the installation of efficient pump systems can lead to reductions in energy usage, as more efficient systems require less power.
- **Wastewater System Capital Projects** such as repairs and replacements in the wastewater system can lead to more efficient treatment processes, which, in turn, can reduce energy consumption and emissions.

Housing



The White Salmon [Housing Action Plan \(2023\)](#) strongly supports the city's emission reductions plan through its strategic approach to diversifying housing options while facilitating sustainable development patterns. It lays a foundation for creating a more resilient and sustainable community by promoting a variety of housing types that cater to different needs and income levels, ultimately aiming for a well-located, efficient, durable housing stock that supports a high quality of life. Key points from the Housing Action Plan that align with emission reduction efforts include:

- **Encouraging Infill Development:** By easing restrictions on infill within residential zones, the plan fosters higher-density living in existing neighborhoods, reducing the need for extensive new infrastructure and minimizing urban sprawl. This approach is conducive to lower emissions from transportation by facilitating closer living quarters to workplaces, amenities, and public transportation options.
- **Promoting Diverse and Affordable Housing:** The plan's strategies to increase the supply of housing at various price points and configurations, such as accessory dwelling units (ADUs), cottage housing, and mixed-use developments, support a more compact, efficient urban form. This diversity in housing options can help accommodate a growing population without the corresponding increase in emissions typically associated with new, sprawling residential developments.
- **Advancing Sustainable Site and Building Design:** By advocating for housing developments that are not only diverse and affordable but also well-located and efficient, the plan supports sustainable land use planning.

Transportation



The White Salmon [Transportation System "Lite Plan" \(2023\)](#) sets forth a vision for a transportation system that caters to the mobility and connectivity needs of all community members. By prioritizing projects that enhance multimodal access and safety, the plan underscores a proactive approach to accommodating expected population growth while addressing the current demands on the transportation infrastructure. Initiatives within the plan align with the city's emissions reduction goals:

- **Sidewalk Enhancements and New Developments:** Prioritizing pedestrian infrastructure to encourage walking as a primary mode of transportation.
- **Bicycle Network Expansion:** Developing a comprehensive network of bicycle lanes and trails to facilitate non-motorized transport.
- **Multimodal Transit Improvements:** Fostering the use of public transit through service enhancements and infrastructure upgrades, reducing reliance on personal vehicles.
- **Sustainable Street Designs:** Implementing green infrastructure and low-impact development practices within transportation projects to mitigate environmental impacts.

Water



The White Salmon Water System Plan was updated in 2023 and adopted by City Council in 2024. The plan focuses on prioritizing projects to modernize the system as well as improve energy efficiency and sustainable water sourcing. Targets for reducing water loss, and direction for an associated public outreach plan are also contained within to ensure water management practices contribute to the broader goal of lowering greenhouse gas emissions, aligning with the city's commitment to environmental stewardship and sustainability.

Proposed actions included in the Water System Plan that could support emissions reduction include:

- **Upgrading Water Infrastructure for Efficiency**
 - Replacing aging pipelines and installing automated meter reading technology to reduce leaks and unnecessary energy use.
 - Implementing pressure management systems to optimize water distribution and lower energy consumption.
- **Diversifying Water Sources & Treatment Improvements**
 - Evaluating the use of alternative water sources, which may reduce reliance on energy-intensive groundwater pumping.
 - Enhancing filtration and treatment processes to improve efficiency and potentially reduce chemical and energy use.
- **Encouraging Water Conservation**
 - Promoting conservation programs that reduce overall water demand, leading to lower energy usage for treatment and distribution.
 - Implementing tiered pricing structures to incentivize reduced water consumption.
- **Emergency Preparedness**
 - Developing contingency plans for drought and extreme weather events, which can help mitigate emissions related to emergency water transport or treatment.
- **Potential for Renewable Energy Integration**
 - While not explicitly mentioned, future improvements may include renewable energy sources (such as solar power for treatment plants or pumping stations) to further reduce the carbon footprint of the city's water system.

Relatedly, [City Resolution 2022-05-543, "A Resolution of the City of White Salmon Approving and Adopting Water Use Efficiency Goals and Measures"](#), committed to several water usage goals:

- A 2% reduction in average gallons per equivalent residential unit per day
- A distribution system leakage of 25% or less by the year 2028

Wastewater



The General Sewer/[Wastewater System Plan \(2016\)](#) for Bingen and White Salmon cities lays a strategic foundation for supporting emissions reduction efforts by integrating advancements in treatment processes and system efficiency. The focus on modernizing infrastructure and optimizing operational efficiency plays a critical role in minimizing the environmental impact of wastewater management, thereby aligning with broader emissions reduction goals. Key projects that align with the Emissions Reduction Plan include:

- **Upgrading Aeration Systems:** Implementing high-efficiency aeration systems with fine-bubble diffusers to improve treatment processes and reduce energy demand.
- **Heat Pump Replacement for Operations Building:** Replacing the old heat pump with a more energy-efficient model to reduce electricity consumption.
- **Inflow/Infiltration Corrections:** Mitigating excess water entering the sewer system, thus lowering the energy-intensive treatment of additional water volumes.



The [Parks Plan \(2022\)](#) embodies a holistic approach to sustainability, directly contributing to the Emissions Reduction Plan by prioritizing environmental enhancements and community well-being. Upgrading park facilities to be more energy-efficient, enhancing green spaces for carbon sequestration, and improving infrastructure for sustainable transportation options all play a key role in our journey towards a cleaner White Salmon. Here is a partial list of how specific projects within the plan bolster our emission reduction goals:

- **Pioneer Park:** The construction of walking loops and installation of benches provides a space for low-carbon recreation, while upgraded trash receptacles support recycling efforts. (2031-2037)
- **Fireman's Park:** The addition of a sidewalk and stormwater facility, complete with educational signage, promotes sustainable water management and public awareness on environmental issues. (2031-2037)
- **Rheingarten Park:** Water conservation efforts in the park's irrigation system align with energy-saving initiatives. (2023-2037)
- **Gaddis Park:** Acquiring additional park property and restoring riparian vegetation expands carbon sequestration areas and preserves biodiversity, enhancing the park's role in the local ecosystem. (2023-2043)
- **Loop Trail & Riverfront Park Trail Bridge:** These projects aim to boost multimodal transport, providing infrastructure for cycling and walking, which will help cut down on emissions from traditional transportation methods. (2023-2043)
- **Future Neighborhood Parks & Dog Park:** The development of new parks and a dog park with multi-modal access provides low-carbon recreation options to the community. (2023-2037)



The White Salmon [Critical Areas Ordinance \(2023\)](#) emphasizes the protection and enhancement of valuable and fragile natural resource areas, which supports the Emissions Reduction Plan by ensuring the conservation of natural resources, forested lands and the resilience of ecological functions.

The ordinance includes provisions like buffer enhancement, placing critical areas and their buffers in a protective tract to protect against future development, the use of low-impact development techniques, and the implementation of habitat management plans, which collectively work towards mitigating environmental impacts and enhancing ecological function. The ordinance also outlines clear strategies for the protection and management of wetlands, streams and their buffers, habitat conservation areas, and geologically hazardous areas, which not only play a role in carbon sequestration, but also provide a range of other ecosystem services like helping to purify air and water, promote beneficial habitat corridors, or contribute to soil health.

By mandating the use of best available science for critical area reports and mitigation plans, as well as requiring long-term monitoring of development impacts on critical areas, the ordinance aligns with the objective to minimize the urban carbon footprint and advancing the city's

sustainability goals. Moreover, the ordinance requires the mitigation of impacts to critical areas in a way that achieves no net loss of functions, contributing to the broader emissions reduction strategy by preserving the ecosystem's ability to capture and store greenhouse gasses.



The White Salmon [Shoreline Master Plan \(2024\)](#) inherently supports the Emissions Reduction Plan by emphasizing protection and restoration of ecological functions of critical areas within shoreline jurisdiction. It advocates for human uses that do not result in a net loss of ecological functions and incentivizes restoration of critical areas with degraded functions alongside development projects, both public and private. Restoration efforts are to be consistent with the City's Shoreline Restoration Plan, illustrating a commitment to enhancing shoreline ecological functions which inherently supports emissions reduction through natural processes.

- **Restoration of Ecological Functions:** The program prioritizes the restoration of degraded shoreline ecological functions and processes through public and private development projects. This supports emission reduction by enhancing natural landscapes that can absorb and store carbon dioxide.
- **Protection of Critical Areas:** Policies within the program aim to protect critical freshwater habitats, wetlands, and geologically hazardous areas, conserving environments that act as natural carbon sinks.
- **Mitigation Sequencing:** The program enforces a mitigation sequence to avoid, minimize, and compensate for ecological impacts, ensuring no net loss of shoreline ecological functions. This methodology ensures that any development or restoration projects contribute positively to emission reduction efforts.
- **Vegetation Conservation:** There's a strong focus on preserving the natural character of the shoreline and its native vegetation, which is crucial for maintaining biodiversity and ecosystem resilience in the face of climate change.
- **Habitat Management Plans:** The requirement for habitat management plans for development proposals ensures that ecological impacts are carefully considered and managed, which aligns with broader goals of emissions reduction by maintaining ecological balance.
- **Flood Hazard Reduction:** The goal for flood hazard reduction is aligned with the emission reduction plan by promoting methods and measures that maintain natural hydrological functions, which can indirectly reduce emissions through improved water management and preservation of wetland habitats.
- **Public and Private Cooperative Actions:** The program encourages cooperative restoration actions involving a wide range of stakeholders, enhancing community engagement in shoreline management and conservation practices which contribute to emission reduction efforts.

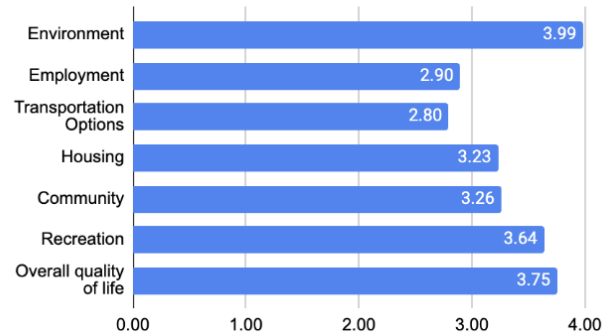
Community Survey on Climate Change

In 2023, CityLab conducted a Community Climate Action Survey to better understand citizens' attitudes to climate-related risks, as well as their attitudes towards mitigating and adaptive measures to address climate change, both City-implemented and private activity-related. Please refer to Appendix 2 for full survey results.

Between April - December, City Lab collected 121 responses to the survey, with approximately 60% of responses from White Salmon City residents, with another approximately 23% of responses from residents in the urban exempt area and/or Snowden.

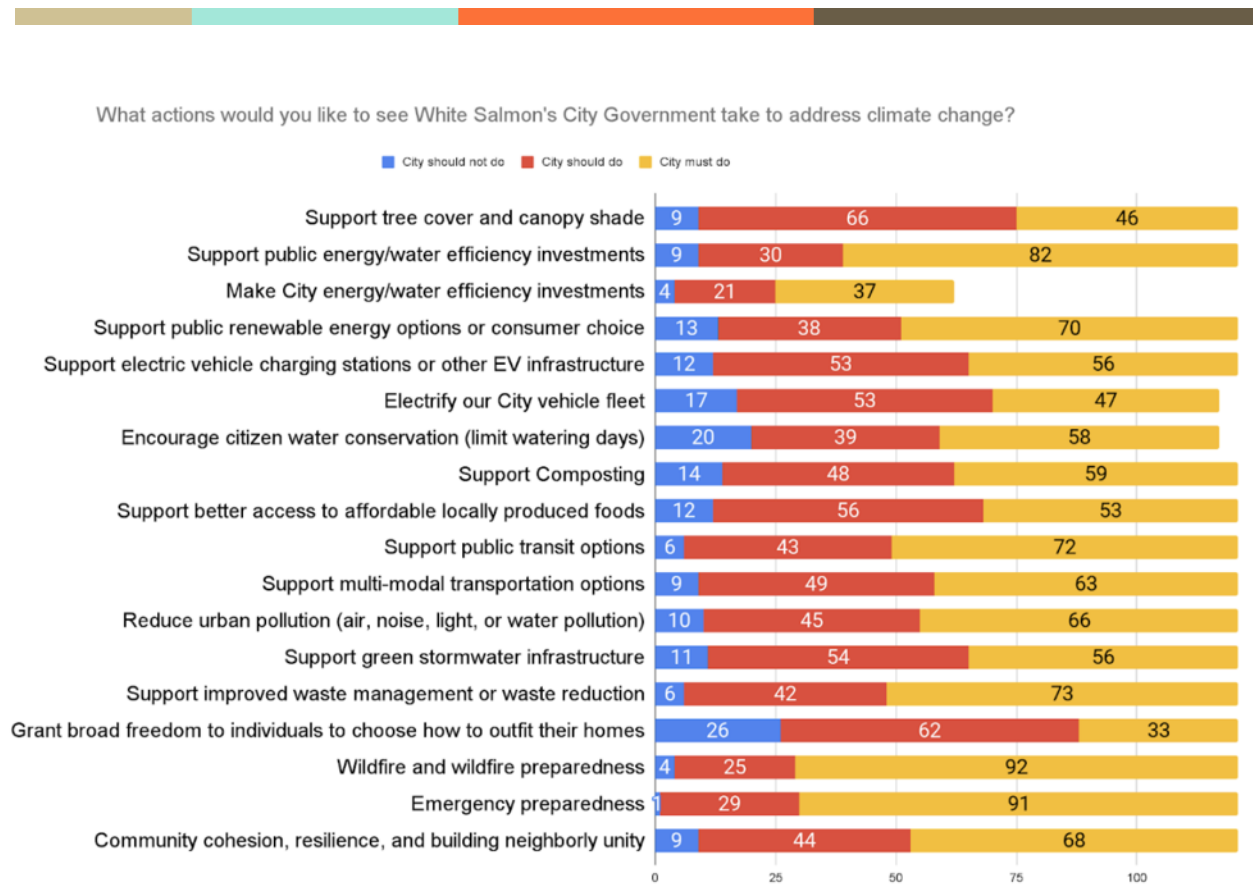
Demographic data was not collected from respondents until the survey was edited in the fall (after most surveys had been collected). Because of this, we feel uncomfortable drawing any specific information from the data we've collected. We understand this is a critical oversight and will require more reliable data as part of the Climate Action Plan.

Q3. On a scale from 1 to 5, 1 being not at all concerned and 5 being extremely concerned, how concerned are you about climate change impacting the following aspects of your life in White Salmon?
[City Residents]



Key Findings

- The 3 biggest areas of concern for City residents regarding impacts of climate change include impacts on the 1) environment, followed by 2) overall quality of life and 3) recreation, respectively. These are also the three areas that City residents rank as being the highest in terms of their current life satisfaction.
- On a scale from 1 to 5, 1 being not at all concerned and 5 being extremely concerned, City residents overall ranked wildfires as their top concern (average score of 4.42) followed by heat waves (4.17) and air quality (4.17).
- City residents that are raising children reported being somewhat concerned (average score of 3.69) about climate change impacting raising their children, or their children's lives in White Salmon.
- City residents reported that the biggest obstacles for them to personally address climate change are government support, followed by money and time.
- Most respondents reported being willing to install renewable energy for their homes, invest in hybrid or electric vehicles, drive less, change dietary habits, and get involved in local government or nonprofit groups. Areas where respondents reported needing the



most support included renewable energy investments, hybrid/electric vehicles, driving less, and getting involved with local government or nonprofits.

- When asked what actions they'd like to see White Salmon City government take to address climate change, the top options respondents rated "City must do" were:
 - Wildfire preparedness,
 - Emergency Preparedness,
 - Support public energy/water efficiency investments,
 - Support improved waste management or waste reduction,
 - Support public transit options, and
 - Support renewable energy options or consumer choice

I'm concerned about the compounding effects of climate change on our community. Each of these impacts affects other issues and magnifies them - together the impact is greater than any one issue.

City Resident

We are past mitigation and into the adaptation mode because it is already upon us. Hopefully we can slow down the final phase of our society by going into pure survival mode!

City Resident

Climate Vulnerability Assessment

Climate change has already impacted and will continue to impact the City of White Salmon, its residents, businesses, and visitors. Many climate hazards may become more frequent and intense as the climate changes.

Furthermore, vulnerable and disadvantaged members of the community are disproportionately affected by climate change. As discussed further in the “Advancing Equity,” the City must prioritize these groups in mitigative as well as adaptation activities.

The present report targets priority initiatives for achieving emissions reductions commitments of the Climate Crisis Resolution. The identified vulnerabilities in this section are expected to be a significant focus in the forthcoming comprehensive Climate Action Plan. **Major concerns for White Salmon are rising temperatures, increased frequency and intensity of extreme heat events, and increased frequency and intensity of wildfires, all which are expected to have economic, social, political, and environmental impacts.** See more details and citations in Appendix 1.



Sources

The below projections are sourced from the Climate Risk and Resilience Portal (ClimRR) tool, developed by the Center for Climate Resilience and Decision Science (CCRDS) at Argonne National Laboratory. The goals of ClimRR are to provide free and equitable access to leading, peer-reviewed climate datasets to support analysis and data-driven planning for future climate risks; as well as empower non-technical individuals, organizations, planners and decision-makers at state, local, and Tribal governments to gain awareness of future climate conditions and to conduct climate risk-informed analyses to support decision-making and adaptation efforts.

Scientists at Argonne are responsible for all aspects of climate modeling, with funding for the development of the portal and its maintenance from the Federal Emergency Management Agency (FEMA). FEMA, in coordination with Argonne, provides technical assistance on the application of this climate data to support community and infrastructure resilience analytic and planning initiatives.

Representative concentration pathways (RCP) 4.5 and RCP 8.5

The below projections also reference representative concentration pathways (RCP) 4.5 and RCP 8.5. Representative concentration pathways portray possible future greenhouse gas and aerosol emissions scenarios. RCP scenarios are not specific policies, demographics, or economic futures;

instead, they are defined by total solar radiative forcing by the year 2100. To address uncertainty in future concentrations of greenhouse gasses and emissions of aerosols, datasets often incorporate multiple RCPs.

RCP 4.5 is a moderate scenario in which emissions peak around 2040 and then decline (and which is associated with an approximately 2°C of warming), and RCP 8.5 is the highest baseline emissions scenario in which emissions continue to rise throughout the twenty-first century (and which is associated with an approximately 5°C of warming).

Key Findings

	Historical	Mid-Century		End of Century	
		RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5
Maximum Avg Temperature	58.0°F	60.4°F	60.8°F	62.5°F	66.3°F
	+8.3°F	+2.4°F	+2.8°F	+4.5°F	+8.3°F
Minimum Avg Temperature	42.5°F	45.0°F	45.2°F	47.8°F	50.5°F
	+8.3°F	+2.5°F	+2.7°F	+5.3°F	+8°F

	Historical	Mid-Century RCP 4.5	End of Century RCP 4.5
Daily Max Heat Index*	77.2°F	81.7°F	88.7°F
Seasonal Max Heat Index*	97.6°F	108.1°F	116.4°F
Days with Max Heat Index Over 95°F	3.4 days	9 days	27.1 days
Days with Max Heat Index Over 105°F	0.1 days	2.3 days	6.6 days
Days with Max Heat Index Over 115°F	0 days	1.1 days	1.0 days
Days with Max Heat Index Over 125°F	0 days	0.8 days	0.3 days

**A heat index is a measure of how hot weather feels to humans when factoring in both relative humidity and the actual temperature. Heat index is an important gauge of heat-related risks. Readings above 105°F typically represent dangerous conditions, with readings above 125°F being extremely dangerous to humans.*

Both annual daily average temperatures, and incidence and severity of extreme heat events, are expected to increase as a result of climate change. This is expected to impact White Salmon in a number of ways, including:

Agriculture Agriculture in the region, particularly fruit orchards and vineyards, could be adversely affected by higher temperatures and heatwaves. Fruit crops like apples, pears, and cherries require a certain number of chill hours during winter for proper growth and development. Warmer temperatures could disrupt this requirement, impacting fruit yields and quality.

Heatwaves during critical growth stages can also stress crops, leading to sunburn, reduced fruit set, and decreased overall productivity. This could result in economic losses for farmers and orchard owners.

Changes in temperature and precipitation patterns may also affect water availability for irrigation, further exacerbating challenges faced by farmers in maintaining crop health and productivity.

Tourism & Outdoor Recreation Higher temperatures and more frequent extreme heat events can impact outdoor recreational activities such as windsurfing, kiteboarding, hiking, and skiing. For example, reduced snowpack due to warmer temperatures could shorten the ski season on nearby Mount Hood, impacting winter tourism.

Extreme heat events may also deter tourists from engaging in outdoor activities during peak summer months, leading to a decrease in visitor numbers and revenue for businesses that cater to tourists.

Additionally, warmer temperatures could alter ecosystems and wildlife habitats, affecting the attractiveness of the natural landscape and wildlife viewing opportunities for tourists.

Additionally, the risk of more frequent, high-severity, and larger wildfires has increased in recent years, threatening scenic, natural, cultural, and recreation values, as well as human health, local economies, and carbon stores.

	Historical	Mid-Century RCP 4.5	End of Century RCP 4.5
Fire Weather Index	28.9	28.1	35.4
Fire Weather Index Class	High	High	Very High

The Fire Weather Index (FWI) estimates weather-related wildfire danger using daily readings of weather conditions that influence the spread of wildfires, including the dryness of fuel sources and high winds. Higher FWI values represent greater danger of wildfires due to weather conditions; the index does not account for land cover or potential ignition sources. FWI values signal different levels of relative fire danger across regions.

City Scope 1 and 2 GHG Emissions Inventory

The City's City Scope 1 and 2 Greenhouse Gas (GHG) Emissions Inventory is a fundamental component of White Salmon's efforts to understand and manage its contribution to climate change. The inventory results provide valuable insights into our city's carbon footprint, allowing us to identify priority areas for emissions reductions, set targets for carbon neutrality or reduction, and develop strategies and initiatives to cut costs while mitigating climate change impacts associated with city operations.

CityLab has conducted a baseline Scope 1 and 2 GHG Emissions Inventory for the year of 2022, and is working to finalize Scope 1 and 2 GHG Emissions Inventories for 2018-2021, as well as a Scope 1-3 GHG Emissions Inventory for 2023.

Methodology and Scope

Tool and Boundaries: CityLab utilized the EPA Local Greenhouse Gas Assessment tool to develop its inventory, and an ownership-boundary approach (primarily as a result of data availability).

Emissions factors are based on a location-based method, meaning the emissions from the energy mix on the grids where we operate. The electricity grid is physically bound, and our consumption is linked to our regional grid. Moreover, because Klickitat PUD is not held to similar renewable portfolio standards as counties with higher populations in Washington State, CityLab is concerned that using a market-based method may result in double-counting of renewable energy resources.

Scope 1 Emissions: These are direct GHG emissions that result from sources that are owned or controlled by the city government. Scope 1 emissions included in the inventory include:

- Emissions from municipal vehicles and fleets (e.g., cars, trucks, buses).
- Emissions from stationary fuel sources for facilities like municipal buildings, facilities, and equipment (e.g. natural gas heating, cooling, and electricity generation).

Scope 2 Emissions: indirect GHG emissions associated with the consumption of purchased or acquired electricity, heat, or steam by the City. While the emissions occur at the facilities where the electricity is generated, they are reported by the City because they result from its energy consumption. Sources of Scope 2 emissions included in the inventory include:

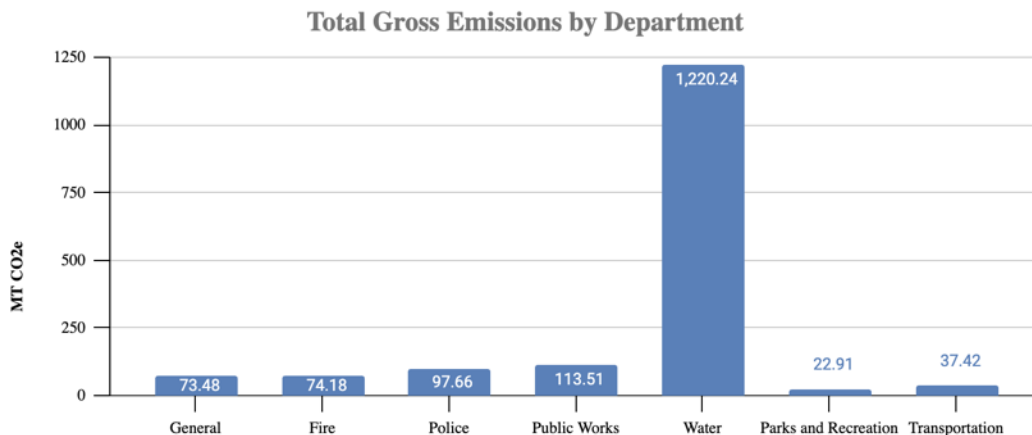
- Emissions from purchased electricity: These are emissions associated with the electricity consumed by municipal buildings, facilities, and operations.

What is not included:

- Direct Scope 1 emissions such as refrigerants, emissions associated with paving activities, emissions associated with diesel-run small equipment, etc.

- Indirect Scope 3 emissions such as goods and services purchased by the City (office supplies, equipment), employee commuting, waste generation, and wastewater treatment

Key Findings



1. White Salmon Water System

The drinking water system represents nearly 75% of City emissions. Relatedly, the water system represents over 80% of City electricity usage, with a single location (identified as Well #1 Booster Station) representing roughly 70% of City electricity usage. See details to address this in the Water section in this report.

The present inventory does not contemplate solid waste management, as waste is managed by the county and third-party services, nor wastewater treatment, as the Bingen / White Salmon Wastewater Treatment Plant is owned and operated by the City of Bingen; these are treated as Scope 3 emissions. Because these are not currently included in the inventory, our drinking water system's emissions and electricity usage may seem disproportionately high. CityLab is pursuing benchmarks for peer cities to determine how our water system's emissions per capita and electricity usage per capita perform relative to others. CityLab strongly recommends inclusion of the Bingen wastewater treatment center, of which White Salmon represents approximately 80% of capacity, and waste management, in forthcoming GHG inventories to ensure these utilities are adequately and fairly represented.

2. City Fleet

The second largest contributor to City Scope 1 and 2 emissions is transportation-related emissions from the City's fleet.

Total Emissions by Department and Source (MT CO2e)				
Department	Combustion	Electricity	Transportation	TOTAL
General	0.67	72.82	-	73.48
Fire	-	67.57	6.61	74.18
Police	-	41.63	56.04	97.66
Public Works	-	-	113.51	113.51
Water	-	1,220.24	-	1,220.24
Parks and Recreation	-	22.91	-	22.91
Transportation	-	37.42	-	37.42
Total	0.67	1,462.58	176.16	1,639.41

The City owns and operates 37 vehicles, between the Fire, Public Works, and Police Departments. The average age of fleet vehicles is 16 years. See details to address this in the Transportation section in this report.

White Salmon Community Energy Usage Assessment

CityLab has conducted a community energy usage assessment based on electricity and natural gas consumption data for City residents, which included an evaluation of emissions associated with this energy consumption. The CityLab highly recommends completion of a full Scope 1-3 GHG Emissions Inventory for the White Salmon community for 2023.

Key Findings

1. Natural Gas Usage

For residential accounts, the average per capita emissions per account holder is roughly the same for natural gas and electricity. Residential and commercial natural gas usage in White Salmon, through approximately 830 accounts, results in nearly twice the emissions of the City's residential and commercial electricity accounts. This is a non-surprising result, as natural gas combustion has a proportionally higher emissions factor of natural gas combustion. For this reason, as well as concerns regarding public health, CityLab recommends adoption of the new proposed Washington State Energy Code upon its passage, which restricts the installation of natural combustion for residential and commercial heating and cooking.

		Natural Gas - Totals (2022)		Natural Gas - Per User (2022)	
	Customers (2022)	mcf	MT CO2e	mcf	MT CO2e
Residential	748	43,123.00	2,371.00	58	3
Commercial/ Institutional	78	31,503.00	1,732.00	404	22

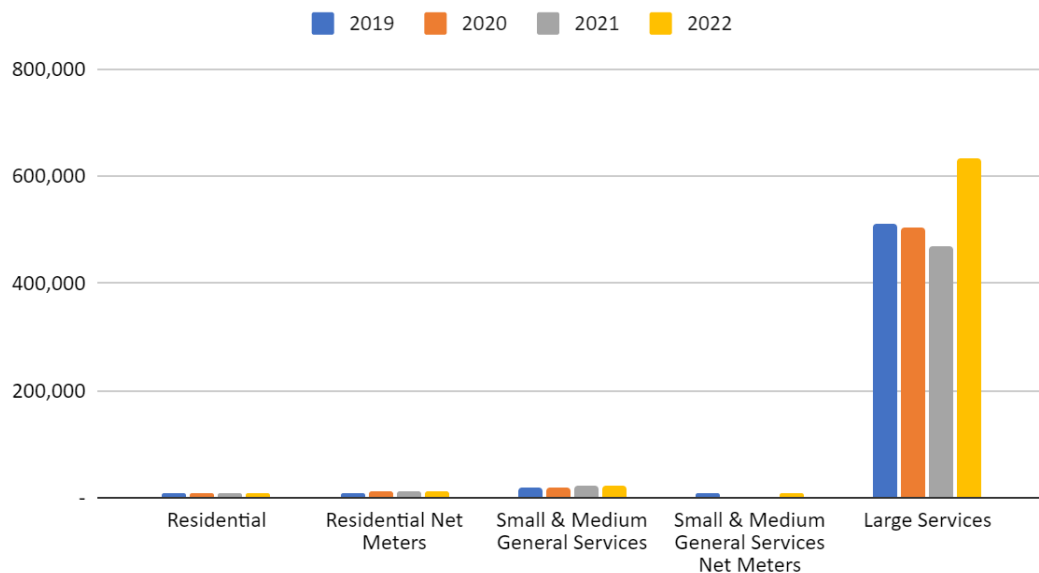
	Customers (2022)	Electricity - Totals (2022)		Electricity - Per User (2022)	
		KwH	MT CO2e	KwH	MT CO2e
Residential	1,283	12,790,853	3,704	9,969	3
Residential Net Meters	21	229,318	66	10,920	3
Small & Medium General Services	182	4,292,502	1,243	23,585	7
Small & Medium General Services Net Meters	2	14,029	4	7,015	2
Large Services	9	5,690,984	1,648	632,332	183

2. Large Service Users

Small and medium general services, who represent approximately 12% of electricity account holders, account for 19% of electricity use and emissions. Relatedly, 9 large service users representing less than 1% of total electricity account holders in City limits, account for 25% of electricity use and emissions.

CityLab recommends that, in the medium-term, the City and/or CityLab with City oversight work with these account holders to identify major electricity drivers and develop incentives and rebates to support energy efficiency upgrades within their activities.

Average Kwh Consumption per Account, Including Large Services



Advancing Equity

While climate change poses a threat to all of humanity, its effects are not evenly distributed. Vulnerable communities, often marginalized by socioeconomic disparities and structural inequalities, bear a disproportionate burden of the consequences. This challenge is compounded by the fact that White Salmon's infrastructure, policies, and investment have historically and systemically neglected and even harmed low-income communities and communities of color. The City has acknowledged these injustices and the need to right these wrongs by creating a culture of equity within its institutions.¹

Equity means meeting communities where they are and allocating resources and opportunities as needed to create beneficial outcomes for all community members. In White Salmon, our sustainability planning will only succeed if we center racial, gender, age, and disability equity in the plan's goals and strategies.

Vulnerable Communities in White Salmon

Social vulnerability expresses the degree to which a community exhibits certain social conditions, including high poverty, low percentage of vehicle access, or crowded households, that may affect that community's ability to prevent human suffering and financial loss in the event of disaster. These factors describe a community's social vulnerability.

Vulnerable communities include, but are not limited to, low-income communities, communities of color, seniors, LGBTQIA+, residents with physical or mental impairments, and other groups with diminished adaptive capacity as a result of certain conditions.

The CDC/ATSDR Social Vulnerability Index (CDC/ATSDR SVI)² is a tool published by the Centers for Disease Control and Prevention (CDC) that uses U.S. Census data to determine the social vulnerability of every census tract. The SVI ranks U.S. Census tracts on 16 social factors, including unemployment, racial and ethnic minority status, and disability, and further groups them into four related themes.

**As a respiratory health
compromised person,
the environment is a
huge factor on my
health, well-being,
ability to function and
probably life**

¹ Resolution 2019-07-489: A Resolution of the City of White Salmon Making a Declaration of Diversity and Inclusiveness:

https://www.whitesalmonwa.gov/sites/default/files/fileattachments/city_council/page/3261/approved_resolution_2019-06-489_declaration_of_diversity_and_inclusiveness.pdf

² CDC/ATSDR Social Vulnerability Index (CDC/ATSDR SVI):

<https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>

Social Vulnerability Data for White Salmon³

Socioeconomic Status	Persons below 150% poverty estimate, 2016-2020 ACS	425
	Percentage of persons below 150% poverty estimate	12.90%
	Persons (age 25+) with no high school diploma estimate, 2016-2020 ACS	207
	Percentage of persons with no high school diploma (age 25+) estimate	8.40%
	Housing cost-burdened occupied housing units with annual income less than \$75,000 (30%+ of income spent on housing costs) estimate, 2016-2020 ACS	249
	Percentage of housing cost-burdened occupied housing units with annual income less than \$75,000 estimate, 2016-2020 ACS	17.40%
	Uninsured in the total civilian noninstitutionalized population estimate, 2016-2020 ACS	51
	Percentage uninsured in the total civilian noninstitutionalized population estimate, 2016-2020 ACS	1.50%
Household Characteristics	Persons aged 65 and older estimate, 2016-2020 ACS	677
	Percentage of persons aged 65 and older estimate, 2016-2020 ACS	20.50%
	Persons aged 17 and younger estimate, 2016-2020 ACS	711
	Percentage of persons aged 17 and younger estimate, 2016-2020 ACS	21.60%
	Civilian non-institutionalized population with a disability estimate, 2016-2020 ACS	376
	Percentage of civilian noninstitutionalized population with a disability estimate, 2016-2020 ACS	11.40%
	Persons (age 5+) who speak English "less than well" estimate, 2016-2020 ACS	160
	Percentage of persons (age 5+) who speak English "less than well" estimate, 2016-2020 ACS	5.30%
Racial & Ethnic Minority Status	Minority	484
	Percentage minority (as defined above) estimate, 2016-2020 ACS	14.70%
Housing Type & Transportation	Housing in structures with 10 or more units estimate, 2016-2020 ACS	54
	Percentage of housing in structures with 10 or more units estimate	3.30%
	Mobile homes estimate, 2016-2020 ACS	180
	Percentage of mobile homes estimate	11.00%
	At household level (occupied housing units), more people than rooms estimate, 2016-2020 ACS	41
	Percentage of occupied housing units with more people than rooms estimate	2.90%

³ SVI Data, Census Tract 53039950301:

https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html

	Persons in group quarters estimate, 2016-2020 ACS	2
	Percentage of persons in group quarters estimate, 2016-2020 ACS	0.10%
	Households with no vehicle available estimate, 2016-2020 ACS	32
	Percentage of households with no vehicle available estimate	2.20%

Equity-informed Climate Action Planning

Advancing Equity will require action across a broad range of focus areas. This section highlights seven primary areas that White Salmon should consider in comprehensive climate action planning, to ensure that the costs of the mobilization against climate change do not disproportionately burden those in vulnerable communities, and that the realized benefits of a more just and sustainable future accrue for all.

Affordability

White Salmon's climate action strategy should strive to lower and stabilize costs related to basic living needs for vulnerable communities. Recommendations included in this plan include:

- Prioritize and target incentives for low-income communities and communities of color.
- Develop green incentives or programs that are accessible for all income groups.
- Seek solutions that address household affordability, transport access, and urban sprawl.

Accessibility

White Salmon's climate action strategy should strive to improve access to information, housing, transportation, funding, healthy foods, and a clean environment for vulnerable communities, through infrastructure, policy, and investments. Recommendations included in this plan include:

- Lack of awareness and information may prevent the City from meeting sustainability goals. Consider financial barriers to participation.
- Consider the inequities of how people are excluded from economic opportunity because of disabilities, income, education, and healthcare.
- Consider inequitable access to transportation options for communities that do not have access to personal vehicles.

Just Transition

White Salmon's climate action strategy should ensure economic justice for low-income communities, communities of color, and those with disabilities and protect these communities from potential negative consequences.

- Help BIPOC-owned businesses include participation efforts targeted toward these groups.
- Ensure that the needs of visually and mobility impaired citizens are centered in climate action planning and prioritization.

Community Capacity

White Salmon's climate action strategy should elevate the voices of vulnerable communities by developing and strengthening the skills, abilities, and resources a community needs to survive, adapt and thrive. Sustainability connects with a sense of place where people work, play, go to church, and spend money in one community.

- Improve informational materials for community members so people understand why climate change issues are essential, especially for parents who want to teach children to understand these issues.
- Emphasize the intersectionality of climate issues.
- Actively address safety concerns and community priorities and communicate with the community through meaningful connections to these concerns.
- Build community resilience to long-term climate change impacts by focusing on social and economic stressors for people living in White Salmon.
- Prepare for long-term climate change impacts and concerns that the infrastructure won't be able to keep up with growth.

Accountability

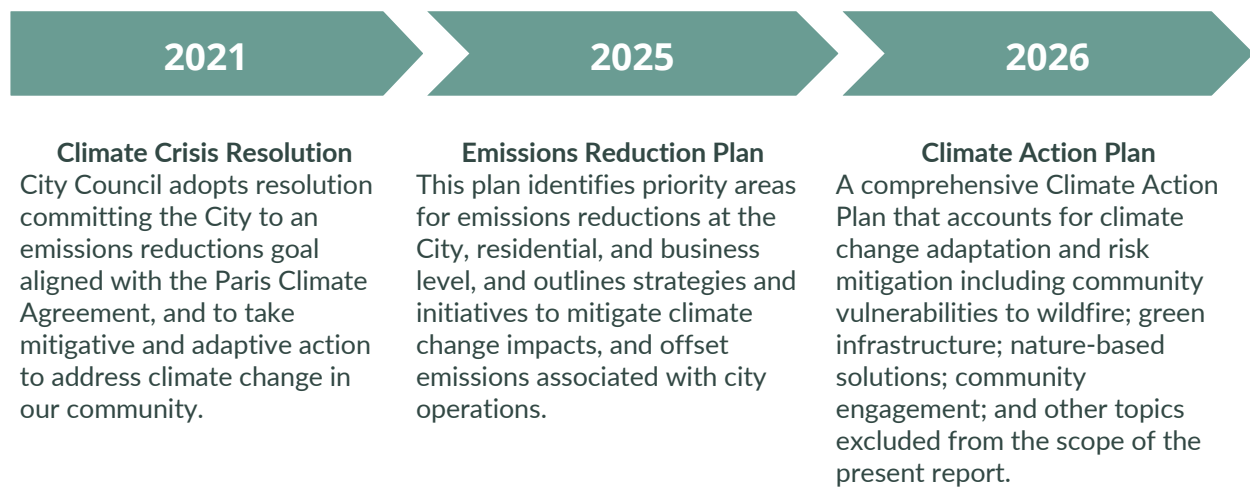
White Salmon's climate action strategy should ensure that vulnerable communities can hold institutions accountable for equitable implementation.

- Include representative leaders from BIPOC communities that are impacted by decision-making.
- Ensure equitable distribution of responsibilities in climate action.
- Equitably design programs for low-income communities.
- Address community-based concerns around systemic racism

Next Steps

Through ambitious goals and commitments in City planning documentation over the past few years, White Salmon has taken the first steps towards a more sustainable future. Now is the time to turn those commitments into action.

This report provides recommendations for the highest-priority, lowest-hanging fruit to begin progress towards achieving our emission reduction targets and fostering a more sustainable, equitable, and resilient community. This report is intended to be the first piece of planning documentation for climate action planning in White Salmon, to be followed by more comprehensive planning in 2025.



The identified priority recommendations contained herein, as well as the corresponding Future Recommendations Report lay a path forward for the immediate and near future:

- **Advancing Equity:** Ensure equitable distribution of resources and opportunities by centering racial, gender, age, and disability equity in all planning efforts.
- **Facilities and Buildings:** Implement sustainable design and construction practices, focusing on energy efficiency and green building standards.
- **Energy Independence and Resilience:** Embrace distributed renewable energy sources and energy storage technologies to enhance energy independence and resilience.
- **Transportation:** Prioritize electrification of vehicles, implementation of EV-ready infrastructure, and reduction of vehicle miles traveled through multimodal transportation planning.
- **Water Conservation:** Implement water efficiency standards and prioritize leakage reduction to conserve water and reduce related electricity and emissions.

- **Governance:** Incorporate GHG reductions into the planning and budgeting processes, establish public progress reporting, and engage stakeholders to promote accountability and transparency.
- **Comprehensive Climate Action Plan:** Develop a comprehensive Climate Action Plan accounting for green infrastructure, addressing community vulnerabilities such as wildfires, and developing a quantified drawdown plan for the City and community.

Finally, and most importantly, this report is nothing without action.

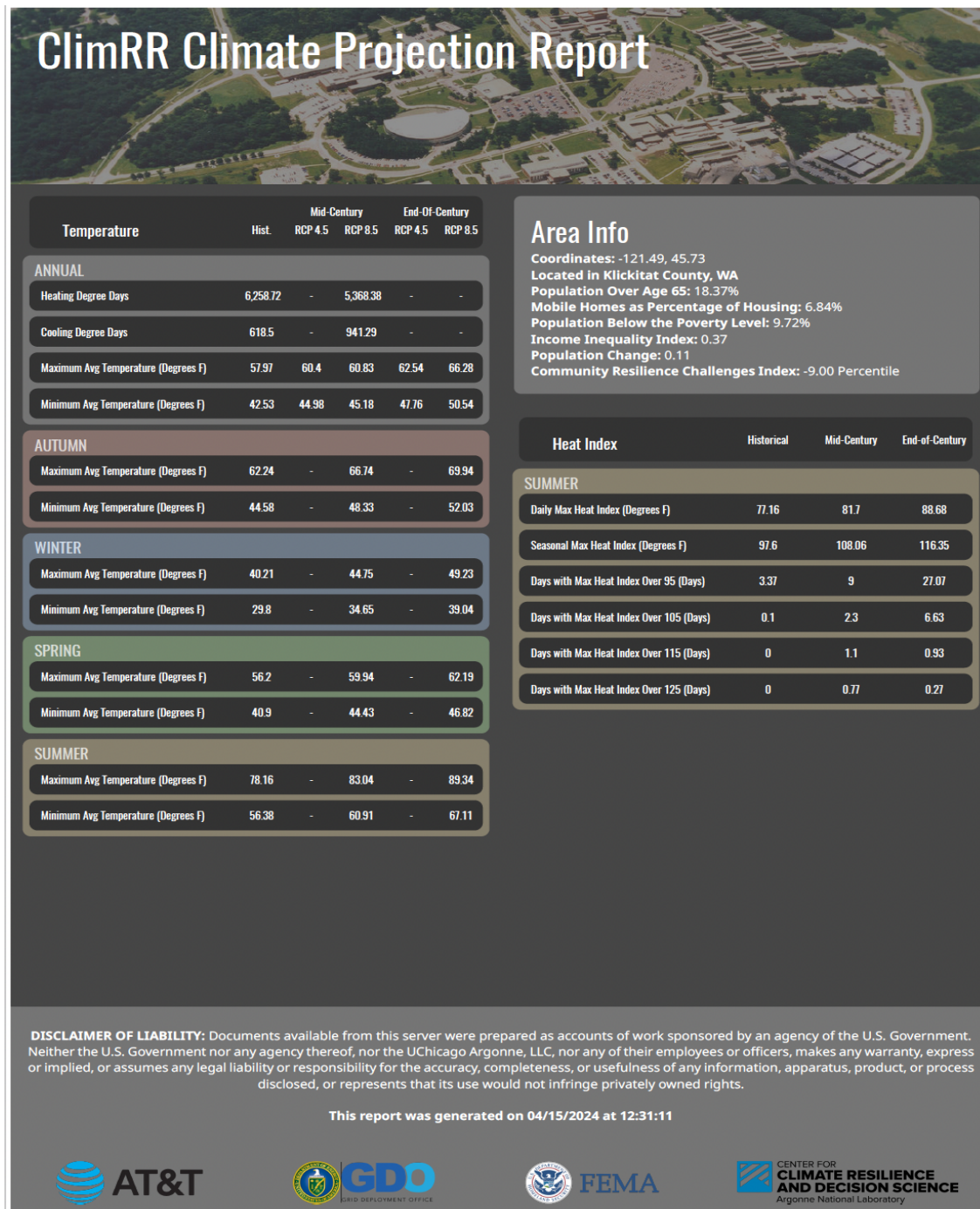
Those actions - that will allow us meet current needs without jeopardizing future generations' ability to do the same - will require a concerted effort and political will from City elected leadership, residents, businesses, and stakeholders to implement these strategies effectively.

By working collaboratively and staying committed to our goals, we can mitigate our contribution to climate change, adapt to its impacts, safeguard vulnerable communities, enhance quality of life, and leave a positive legacy for future generations in the City of White Salmon.

White Salmon CityLab Board

January 2025

Appendix 1: ClimRR Climate Projection Report⁴



⁴ Climate Projection Summary for: -121.49, 45.73

Center for Climate Resilience and Decision Science at Argonne National Laboratory.

Accessed 11/4/23:



<https://disgeoportal.egs.anl.gov/ClimRR/?page=Local-Climate-Projections&views=Wildfire>

Appendix 2: White Salmon Climate Action Survey

Community Survey on Climate Change

In 2023, CityLab conducted a Community Climate Action Survey to better understand citizens' attitudes to climate-related risks, as well as their attitudes towards City and public mitigative and adaptive activities to climate change.

Between April - December, City Lab collected 121 responses to the survey, with approximately 60% of responses from White Salmon City residents, with another approximately 23% of responses from residents in the urban exempt area and/or Snowden. Demographic data was not collected from respondents until the fall, a critical oversight that skews the demographic data results.

How satisfied are you with your life in White Salmon along the following dimensions? *

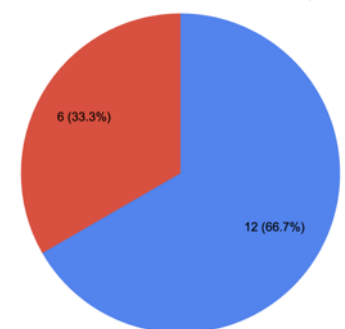
	Extremely dissatisfied	Dissatisfied	Neutral	Satisfied	Extremely satisfied
Environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation Options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall quality of life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The survey included open-answer, multiple choice, and ranking questions (like the example above).

Racial / Ethnic Identity

This question was not added to the survey until 9/15/23. Only 16 respondents, or about 13% of all respondents, answered this question. This is not expected to be representative of total response rates.

Which race or ethnicities best describe you?

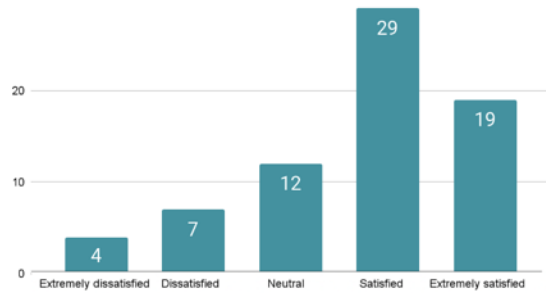


● White / Caucasian ● Hispanic or Latino/a

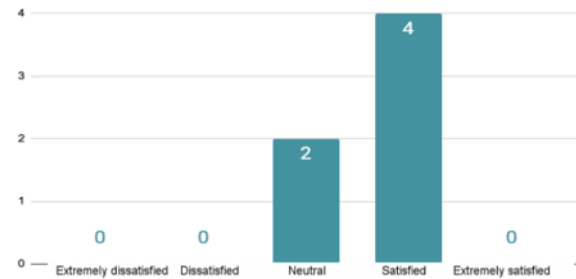


Q1. How satisfied are you with your life in White Salmon along the following dimensions?

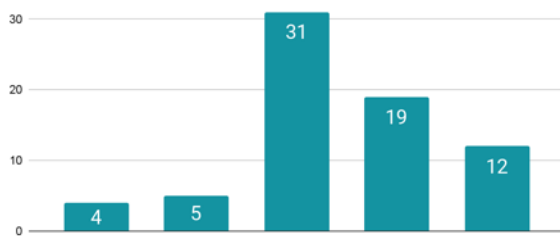
Environment: City Residents



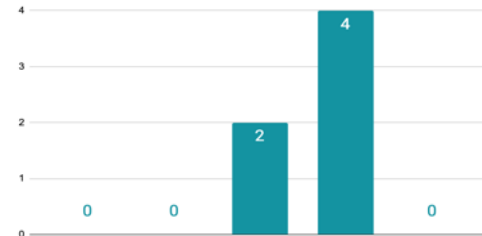
Environment: Respondents Identifying as Hispanic/Latino/a



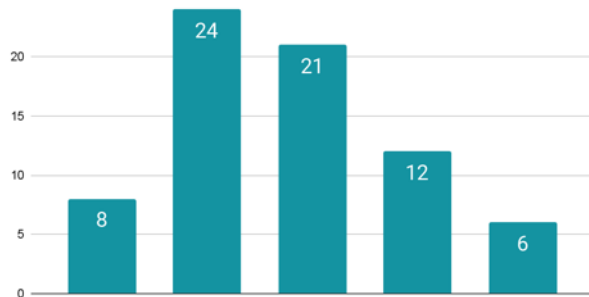
Employment: City Residents



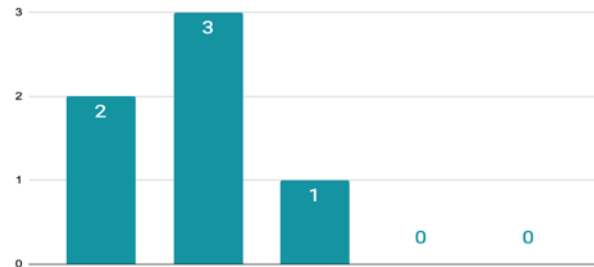
Employment: Respondents Identifying as Hispanic/Latino/a



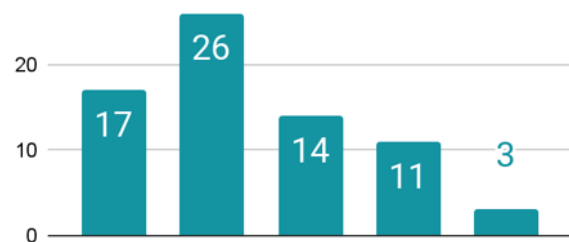
Transportation: City Residents



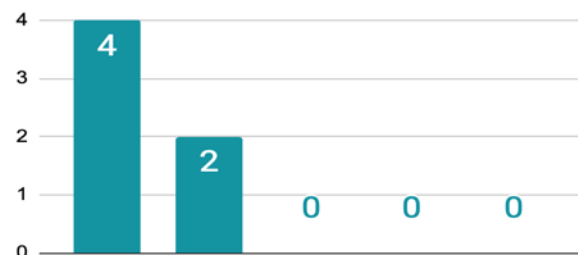
Transportation: Respondents Identifying as Hispanic/Latino/a



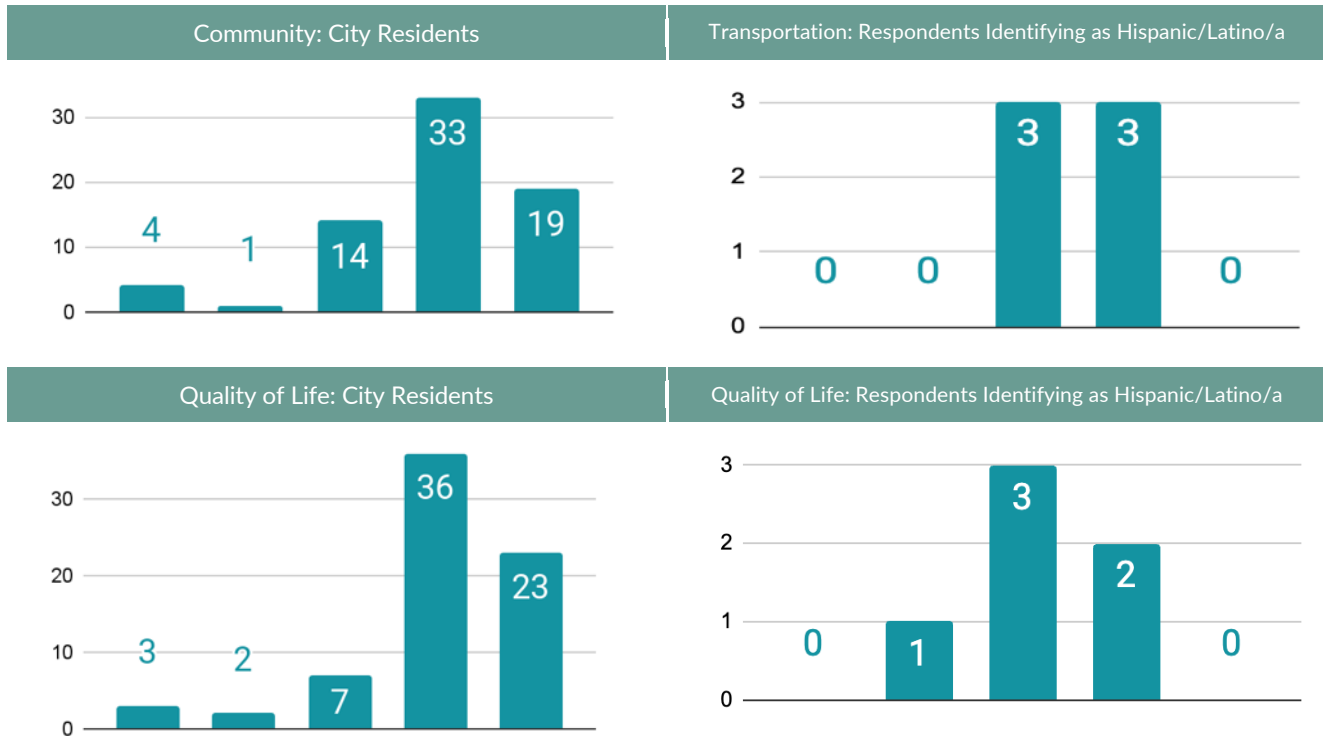
Housing: City Residents



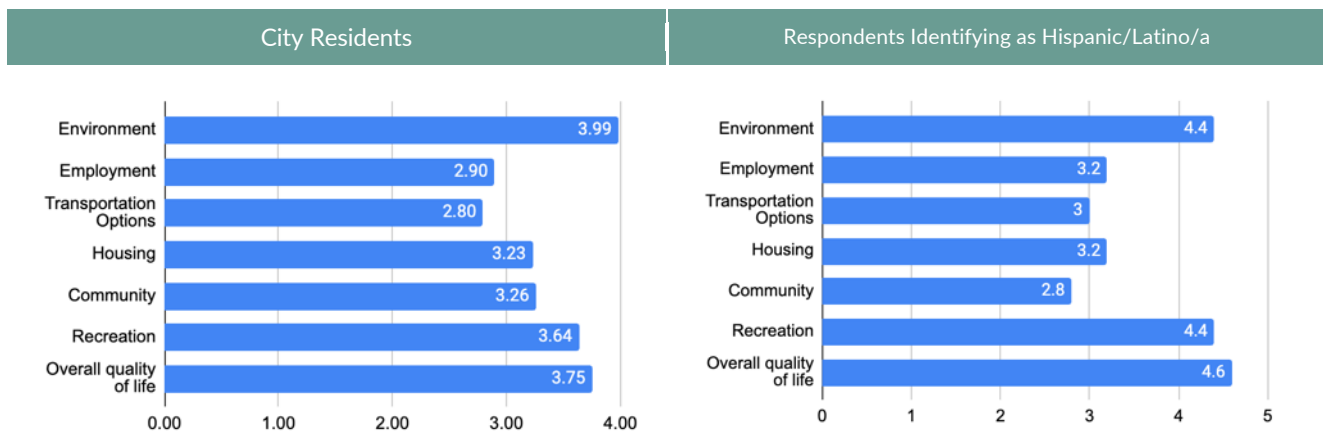
Housing: Respondents Identifying as Hispanic/Latino/a



Q1. How satisfied are you with your life in White Salmon along the following dimensions? (Cont.)



Q3. On a scale from 1 to 5, 1 being not at all concerned and 5 being extremely concerned, how concerned are you about climate change impacting the following aspects of your life in White Salmon?

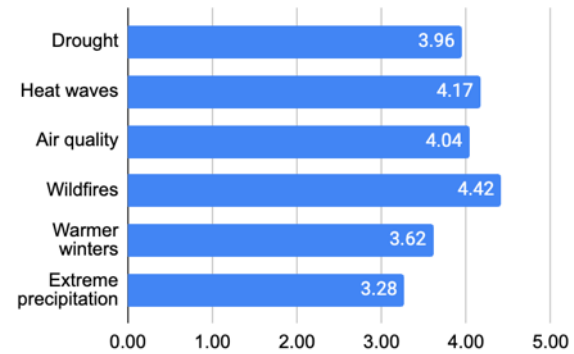


Question 2

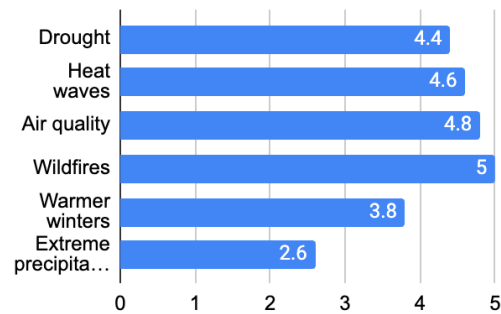
City Residents

On a scale from 1 to 5, 1 being not at all concerned and 5 being extremely concerned, how concerned are you about climate change impacting the following aspects of your life in White Salmon? *

	1	2	3	4	5
Environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation Options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall quality of life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Respondents Identifying as Hispanic/Latino/a

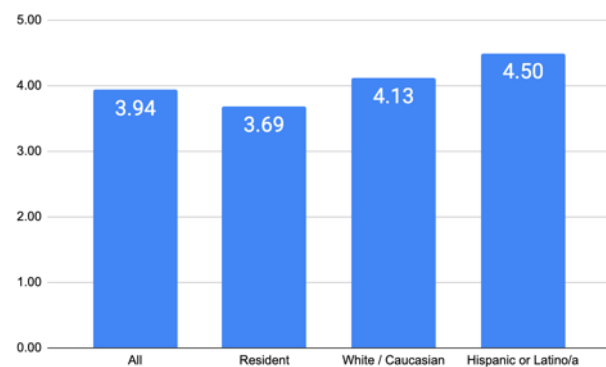


Question 4

Responses

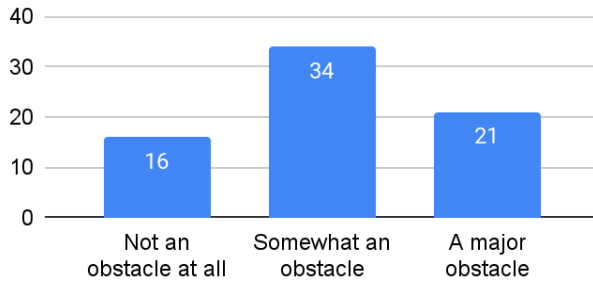
If you are raising children, on a scale from 1 to 5, how concerned are you about climate change impacting raising your children or your children's lives in White Salmon?

	1	2	3	4	5	
Not at all concerned	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely concerned

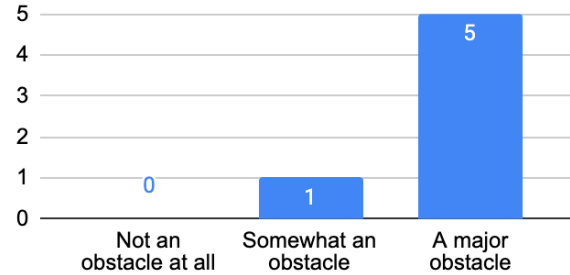


Q7. What are the biggest obstacles for you personally in addressing climate change impacts?

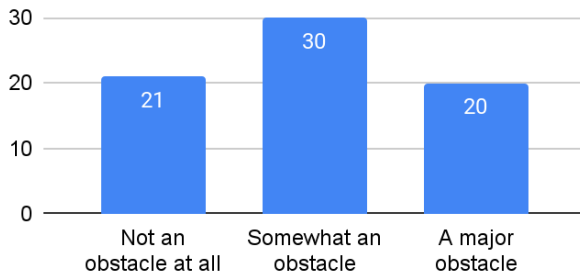
Money: City Residents



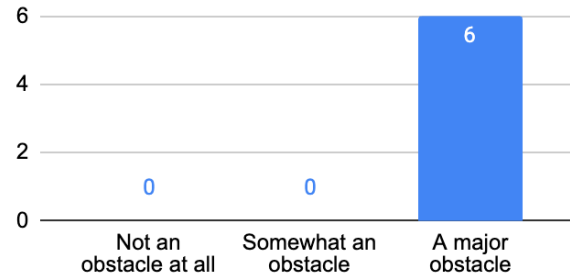
Money: Respondents Identifying as Hispanic/Latino/a



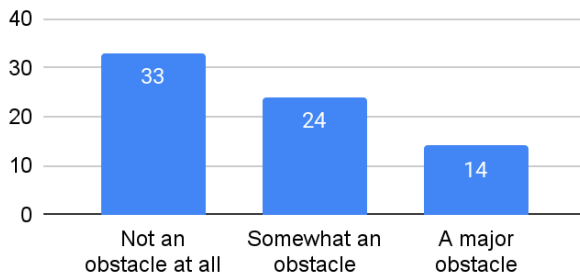
Time: City Residents



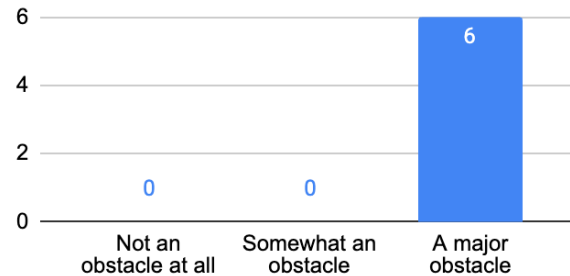
Time: Respondents Identifying as Hispanic/Latino/a



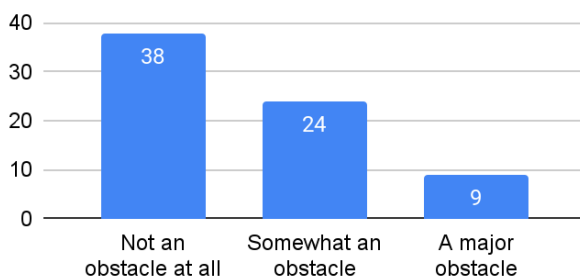
Information: City Residents



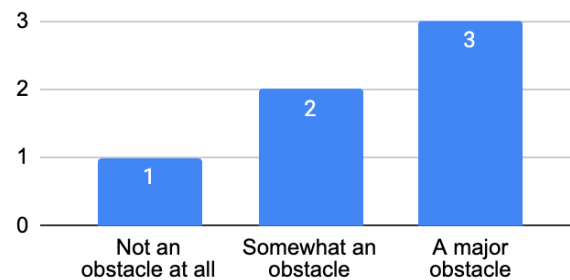
Information: Respondents Identifying as Hispanic/Latino/a



Motivation: City Residents

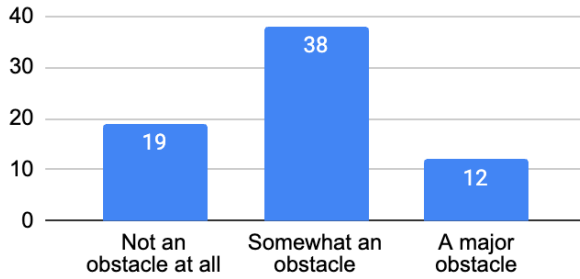


Motivation: Respondents Identifying as Hispanic/Latino/a

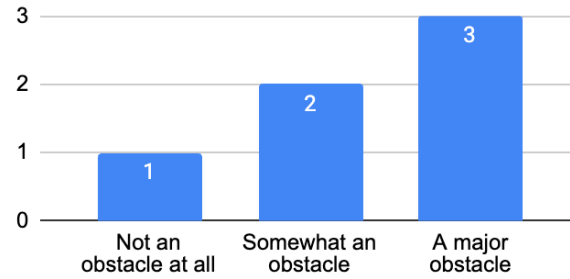


Q7. What are the biggest obstacles for you personally in addressing climate change impacts? (Cont.)

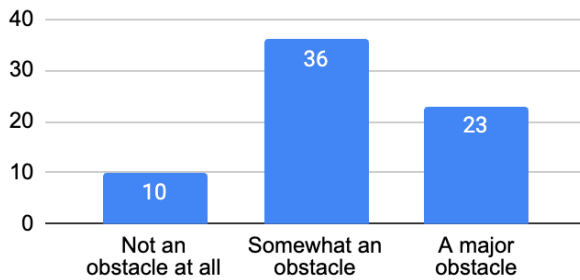
Community Support: City Residents



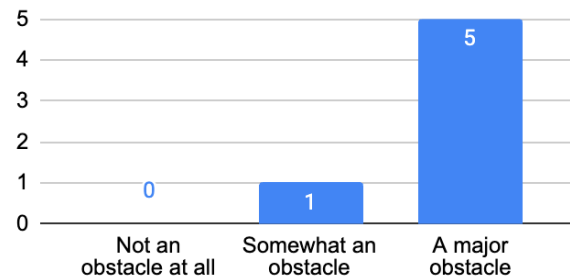
Community Support: Respondents Identifying as Hispanic/Latino/a



Government Support: City Residents

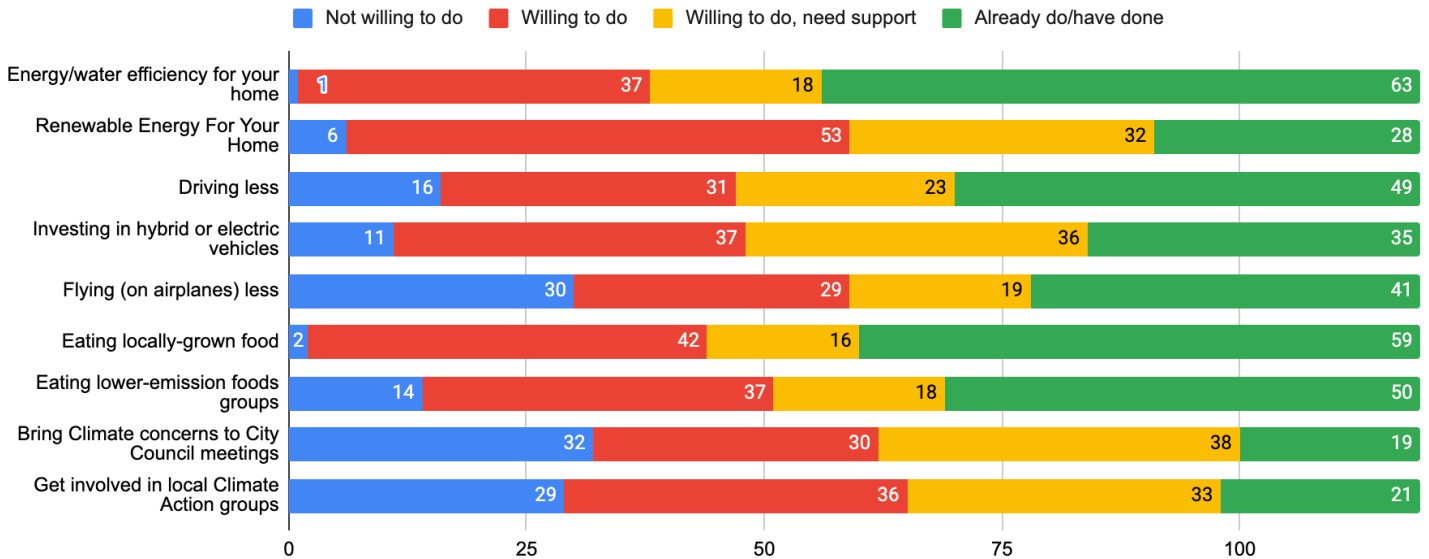


Government Support: Respondents Identifying as Hispanic/Latino/a



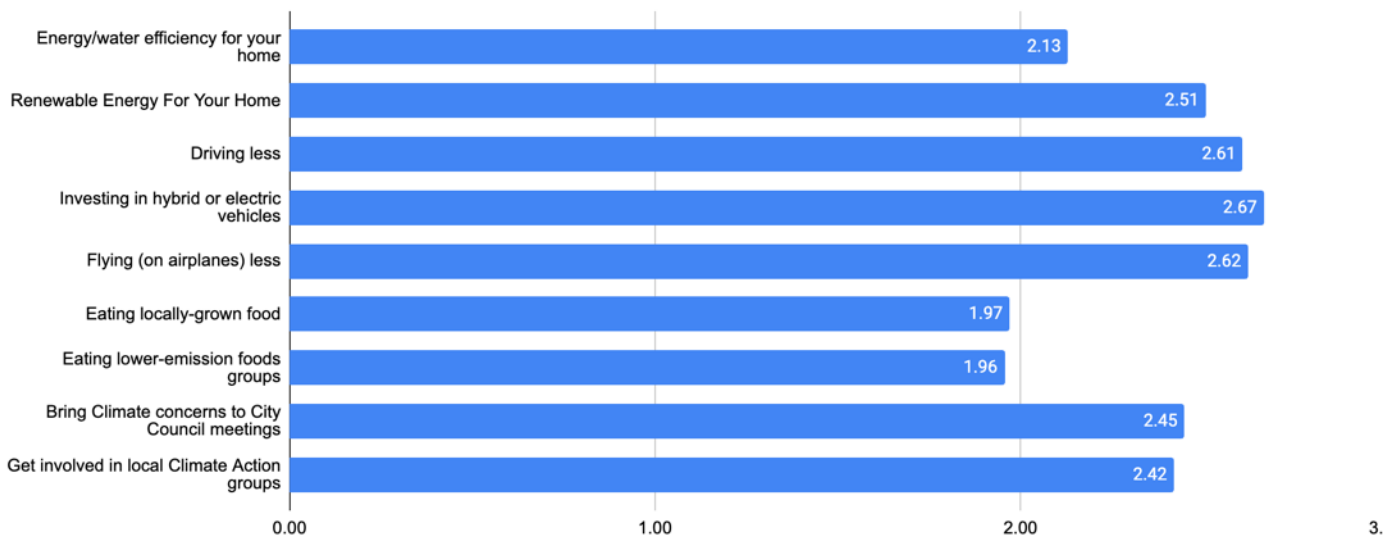
Question 9

Rate your willingness to do the following options, as an individual



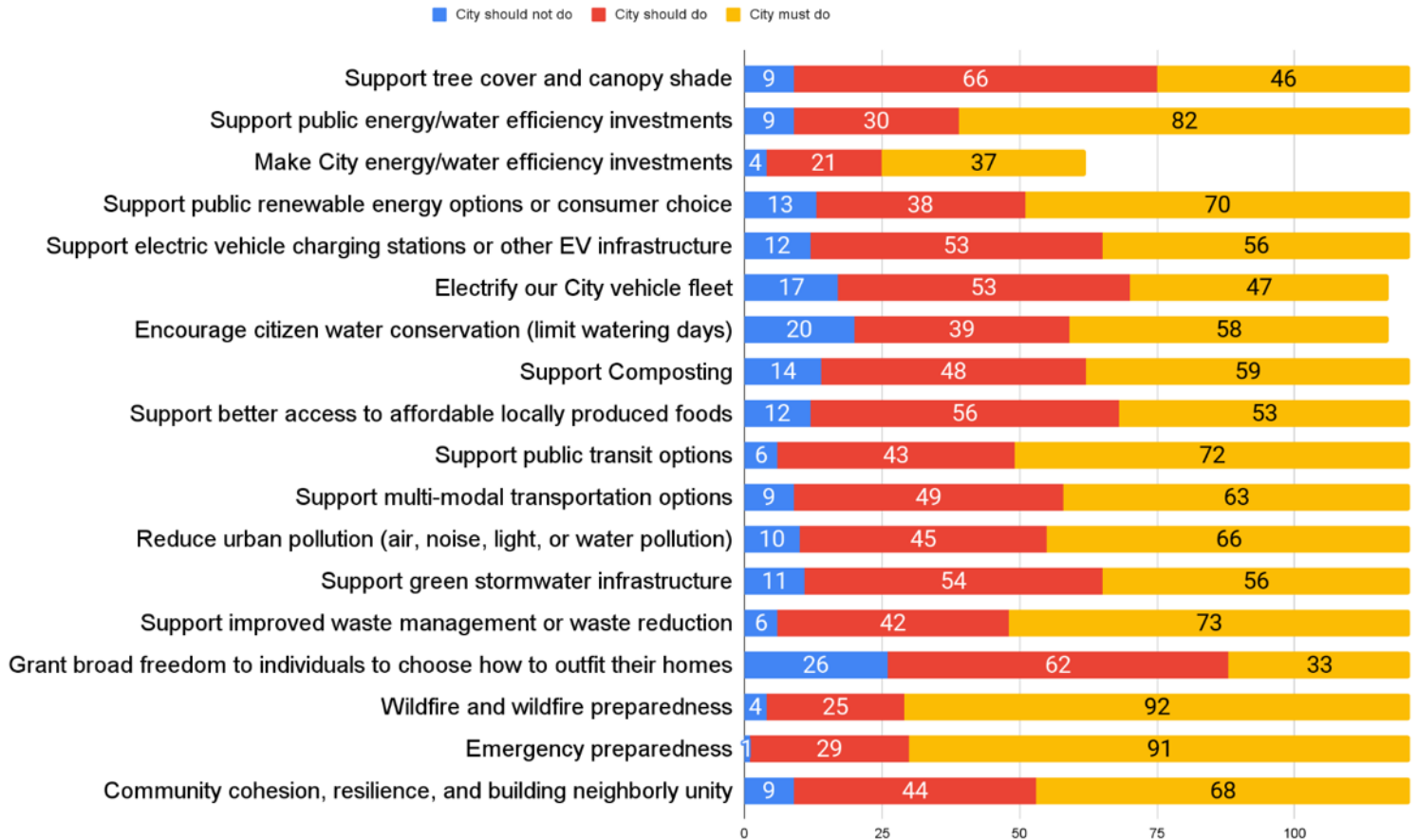
Question 10

Average Respondent Response: On a scale from 1 to 5, 1 being no obstacles and 5 being insurmountable obstacles, what actions feel like they have the biggest obstacles for you personally, in addressing climate change impacts?



Question 11

What actions would you like to see White Salmon's City Government take to address climate change?



Gross Emissions by Department		
Department	Total (MT CO ₂ e)	Percent of Total
General	73.48	4%
Fire	74.18	5%
Police	97.66	6%
Public Works	113.51	7%
Water	1,220.24	74%
Parks and Recreation	22.91	1%
Transportation	37.42	2%
Total	1,639.41	100%

Total Emissions by Department and Source (MT CO2e)				
Department	Combustion	Electricity	Transportation	TOTAL
General	0.67	72.82	-	73.48
Fire	-	67.57	6.61	74.18
Police	-	41.63	56.04	97.66
Public Works	-	-	113.51	113.51
Water	-	1,220.24	-	1,220.24
Parks and Recreation	-	22.91	-	22.91
Transportation	-	37.42	-	37.42
Total	0.67	1,462.58	176.16	1,639.41



Future Recommendations Report

February 5, 2025

Presented by White Salmon CityLab Board

Project Lead: Kate Bennett

Project Team: Jim Ransier, Barbara Hayman, Steven Woolpert, Alexa Schmidt

Additional Support: Peter Fink, Kalama Reuter, Ruth Olin

Recommendations for Future Consideration

The below recommendations include additional initiatives for future consideration, which may be lower in urgency, lower in impact, and longer in timeframe of implementation than those initiatives cited **as part of the Emissions Reduction Action Plan**. These recommendations are included as a **complement to the Plan** to aid in providing actionable ideas to committed citizenry, City staff, or City Councilmembers.

Facilities and Buildings

White Salmon will not meet its emission reduction targets if it sticks to business as usual. For emissions related to buildings, in addition to prioritizing building upgrades that improve efficiency and reduce cost, it is critical to incorporate green building practices during initial planning and construction phases. Fixed assets, including building components and systems, have long life cycles. To reach emissions goals, we must not increase City and community emissions by creating an even *higher* stock of inefficient fixed assets than we had at baseline.

This section contemplates sustainability of City-owned and -operated public facilities, including City Hall, the fire hall, the police station, and future buildings such as the Community Center. This section also contemplates private commercial, residential, and industrial structures in the city. This section outlines measures to improve the energy performance of these facilities and implement sustainable design and construction practices.

By incorporating green building practices from the outset, facilities management can minimize lifecycle costs by reducing energy consumption, maintenance requirements, and disposal costs associated with conventional building materials and systems.

Related City Plans & Goals

Comprehensive Plan

- GOAL E/CA-4: Address climate change by working towards reducing greenhouse gas emissions, increasing energy efficiency
- 4.3: Transportation modes that reduce the use of fossil fuels
- 4.4: Increase the resiliency of critical infrastructure

Climate Crisis Resolution

- Reduce reliance on fossil fuels in municipal operations;
- Pursue local policies and reforms that promote environmental stewardship
- Identify current municipal greenhouse emissions in pursuit of a target reduction in municipal net greenhouse gas emissions of at least 45% by 2030 and net zero by 2050;

- Initiate efforts to prepare for intensifying climate impacts such as wildfires, drought, and reduced water availability

Actions that could be considered - Facilities & Buildings

Scale	Cost	Recommendation	Performance Metrics
City	\$\$\$	<p>For all new construction, and major renovations, of City-owned facilities, consider:</p> <ul style="list-style-type: none"> • Near-zero/net-zero building design standards; • A minimum of 5% parking spaces with Level 2 EV chargers; • 50% of parking spaces EV-ready; • All-electric heating, ventilating, and air-conditioning (HVAC) systems and appliances; • Applicable appliances, equipment, and processes that meet the requirements of LEED BD+C V4.1 Indoor Water Use Certification; • Landscaping components and planting plans with all drought tolerant and native vegetation and/or fire-resilient landscaping as recommended by the State of Washington Department of Natural Resource; • No landscaping requiring permanent irrigation system beyond a maximum two-year establishment period 	<ul style="list-style-type: none"> • Annual City energy usage • Annual City energy use intensity (per Citizen) • Annual City emissions • Green building standards for City development (Y/N)
City	\$	Pursue energy performance contracting (a common financing method that links payments for the installation of energy conservation measures directly to the future energy savings associated with those measures) for existing City owned and operated buildings.	
Community	\$	Work with CityLab to prioritize communication and outreach regarding income-based and non-income-based discounts and subsidies for energy and water efficiency improvements for homeowners (including a range of housing types) and renters, offered outside organizations.	<ul style="list-style-type: none"> • Annual Community emissions • Green building standards for residential development
Community	\$\$	Incentivize development of residential housing that addresses the City's affordability goals and sustainability goals. CityLab recommends requirements for all residential new construction over 1,750 square feet to:	

		<ul style="list-style-type: none"> ● Achieve United States Green Building Council LEED Silver Certification, 1) fulfilling the elective points for Electric Vehicles and 2) utilizing all-electric heating, ventilating, and air-conditioning (HVAC) systems; OR ● Achieve Environmental Protection Agency Energy Star certification for design OR/AND 1) Install Level 2 electrical vehicle supply equipment (EVSE) in 50% of required parking spaces or at least one parking spot, whichever is greater, 2) install appliances, equipment, and processes meeting the requirements of LEED BD+C V4.1 Indoor Water Use credit; and 3) Utilize all-electric heating, ventilating, and air-conditioning (HVAC) systems 	
Community	\$	Incentivize development of residential housing that addresses the City's affordability goals and/or sustainability goals through progressive code, policies, or procedures, with the goal of near-zero/net-zero standards.	
Community	\$	City to require an energy audit (e.g. DOE Home Energy Score) and disclosure during the sale or lease for older residential, commercial, and multifamily buildings, either through seller arrangement with private licensed auditors or through the City securing funding for training City staff to provide paid energy audit.	
Community	\$	City to adopt all electric standards of new proposed WA State energy code.	

Commented [JR1]: This should not be removed.

Commented [MOU2R1]: This is now in the proposed emissions reductions plan priority list

Commented [MOU4R3]: These have been requested to be removed by legal and administration since the summer.

Commented [MOU5R3]: The item regarding adopt all electric standards proposed by WA State energy code is something the city would do regardless of a requirement within this plan or another if it was a state law, so see this as a redundant addition.

Commented [JR3]: Why are these removed? If we did them, great, but they shouldn't be crossed out.

Facilities and Buildings

- Report annually on Greenhouse Gas emissions at the City level (Scope 1-3) and establish a public-facing emissions dashboard.
- Energy efficient pre-approved plans for residential single-family detached units and accessory dwelling units.
- Raise awareness among residents, businesses, and local stakeholders about the importance of energy efficiency and providing resources to support behavior change can drive energy-saving actions at the individual and community levels.
- Develop and implement occupant behavior programs to optimize the energy efficiency of municipal buildings.
- Work with Klickitat PUD to design 'Time of Use' rates that incentivize decarbonization actions, shift and reduce system peak load, and promote more efficient electricity use.
- Incentivize development of commercial structures that addresses the City's sustainability

goals through progressive code, policies, or procedures, with the goal of near-zero/net-zero standards.

- CityLab could conduct Energy Savings and Impacts Scenario Tool (ESIST) to analyze energy savings, costs, and multiple benefits from energy efficiency programs.
- Reduce urban heat island effect by painting roofs of City-owned and operated buildings with white or other reflective colors or materials.
- Work with materials providers and roofing contractors to encourage them to offer cool and green roofs.
- Work with private/public organizations to establish a community composting facility to create a use for organic matter, woody debris, yard, and food waste that is often burned or landfilled.
- Support efforts to establish viable recycling, chipping, and composting services to reduce construction and demolition debris that goes to the landfill as waste.

Support creation of an appliance repair vocational program at CGCC.

Energy Independence and Resilience

Distributed, renewable energy is key to White Salmon's energy independence and resilience. Distributed renewable energy sources are critical to managing load growth and meeting White Salmon's energy needs. By generating our own electricity from solar power, White Salmon can offset our reliance on grid-supplied electricity, thereby lowering their utility expenses over the long term. Batteries can help further optimize energy use and reduce peak demand charges should these be introduced, leading to additional cost savings.

Distributed renewable energy systems such as rooftop solar panels provide redundancy and backup power capabilities, supplementing grid-supplied electricity with onsite generation. In combination with energy storage technologies such as batteries, distributed solar can store excess energy generated during periods of sunlight and deploy it during times of high demand or grid outages. This can enhance the reliability and resilience of the local energy supply, possibly ensuring continuous power availability for critical infrastructure, emergency services, and essential functions.

While our city benefits from the prevalence of hydroelectric power in Washington State, hydroelectricity will face increasing challenges related to precipitation variability, reduced snowpack, and low water levels resulting from climate change. Additionally, as the transportation and building sectors electrify (e.g. switch from fossil fuels to electric power) in order to decrease emissions, our electric system will experience significant load growth. Finally, implementation of renewable generation and storage systems is critical to reach White Salmon's emissions reductions goals as outlined in the Climate Crisis Resolution.

Related City Plans & Goals

Comprehensive Plan

- GOAL E/CA-4: Address climate change by working towards reducing greenhouse gas emissions, increasing energy efficiency
- 4.4: Increase the resiliency of critical infrastructure

Climate Crisis Resolution

- Reduce reliance on fossil fuels in municipal operations;
- Pursue local policies and reforms that promote environmental stewardship
- Identify current municipal greenhouse emissions in pursuit of a target reduction in municipal net greenhouse gas emissions of at least 45% by 2030 and net zero by 2050;
- Initiate efforts to prepare for intensifying climate impacts such as wildfires, drought, and reduced water availability

Actions that could be considered- Energy Independence & Resilience

Energy Independence and Resilience

- Develop a plan to coordinate solar installations with the replacement of roofs on all applicable City structures.
- Create a solar energy dashboard to build public awareness of current solar usage in White Salmon.
- CityLab with City oversight could work with Klickitat PUD and other regional actors to incentivize renewable energy installation & advocate for State incentives for local renewable installations, energy storage, and other emissions reduction programs in small cities outside of the GMA.

CityLab with City oversight design and deliver outreach programs to encourage the installation of solar and energy storage on residential, commercial, and institutional properties.

Scale	Cost	Recommendation	Performance Metrics
City	\$\$	Complete a solar feasibility study for all municipal buildings.	<ul style="list-style-type: none"> ● % of municipal energy use offset by solar ● Total capacity (MW) of municipal solar
City	\$	Pilot renewable energy and battery backup system to ensure resilient City government operations for emergency preparedness and develop a plan to expand the pilot to more buildings, with prioritization for the Booster Station.	<ul style="list-style-type: none"> ● Total capacity (MW) of municipal battery energy storage ● Number of municipal buildings with solar ● Number of buildings in City limits with solar ● Number of power outages per year ● % of critical facilities with backup power redundancy
City	\$\$\$	Commit, for all new construction, and major renovations, of City-owned facilities to: <ul style="list-style-type: none"> ● Near-zero/net-zero building design standards; ● A minimum of 5% parking spaces with Level 2 EV chargers; ● 50% of parking spaces EV-ready; ● All-electric heating, ventilating, and air-conditioning (HVAC) systems and appliances; ● Applicable appliances, equipment, and processes that meet the requirements of LEED BD+C V4.1 Indoor Water Use Certification; ● Landscaping components and planting plans with all drought tolerant and native vegetation and/or fire-resilient landscaping as recommended by the State of Washington Department of Natural Resource; ● No landscaping requiring permanent irrigation system beyond a maximum two-year establishment period 	

Transportation

Transportation-related emissions must be a priority for White Salmon. City and residents' transportation-related emissions represent a substantial portion of our contribution to climate change. Priorities for transportation include 1) reduction of emissions through vehicle

electrification and 2) implementation of EV-ready infrastructure, and 3) reduction of vehicle miles traveled through multimodal transportation planning and sustainable land use planning.

Transportation is the largest source of GHG emissions overall in the United States,¹ and Washington State estimates that approximately 45% of the state's 2018 emissions were from transportation.² Thirty percent of U.S. automobile travel occurs in rural areas, where the average person travels 40% further than their urban counterparts³ – meaning an outsize percentage of transportation emissions come from rural areas like White Salmon.

Additionally, 11.0% of 2022 City emissions are driven by the operation of City vehicles. But where there are challenges, there are also opportunities: about 85% of Climate Action Survey respondents report being willing to drive less (or are already driving less) to curb transportation-related emissions, and the vast majority expressed interest in vehicle electrification.

Related City Plans & Goals

Comprehensive Plan

- GOAL E/CA-4: Address climate change by working towards reducing greenhouse gas emissions, increasing energy efficiency
- 4.3: Transportation modes that reduce the use of fossil fuels

Climate Crisis Resolution

- Reduce reliance on fossil fuels in municipal operations;
- Pursue local policies and reforms that promote environmental stewardship
- Identify current municipal greenhouse emissions in pursuit of a target reduction in municipal net greenhouse gas emissions of at least 45% by 2030 and net zero by 2050;

Transportation “Lite” Plan

- Prioritize pedestrian infrastructure to encourage walking as a primary mode of transportation
- Develop a comprehensive network of bicycle lanes and trails to facilitate non-motorized transport.
- Fostering the use of public transit through service enhancements and infrastructure upgrades.

Actions that could be considered - Transportation

Scale	Cost	Recommendation	Performance Metrics
City	\$\$	Adopt an electric-first vehicle policy for City municipal police and/or public works fleet	● Municipal vehicle emissions

¹ Quallen, E., Clarke, J., Nelson, A.C., & Rowangould, G. (2023). Comparing Travel Behavior and Opportunities to Increase Transportation Sustainability in Small Cities, Towns, and Rural Communities. *Transportation Research Record*, 2677(3), 1439–1452. <https://doi.org/10.1177/03611981221124590>

² Washington State Department of Commerce. (2021). Executive Summary: Washington 2021 State Energy Strategy. https://www.commerce.wa.gov/wp-content/uploads/2021/01/WA_2021SES_-Executive-Summary.pdf

³ Quallen, et al.

City	\$	When applicable, budget for EV repair training for City staff	(MTCO2e) <ul style="list-style-type: none"> ● Hybrid electric and full electric vehicles in the municipal fleet ● Utilization of shared City EV
City	\$	Adopt EV charger requirements for all new construction and major renovations of City-owned and -operated facilities: <ul style="list-style-type: none"> ● Install Level 2 electrical vehicle supply equipment (EVSE) in a minimum of 5% of all parking spaces used by the project or at least two spaces, whichever is greater. ● Make 50% of all parking spaces EV Ready. 	
Community	\$	Participate in regional discussions on transit, and prioritize integration/coordination with the City of Hood River, Amtrak, CAT, and Mt. Adams Transit such that schedules align and service is increased for White Salmon residents	<ul style="list-style-type: none"> ● Number of registered electric vehicles ● Number of publicly available EV chargers ● Number of city employees commuting to work by private vehicle (American Community Survey)
Community	\$	Encourage compact development patterns that promote mixed-use neighborhoods, reduce sprawl, and minimize vehicle miles traveled to essential services; support infill development and redevelopment projects that utilize existing infrastructure and amenities efficiently.	
Community	+\$	Consider enacting Transportation Impact Fees for all new construction to finance multi-modal and transit improvements.	
Community	\$	Install secure parking at key locations to facilitate bike, electric bike, and scooter usage	
Community	\$	Adopt EV charger requirements for all residential new construction over 1,750 square feet.	

Transportation

- Improve community walkability, in line with [Jeff Speck recommendations](#).⁴
- Use incentives such as density bonuses and parking credits to promote affordable and accessible housing development that is transit-oriented and location-efficient.
- Develop policies to limit vehicle idling, such as anti-idling ordinances or awareness campaigns.
- Support City Staff telecommuting and flexible work arrangements to reduce the need for commuting.
- Conduct parking assessment plan to evaluate utilization of blacktop parking in downtown core and remove extraneous city-owned concrete.
- Implement transportation demand management strategies, such as parking pricing or employer-based incentives.
- Develop car-free zones or pedestrian-only streets.
- Reduce off-street parking requirements and size on residential properties, and support more effective use of parking downtown..
- Invest in infrastructure for alternative transportation modes, such as electric scooters or shared bicycles.
- Seek opportunities to increase electric bike usage in the city, such as docked, shared electric bike system, subsidies for purchase of electric bikes, etc., through partnership with local municipalities, grant funders, or private companies..
- Expand EV car-sharing program in partnership with community organizations and affordable housing developments.
- Implement nature-based solutions that increase carbon storage, including native trees and plants, bioswales, rain gardens, green roofs, urban gardens, and other types of green stormwater infrastructure (GSI) into residential, commercial, and municipal landscaping is a natural way to remove CO2 from the atmosphere.

⁴ Walkable White Salmon: Jeff Speck Presentation: <https://vimeo.com/669484738>

Water

Water conservation is a critical component of City decarbonization efforts. White Salmon's drinking water system represents nearly 75% of City emissions and over 80% of City electricity usage, with a single location (Well #1 Booster) representing roughly 70% of electricity consumption of all City owned facilities. Moreover, as of 2022, 32.6% of water usage in the system was related to water leakage.⁵

In addition to prioritizing supply-side resilience and energy efficiency improvements, community demand and leakage prevention also represent a major opportunity for water conservation, and in turn, electricity and emissions reductions.

CityLab recommends mandatory water efficiency standards for the City and community, to achieve the City's water conservation goals as well as reduce related electricity and emissions. CityLab also recommends prioritizing leakage reduction work in capital project planning.

Commented [JR6]: Why was this removed?

Commented [MOU7R6]: Because water efficiency standards are already in place via a resolution and leakage reduction is already prioritized in capital project planning.

Related City Plans & Goals

Comprehensive Plan

- GOAL E/CA-4: Address climate change by working towards reducing greenhouse gas emissions, increasing energy efficiency
- 4.2: Implement a resource-conservation approach that aims to reduce energy and water usage at City facilities

Climate Crisis Resolution

- Reduce reliance on fossil fuels in municipal operations;
- Pursue local policies and reforms that promote environmental stewardship
- Identify current municipal greenhouse emissions in pursuit of a target reduction in municipal net greenhouse gas emissions of at least 45% by 2030 and net zero by 2050;

Water Use Efficiency Resolution

- 2% reduction in average gallons per equivalent residential unit per day
- Distribution system leakage of 25% or less by the year 2028

⁵ As noted by Dave Jepsen (Anderson Perry) at May 18, 2022 City Council Meeting: <https://www.whitesalmonwa.gov/citycouncil/page/city-council-meeting-66>

Actions that could be considered- Water

Scale	Cost	Recommendation	Performance Metrics
City	\$	Use native and drought-tolerant landscaping for all new construction and major renovations for City-owned facilities.	<ul style="list-style-type: none"> City water usage City electricity usage for water system
City	\$\$\$	Prioritize water leakage identification and repair in the water system, including replacement of Rheingarten Park Irrigation system, replacement of the water main line, and a meter reading base station at City Hall to facilitate daily leak alarms (as opposed to monthly).	
City	\$\$\$	City to review opportunities to improve energy efficiency and energy resilience for Booster Station, which represents 70% of electricity consumption of City-owned facilities, possibly through grant funding.	
Community	\$	Conduct outreach to the highest 20 water users in the City to develop strategies to achieve water usage efficiencies.	<ul style="list-style-type: none"> Community water usage City electricity usage for water system
Community	\$	Consider requirements for native and drought-tolerant landscaping for all residential new construction over 1,750 square feet, planned unit developments, and cottage courts.	
Community	\$	Consider water efficiency requirements for all residential new construction over 1,750 square feet.	

Commented [MOU9R8]: The issue here is concerns about advancement of alternate energy solutions for maintaining the system in an emergency situation, which was expressed in ongoing comments during the review this summer. Removing it here does not mean we are not improving energy efficiency, but there is concern that the way this is being presented here risks jeopardizing the real responsibility of the city as a water utility provider and the certifications that requires. Our priority is ensuring the safe and sanitary delivering of the water and we are not going to implement alternative energy solutions there until there is industry confidence they will be effective and reliable in an emergency situation.

Commented [JR8]: This is a big red flag for me.

Water

- Public annual water usage statistics on city website: (Potable water used per capita (gallons/capita); Total citywide Water Consumption; Residential Per-Capita Water Use (RGPCD); Annual Commercial Water Usage (MGY); Total Annual Water Demand (MGY).
- Consider seasonal water use rates.

Enable/incentivize gray water systems.

Governance

The successful implementation of this plan is contingent upon the City of White Salmon having adequate staffing and resources to effectively support the identified goals, as well as ongoing support of elected leadership." The below recommendations have been developed and prioritized with the goal of building public trust, enhancing accountability, promoting equity, and ensuring the effective implementation and long-term sustainability of efforts to reduce greenhouse gas emissions and address climate-related risks and opportunities in our city.

Actions that could be considered - Governance

Scale	Cost	Recommendation
City	N/A	Incorporate GHG reductions and other sustainability considerations into the budget process, including capital planning and prioritization, possibly through a "sustainability lens."
City	\$\$	City to seek grant funding to increase staff headcount to support implementation of emission reduction initiatives.
City	\$	City / CityLab to prepare an annual public progress report on the Emissions Reduction Plan, and establish a web-based dashboard to track the Emissions Reduction Plan progress to provide information, accountability, and transparency.
City	\$	City / CityLab to create a distinct website to propel the sustainability narrative in WS and give residents and interested parties a central place to review progress.
City	\$	Engagement with private stakeholders: publicize, promote, and solicit input from underserved and marginalized communities (as defined in the "Advancing Equity" section) on the Emissions Reduction Plan. By actively engaging with marginalized communities and ensuring their voices are centered in climate action planning, White Salmon can develop policies and programs that prioritize equity and promote environmental justice, helping to address disparities in environmental impacts and access to resources.
City	\$	Engagement with private stakeholders: publicize and promote the Emissions Reduction Plan to important stakeholders and civic groups such as the business community, realtors and developers, neighborhood associations, educational and medical institutions, faith communities, and

		social services groups. Invite stakeholder groups to endorse the plan and commit to advancing one or more goals.
City	\$	Join the Carbon Neutral Cities Alliance (CNCA), a collaboration of leading global cities and towns working on cutting greenhouse gas emissions by 80-100% by 2050 or sooner. Among other initiatives, it funds early-stage innovation projects led by cities to cut GHG emissions.
Community & City	\$\$	Conduct a comprehensive Climate Action Plan, accounting for green infrastructure; nature-based solutions; community vulnerabilities to wildfire, drought, and other extreme weather events; and other topics excluded from the scope of the present report.

Governance

- Conduct the EPA Co-Benefits Risk Assessment Health Impacts Screening and Mapping Tool (COBRA) to quantify health impacts of reducing emissions.
- Coordinate community education and engagement to support Climate Action Plan implementation.
- Identify and evaluate opportunities to advocate for state laws and policies to further Climate Action Plan goals and other sustainability priorities.
- Work with small business districts to create community emissions reductions transparency dashboard.

Partnering with existing City resource groups / events

- Implement a data-driven plan to protect and expand tree canopy, monitoring its effect on carbon sequestration, water quantity, and quality; maintain an inventory of public street trees to monitor their health and survival, taking climate change into account; identify new planting areas to increase the number of public trees.

Greenhouse Gas Emissions Reduction Plan - changes since 1/15/25 meeting

2

Acknowledgements

CityLab Board Members & Community Contributors:

- Jim Ransier, Chair & Councilor
- Ben Giant, Councilor
- Kate Bennett, Project Lead
- Barbara Hayman
- Steven Woollett
- Alexa Schmidt
- Peter Fink
- Ruth Olin
- Kalama Reuter

City of White Salmon Elected Leadership:

- Mayor: Marla Keethler
- City Councilor, Position 1: Patty Fink
- City Councilor, Position 2: David Lindley
- City Councilor, Position 3: Jason Hartmann
- City Councilor, Position 4: Jim Ransier
- City Councilor, Position 5: Ben Giant

City of White Salmon Staff:

- Troy Rayburn, City Administrator
- Stephanie Porter, Clerk/Treasurer
- Erica Castro Guzman, Associate Planner
- Andrew Dirks, Public Works Director

Consultants

- Facet

3

Priority Recommendations

The following are priority recommendations-as to the first courses of action for emissions reductions, for consideration by the City and City Council of White Salmon. Additional recommendations, as well as explanatory context, can be found in the Future Recommendations Report, also published by the City Lab Board and seen as a complement to this adopted plan.

Section	Recommendation	Term	Other
Facilities and Buildings	Consider incorporating green building and sustainability best practices in the design and renovation of City-owned facilities, including prioritizing energy efficiency, low-impact development, sustainable landscaping, and other environmentally responsible construction and renovation strategies in alignment with recognized standards and recommendations.	Short term term (6-12 months)	
Facilities and Buildings	Incentivize development of residential housing that addresses the City's affordability goals and sustainability goals. CityLab recommends LEED Silver Certification OR EPA Energy Star Certification requirements for all residential new construction over 1,750 square feet.	Short term term (6-12 months)	
Transportation	Consider Transportation Impact Fee for all new construction to finance multi-modal and transit improvements.	Short term (6-12 months)	
Transportation	Consider an electric-vehicle first policy for City municipal police and/or public works fleet.	Short term (6-12 months)	Seek grant funding
Governance	Seek grant funding to increase staff headcount to support implementation of emission reduction initiatives.	Short term (6-12 months)	Seek grant funding
Water	Prioritize water leakage identification and repair in the water system, including replacement of Booster Station Park Irrigation system, replacement of the water main line, and a meter reading base station at City Hall to facilitate daily (as opposed to monthly) leak alarms.	Immediate-Long term (0 months-3 years)	Seek grant funding
Energy Independence and Resilience	Pilot renewable energy and battery backup system to ensure resilient City government operations for emergency preparedness and develop a plan to expand the pilot to more buildings, with prioritization for the Booster Station.	Long term (2-5 years)	Seek grant funding



Greenhouse Gas Emissions Reduction Plan - changes since 1/15/25 meeting

Background

Timeline of Sustainability Commitments in White Salmon

The Emissions Reduction Plan builds off the City's existing foundation of climate action. These efforts are primarily thanks to dedicated stakeholders who are and will continue to be central in supporting the implementation of the measures outlined in this plan.

2021

Climate Crisis Resolution (Resolution 2021-03-517): City Council adopts resolution committing the [City](#) to an emissions reductions goal aligned with the Paris Climate Agreement, and to take mitigative and adaptive action to address climate change in our community.

2022

CityLab Board: City council forms CityLab board, to serve as accountability and advisory body on core aims as outlined in the [City](#) comprehensive plan, and in particular, key visioning documents adopted by the city council: the Climate Crisis Resolution and the Diversity Resolution (Resolution 2019-06-489).

Water System Modernization: City successfully funds Mainline Phase I project to replace and improve mainline water delivery from Buck Creek water source.

2023

Community Climate Action Survey: CityLab completes a survey on citizen concerns about climate change and desired city government actions.

Fleet electrification: City acquires one gas hybrid vehicle for police fleet.

Housing Action Plan and land use code ordinance: City Council adopts a housing action plan and updates to land use codes (Ordinance No. 2023-12-1155) that facilitate sustainable, infill housing development in White Salmon.

Water System Plan: City submits complete Water System Plan to state for final approval.

2024

Climate Vulnerabilities Assessment: This assessment is an evaluation (further detail below) of the risks and vulnerabilities that White Salmon faces due to climate [change](#) and identifies potential impacts of climate change to understand how these changes may interact with existing social, economic, and environmental conditions.

Scope 1 and 2 GHG Inventory for City Operations: This report (further detail below) is a fundamental component of the City's

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Greenhouse Gas Emissions Reduction Plan - changes since 1/15/25 meeting

10

2024 cont.

efforts to understand and minimize its contribution to climate change.

Emissions Reduction Plan: This plan identifies initial priority areas for emissions reductions at the City, residential, and business level, and outlines strategies and initiatives to mitigate climate change impacts, and offset emissions associated with city operations.

Water System Modernization: City completes Mainline Phase I project; secures funding for drought resilience improvements as part of Mainline Phase IID; finalizes funding for Mainline Phase IIA improvements to prepare for construction in 2025. City installs Supervisory Control and Data Acquisition system to more efficiently track water leaks and emergencies across entire system.

Water System Plan: State accepts and approves Water System Plan; plan adopted by council.

Operational Efficiencies: City completes energy audit of public facility housing Public Works and Fire Department operations.

13



The White Salmon Water System Plan was updated in 2023 and adopted by City Council in 2024. The plan focuses on prioritizing projects to modernize the system as well as improve energy efficiency and sustainable water sourcing. Targets for reducing water loss, and direction for an associated public outreach plan are also contained within to ensure water management practices contribute to the broader goal of lowering greenhouse gas emissions, aligning with the city's commitment to environmental stewardship and sustainability.

Proposed actions included in the Water System Plan that could support emissions reduction include:

- **Upgrading Water Infrastructure for Efficiency**
 - Replacing aging pipelines and installing automated meter reading technology to reduce leaks and unnecessary energy use.
 - Implementing pressure management systems to optimize water distribution and lower energy consumption.
- **Diversifying Water Sources & Treatment Improvements**
 - Evaluating the use of alternative water sources, which may reduce reliance on energy-intensive groundwater pumping.
 - Enhancing filtration and treatment processes to improve efficiency and potentially reduce chemical and energy use.
- **Encouraging Water Conservation**
 - Promoting conservation programs that reduce overall water demand, leading to lower energy usage for treatment and distribution.
 - Implementing tiered pricing structures to incentivize reduced water consumption.
- **Emergency Preparedness**
 - Developing contingency plans for drought and extreme weather events, which can help mitigate emissions related to emergency water transport or treatment.
- **Potential for Renewable Energy Integration**
 - While not explicitly mentioned, future improvements may include renewable energy sources (such as solar power for treatment plants or pumping stations) to further reduce the carbon footprint of the city's water system.



Greenhouse Gas Emissions Reduction Plan - changes since 1/15/25 meeting

30

- **Governance:** Incorporate GHG reductions into the planning and budgeting processes, establish public progress reporting, and engage stakeholders to promote accountability and transparency.
- **Comprehensive Climate Action Plan:** Develop a comprehensive Climate Action Plan accounting for green infrastructure, addressing community vulnerabilities such as wildfires, and developing a quantified drawdown plan for the [City](#) and community.

Finally, and most importantly, this report is nothing without action.

Those actions - that will allow us meet current needs without jeopardizing future generations' ability to do the same - will require a concerted effort and political will from **City elected leadership**, residents, businesses, and stakeholders to implement these strategies effectively.

By working collaboratively and staying committed to our goals, we can mitigate our contribution to climate change, adapt to its impacts, safeguard vulnerable communities, enhance quality of life, and leave a positive legacy for future generations in the City of White Salmon.

White Salmon CityLab Board
January 2025

|



Future Emissions Reduction Report

Recommendations for Future Consideration

The below recommendations include additional initiatives for future consideration, which may be lower in urgency, lower in impact, and longer in timeframe of implementation than those initiatives cited as part of the [Emissions Reduction Action Plan](#). These recommendations are included as a [complement to the Plan](#) to aid in providing actionable ideas to committed citizenry, City staff, or City Councilmembers.

Facilities and Buildings

White Salmon will not meet its emission reduction targets if it sticks to business as usual. For emissions related to buildings, in addition to prioritizing building upgrades that improve efficiency and reduce cost, it is critical to incorporate green building practices during initial planning and construction phases. Fixed assets, including building components and systems, have long life cycles. To reach emissions goals, we must not increase City and community emissions by creating an even *higher* stock of inefficient fixed assets than we had at baseline.

This section contemplates sustainability of City-owned and -operated public facilities, including City Hall, the fire hall, the police station, and future buildings such as the Community Center. This section also contemplates private commercial, residential, and industrial structures in the city. This section outlines measures to improve the energy performance of these facilities and implement sustainable design and construction practices.

By incorporating green building practices from the outset, facilities management can minimize lifecycle costs by reducing energy consumption, maintenance requirements, and disposal costs associated with conventional building materials and systems.

Related City Plans & Goals

Comprehensive Plan

- GOAL E/CA-4: Address climate change by working towards reducing greenhouse gas emissions, increasing energy efficiency
- 4.3: Transportation modes that reduce the use of fossil fuels
- 4.4: Increase the resiliency of critical infrastructure

Climate Crisis Resolution

- Reduce reliance on fossil fuels in municipal [operations](#);
- Pursue local policies and reforms that promote environmental stewardship
- Identify current municipal greenhouse emissions in pursuit of a target reduction in municipal net greenhouse gas emissions of at least 45% by 2030 and net zero by [2050](#).

Actions that could be considered - Facilities & Buildings

Scale	Cost	Recommendation	Performance Metrics
City	\$\$\$	<p>For all new construction, and major renovations, of City-owned facilities, consider:</p> <ul style="list-style-type: none"> ● Near-zero/net-zero building design standards; ● A minimum of 5% parking spaces with Level 2 EV chargers; ● 50% of parking spaces EV-ready; ● All-electric heating, ventilating, and air-conditioning (HVAC) systems and appliances; ● Applicable appliances, equipment, and processes that meet the requirements of LEED BD+C V4.1 Indoor Water Use Certification; ● Landscaping components and planting plans with all drought tolerant and native vegetation and/or fire-resilient landscaping as recommended by the State of Washington Department of Natural Resource; ● No landscaping requiring permanent irrigation system beyond a maximum two-year establishment period 	<ul style="list-style-type: none"> ● Annual City energy usage ● Annual City energy use intensity (per Citizen) ● Annual City emissions ● Green building standards for City development (Y/N)
City	\$	Pursue energy performance contracting (a common financing method that links payments for the installation of energy conservation measures directly to the future energy savings associated with those measures) for existing City owned and operated buildings.	
Community	\$	Work with CityLab to prioritize communication and outreach regarding income-based and non-income-based discounts and subsidies for energy and water efficiency improvements for homeowners (including a range of housing types) and renters, offered outside organizations.	<ul style="list-style-type: none"> ● Annual Community emissions ● Green building standards for residential development
Community	\$\$	Incentivize development of residential housing that addresses the City's affordability goals and sustainability goals. CityLab recommends requirements for all residential new construction over 1,750 square feet to:	



Future Emissions Reduction Report

		<ul style="list-style-type: none"> ● Achieve United States Green Building Council LEED Silver Certification, 1) fulfilling the elective points for Electric Vehicles and 2) utilizing all-electric heating, ventilating, and air-conditioning (HVAC) systems; OR ● Achieve Environmental Protection Agency Energy Star certification for design OR/AND 1) Install Level 2 electrical vehicle supply equipment (EVSE) in 50% of required parking spaces or at least one parking spot, whichever is greater, 2) install appliances, equipment, and processes meeting the requirements of LEED BD+C V4.1 Indoor Water Use credit; and 3) Utilize all-electric heating, ventilating, and air-conditioning (HVAC) systems
Community	\$	Incentivize development of residential housing that addresses the City's affordability goals and/or sustainability goals through progressive code, policies, or procedures, with the goal of near-zero/net-zero standards.
Community	\$	City to require an energy audit (e.g. DOE Home Energy Score) and disclosure during the sale or lease for older residential, commercial, and multifamily buildings, either through seller arrangement with private licensed auditors or through the City securing funding for training City staff to provide paid energy audit.
Community	\$	City to adopt all-electric standards of new proposed WA State energy code.



Future Emissions Reduction Report

Water

Water conservation is a critical component of City decarbonization efforts. White Salmon's drinking water system represents nearly 75% of City emissions and over 80% of City electricity usage, with a single location (Well #1 Booster) representing roughly 70% of electricity consumption of all City owned facilities. Moreover, as of 2022, 32.6% of water usage in the system was related to water leakage.⁵

In addition to prioritizing supply-side resilience and energy efficiency improvements, community demand and leakage prevention also represent a major opportunity for water conservation, and in turn, electricity and emissions reductions.

CityLab recommends mandatory water efficiency standards for the City and community, to achieve the City's water conservation goals as well as reduce related electricity and emissions. CityLab also recommends prioritizing leakage reduction work in capital project planning.

Related City Plans & Goals

Comprehensive Plan

- GOAL E/CA-4: Address climate change by working towards reducing greenhouse gas emissions, increasing energy efficiency
- 4.2: Implement a resource-conservation approach that aims to reduce energy and water usage at City facilities

Climate Crisis Resolution

- Reduce reliance on fossil fuels in municipal operations;
- Pursue local policies and reforms that promote environmental stewardship
- Identify current municipal greenhouse emissions in pursuit of a target reduction in municipal net greenhouse gas emissions of at least 45% by 2030 and net zero by 2050.

Water Use Efficiency Resolution

- 2% reduction in average gallons per equivalent residential unit per day
- Distribution system leakage of 25% or less by the year 2028

⁵ As noted by Dave Jepsen (Anderson Perry) at May 18, 2022 City Council Meeting: <https://www.whitesalmonwa.gov/citycouncil/page/city-council-meeting-66>

Actions that could be considered- Water

Scale	Cost	Recommendation	Performance Metrics
City	\$	Use native and drought-tolerant landscaping for all new construction and major renovations for City-owned facilities.	<ul style="list-style-type: none"> • City water usage • City electricity usage for water system
City	\$\$\$	Prioritize water leakage identification and repair in the water system, including replacement of Rheingarten Park Irrigation system, replacement of the water main line, <u>and a</u> meter reading base station at City Hall to facilitate daily leak alarms (as opposed to monthly).	
City	\$\$\$	City to review opportunities to improve energy efficiency and energy resilience for Booster Station, which represents 70% of electricity consumption of City-owned facilities, possibly through grant funding.	
Community	\$	Conduct outreach to the highest 20 water users in the <u>City</u> to develop strategies to achieve water usage efficiencies.	<ul style="list-style-type: none"> • Community water usage • City electricity usage for water system
Community	\$	Consider requirements for native and drought-tolerant landscaping for all residential new construction over 1,750 square feet, planned unit developments, and cottage courts.	
Community	\$	Consider water efficiency requirements for all residential new construction over 1,750 square feet.	

Water

- Public annual water usage statistics on city website: (Potable water used per capita (gallons/capita); Total citywide Water Consumption; Residential Per-Capita Water Use (RGPCD); Annual Commercial Water Usage (MGY); Total Annual Water Demand (MGY).
 - Consider seasonal water use rates.
- Enable/incentivize gray water systems.





Greenhouse Gas Emissions Reduction Plan for the City of White Salmon, WA

12.18.2024

Presented by White Salmon CityLab Board

Project Lead: Kate Bennett

Project Team: Jim Ransier, Barbara Hayman, Steven Woolpert, Alexa Schmidt

Additional Support: Peter Fink, Kalama Reuter, Ruth Olin



Executive Summary..... 3

Priority Recommendations.....4

Overview.....5

Glossary.....6

Background..... 7

 Timeline of Sustainability Commitments in White Salmon..... 7

 Alignment with City Planning Documents..... 8

 Community Survey on Climate Change..... 13

 Climate Vulnerability Assessment..... 15

 City Scope 1 and 2 GHG Emissions Inventory..... 18

 White Salmon Community Energy Usage Assessment.....20

Advancing Equity.....22

 Vulnerable Communities in White Salmon..... 22

 Equity-informed Climate Action Planning..... 24



Executive Summary

Climate change presents a significant challenge to White Salmon, with increasing threats such as wildfires, extreme heat, and severe weather. Without a tailored approach, our city remains vulnerable. Yet opportunities are right in front of us - we need only to reach out and take them.

In 2021, White Salmon City Council passed a Climate Crisis Resolution committing to certain sustainability goals, including pursuing a target reduction in municipal net greenhouse gas emissions of at least 45% by 2030 and 100% by 2050. Later that year, the City established the CityLab Board, composed of City Council members and public volunteers, to drive these initiatives.

This Greenhouse Gas Emissions Reduction Plan ("Emissions Reduction Plan", "Plan") marks the first phase in a series of risk-management tools developed by that group, intended to equip White Salmon for potential environmental and economic changes from global climate shifts. The Plan focuses primarily on immediate, urgent actions for emissions reductions, in the form of prioritized recommendations and proposals. Key priority areas outlined in this plan include transportation



electrification, water conservation, green building practices, and working with the community's major electricity users to improve efficiencies.

The Emissions Reduction Plan also aims to lay a foundation for integrating resilience and sustainability into City planning, representing a crucial step in a broader strategy to strengthen our community against climate change. This Plan is intended to be

complemented by a comprehensive Climate Action Plan in 2025 that accounts for climate change adaptation and risk mitigation, including community vulnerabilities to wildfire; green infrastructure; nature-based solutions; and community engagement; as well as strategies that are critical to achieve White Salmon's climate action goals but have longer timelines for execution.

Sustainability, by definition, is the ability to meet current needs without jeopardizing future generations' ability to do the same. This Plan outlines a roadmap for White Salmon to fulfill our present needs and protect our treasured corner of the planet, while ensuring a resilient future for generations to come.

White Salmon CityLab Board
November 2024

Priority Recommendations

The following are priority recommendations-as to the first courses of action for emissions reductions, for consideration by the City and City Council of White Salmon. All recommendations, as well as explanatory context, can be found in the Strategic Focus Areas section of the plan.

Section	Recommendation	Term	Other
Facilities and Buildings	City to incentivize development of residential housing that addresses the City's affordability goals and sustainability goals through energy efficiency requirements and EV charger requirements for all residential new construction over 1,750 square feet (See Appendix 2).	Immediate term (0-6 months)	
Transportation	City to enact Transportation Impact Fee for all new construction to finance multi-modal and transit improvements.	Immediate term (0-6 months)	
Facilities and Buildings	City to commit to near-zero/net-zero design standards and EV charger requirements for all new construction and major renovations for City-owned facilities (See Appendix 2).	Short term (6-12 months)	
Transportation	Adoption of an electric-vehicle first policy for City municipal police and/or public works fleet.	Short term (6-12 months)	Seek grant funding
Governance	City to seek grant funding to increase staff headcount to support implementation of emission reduction initiatives.	Short term (6-12 months)	Seek grant funding
Water	City to prioritize water leakage identification and repair in the water system, including replacement of Rhinegarten Park Irrigation system, replacement of the water main line, and a meter reading base station at City Hall to facilitate daily (as opposed to monthly) leak alarms.	Medium term (1-3 years)	Seek grant funding
Energy Independence and Resilience	Pilot renewable energy and battery backup system to ensure resilient City government operations for emergency preparedness and develop a plan to expand the pilot to more buildings, with prioritization for the Booster Station.	Medium term (1-3 years)	Seek grant funding
Governance	Conduct a comprehensive Climate Action Plan, accounting for green infrastructure; nature-based solutions; community vulnerabilities to wildfire, drought, and other extreme weather events; and other topics excluded from the scope of the present report.	Long term (2-5 years)	Seek grant funding

Overview

The Emissions Reduction Plan is intended to be integrated into a broader sustainability planning framework, and function as a **first** step in assisting the City in furthering climate action. This plan contains the following sections:

1. Background: This section shares a background of climate action in White Salmon, the impending impacts of climate change on the community, and an inventory of City emissions, community energy use, and resident attitudes towards climate action planning.

2. Advancing Equity: This section identifies vulnerable groups that may be disproportionately affected by climate change impacts and provides guidance for centering those groups in climate action planning.

**We need to do more, now.
Instead of “we need to do
this by 2030.”**

*White Salmon City Resident
2023 Community Climate Action Survey*

3. Strategic Focus Areas: The strategic focus areas of this plan are Facilities and Buildings, Energy Resilience, Transportation, Water, and Governance.

These subsections include a discussion of current challenges and opportunities for emissions management in each focus area. Each section includes 5-10 recommended actions, including those priority recommendations listed on page four of this report, for emissions reductions associated both with A) City operations, and City-owned and -operated facilities, and B) transportation, housing, and other activities of the White Salmon community.

Actions are prioritized based on their relative impact and ease of implementation. The impact of an initiative is gauged by its effectiveness in furthering White Salmon's emissions reduction goals. Ease of implementation refers to the presence of barriers (financial, social, technological, etc.) impeding successful execution.

These sub-sections also include:

- Performance metrics for annual reporting on the aforementioned actions.
- Recommendations for further action in future climate planning documents; and
- Recommendations to ensure that the costs of the required mobilization do not unfairly burden those economically or socially disadvantaged and that the realized benefits of a more just and sustainable future accrue to all.

4. Next Steps: This section focuses on the next steps following this report, and emphasizes the priorities for City Council's consideration in climate action planning.

Glossary

Adaptation

Climate change adaptation is the process of adjusting to the effects of climate change. These can be both current or expected impacts. Adaptation aims to moderate or avoid harm for people, and is usually done alongside climate change mitigation. It also aims to exploit opportunities.

Climate Action Plan

A climate action plan is a framework document for measuring, tracking, and reducing greenhouse gas emissions and adopting climate adaptation measures. These documents are used as a framework to guide administrative bodies in addressing the impact of climate change in their communities.

Infill Development

The term “infill development” refers to building within unused and underutilized lands within existing development patterns that already have water, waste, and transportation infrastructure in place, typically but not exclusively in urban areas. Infill development is critical to accommodating growth at low cost for local government and redesigning our cities to be environmentally- and socially-sustainable.

Intersectionality

Intersectionality is a sociological analytical framework for understanding interconnected nature of social categorizations such as race, class, and gender as they apply to a given individual or group, regarded as creating overlapping and interdependent systems of discrimination or disadvantage.

Mitigation

Climate change mitigation is action to limit the greenhouse gasses in the atmosphere that cause climate change. Greenhouse gas emissions are primarily caused by people burning fossil fuels such as coal, oil, and natural gas.

Nature Based Solutions

Nature-based solutions are the sustainable management and use of natural features and processes to tackle socio-environmental issues. These issues include, for example, climate change, water security, food security, preservation of biodiversity, and disaster risk reduction.

Resilience

Climate resilience is a concept to describe how well people or ecosystems are prepared to bounce back from certain climate hazard events. The formal definition of the term is the “capacity of social, economic and ecosystems to cope with a hazardous event or trend or disturbance.”

Background

Timeline of Sustainability Commitments in White Salmon

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Scope 1 and 2 GhG Inventory for City Operations: This report (further detail below) is a fundamental component of the City's efforts to understand and minimize its contribution to climate change.

Emissions Reduction Plan: This plan identifies initial priority areas for emissions reductions at the City, residential, and business level, and outlines strategies and initiatives to mitigate climate change impacts, and offset emissions associated with city operations.

Alignment with City Planning Documents

The city has many approved planning documents, and there is value in aligning, where possible, with those documents. The proposed emissions reduction plan is designed to align with existing planning documentation for the City, and provide direction for future and forthcoming city planning documentation. Key documents include:

Comprehensive Planning



The Environmental & Critical Qualities section of White Salmon's [2040 Comprehensive Plan \(2021\)](#) directly aligns with our emissions reduction goals, laying a solid foundation for sustainable development in White Salmon. Through targeted policies and objectives, this section addresses key areas of concern including energy use, greenhouse gas emissions, and infrastructure resilience, thereby providing a roadmap towards a more sustainable and climate-resilient community.

GOAL E/CA-4: Address climate change by working towards reducing greenhouse gas emissions, increasing energy efficiency, and improving infrastructure resiliency in White Salmon.

- Policy E/CA-4.1: Reduce the reliance on fossil fuels and incorporate renewable energy sources, when appropriate, in municipal operations.
- Policy E/CA-4.2: Implement a resource-conservation approach for managing and developing City-operated facilities that aims to reduce energy and water usage and facility costs.
- Policy E/CA-4.3: Develop infrastructure for, and promote the use of, transportation modes that reduce the use of fossil fuels, such as biking and walking.
- Policy E/CA-4.4: Increase the resiliency of critical infrastructure through monitoring, maintenance, planning, investment, and adaptive technology.

Capital Plan



The [6-Year Capital Facilities/Capital Improvement Program \(2023\)](#) presents a host of projects that enhance the city's infrastructure. Certain projects also offer support to our emissions reduction commitments. For instance, transportation capital projects such as the reconstruction of roadways with added sidewalks and paths for pedestrians and cyclists encourage eco-friendly modes of transport. With a focus on sustainable development, these projects collectively contribute to a greener, more resilient White Salmon:

- **Parks, Recreation, & Public Facilities Capital Projects** such as the installation of modern, efficient irrigation systems in our parks contributes to the plan by minimizing water waste, reducing the energy required for water transport and treatment, and encouraging the growth of healthy green spaces that absorb carbon dioxide.
- **Transportation Capital Projects** such as road reconstructions with sidewalks and paths encourage walking and cycling, directly reducing vehicular emissions.
- **Water System Capital Projects** such as upgrades to water mains and the installation of efficient pump systems can lead to reductions in energy usage, as more efficient systems require less power.
- **Wastewater System Capital Projects** such as repairs and replacements in the wastewater system can lead to more efficient treatment processes, which, in turn, can reduce energy consumption and emissions.



Housing

The White Salmon [Housing Action Plan \(2023\)](#) strongly supports the city's emission reductions plan through its strategic approach to diversifying housing options while facilitating sustainable development patterns. It lays a foundation for creating a more resilient and sustainable community by promoting a variety of housing types that cater to different needs and income levels, ultimately aiming for a well-located, efficient, durable housing stock that supports a high quality of life. Key points from the Housing Action Plan that align with emission reduction efforts include:

- **Encouraging Infill Development:** By easing restrictions on infill within residential zones, the plan fosters higher-density living in existing neighborhoods, reducing the need for extensive new infrastructure and minimizing urban sprawl. This approach is conducive to lower emissions from transportation by facilitating closer living quarters to workplaces, amenities, and public transportation options.
- **Promoting Diverse and Affordable Housing:** The plan's strategies to increase the supply of housing at various price points and configurations, such as accessory dwelling units (ADUs), cottage housing, and mixed-use developments, support a more compact, efficient urban form. This diversity in housing options can help accommodate a growing population without the corresponding increase in emissions typically associated with new, sprawling residential developments.
- **Advancing Sustainable Site and Building Design:** By advocating for housing developments that are not only diverse and affordable but also well-located and efficient, the plan supports sustainable land use planning.



Transportation

The White Salmon [Transportation System "Lite Plan" \(2023\)](#) sets forth a vision for a transportation system that caters to the mobility and connectivity needs of all community members. By prioritizing projects that enhance multimodal access and safety, the plan underscores a proactive approach to accommodating expected population growth while addressing the current demands on the transportation infrastructure. Initiatives within the plan align with the city's emissions reduction goals:

- **Sidewalk Enhancements and New Developments:** Prioritizing pedestrian infrastructure to encourage walking as a primary mode of transportation.
- **Bicycle Network Expansion:** Developing a comprehensive network of bicycle lanes and trails to facilitate non-motorized transport.
- **Multimodal Transit Improvements:** Fostering the use of public transit through service enhancements and infrastructure upgrades, reducing reliance on personal vehicles.
- **Sustainable Street Designs:** Implementing green infrastructure and low-impact development practices within transportation projects to mitigate environmental impacts.

Water



The White Salmon Water System Plan is being updated in 2024, so the details of the plan have not been released. A comprehensive Water Plan can significantly contribute to a municipality's emissions reduction efforts by implementing strategies that reduce energy use and optimize water distribution and treatment processes. By focusing on energy efficiency, sustainable water sourcing, and reducing water loss, such a plan ensures that water management practices contribute to the broader goal of lowering greenhouse gas emissions, aligning with the city's commitment to environmental stewardship and sustainability.

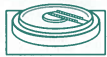
Key initiatives that could be included in a Water Plan to support emissions reduction include:

- **Adoption of Energy-Efficient Water Treatment Processes:** Implementing advanced water treatment technologies that require less energy compared to traditional methods.
- **Leak Detection and Repair Programs:** Reducing water loss through comprehensive leak detection and repair, thereby minimizing the unnecessary treatment and pumping of water, which is energy-intensive.
- **Water Conservation and Demand Management:** Encouraging water conservation among consumers and businesses to lower the overall volume of water needing treatment and distribution, directly reducing energy usage.
- **Expanding Diverse Water Sources:** Exploring and integrating alternative water sources such as rainwater harvesting, greywater systems, and other nearby sources can help adapt to the impacts of climate change by ensuring a more resilient water supply. These strategies not only provide additional water resources but also have the potential to reduce emissions by relying on less energy-intensive sources compared to traditional water supply methods.

Relatedly, [City Resolution 2022-05-543, "A Resolution of the City of White Salmon Approving and Adopting Water Use Efficiency Goals and Measures"](#), committed to several water usage goals:

- A 2% reduction in average gallons per equivalent residential unit per day
- A distribution system leakage of 25% or less by the year 2028

Wastewater



The General Sewer/[Wastewater System Plan \(2016\)](#) for Bingen and White Salmon cities lays a strategic foundation for supporting emissions reduction efforts by integrating advancements in treatment processes and system efficiency. The focus on modernizing infrastructure and optimizing operational efficiency plays a critical role in minimizing the environmental impact of wastewater management, thereby aligning with broader emissions reduction goals. Key projects that align with the Emissions Reduction Plan include:

- **Upgrading Aeration Systems:** Implementing high-efficiency aeration systems with fine-bubble diffusers to improve treatment processes and reduce energy demand.
- **Heat Pump Replacement for Operations Building:** Replacing the old heat pump with a more energy-efficient model to reduce electricity consumption.
- **Inflow/Infiltration Corrections:** Mitigating excess water entering the sewer system, thus lowering the energy-intensive treatment of additional water volumes.



The [Parks Plan \(2022\)](#) embodies a holistic approach to sustainability, directly contributing to the Emissions Reduction Plan by prioritizing environmental enhancements and community well-being. Upgrading park facilities to be more energy-efficient, enhancing green spaces for carbon sequestration, and improving infrastructure for sustainable transportation options all play a key role in our journey towards a cleaner White Salmon.

Here is a partial list of how specific projects within the plan bolster our emission reduction goals:

- **Pioneer Park:** The construction of walking loops and installation of benches provides a space for low-carbon recreation, while upgraded trash receptacles support recycling efforts. (2031-2037)
- **Fireman's Park:** The addition of a sidewalk and stormwater facility, complete with educational signage, promotes sustainable water management and public awareness on environmental issues. (2031-2037)
- **Rheingarten Park:** Water conservation efforts in the park's irrigation system align with energy-saving initiatives. (2023-2037)
- **Gaddis Park:** Acquiring additional park property and restoring riparian vegetation expands carbon sequestration areas and preserves biodiversity, enhancing the park's role in the local ecosystem. (2023-2043)
- **Loop Trail & Riverfront Park Trail Bridge:** These projects aim to boost multimodal transport, providing infrastructure for cycling and walking, which will help cut down on emissions from traditional transportation methods. (2023-2043)
- **Future Neighborhood Parks & Dog Park:** The development of new parks and a dog park with multi-modal access provides low-carbon recreation options to the community. (2023-2037)



The White Salmon [Critical Areas Ordinance \(2023\)](#) emphasizes the protection and enhancement of valuable and fragile natural resource areas, which supports the Emissions Reduction Plan by ensuring the conservation of natural resources, forested lands and the resilience of ecological functions.

The ordinance includes provisions like buffer enhancement, placing critical areas and their buffers in a protective tract to protect against future development, the use of low-impact development techniques, and the implementation of habitat management plans, which collectively work towards mitigating environmental impacts and enhancing ecological function. The ordinance also outlines clear strategies for the protection and management of wetlands, streams and their buffers, habitat conservation areas, and geologically hazardous areas, which not only play a role in carbon sequestration, but also provide a range of other ecosystem services like helping to purify air and water, promote beneficial habitat corridors, or contribute to soil health.

By mandating the use of best available science for critical area reports and mitigation plans, as well as requiring long-term monitoring of development impacts on critical areas, the ordinance aligns with the objective to minimize the urban carbon footprint and advancing the city's sustainability goals. Moreover, the ordinance requires the mitigation of impacts to critical areas in a way that achieves no net loss of functions, contributing to the broader emissions reduction strategy by preserving the ecosystem's ability to capture and store greenhouse gasses.



The White Salmon [Shoreline Master Plan \(2024\)](#) inherently supports the Emissions Reduction Plan by emphasizing protection and restoration of ecological functions of critical areas within shoreline jurisdiction. It advocates for human uses that do not result in a net loss of ecological functions and incentivizes restoration of critical areas with degraded functions alongside development projects, both public and private. Restoration efforts are to be consistent with the City's Shoreline Restoration Plan, illustrating a commitment to enhancing shoreline ecological functions which inherently supports emissions reduction through natural processes.

- **Restoration of Ecological Functions:** The program prioritizes the restoration of degraded shoreline ecological functions and processes through public and private development projects. This supports emission reduction by enhancing natural landscapes that can absorb and store carbon dioxide.
- **Protection of Critical Areas:** Policies within the program aim to protect critical freshwater habitats, wetlands, and geologically hazardous areas, conserving environments that act as natural carbon sinks.
- **Mitigation Sequencing:** The program enforces a mitigation sequence to avoid, minimize, and compensate for ecological impacts, ensuring no net loss of shoreline ecological functions. This methodology ensures that any development or restoration projects contribute positively to emission reduction efforts.
- **Vegetation Conservation:** There's a strong focus on preserving the natural character of the shoreline and its native vegetation, which is crucial for maintaining biodiversity and ecosystem resilience in the face of climate change.
- **Habitat Management Plans:** The requirement for habitat management plans for development proposals ensures that ecological impacts are carefully considered and managed, which aligns with broader goals of emissions reduction by maintaining ecological balance.
- **Flood Hazard Reduction:** The goal for flood hazard reduction is aligned with the emission reduction plan by promoting methods and measures that maintain natural hydrological functions, which can indirectly reduce emissions through improved water management and preservation of wetland habitats.
- **Public and Private Cooperative Actions:** The program encourages cooperative restoration actions involving a wide range of stakeholders, enhancing community engagement in shoreline management and conservation practices which contribute to emission reduction efforts.

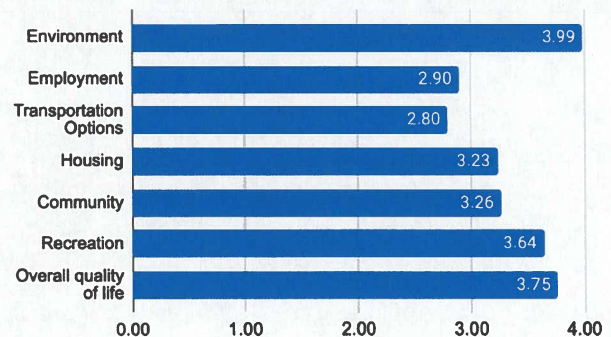
Community Survey on Climate Change

In 2023, CityLab conducted a Community Climate Action Survey to better understand citizens' attitudes to climate-related risks, as well as their attitudes towards mitigating and adaptive measures to address climate change, both City-implemented and private activity-related. Please refer to Appendix 3 for full survey results.

Between April - December, City Lab collected 121 responses to the survey, with approximately 60% of responses from White Salmon City residents, with another approximately 23% of responses from residents in the urban exempt area and/or Snowden.

Demographic data was not collected from respondents until the survey was edited in the fall (after most surveys had been collected). Because of this, we feel uncomfortable drawing any specific information from the data we've collected. We understand this is a critical oversight and will require more reliable data as part of the Climate Action Plan.

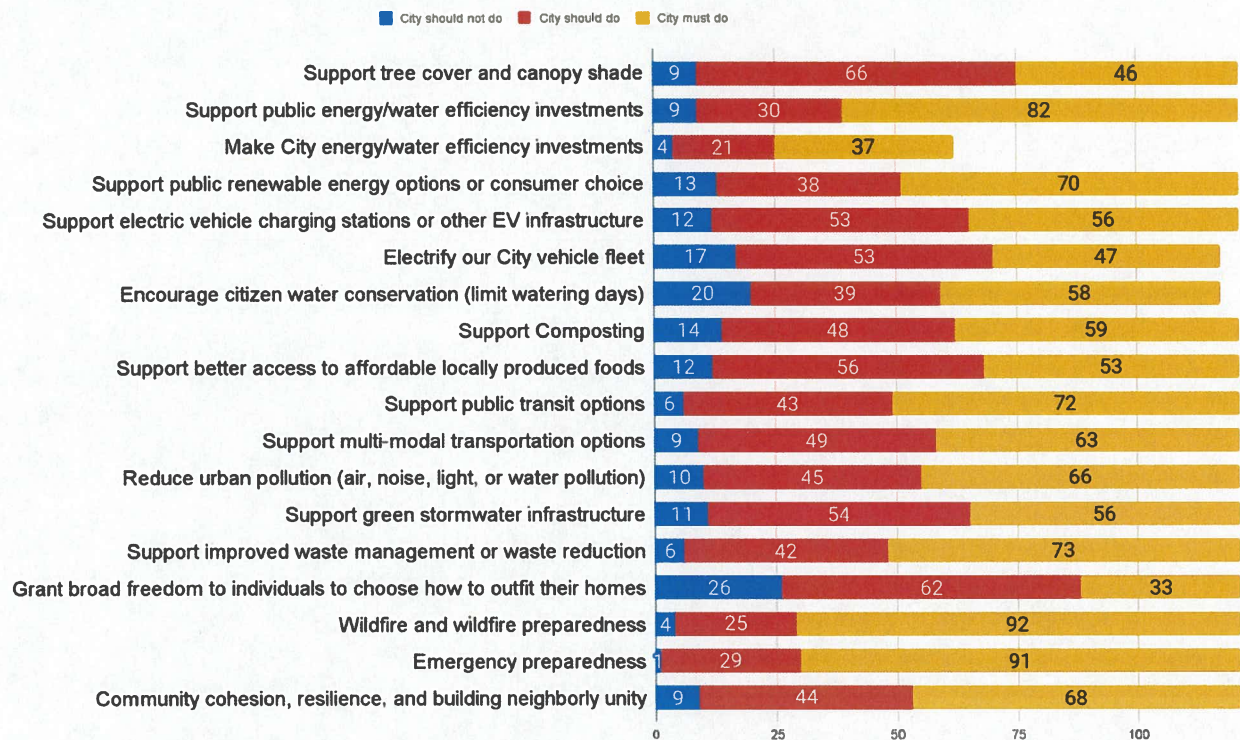
Q3. On a scale from 1 to 5, 1 being not at all concerned and 5 being extremely concerned, how concerned are you about climate change impacting the following aspects of your life in White Salmon?
[City Residents]



Key Findings

- The 3 biggest areas of concern for City residents regarding impacts of climate change include impacts on the 1) environment, followed by 2) overall quality of life and 3) recreation, respectively. These are also the three areas that City residents rank as being the highest in terms of their current life satisfaction.
- On a scale from 1 to 5, 1 being not at all concerned and 5 being extremely concerned, City residents overall ranked wildfires as their top concern (average score of 4.42) followed by heat waves (4.17) and air quality (4.17).
- City residents that are raising children reported being somewhat concerned (average score of 3.69) about climate change impacting raising their children, or their children's lives in White Salmon.
- City residents reported that the biggest obstacles for them to personally address climate change are government support, followed by money and time.

What actions would you like to see White Salmon's City Government take to address climate change?



- Most respondents reported being willing to install renewable energy for their homes, invest in hybrid or electric vehicles, drive less, change dietary habits, and get involved in local government or nonprofit groups. Areas where respondents reported needing the most support included renewable energy investments, hybrid/electric vehicles, driving less, and getting involved with local government or nonprofits.
- When asked what actions they'd like to see White Salmon City government take to address climate change, the top options respondents rated "City must do" were:
 - Wildfire preparedness,
 - Emergency Preparedness,
 - Support public energy/water efficiency investments,
 - Support improved waste management or waste reduction,
 - Support public transit options, and
 - Support renewable energy options or consumer choice

I'm concerned about the compounding effects of climate change on our community. Each of these impacts affects other issues and magnifies them - together the impact is greater than any one issue.

City Resident

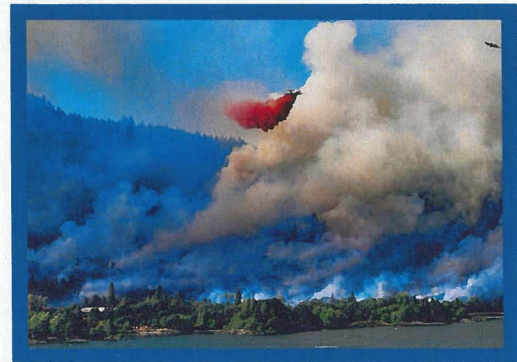
We are past mitigation and into the adaptation mode because it is already upon us. Hopefully we can slow down the final phase of our society by going into pure survival mode!

City Resident

Climate Vulnerability Assessment

Climate change has already impacted and will continue to impact the City of White Salmon, its residents, businesses, and visitors. Many climate hazards may become more frequent and intense as the climate changes.

Furthermore, vulnerable and disadvantaged members of the community are disproportionately affected by climate change. As discussed further in the “Advancing Equity,” the City must prioritize these groups in mitigative as well as adaptation activities.



The present report targets priority initiatives for achieving emissions reductions commitments of the Climate Crisis Resolution. The identified vulnerabilities in this section are expected to be a significant focus in the forthcoming comprehensive Climate Action Plan. **Major concerns for White Salmon are rising temperatures, increased frequency and intensity of extreme heat events, and increased frequency and intensity of wildfires, all which are expected to have economic, social, political, and environmental impacts.** See more details and citations in Appendix 1.

Sources

The below projections are sourced from the Climate Risk and Resilience Portal (ClimRR) tool, developed by the Center for Climate Resilience and Decision Science (CCRDS) at Argonne National Laboratory. The goals of ClimRR are to provide free and equitable access to leading, peer-reviewed climate datasets to support analysis and data-driven planning for future climate risks; as well as empower non-technical individuals, organizations, planners and decision-makers at state, local, and Tribal governments to gain awareness of future climate conditions and to conduct climate risk-informed analyses to support decision-making and adaptation efforts.

Scientists at Argonne are responsible for all aspects of climate modeling, with funding for the development of the portal and its maintenance from the Federal Emergency Management Agency (FEMA). FEMA, in coordination with Argonne, provides technical assistance on the application of this climate data to support community and infrastructure resilience analytic and planning initiatives.

Representative concentration pathways (RCP) 4.5 and RCP 8.5

The below projections also reference representative concentration pathways (RCP) 4.5 and RCP 8.5. Representative concentration pathways portray possible future greenhouse gas and aerosol emissions scenarios. RCP scenarios are not specific policies, demographics, or economic futures; instead, they are defined by total solar radiative forcing by the year 2100. To address uncertainty

in future concentrations of greenhouse gasses and emissions of aerosols, datasets often incorporate multiple RCPs.

RCP 4.5 is a moderate scenario in which emissions peak around 2040 and then decline (and which is associated with an approximately 2°C of warming), and RCP 8.5 is the highest baseline emissions scenario in which emissions continue to rise throughout the twenty-first century (and which is associated with an approximately 5°C of warming).

Key Findings

	Historical	Mid-Century		End of Century	
		RCP 4.5	RCP 8.5	RCP 4.5	RCP 8.5
Maximum Avg Temperature	58.0°F	60.4°F	60.8°F	62.5°F	66.3°F
	+8.3°F	+2.4°F	+2.8°F	+4.5°F	+8.3°F
Minimum Avg Temperature	42.5°F	45.0°F	45.2°F	47.8°F	50.5°F
	+8.3°F	+2.5°F	+2.7°F	+5.3°F	+8°F

	Historical	Mid-Century RCP 4.5	End of Century RCP 4.5
Daily Max Heat Index*	77.2°F	81.7°F	88.7°F
Seasonal Max Heat Index*	97.6°F	108.1°F	116.4°F
Days with Max Heat Index Over 95°F	3.4 days	9 days	27.1 days
Days with Max Heat Index Over 105°F	0.1 days	2.3 days	6.6 days
Days with Max Heat Index Over 115°F	0 days	1.1 days	1.0 days
Days with Max Heat Index Over 125°F	0 days	0.8 days	0.3 days

**A heat index is a measure of how hot weather feels to humans when factoring in both relative humidity and the actual temperature. Heat index is an important gauge of heat-related risks. Readings above 105°F typically represent dangerous conditions, with readings above 125°F being extremely dangerous to humans.*

Both annual daily average temperatures, and incidence and severity of extreme heat events, are expected to increase as a result of climate change. This is expected to impact White Salmon in a number of ways, including:

Agriculture Agriculture in the region, particularly fruit orchards and vineyards, could be adversely affected by higher temperatures and heatwaves. Fruit crops like

apples, pears, and cherries require a certain number of chill hours during winter for proper growth and development. Warmer temperatures could disrupt this requirement, impacting fruit yields and quality.

Heatwaves during critical growth stages can also stress crops, leading to sunburn, reduced fruit set, and decreased overall productivity. This could result in economic losses for farmers and orchard owners.

Changes in temperature and precipitation patterns may also affect water availability for irrigation, further exacerbating challenges faced by farmers in maintaining crop health and productivity.

Tourism & Outdoor Recreation

Higher temperatures and more frequent extreme heat events can impact outdoor recreational activities such as windsurfing, kiteboarding, hiking, and skiing. For example, reduced snowpack due to warmer temperatures could shorten the ski season on nearby Mount Hood, impacting winter tourism.

Extreme heat events may also deter tourists from engaging in outdoor activities during peak summer months, leading to a decrease in visitor numbers and revenue for businesses that cater to tourists.

Additionally, warmer temperatures could alter ecosystems and wildlife habitats, affecting the attractiveness of the natural landscape and wildlife viewing opportunities for tourists.

Additionally, the risk of more frequent, high-severity, and larger wildfires has increased in recent years, threatening scenic, natural, cultural, and recreation values, as well as human health, local economies, and carbon stores.

	Historical	Mid-Century RCP 4.5	End of Century RCP 4.5
Fire Weather Index	28.9	28.1	35.4
Fire Weather Index Class	High	High	Very High

The Fire Weather Index (FWI) estimates weather-related wildfire danger using daily readings of weather conditions that influence the spread of wildfires, including the dryness of fuel sources and high winds. Higher FWI values represent greater danger of wildfires due to weather conditions; the index does not account for land cover or potential ignition sources. FWI values signal different levels of relative fire danger across regions.

City Scope 1 and 2 GHG Emissions Inventory

The City's City Scope 1 and 2 Greenhouse Gas (GHG) Emissions Inventory is a fundamental component of White Salmon's efforts to understand and manage its contribution to climate change. The inventory results provide valuable insights into our city's carbon footprint, allowing us to identify priority areas for emissions reductions, set targets for carbon neutrality or reduction, and develop strategies and initiatives to cut costs while mitigating climate change impacts associated with city operations.

CityLab has conducted a baseline Scope 1 and 2 GHG Emissions Inventory for the year of 2022, and is working to finalize Scope 1 and 2 GHG Emissions Inventories for 2018-2021, as well as a Scope 1-3 GHG Emissions Inventory for 2023.

Methodology and Scope

Tool and Boundaries: CityLab utilized the EPA Local Greenhouse Gas Assessment tool to develop its inventory, and an ownership-boundary approach (primarily as a result of data availability).

Emissions factors are based on a location-based method, meaning the emissions from the energy mix on the grids where we operate. The electricity grid is physically bound, and our consumption is linked to our regional grid. Moreover, because Klickitat PUD is not held to similar renewable portfolio standards as counties with higher populations in Washington State, CityLab is concerned that using a market-based method may result in double-counting of renewable energy resources.

Scope 1 Emissions: These are direct GHG emissions that result from sources that are owned or controlled by the city government. Scope 1 emissions included in the inventory include:

- Emissions from municipal vehicles and fleets (e.g., cars, trucks, buses).
- Emissions from stationary fuel sources for facilities like municipal buildings, facilities, and equipment (e.g. natural gas heating, cooling, and electricity generation).

Scope 2 Emissions: indirect GHG emissions associated with the consumption of purchased or acquired electricity, heat, or steam by the City. While the emissions occur at the facilities where the electricity is generated, they are reported by the City because they result from its energy consumption. Sources of Scope 2 emissions included in the inventory include:

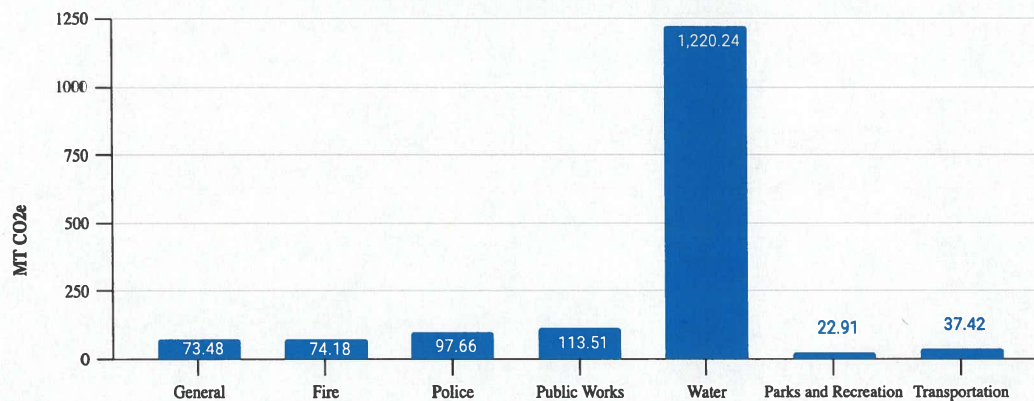
- Emissions from purchased electricity: These are emissions associated with the electricity consumed by municipal buildings, facilities, and operations.

What is not included:

- Direct Scope 1 emissions such as refrigerants, emissions associated with paving activities, emissions associated with diesel-run small equipment, etc.
- Indirect Scope 3 emissions such as goods and services purchased by the City (office supplies, equipment), employee commuting, waste generation, and wastewater treatment

Key Findings

Total Gross Emissions by Department



1. White Salmon Water System

The drinking water system represents nearly 75% of City emissions. Relatedly, the water system represents over 80% of City electricity usage, with a single location (identified as Well #1 Booster Station) representing roughly 70% of City electricity usage. See details to address this in the Water section in this report.

The present inventory does not contemplate solid waste management, as waste is managed by the county and third-party services, nor wastewater treatment, as the Bingen / White Salmon Wastewater Treatment Plant is owned and operated by the City of Bingen; these are treated as Scope 3 emissions. Because these are not currently included in the inventory, our drinking water system's emissions and electricity usage may seem disproportionately high. CityLab is pursuing benchmarks for peer cities to determine how our water system's emissions per capita and electricity usage per capita perform relative to others. CityLab strongly recommends inclusion of the Bingen wastewater treatment center, of which White Salmon represents approximately 80% of capacity, and waste management, in forthcoming GHG inventories to ensure these utilities are adequately and fairly represented.

2. City Fleet

The second largest contributor to City Scope 1 and 2 emissions is transportation-related emissions from the City's fleet.

The City owns and operates 37 vehicles, between the Fire, Public Works, and Police Departments. The average age of fleet vehicles is 16 years. See details to address this in the Transportation section in this report.

Total Emissions by Department and Source (MT CO2e)				
Department	Combustion	Electricity	Transportation	TOTAL
General	0.67	72.82	-	73.48
Fire	-	67.57	6.61	74.18
Police	-	41.63	56.04	97.66
Public Works	-	-	113.51	113.51
Water	-	1,220.24	-	1,220.24
Parks and Recreation	-	22.91	-	22.91
Transportation	-	37.42	-	37.42
Total	0.67	1,462.58	176.16	1,639.41

White Salmon Community Energy Usage Assessment

CityLab has conducted a community energy usage assessment based on electricity and natural gas consumption data for City residents, which included an evaluation of emissions associated with this energy consumption. The CityLab highly recommends completion of a full Scope 1-3 GHG Emissions Inventory for the White Salmon community for 2023.

Key Findings

1. Natural Gas Usage

For residential accounts, the average per capita emissions per account holder is roughly the same for natural gas and electricity. Residential and commercial natural gas usage in White Salmon, through approximately 830 accounts, results in nearly twice the emissions of the City's residential and commercial electricity accounts. This is a non-surprising result, as natural gas combustion has a proportionally higher emissions factor of natural gas combustion. For this reason, as well as concerns regarding public health, CityLab recommends adoption of the new proposed Washington State Energy Code upon its passage, which restricts the installation of natural combustion for residential and commercial heating and cooking.

	Customers (2022)	Natural Gas - Totals (2022)		Natural Gas - Per User (2022)	
		mcf	MT CO ₂ e	mcf	MT CO ₂ e
Residential	748	43,123.00	2,371.00	58	3
Commercial/ Institutional	78	31,503.00	1,732.00	404	22

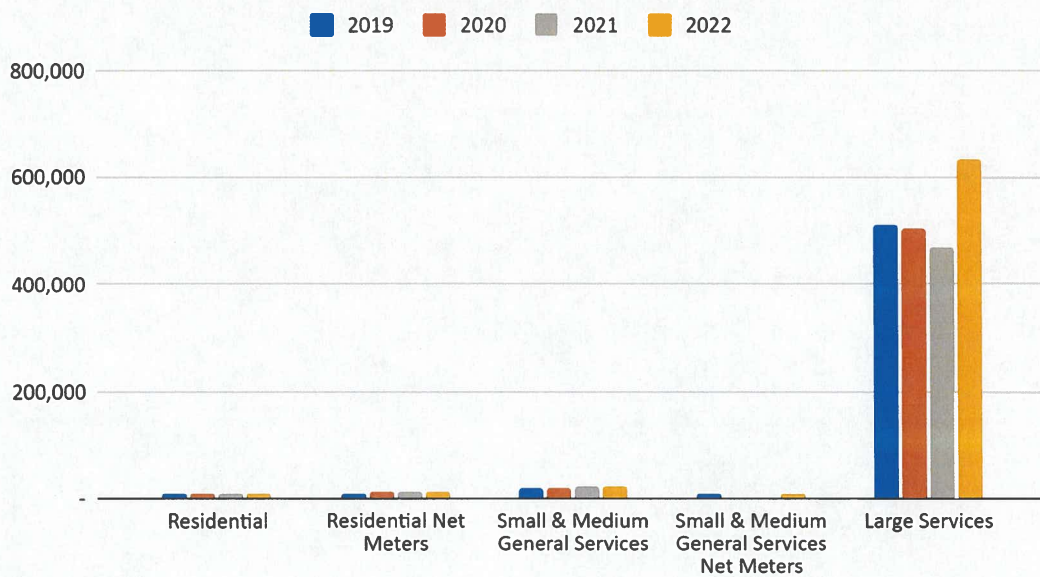
	Customers (2022)	Electricity - Totals (2022)		Electricity - Per User (2022)	
		KwH	MT CO ₂ e	KwH	MT CO ₂ e
Residential	1,283	12,790,853	3,704	9,969	3
Residential Net Meters	21	229,318	66	10,920	3
Small & Medium General Services	182	4,292,502	1,243	23,585	7
Small & Medium General Services Net Meters	2	14,029	4	7,015	2
Large Services	9	5,690,984	1,648	632,332	183

2. Large Service Users

Small and medium general services, who represent approximately 12% of electricity account holders, account for 19% of electricity use and emissions. Relatedly, 9 large service users representing less than 1% of total electricity account holders in City limits, account for 25% of electricity use and emissions.

CityLab recommends that, in the medium-term, the City and/or CityLab with City oversight work with these account holders to identify major electricity drivers and develop incentives and rebates to support energy efficiency upgrades within their activities.

Average Kwh Consumption per Account, Including Large Services



Advancing Equity

While climate change poses a threat to all of humanity, its effects are not evenly distributed. Vulnerable communities, often marginalized by socioeconomic disparities and structural inequalities, bear a disproportionate burden of the consequences. This challenge is compounded by the fact that White Salmon's infrastructure, policies, and investment have historically and systemically neglected and even harmed low-income communities and communities of color. The City has acknowledged these injustices and the need to right these wrongs by creating a culture of equity within its institutions.¹

Equity means meeting communities where they are and allocating resources and opportunities as needed to create beneficial outcomes for all community members. In White Salmon, our sustainability planning will only succeed if we center racial, gender, age, and disability equity in the plan's goals and strategies.

Vulnerable Communities in White Salmon

Social vulnerability expresses the degree to which a community exhibits certain social conditions, including high poverty, low percentage of vehicle access, or crowded households, that may affect that community's ability to prevent human suffering and financial loss in the event of disaster. These factors describe a community's social vulnerability. Vulnerable communities include, but are not limited to, low-income communities, communities of color, seniors, LGBTQIA+, residents with physical or mental impairments, and other groups with diminished adaptive capacity as a result of certain conditions.

As a respiratory health compromised person, the environment is a huge factor on my health, well-being, ability to function and probably life expectancy. The smoke from wildfires is literally debilitating.

*White Salmon City Resident
2023 Community Climate Action Survey*

The CDC/ATSDR Social Vulnerability Index (CDC/ATSDR SVI)² is a tool published by the Centers for Disease Control and Prevention (CDC) that uses U.S. Census data to determine the social vulnerability of every census tract. The SVI ranks U.S. Census tracts on 16 social factors, including unemployment, racial and ethnic minority status, and disability, and further groups them into four related themes.

¹ Resolution 2019-07-489: A Resolution of the City of White Salmon Making a Declaration of Diversity and Inclusiveness:
https://www.whitesalmonwa.gov/sites/default/files/fileattachments/city_council/page/3261/approved_resolution_2019-06-489_declaration_of_diversity_and_inclusiveness.pdf

² CDC/ATSDR Social Vulnerability Index (CDC/ATSDR SVI): <https://www.atsdr.cdc.gov/placeandhealth/svi/index.html>

Social Vulnerability Data for White Salmon ³		
Socioeconomic Status	Persons below 150% poverty estimate, 2016-2020 ACS	425
	Percentage of persons below 150% poverty estimate	12.90%
	Persons (age 25+) with no high school diploma estimate, 2016-2020 ACS	207
	Percentage of persons with no high school diploma (age 25+) estimate	8.40%
	Housing cost-burdened occupied housing units with annual income less than \$75,000 (30%+ of income spent on housing costs) estimate, 2016-2020 ACS	249
	Percentage of housing cost-burdened occupied housing units with annual income less than \$75,000 estimate, 2016-2020 ACS estimate, 2016-2020 ACS	17.40%
	Uninsured in the total civilian noninstitutionalized population estimate, 2016-2020 ACS	51
	Percentage uninsured in the total civilian noninstitutionalized population estimate, 2016-2020 ACS	1.50%
Household Characteristics	Persons aged 65 and older estimate, 2016-2020 ACS	677
	Percentage of persons aged 65 and older estimate, 2016-2020 ACS	20.50%
	Persons aged 17 and younger estimate, 2016-2020 ACS	711
	Percentage of persons aged 17 and younger estimate, 2016-2020 ACS	21.60%
	Civilian non-institutionalized population with a disability estimate, 2016-2020 ACS	376
	Percentage of civilian noninstitutionalized population with a disability estimate, 2016-2020 ACS	11.40%
	Persons (age 5+) who speak English "less than well" estimate, 2016-2020 ACS	160
	Percentage of persons (age 5+) who speak English "less than well" estimate, 2016-2020 ACS	5.30%
Racial & Ethnic Minority Status	Minority	484
	Percentage minority (as defined above) estimate, 2016-2020 ACS	14.70%
Housing Type & Transportation	Housing in structures with 10 or more units estimate, 2016-2020 ACS	54
	Percentage of housing in structures with 10 or more units estimate	3.30%
	Mobile homes estimate, 2016-2020 ACS	180
	Percentage of mobile homes estimate	11.00%
	At household level (occupied housing units), more people than rooms estimate, 2016-2020 ACS	41
	Percentage of occupied housing units with more people than rooms estimate	2.90%
	Persons in group quarters estimate, 2016-2020 ACS	2
	Percentage of persons in group quarters estimate, 2016-2020 ACS	0.10%
	Households with no vehicle available estimate, 2016-2020 ACS	32
	Percentage of households with no vehicle available estimate	2.20%

³ SVI Data, Census Tract 53039950301: https://www.atsdr.cdc.gov/placeandhealth/svi/data_documentation_download.html

Equity-informed Climate Action Planning

Advancing Equity will require action across a broad range of focus areas. This section highlights seven primary areas that White Salmon should consider in comprehensive climate action planning, to ensure that the costs of the mobilization against climate change do not disproportionately burden those in vulnerable communities, and that the realized benefits of a more just and sustainable future accrue for all.

Affordability

White Salmon's climate action strategy should strive to lower and stabilize costs related to basic living needs for vulnerable communities. Recommendations included in this plan include:

- Prioritize and target incentives for low-income communities and communities of color.
- Develop green incentives or programs that are accessible for all income groups.
- Seek solutions that address household affordability, transport access, and urban sprawl.

Accessibility

White Salmon's climate action strategy should strive to improve access to information, housing, transportation, funding, healthy foods, and a clean environment for vulnerable communities, through infrastructure, policy, and investments. Recommendations included in this plan include:

- Lack of awareness and information may prevent the City from meeting sustainability goals. Consider financial barriers to participation.
- Consider the inequities of how people are excluded from economic opportunity because of disabilities, income, education, and healthcare.
- Consider inequitable access to transportation options for communities that do not have access to personal vehicles.

Just Transition

White Salmon's climate action strategy should ensure economic justice for low-income communities, communities of color, and those with disabilities and protect these communities from potential negative consequences.

- Help BIPOC-owned businesses include participation efforts targeted toward these groups.
- Ensure that the needs of visually and mobility impaired citizens are centered in climate action planning and prioritization.

Community Capacity

White Salmon's climate action strategy should elevate the voices of vulnerable communities by developing and strengthening the skills, abilities, and resources a community needs to survive, adapt and thrive. Sustainability connects with a sense of place where people work, play, go to church, and spend money in one community.

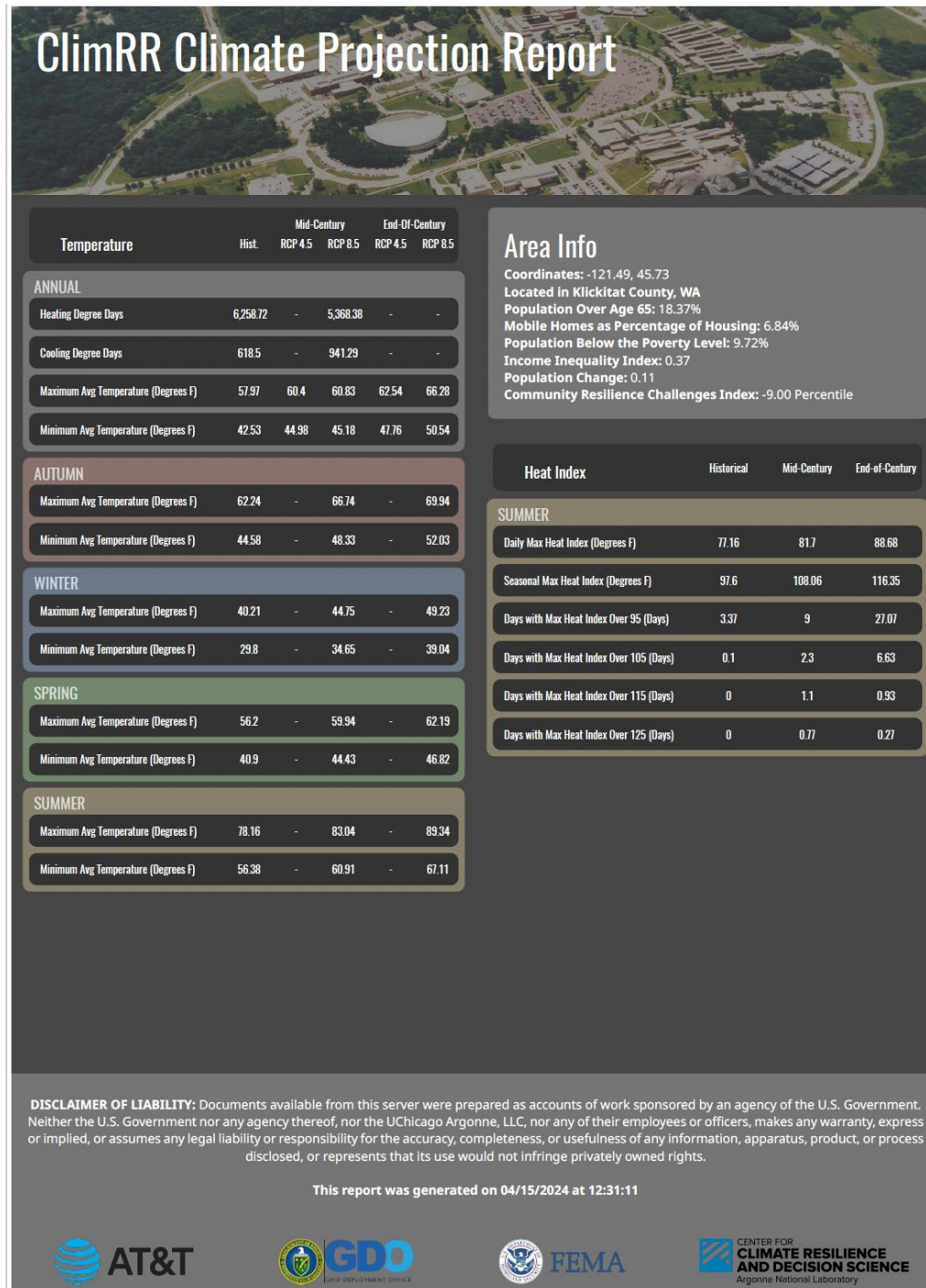
- Improve informational materials for community members so people understand why climate change issues are essential, especially for parents who want to teach children to understand these issues.
- Emphasize the intersectionality of climate issues.
- Actively address safety concerns and community priorities and communicate with the community through meaningful connections to these concerns.
- Build community resilience to long-term climate change impacts by focusing on social and economic stressors for people living in White Salmon.
- Prepare for long-term climate change impacts and concerns that the infrastructure won't be able to keep up with growth.

Accountability

White Salmon's climate action strategy should ensure that vulnerable communities can hold institutions accountable for equitable implementation.

- Include representative leaders from BIPOC communities that are impacted by decision-making.
- Ensure equitable distribution of responsibilities in climate action.
- Equitably design programs for low-income communities.
- Address community-based concerns around systemic racism.

ClimRR Climate Projection Report⁵



⁵ **Climate Projection Summary for: -121.49, 45.73**
 Center for Climate Resilience and Decision Science at Argonne National Laboratory.
 Accessed 11/4/23:

ClimRR Climate Projection Report

Wildfire

Historical Mid-Century End-of-Century

ANNUAL

Fire Weather Index	28.88	28.14	35.4
Fire Weather Index Class	High	High	Very High

AUTUMN

Fire Weather Index	21.54	21.85	20.46
Fire Weather Index Class	High	High	Medium

WINTER

Fire Weather Index	0.53	0.49	1.58
Fire Weather Index Class	Low	Low	Low

SPRING

Fire Weather Index	5.5	5.32	6.52
Fire Weather Index Class	Low	Low	Low

SUMMER

Fire Weather Index	33.73	32.46	38.02
Fire Weather Index Class	High	High	Very High

Precipitation

Hist. Mid-Century End-Of-Century
RCP 4.5 RCP 8.5 RCP 4.5 RCP 8.5

ANNUAL

Days Without Precipitation (Days)	60	52.67	65.67	64.33	60.33
Annual Precipitation (Inches)	41.99	42.42	41.25	53.63	40.86

AUTUMN

Daily Precipitation (Inches)	0.08	-	0.07	-	0.08
Maximum Daily Precipitation (Inches)	1.14	-	1.07	-	1.33

WINTER

Daily Precipitation (Inches)	0.17	-	0.19	-	0.18
Maximum Daily Precipitation (Inches)	1.63	-	1.69	-	1.91

SPRING

Daily Precipitation (Inches)	0.08	-	0.08	-	0.08
Maximum Daily Precipitation (Inches)	0.82	-	0.96	-	1.07

SUMMER

Daily Precipitation (Inches)	0.01	-	0.01	-	0.01
Maximum Daily Precipitation (Inches)	0.26	-	0.33	-	0.46

Wind Speed

Hist. Mid-Century End-Of-Century
RCP 4.5 RCP 8.5 RCP 4.5 RCP 8.5

ANNUAL

Wind Speed (Mph)	6.68	6.78	6.79	6.87	6.83
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This report was generated on 04/15/2024 at 12:31:11





<https://disgeoportal.egs.anl.gov/ClimRR/?page=Local-Climate-Projections&views=Wildfire>

White Salmon Climate Action Survey

Community Survey on Climate Change

In 2023, CityLab conducted a Community Climate Action Survey to better understand citizens' attitudes to climate-related risks, as well as their attitudes towards City and public mitigative and adaptive activities to climate change.

Between April - December, City Lab collected 121 responses to the survey, with approximately 60% of responses from White Salmon City residents, with another approximately 23% of responses from residents in the urban exempt area and/or Snowden. Demographic data was not collected from respondents until the fall, a critical oversight that skews the demographic data results.

How satisfied are you with your life in White Salmon along the following dimensions? *

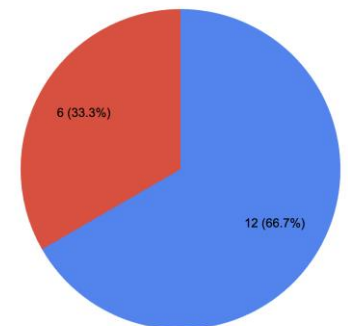
	Extremely dissatisfied	Dissatisfied	Neutral	Satisfied	Extremely satisfied
Environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation Options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall quality of life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The survey included open-answer, multiple choice, and ranking questions (like the example above).

Racial / Ethnic Identity

This question was not added to the survey until 9/15/23. Only 16 respondents, or about 13% of all respondents, answered this question. This is not expected to be representative of total response rates.

Which race or ethnicities best describe you?

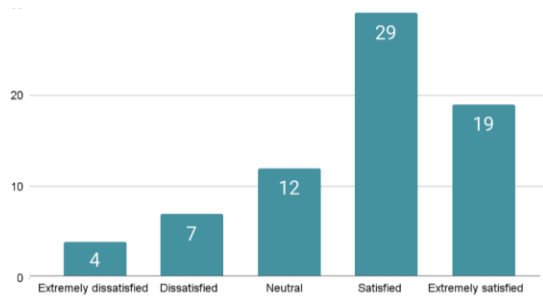


● White / Caucasian ● Hispanic or Latino/a

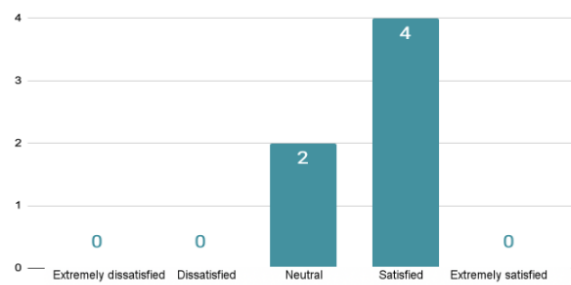


Q1. How satisfied are you with your life in White Salmon along the following dimensions?

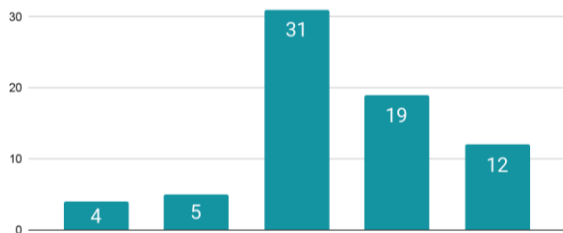
Environment: City Residents



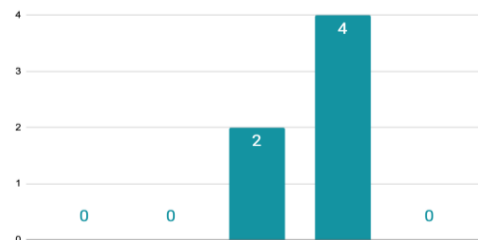
Environment: Respondents Identifying as Hispanic/Latino/a



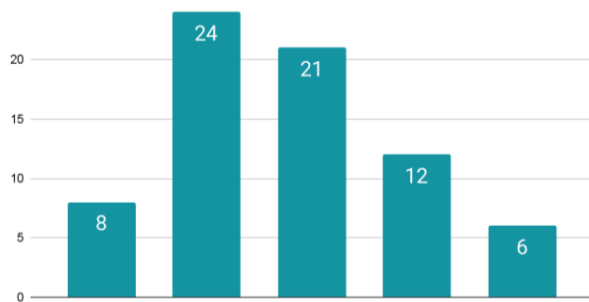
Employment: City Residents



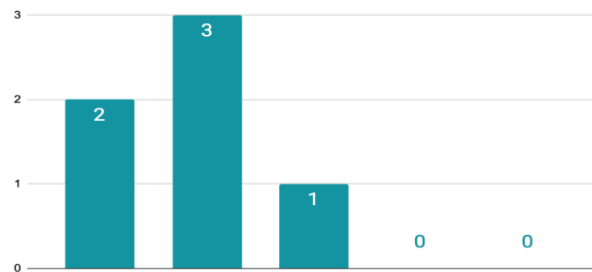
Employment: Respondents Identifying as Hispanic/Latino/a



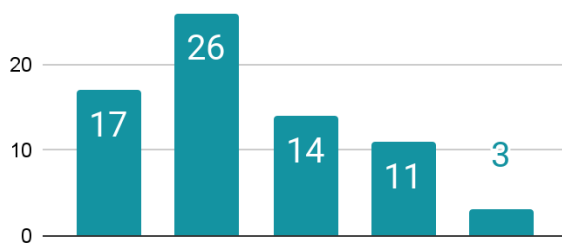
Transportation: City Residents



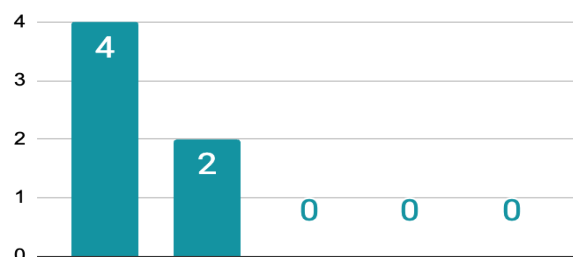
Transportation: Respondents Identifying as Hispanic/Latino/a



Housing: City Residents



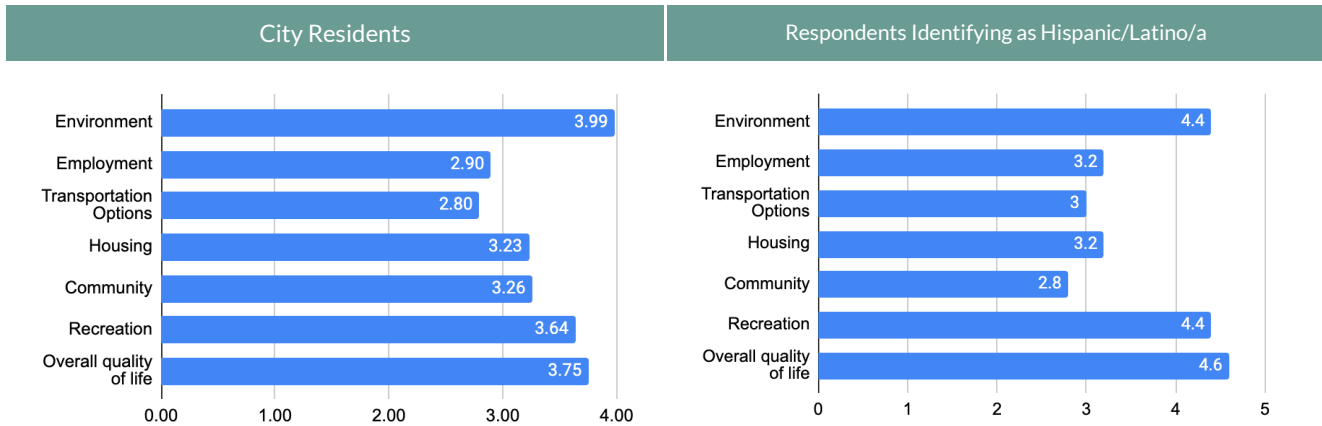
Housing: Respondents Identifying as Hispanic/Latino/a



Q1. How satisfied are you with your life in White Salmon along the following dimensions? (Cont.)



Q3. On a scale from 1 to 5, 1 being not at all concerned and 5 being extremely concerned, how concerned are you about climate change impacting the following aspects of your life in White Salmon?

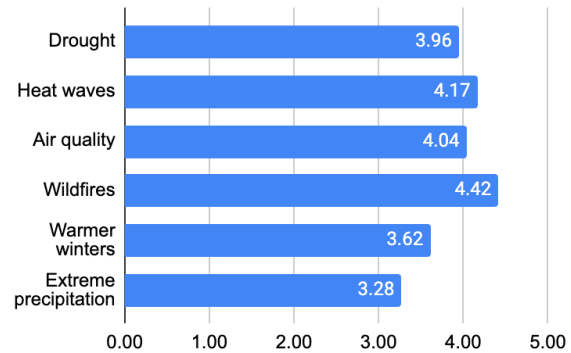


Question 2

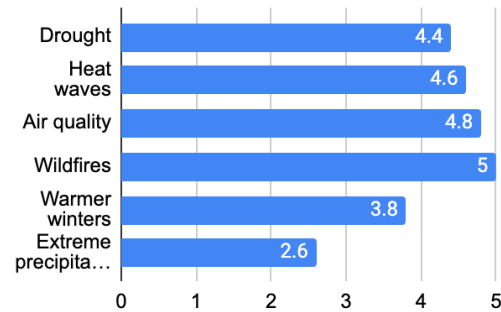
On a scale from 1 to 5, 1 being not at all concerned and 5 being extremely concerned, how concerned are you about climate change impacting the following aspects of your life in White Salmon? *

	1	2	3	4	5
Environment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Employment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transportation Options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Housing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall quality of life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

City Residents



Respondents Identifying as Hispanic/Latino/a



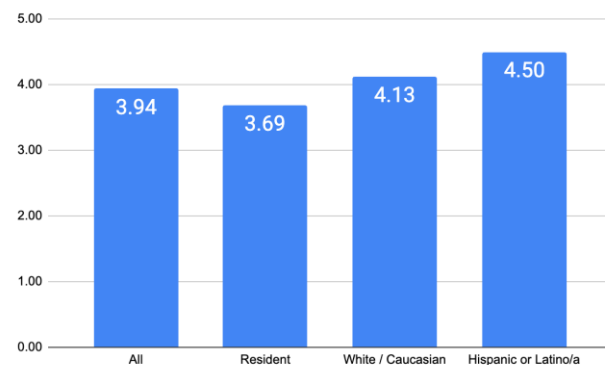
Question 4

If you are raising children, on a scale from 1 to 5, how concerned are you about climate change impacting raising your children or your children's lives in White Salmon?

1 2 3 4 5

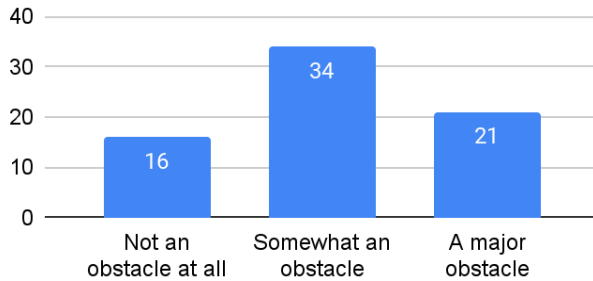
Not at all concerned ☐ ☐ ☐ ☐ ☐ Extremely concerned

Responses

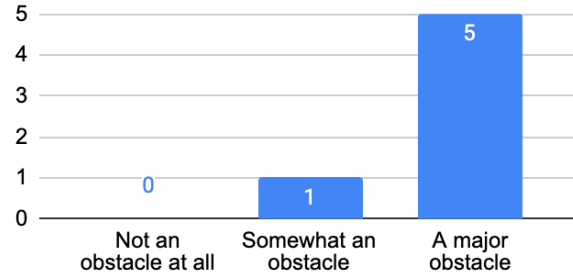


Q7. What are the biggest obstacles for you personally in addressing climate change impacts?

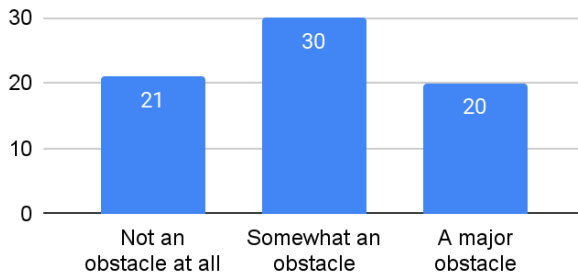
Money: City Residents



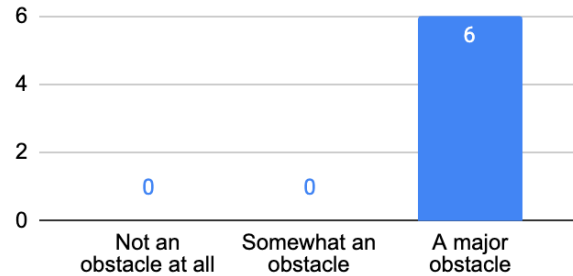
Money: Respondents Identifying as Hispanic/Latino/a



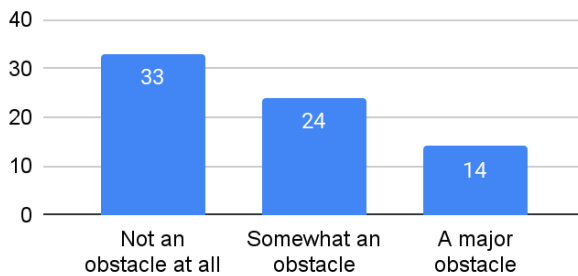
Time: City Residents



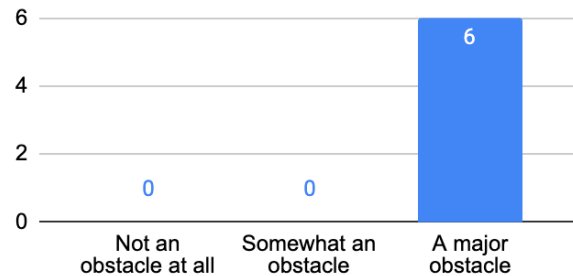
Time: Respondents Identifying as Hispanic/Latino/a



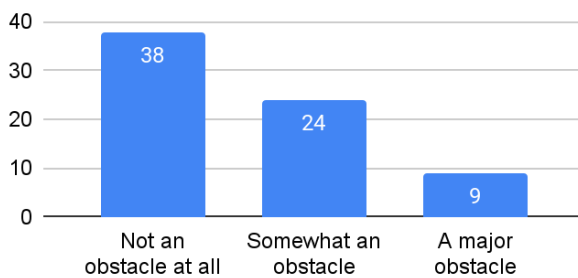
Information: City Residents



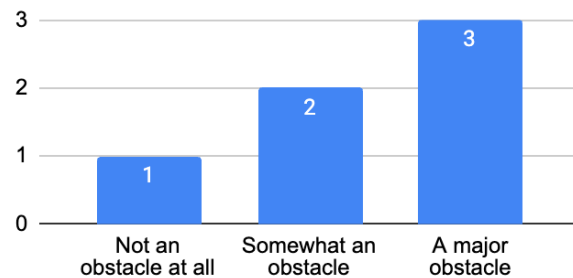
Information: Respondents Identifying as Hispanic/Latino/a



Motivation: City Residents

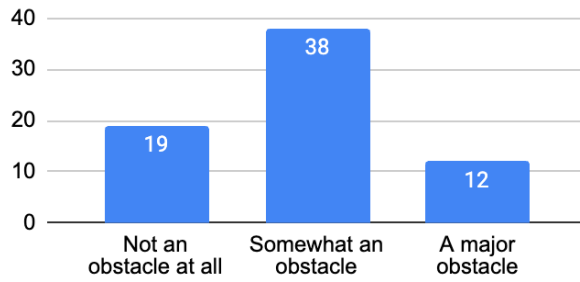


Motivation: Respondents Identifying as Hispanic/Latino/a

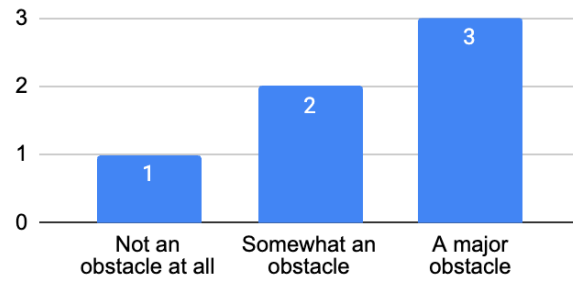


Q7. What are the biggest obstacles for you personally in addressing climate change impacts? (Cont.)

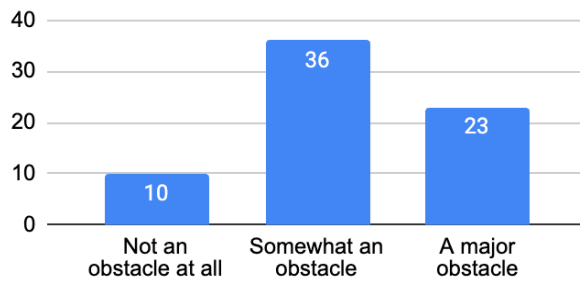
Community Support: City Residents



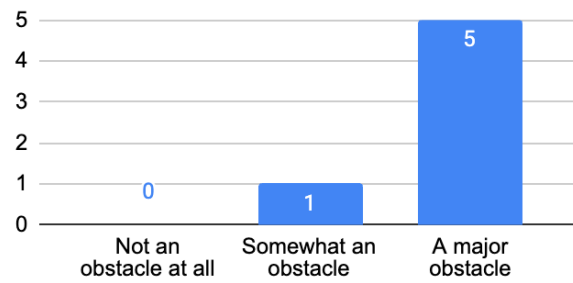
Community Support: Respondents Identifying as Hispanic/Latino/a



Government Support: City Residents

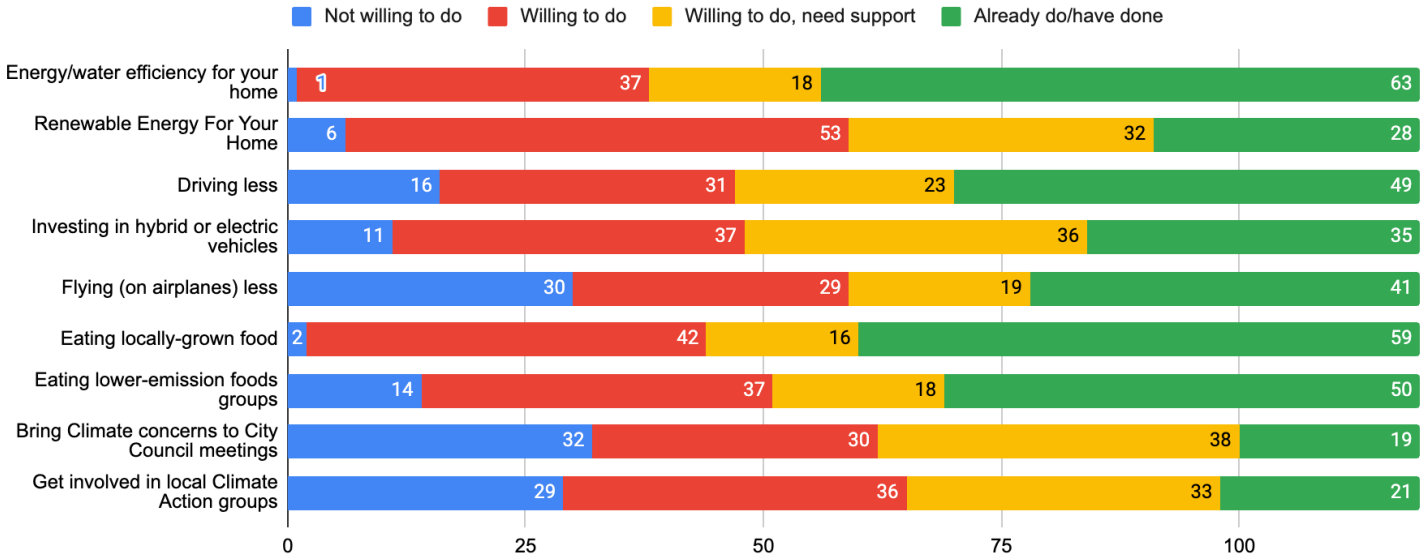


Government Support: Respondents Identifying as Hispanic/Latino/a



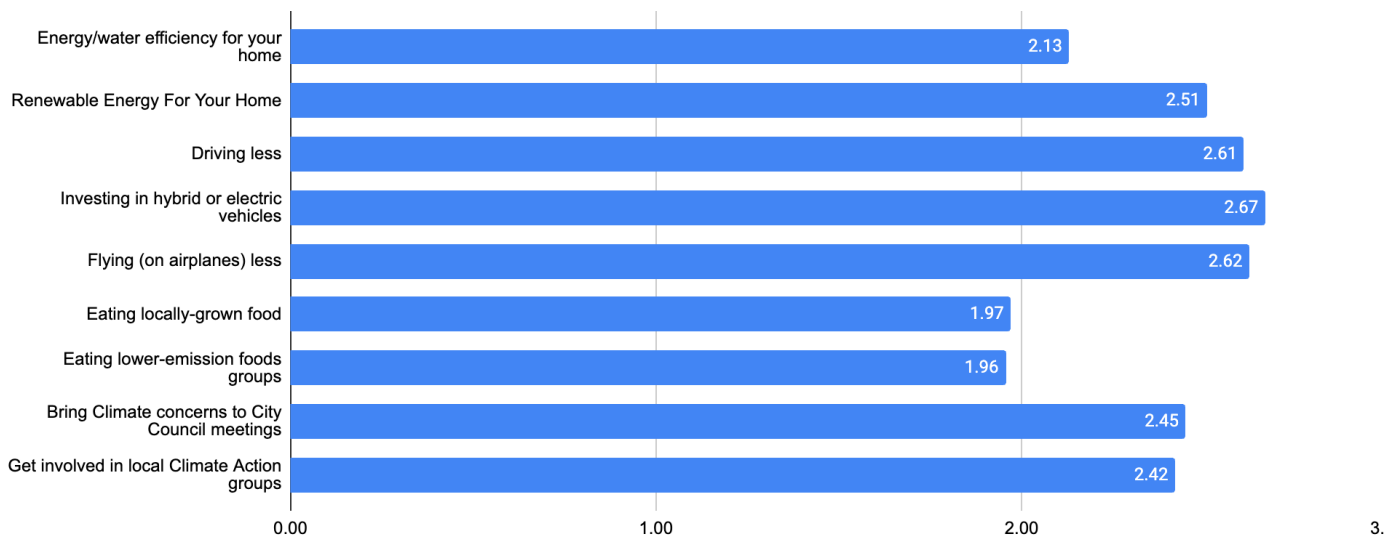
Question 9

Rate your willingness to do the following options, as an individual



Question 10

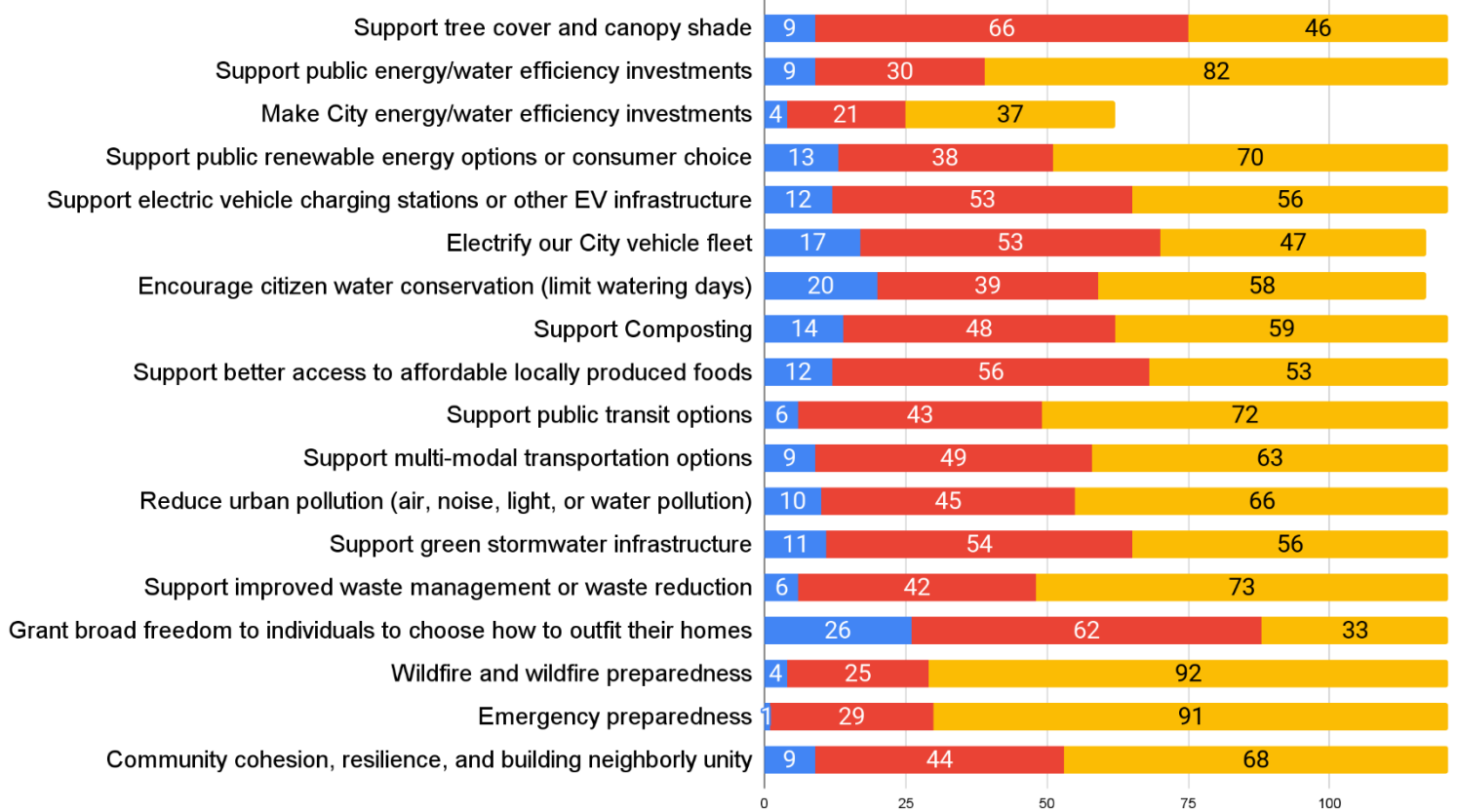
Average Respondent Response: On a scale from 1 to 5, 1 being no obstacles and 5 being insurmountable obstacles, what actions feel like they have the biggest obstacles for you personally, in addressing climate change impacts?



Question 11

What actions would you like to see White Salmon's City Government take to address climate change?

City should not do City should do City must do



Gross Emissions by Department		
Department	Total (MT CO ₂ e)	Percent of Total
General	73.48	4%
Fire	74.18	5%
Police	97.66	6%
Public Works	113.51	7%
Water	1,220.24	74%
Parks and Recreation	22.91	1%
Transportation	37.42	2%
Total	1,639.41	100%

Total Emissions by Department and Source (MT CO ₂ e)				
Department	Combustion	Electricity	Transportation	TOTAL
General	0.67	72.82	-	73.48
Fire	-	67.57	6.61	74.18
Police	-	41.63	56.04	97.66
Public Works	-	-	113.51	113.51
Water	-	1,220.24	-	1,220.24
Parks and Recreation	-	22.91	-	22.91
Transportation	-	37.42	-	37.42
Total	0.67	1,462.58	176.16	1,639.41