

# Climate Resiliency Element

## INTRODUCTION

### Why Is the Climate Resiliency Element Included?

In 2023, the Washington State Legislature passed [House Bill \(HB\) 1181](#), which amended the Growth Management Act (GMA) to require cities and counties to incorporate climate planning into their comprehensive plans. HB 1181 added a new climate change and resiliency element to the mandatory elements of the comprehensive plan found in [RCW 36.70A.070](#). The GMA now requires cities to use their comprehensive plan to build citywide resilience to natural hazards and extreme weather events that are exacerbated by climate change and reduce their contributions to greenhouse gas emissions that contribute to climate change.

Under the GMA, climate elements are required, at a minimum, to include goals and policies to help cities reduce greenhouse gas (GHG) emissions, enhance community resilience to climate change, and mitigate extreme weather events and natural hazards that may be exacerbated by climate change. Due to Lynden's size and location within Whatcom County, one of the largest and fastest growing counties in Washington State, the city is required to include both the Greenhouse Gas Emissions Reduction Sub-Element and the Climate Resilience Sub-Element.

The **GHG emissions reduction sub-element** must, at minimum, result in overall GHG emissions reductions generated by transportation and land use in the city and reductions in per capita vehicle miles traveled (VMT) without increasing GHG emissions or VMT elsewhere in the state, and prioritize GHG emissions reductions that benefit overburdened and vulnerable communities in the city ([RCW 36.70A.070\(9\)\(d\)](#)).

The **climate resilience sub-element** must, at minimum, address each relevant climate hazard a city may experience over the planning period, such as extreme heat, wildfire smoke, and flooding; identify, protect, and enhance natural areas and habitat vital for species migration; and strengthen community resilience with a focus on prioritizing vulnerable communities and climate justice ([RCW 36.70A.070\(9\)\(e\)](#)).

**Vulnerable populations** are groups that are more likely to be at higher risk for poor health outcomes in response to environmental harms, due to adverse economic factors such as unemployment, high housing and transportation costs relative to income, limited access to nutritious food and adequate health care, linguistic isolation, and other factors that negatively affect health outcomes and increase vulnerability to the effects of environmental harms, and sensitivity factors such as low birth weight and higher rates of hospitalization.

**Overburdened communities** are geographic areas where vulnerable populations face multiple, combined environmental harms and health impacts. In general, these groups are more likely to be exposed to climate risks and hazards or suffer from poor health without the means or security to recover and rebuild.



The Nooksack River experienced extensive flooding in November 2021.

Climate justice is a term used to acknowledge that climate change and extreme weather events and natural hazards can have disproportionately harmful social, economic, and public health impacts on low-income and disinvested populations. Due to these potential disproportionate impacts, the goals and policies in this element attempt to reduce impacts to vulnerable populations, where appropriate.

## Why is Climate Resilience Important for Lynden?

The strategies in this element help the City of Lynden be better suited to face natural hazard risks over the next 20 years. Community input from focus groups and a survey were used to develop goals and strategies that address existing issues of interest identified by the community such as preparing for flooding, stormwater management, the sustainability and longevity of agriculture and ag-related industries, water supply, and energy capacity.

Given the state requirements and Lynden-specific issues described above, the goals and policies in this Climate Resiliency Element are intended to help the City of Lynden address:

- Efforts to increase energy efficiency and capacity throughout the city to support future growth, energy security, cost savings, and economic development.
- Strategies to support Lynden's agricultural industry and infrastructure.
- Support for and coordination with local nonprofits and organizations that help provide crucial resources and services for vulnerable communities in the city.
- Emergency management protocols and coordination with local organizations and churches to help bolster existing community support during natural disasters or extreme weather events.
- Flooding events, such as the 2021 flood that impacted Lynden residents and infrastructure, have the potential to become more frequent and intense with changing climate conditions.
- Natural hazards and extreme weather events, focusing on those that have already begun to affect the city; namely, flooding, heat waves, and wildfire smoke.
- Efforts to increase and improve the tree canopy equitably throughout the city.

Addressing key issues facing Lynden residents such as these will not only help the city be able to avoid or withstand potentially devastating impacts of natural hazards and extreme weather events, but can also help the city improve air quality, increase tree cover and greenery, reduce

traffic congestion, improve the physical and mental health of residents, prevent crop losses and improve food security, reduce the amount of money spent on disaster recovery, and overall, maintain Lynden as a safe place for residents and visitors to live, work, and play. These co-benefits, among many others, are shown in the graphic below.

## POTENTIAL CO-BENEFITS OF PLANNING FOR CLIMATE RESILIENCY



## How Was This Element Developed?

The Climate Resiliency Element was developed utilizing state guidance, community priorities gathered from surveys and focus group discussions with residents, and feedback from city staff. The Washington State Department of Commerce has developed intermediate guidance to help cities create climate elements that are compliant with HB 1181 and tailored to their communities. This guidance was used throughout the development of this element to ensure compliance with GMA requirements.

To further enrich the contents of this element and tailor the goals and policies to meet the concerns and priorities of residents, consultant and city staff engaged with multiple stakeholder groups and communities in Lynden throughout the update process. As described in the Introduction, a city-wide survey was conducted throughout the summer of 2024.

Through the survey, several priorities for the climate element emerged, including flood management, wildfire smoke preparedness, preservation of open space and trees, energy infrastructure improvements, and emergency management and preparedness efforts that highlight and reinforce existing community networks and support systems.

Multiple stakeholder groups were also engaged through an Advisory Group and sector-specific focus group discussions that were held in the fall of 2024. A summary of the results of these focus group discussions, which included discussions with local business owners, farmers, and seniors, can be found in [Appendix X](#). Overall, discussions with the Advisory Group and the sector-specific focus groups identified the following priorities (in no particular order): electric grid resilience, local economic stability, support for agricultural industry, protection of vulnerable populations, flooding management, sustainable water supply, infrastructure and utility improvements, community collaboration and self-reliance, and maintaining a sense of community as the city grows. Feedback from these discussions with diverse communities in Lynden informed the priorities of the Climate Resiliency Element.

To identify the goals and policies that were included in this element, the consultant team performed a policy audit of the city's existing comprehensive plan (2017), the Lynden-specific portion of the Whatcom Hazard Mitigation Plan (2021), and the Shoreline Management Plan



A smoke-filled day in Lynden in 2020.

(2019). Existing policies that could help the city improve its resilience to climate-exacerbated hazards were identified to help determine any policy gaps for addressing climate resilience and the requirements of HB 1181. The results of this policy gaps analysis can be found in [Appendix X](#). Broadly speaking, policy gaps were primarily identified in the following areas: agriculture and food systems, zoning and development, buildings and energy, water resources and flooding and emergency response and community networks, among others. Policies were also drafted to complement the strategies in the Hazard Mitigation Plan, such as those related to infrastructure improvements; buildings and energy; water resources; stormwater management and flooding; emergency management; and health and climate hazards, among others.

The findings from the following reports have informed the development of the goals and policies of this element:

- Lynden Outreach Summary ([Appendix X](#))
- Environmental Justice Report ([Appendix X](#))
- Climate Policy Gaps Analysis ([Appendix X](#))
- Climate Impacts Memo ([Appendix X](#))

Following the policy gaps analysis, an Environmental Justice Report ([Appendix X](#)) and Climate Impacts Memo ([Appendix X](#)) were developed to identify vulnerable and overburdened communities and relevant climate impacts for the city, respectively. The Environmental Justice (EJ) Report highlights vulnerable populations the city should prioritize in its climate resilience planning and consider in planning efforts to ensure they are not disproportionately impacted. The EJ Report identifies the following vulnerable populations in Lynden:

- **Older populations**, who are particularly vulnerable to flooding.
- **Low-income earners, people of color, and those without a high school diploma**, who are concentrated in areas with lower life expectancy.
- **Those with language barriers**, which comprise a significant portion of the population and may prevent access to information and services.
- **Individuals with heart disease, cancer**; Lynden has a higher rate of these individuals compared to statewide averages, and **individuals with asthma**.
- **Outdoor workers**, primarily agricultural workers.

The goals and policies of this Climate Resiliency Element highlight some initial opportunities the city has to mitigate impacts on these communities.

Given the policy audit, feedback from residents and focus groups, and climate impact and environmental justice memos, goals and policies were drafted to address each relevant extreme weather event or natural hazard, residents' concerns, vulnerable populations, and city priorities to bolster Lynden's resilience and build upon the city's existing planning efforts to increase resilience.

# Climate Resilience Goals and Policies

## Ecosystems and Water Resources

**Goal CR-1. Ensure the protection and restoration of Lynden's freshwater streams (Nooksack River, Fishtrap Creek, Duffner Creek, and Pepin Creek) and their associated riparian habitat, wetlands, and floodplains to improve water quality and reduce and mitigate impacts from flooding and erosion.**

Policy CR-1.1

### STREAM PROTECTION.

Protect and restore riparian vegetation along Lynden's freshwater streams to reduce erosion, provide shade, and support other ecological functions that improve water quality, enhance aquatic habitat, and reduce flooding.

Policy CR-1.2

### ECOLOGICAL FUNCTION.

Ensure no net loss of ecosystem function in critical areas and strive for net ecological gain to enhance habitat and maximize the climate resilience benefits they provide.

### POTENTIAL IMPLEMENTATION ACTIONS:

#### POLICY CR-1.1

- Public property - The City will identify degraded riparian areas on public property, develop restoration plans for those areas, and seek funding or non-profit partnerships to complete the restoration of these lands.
- Private property - The City will work with private property owners to provide habitat restoration and streambank stabilization resources and seek out broad funding opportunities to assist property owners with these projects.

#### POLICY CR-1.2

- Public property - The City will identify key habitat refuge areas currently on public properties and develop stewardship plans for those areas that prioritizes ecological protection and restoration of those areas.



Policy CR-1.3 **AQUATIC HABITAT.** Increase aquatic habitat resilience to low summer flows by increasing water residence time, storing water on the landscape, conserving water, protecting groundwater, keeping waters cool, and protecting water quality.

Policy CR-1.4 **WATER QUALITY.** Protect and preserve water quality from drought, extreme heat, and other natural hazards exacerbated by climate change.

#### **POTENTIAL IMPLEMENTATION ACTIONS:**

##### **POLICY CR-1.3**

- Prioritize the expansion and enhancement of the hydrology, water storage, habitat value, and public access of the Nooksack River floodplain wetland areas that surround the wastewater treatment plant.
- Create stewardship plans for public parks or increase riparian planting on city properties.

#### **Goal CR-2. Increase water conservation and education efforts in the city.**

Policy CR-2.1 **WATER CONSERVATION.** Explore options for expanding Lynden's water conservation program, which encourages residents to irrigate their landscaping more sustainably during the summer months.

Policy CR-2.2 **RESOURCE MANAGEMENT.** Manage water resources sustainably in the face of regional shifts in precipitation and extreme weather events through smart irrigation, stormwater management, preventative maintenance, water conservation and wastewater reuse, plant selection, and landscape management.

## Stormwater Management and Flooding

### **Goal CR-3. Increase the city's stormwater management potential equitably to reduce flooding.**

Policy CR-3.1

**GREEN INFRASTRUCTURE.** Encourage the development of green infrastructure to increase stormwater management capacity and reduce flooding. Comply with Department of Ecology green infrastructure requirements.

Policy CR-3.2

**REGIONAL SOLUTIONS.** Explore the potential construction of a large stormwater facility or stormwater park that can also provide opportunities for recreation or habitat.

Policy CR-3.3

**INNOVATE.** Encourage the use of innovative stormwater management techniques that protect ground and surface water from contamination and pollution, help reduce flooding impacts and increase and stabilize Lynden's water supply during drier summer months.

Policy CR-3.4

**MAINTAIN AND ENHANCE.** Facilitate improvements to stormwater management facilities and overall capacity in the city.

Policy CR-3.5

**ENFORCE.** Ensure development complies with stormwater regulations such as those implemented to meet National Pollutant Discharge Elimination System (NPDES) Phase II permit requirements.

#### **POTENTIAL IMPLEMENTATION ACTIONS:**

##### **GOAL CR-3:**

- Develop a program to connect residents to local organizations or other resources to help mitigate flooding on residential properties.



Pepin Creek flowing directly adjacent to Double Ditch Road in Lynden.



## Extreme Heat

### Goal CR-4. Mitigate the impacts of extreme heat and heat waves on human health and city infrastructure.

Policy CR-4.1 **RESPOND.** Establish development regulations that incorporate best practices for reducing the effects of extreme heat, heat waves, and the urban heat island effect, prioritizing the warmest areas of the city.

The **Urban heat island effect** is where urban areas experience higher temperatures than their rural counterparts due to increased amount of asphalt, cement, and other surfaces that absorb heat more than natural landscapes like forests and water bodies.

Policy CR-4.2 **COORDINATE.** Collaborate with local organizations to provide resources or assistance to populations that are more vulnerable to extreme heat, such as agricultural and other outdoor workers, children under the age of five, adults over the age of 64, those with disabilities or pre-existing health conditions, and low-income households, who may not be able to afford air conditioning or obtain other means of relief from the heat.

#### POTENTIAL IMPLEMENTATION ACTIONS:

##### POLICY CR-4.1

- An urban tree program to enhance the city's tree canopy, provide shade, improve air quality and stormwater management.
- Develop revisions to parking lot design standards that incorporate more or landscaping areas and trees to provide shade relief to parking lots.

## Food Security and Local Agriculture

### Goal CR-5. Support the local agricultural economy's efforts to remain resilient to the impacts of extreme weather and other natural hazards.

Policy CR-5.1 **PROMOTE.** Provide support for events which highlight public awareness and access to the local agricultural economy including the Lynden Farmers Market, the Raspberry Festival, Farmers Day Parade, and the Northwest Washington Fair.

Policy CR-5.2 **COLLABORATE.** Support efforts of the local agricultural industry to adapt to changing climate conditions, extreme weather events, and potential natural hazards. Coordinate with local agriculture groups such as Whatcom Family Farmers and nearby Water

Improvement Districts to develop solutions related to flooding, stormwater management, and downstream impacts.

- Policy CR-5.3 **ACCESS.** Facilitate increased access, i.e., along Main Street, Double Ditch and Depot Roads, for local farmers through reliable transportation corridors that support the transport of farm equipment and farm products, reduce congestion, and decrease vehicle emissions.

## Energy Efficiency and Resilience

**Goal CR-6. Ensure that energy infrastructure, including generation and transmission, is able to accommodate renewable energy opportunities and to withstand and recover quickly from extreme weather events and natural hazards.**

- Policy CR-6.1 **INOVATE.** Explore the potential for alternative and/or renewable sources of energy generation in the city to increase energy security including the potential for generating energy from the process waste of agricultural uses to take advantage of alternative energy sources within the city, such as through digesters or other waste-to-energy systems.
- Policy CR-6.2 **COLLABORATE.** Partner with PSE to effectively meet rapidly increasing electrical demand due to projected population growth and additional heating and cooling needs during extreme weather events.
- Policy CR-6.3 **UPDATE.** Support PSE as the city and region work to achieve a Clean Energy Transition by considering the adoption of zoning and development codes that support the siting of alternative methods of energy generation such as solar, wind, or the use of heat pumps.

## Emergency Management, Preparedness, and Community Networks

**Goal CR-7. Enhance emergency preparedness, response, and recovery efforts to mitigate risks and impacts associated with extreme weather events and natural hazards.**

- Policy CR-7.1 **PROTECT.** Explore the establishment of a community-serving facility, sometimes referred to as a resilience hub or a heating and cooling center, that is designed to support residents, coordinate communication, and distribute resources while providing a safe place that provides relief from hazardous air quality and extreme cold and hot temperatures. Identify organizations that would partner with the city to sustain such a resource.
- Policy CR-7.2 **ASSEMBLE.** Pursue the development of an Emergency Operations Center (EOC) to assist residents during natural hazards or extreme weather events.
- Policy CR-7.3 **INFORM.** Create evacuation plans, informational brochures, or other outreach materials to help residents plan and practice actions that make evacuation quicker and safer. Ensure that information and outreach materials are available in Spanish and other Indo-European languages to reach diverse populations.
- Policy CR-7.4 **PLAN.** Map transportation or other critical infrastructure that is vulnerable to repeated floods, landslides, dangerous winter conditions, or other natural hazards, and designate alternative travel routes for critical transportation corridors when roads must be closed, such as Double Ditch Road or Hannegan Road.

**Resilience hubs** are meant to be well-trusted, well-utilized community facilities that serve the needs of communities more broadly than temporary emergency shelters. They are meant to be designed and managed by the community to enhance social cohesion by providing residents a place to gather and access information and services. They may provide cool, filtered air during wildfire smoke events, or a place to warm up during extreme cold weather events. They may also provide residents a place to receive basic medical care, charge electronic devices, and access the internet. To maintain power during outages, resilience hubs could be outfitted with a solar and back-up battery storage system to serve as an island from the conventional grid and allow continuity of services.

**Goal CR-8. Increase cooperation and partnership with other jurisdictions, nonprofits, and organizations to strengthen post-disaster recovery networks.**

- Policy CR-8.1 **RALLY.** Participate in the coordination between the City, business owners, local churches, and nonprofits or other organizations that

support residents during disaster recovery, such as Healthy Futures, Peace Health, and local churches.

Policy CR-8.2 **COORDINATE.** Ensure that the Lynden portion of the Whatcom County Natural Hazards Management Plan responds to the impacts of extreme weather events and natural hazards exacerbated by regional changes in climate conditions and identifies roles and responsibilities to support a sustainable economic recovery after a disaster. Support Whatcom County efforts to collect data specific to the Natural Hazard Mitigation Plan and integrate a risk assessment into the plan.

Policy CR-8.3 **BUDGET.** Factor the staffing and fiscal impacts of extreme weather events and natural hazards into the planning of operations and coordination of preparedness, response, and recovery activities among first responders and partners, including public health, law enforcement, fire, school, and emergency medical services personnel.

## Economic Development

### **Goal CR-9. Support the local economy in efforts to increase its resilience to natural hazards and extreme weather events.**

Policy CR-9.1 **PROTECT.** Consider the needs of local businesses when updating Hazard Mitigation Plan and related preparedness plans to minimize economic losses during natural disasters or extreme weather events. Support local businesses' efforts to bolster disaster preparedness and maintain continuity of operations.

Health and Climate Hazards

### **Goal CR-10. Protect community health and well-being from the impacts of climate-exacerbated natural hazards and extreme weather events, prioritizing overburdened and vulnerable residents such as those with preexisting health conditions, children and the elderly, and low-income households to ensure they do not bear disproportionate health impacts.**

Policy CR-10.1 **ASSESS.** Promote the continued municipal use of health impact assessments and other tools to address the potential impacts of health, equity, and climate change on vulnerable communities.

Policy CR-10.2 **CONNECT.** Ensure residents are aware of resources and programs within the city that provide support and mental health resources during and after natural disasters and extreme weather events.

Policy CR-10.3 **ALERT.** Maintain and expand the city's notification alert system to include updates which could reduce exposures to flooding risks, hazardous wildfire smoke and particulate matter.

Policy CR-10.4 **COORDINATE.** Collaborate with the city's fire department, code enforcement division, and Whatcom County Fire Districts to assess the wildfire risks in and around the city. Develop and implement a wildfire risk and wildfire smoke resilience strategy.

Policy CR-10.5 **EDUCATE.** Work with local residents, emergency management officials, regional clean air agency officials, and other stakeholders like Peace Health and Healthy Futures to develop and seasonally distribute information and resources to residents to educate residents on how to best address risks associated with wildfire smoke, prioritizing vulnerable populations, to mitigate public health impacts from wildfire and wildfire smoke.

The goals and policies in this section strongly relate to those found in the **Health and Wellness Element** of this Comprehensive Plan. While there are many overlapping issues between health and wellbeing and climate resilience, the goals and policies addressing the city's public health response to climate-exacerbated hazards are outlined below.

Please refer to the Health and Wellness Element for additional City goals related to improving the quality of life for all residents in Lynden. These policies were also drafted to address the findings of the Environmental Justice Report ([Appendix X](#)).



A smoke-filled day in Whatcom County in 2017.



# Greenhouse Gas Reduction Goals and Policies

## Green Spaces and Tree Cover

### **Goal CR-11. Increase the quality and quantity of tree cover in the City.**

- Policy CR-11.1      **GROW.** Increase tree canopy cover by enforcing street tree and parking lot landscape requirements with the goal of reducing heat islands, improving air quality, and boosting carbon sequestration while prioritizing overburdened or vulnerable communities.
- Policy CR-11.2      **PLAN.** Create an Urban Forestry Plan which seeks to protect existing tree cover, strives to increase tree cover especially in the hottest parts of the city, and is written to include consideration of potential extreme weather events and natural hazards.



## Infrastructure Improvements

### **Goal CR-12. Facilitate the expansion of electric vehicle infrastructure, including the comprehensive location of charging stations.**

- Policy CR-12.1      **PARTNER.** Collaborate with interested developers and business owners who may partner with the city to establish electric vehicle charging locations in public rights-of-way or public parking facilities.

Policy CR-12.2	<b>IMPLEMENT.</b> Require the construction of electric vehicle charging locations in association with new development per building code requirements and facilitate those which could be located in public rights-of-way.
Policy CR-12.3	<b>EXPAND.</b> Develop a strategy to build electric vehicle charging infrastructure at public facilities like City Hall, park facilities, and the Lynden Library.
Policy CR-12.4	<b>ADVOCATE.</b> Coordinate with other jurisdictions and service providers to advocate for the improvement and maintenance of infrastructure to ensure the city's infrastructure is well-positioned to withstand potential natural disasters.

#### POTENTIAL IMPLEMENTATION ACTIONS:

##### GOAL CR-14

- Encourage the use of solar and other alternative forms of energy through incentives and updated development regulations.

### **Goal CR-13. Protect the city's infrastructure from extreme weather events and natural hazards.**

Policy CR-13.1	<b>PLAN.</b> Continue to identify and evaluate infrastructure and city assets that are vulnerable to extreme weather events and natural hazards to prioritize them for maintenance, upgrades, or replacement. This includes maintenance of the city's flood plan and Hazard Mitigation Plan.
Policy CR-13.2	<b>COORDINATE.</b> Work with utility providers to improve the safety and reliability of infrastructure vulnerable to extreme weather events and natural hazards, such as power lines, to improve the reliability of utility systems during storms.
Policy CR-13.3	<b>REDUCE DEMAND.</b> Partner with PSE to promote and support programs designed to decrease load on the electric grid during times of peak use.

## Buildings and Energy Efficiency

**Goal CR-14. Prioritize energy efficiency when reviewing the continued scope of use, adaptive reuse, or demolition of public-use buildings when feasible to reduce emissions and/or resources. Ensure that new buildings are designed and built sustainably to reduce environmental impacts and increase energy efficiency where feasible.**

- Policy CR-14.1      **INOVATE.** Retrofit publicly owned buildings with solar panels, electric heat pumps, and energy efficient lighting and equipment, where feasible.
- Policy CR-14.2      **REVIEW.** Conduct an audit of publicly owned buildings in the city to identify whether it is more efficient and seismically safe to reuse, retrofit, or replace them.
- Policy CR-14.3      **COLLABORATE.** Partner with PSE and pursue grant opportunities to promote local investments and customer enrollment in clean energy projects and programs to increase energy efficiency.

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