Port Angeles

CLIMATE RESILIENCY PLAN

June 2022

Welcome

On behalf of the City Council, I am proud to introduce the City of Port Angeles' Climate Resiliency Plan. Port Angeles residents, elected and appointed officials, and staff place a priority on sustainable land use and building practices, resilience of our natural systems, and a focus on reducing the City's carbon footprint to measure our independence, self-reliance, and quality of life.

This is a community-initiated plan that began when Olympic Climate Action requested inclusion of climate action-related goals and policies during the 2016 Comprehensive Plan Periodic Update. This direction became a catalyst for City Council to add climate action to our 2019-2020 Strategic Plan. In November 2019, the recently formed community Climate Action Planning Group (CAPG) provided the Council with recommendations that laid the path for the plan in front of you. This path included one of the most robust public participation and engagement processes that the City of Port Angeles has ever undertaken, which is especially remarkable given a necessary transition to virtual engagement during the COVID-19 pandemic. The CAPG has remained a sounding board for the plan's various elements and iterations and the community's input has provided invaluable guidance that has shaped and prioritized the vision, goals, policies, and actions within the plan.

This plan is the first of its kind for Port Angeles and will assist us in directing measurable action to support system-wide waste and energy/water use reductions, sustainable land use, transportation and economic development, and social and environmental health and equity that celebrates our community's diversity. The plan shifts the City's focus by recognizing the importance of contributing to sustainability through public projects that connect trails and transit, commercial development that provides jobs and services to neighborhoods, and innovative Low Impact Development stormwater and building practices. If the community is to make a significant difference in our impact on local and global systems, however, it will be because of our individual, household, and business choices.

Resilience is not exclusively about self-reliance. This plan recognizes the need for local and regional partnerships that will strengthen and support sustainability across the North Olympic Peninsula. These connections will empower our region's adaptation to sea level rise, natural disasters such as drought, flooding and wildfire, and global supply chain unpredictability.

We want to thank all of you who contributed to the formation and success of this planning process. This Climate Resiliency Plan provides the city with direction to best prepare for radical changes so that future generations will be able to enjoy the same quality of life, natural beauty, and clean air and water that we do today.

Kate Dexter, Mayor
City of Port Angeles

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Thank You

The City of Port Angeles is grateful to the following individuals and organizations for their contributions to develop the Port Angeles Climate Resiliency Plan.

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* Denotes participation in the Climate Change Subcommittee Group

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* Denotes participation in the Climate Action Planning Group

Tribal Government

Lower Elwha Klallam Tribe

Other Stakeholders & Community Groups

Black Ball Ferry Line
Clallam County
Clallam County Marine Resources Committee
Clallam PUD
Clallam Transit
North Olympic Land Trust
Olympic Climate Action
Olympic Coast National Marine Sanctuary
Olympic National Park & Forest
Port of Port Angeles
Strait Ecosystem Recovery Network

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Our Resiliency Plan, At a Glance

The Port Angeles community has long prided itself on embracing a self-sufficient way of life. To continue to rely on ourselves and protect our residents, economy, and infrastructure, we must now plan for our current and future resiliency.

With the development and implementation of the Port Angeles Climate Resiliency Plan (Resiliency Plan or Plan), the City of Port Angeles (the City) and its residents will seize the opportunity to strengthen our communities for ourselves today and for future generations. Guided by principles of social, economic, and environmental sustainability, the Resiliency Plan will move us toward our collective vision of community resilience and carbon neutrality by preparing and reinforcing our energy grid, strengthening our local economy, creating a clean and accessible transportation system, and ensuring a healthy environment for all.

The Resiliency Plan was created to leverage the momentum of the 2016 Comprehensive Plan Update, which included myriad climate- and resilience-related goals and policies. The Resiliency Plan is designed to **build upon existing sustainability programs and efforts and the City will adopt the Plan as part of the 2022 Comprehensive Plan Amendment**. The Plan also increases opportunities for synergies across the region by complementing the work of our North Olympic Peninsula neighbors and partners. The City will lead coordination and implementation for most of the actions proposed in this Plan. To ensure its success, we will assess capacity and funding needs starting in 2022.

We developed the Resiliency Plan in partnership with the **community Climate Action Planning Group**, an ad-hoc volunteer group who have provided recommendations to increase resiliency in Port Angeles since 2019 and have strongly shaped the vision, priorities, strategies, and actions in the Plan. We also engaged 43 members of the broader public and over a dozen City staff to further develop and refine the work of the CAPG and City team. The word cloud illustrates community responses around their **vision for Port Angeles in 2030**.

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Intended to serve as a strategic roadmap to achieve our vision for Port Angeles, the Plan has two overall objectives:

- **Build community resilience** and help better prepare us to face climate impacts and natural disasters.
- **Reduce greenhouse gas emissions** from local sectors and activities.

We will prioritize near- and mid-term actions that help us better prepare for climate risks now and in the future, put us on a pathway to carbon neutrality by 2030, and provide a foundation for long-range sustainability policy. To that end, the Plan is laid out across five key sectors that both **reflect community priorities** and address the largest sources of community greenhouse gas emissions, as shown on the following page.

KEY TERMS

Resilience is the ability to withstand or bounce back from stressors such as climate change, natural disasters, and health crises. Resilience-building actions address the impacts of climate change.

Greenhouse gases that trap heat in the atmosphere and cause climate change, including carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), and fluorinated gases. Actions to reduce greenhouse gas emissions address the cause of climate change.

Carbon neutrality means that greenhouse gases released to the atmosphere are balanced by removing or storing an equivalent amount of carbon. The world's scientists have concluded we must collectively reach carbon neutrality by mid-century to avoid the worst impacts of climate change. The City will prioritize emissions reduction to reach carbon neutrality.

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How Will We Get There?

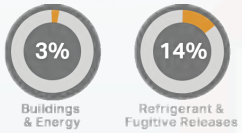
Through these actions and others, we will build resilience across our community.

BUILDINGS & ENERGY

34

Invest in green, efficient buildings. We will rely more on renewable energy, efficient electric appliances, & investments in energy storage to save energy and money, improve indoor air quality, & reduce disruptions from extreme events like flooding & wildfires.

PERCENT OF TOTAL EMISSIONS

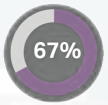


TRANSPORTATION

29

Improve public transit, active transportation, and zero-emission vehicle access. We want to make transportation safer, cleaner, & more accessible. This will help us reduce emissions, stay active, clean the air, & decrease traffic.

PERCENT OF TOTAL EMISSIONS



ECOSYSTEM HEALTH

23

Enhance water and wastewater operations. We will capture, reuse, and store water while enhancing stormwater infrastructure to sustain our natural lands & be more resilient to impacts from sea level rise & reduced snowpack.

PERCENT OF TOTAL EMISSIONS

CONSUMPTION & WASTE

38

Reduce waste and recover food. By getting food, goods, & services locally and regionally, our community can continue to meet our daily needs & maintain a constant supply of goods in the face of climate change.

PERCENT OF TOTAL EMISSIONS

COMMUNITY RESILIENCE & WELLBEING

16

Create resilient shorelines and healthy ecosystems. Green solutions & resilient ecosystems absorb carbon from the atmosphere, cool our city, restore local ecosystems, & create stronger shorelines.

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Why We're Taking Action

A critical goal of the Resiliency Plan is to bolster our community's self-reliance at the local scale and protect our natural resources, while lowering our cost of living. Our Resiliency Plan considers the overall quality of life and health of the community holistically, while promoting tangible benefits.

This Plan is an opportunity for the City to join the community in leading local climate action. In partnership with the community, we've developed a **cohesive, forward-looking, science-based Plan** that draws upon lessons learned from previous and ongoing sustainability efforts, including the work of the Climate Action Planning Group, and helps Port Angeles meet or exceed state and federal standards.[1]

However, building resilience to climate change impacts and doing our part to reduce local greenhouse emissions will take more than just local and regional planning and policy.

While the City will need to build capacity and lead implementation of both the City and community actions in this Plan, our success will depend on continued **collaboration and buy-in from all members of our community**—residents, workers, and business owners alike.

At right are a few sustainable practices that **residents, workers, and business owners** can adopt today to do their part to achieve our collective vision for a resilient and self-reliant Port Angeles.

WHAT YOU CAN DO

- Use public transportation, walk, and bike more
- Turn off appliances and electronics when not in use, or switch to energy-efficient appliances
- Reduce waste, reuse materials, and recycle when available
- Install water-saving fixtures to sinks and showers
- Start a compost pile
- Support our local businesses

Benefits of Action

Implementing the strategies and actions in this Plan will provide local green jobs, support affordable housing and fair development, improve public transit and walkability, prioritize renewable energy and long-term energy cost savings, bolster public health and emergency management services, and support healthy natural systems. Implementation will also avoid damages to the City and community from greenhouse gas emissions (this is known as the social cost of carbon; see Our Carbon Footprint for more information).

1 Key state and federal standards include federal fuel efficiency standards and several state policies: the Climate Commitment Act, which places an economy-wide cap on carbon, requires a 45% reduction in emissions by 2030, and requires a 95% reduction in emissions and net-zero by 2050 (consistent with best available science); the Clean Energy Transition Act (CETA), which requires Washington's electric utilities to be 100% carbon-free by 2045; the Clean Buildings Performance Standard, which requires large commercial and multi-family buildings to reduce their energy use intensity 15% and provide EV charging capability on-site at new buildings; the state building code, which requires a 70% reduction in annual net energy consumption for new construction; the Clean Fuel Standard, which requires a 20% reduction in the carbon intensity of fuels by 2038; and HB 1287, requiring EV charging capability for new single-family construction by 2024.

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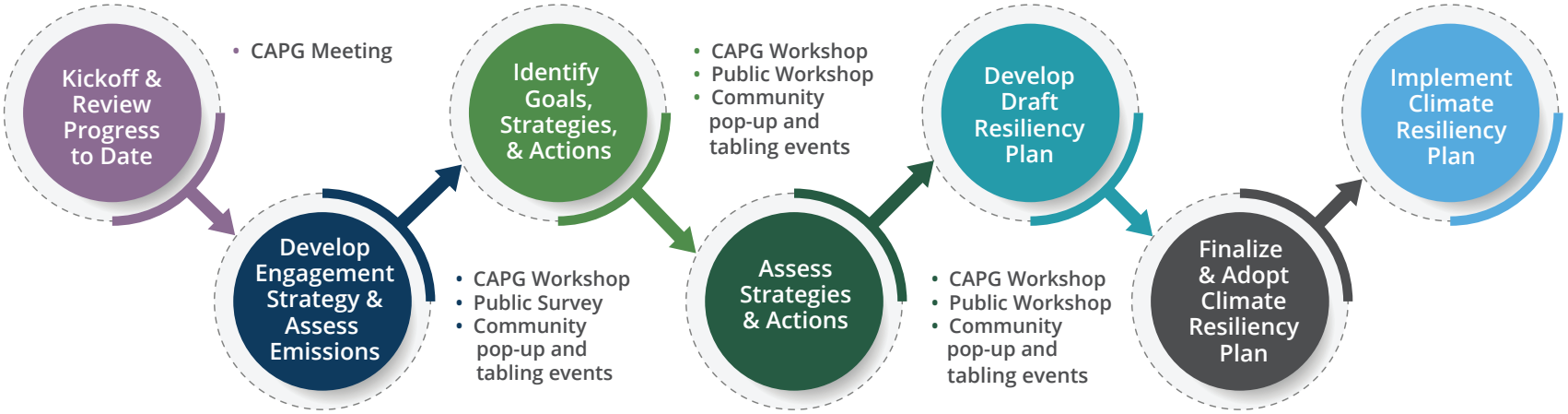
Plan Development Process

Building on the Climate Action Planning Group's prior work and recommendations, we sought to develop a plan that prioritizes ambitious resiliency actions that prepare the community and City for climate change impacts like extreme heat, sea level rise, and increased flooding as well as actions that reduce Port Angeles' greenhouse gas emissions. To identify data-driven goals, strategies, and actions, we drew on best available science and greenhouse gas inventory results. We also worked collaboratively with the Climate Action Planning Group to create an equitable and inclusive community engagement process that offered multiple opportunities for our community, the Planning Commission, and City Council to provide input at each step of plan development.

Our multi-step plan development approach (depicted below) resulted in a Plan that **reflects the unique priorities and values of our community, prioritizes tangible and impactful resilience actions, and increases the community and stakeholder buy-in.**

Planning Timeline: March 2021 to June 2022



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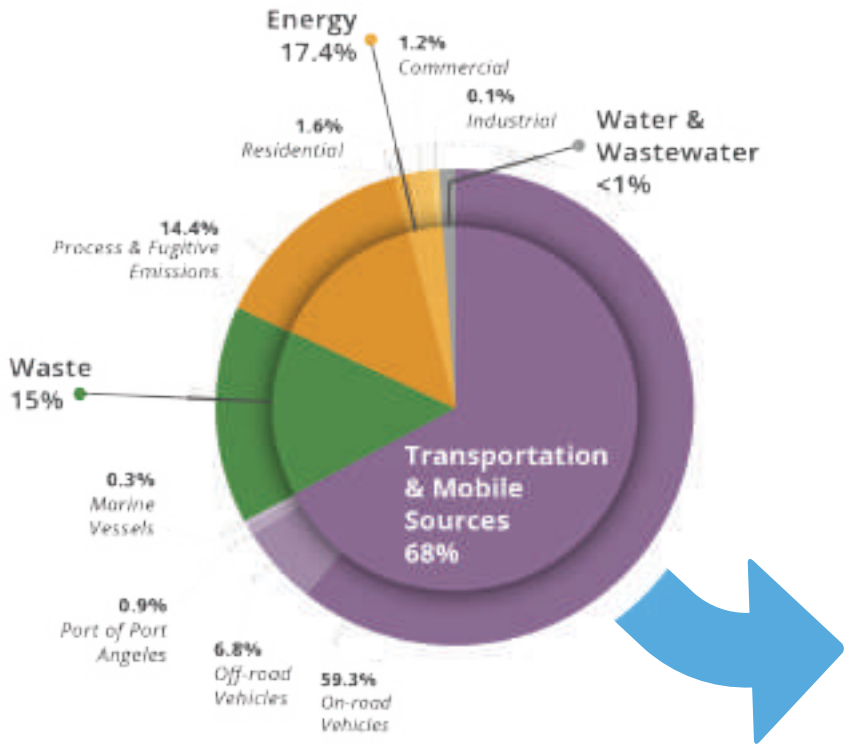
Our Carbon Footprint

When we burn fossil fuels for transportation and energy, use refrigerators and air conditioners, and dispose solid waste that then decomposes, we add greenhouse gases to our atmosphere. These gases warm the planet as they trap heat in our atmosphere, resulting in measurable shifts in global and local climate patterns.

The chart presents Port Angeles' communitywide greenhouse gas emissions in 2019, with transportation accounting for the largest portion of emissions.



Communitywide Emissions

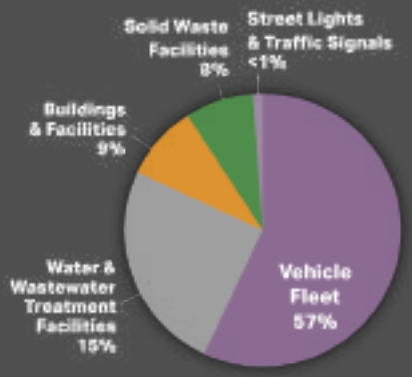
In 2019, the City of Port Angeles' residents, businesses, employees, and visitors produced:

132,597
Metric Tons of CO_2 equivalent ($MTCO_2e$)

OR

Approximately 6.7 $MTCO_2e$ per person, almost 50% less than the average Washington State resident (~13.1 $MTCO_2e$)

Achieving carbon neutrality by 2030 would avoid an estimated **$11.9 billion in social costs**, or approximately **$589 per person**.[2]



City Operations

At 1,581 $MTCO_2e$, City operations produced just 1% of communitywide emissions. However, City leadership in emissions reduction—and the capacity to implement resiliency actions—helps drive support for communitywide action. The chart at left shows the largest sources of emissions from municipal operations by sector.

[2] Calculated using the Washington Utilities & Transportation Commission adjusted social cost of carbon dioxide (in 2020 dollars per metric ton) for 2030.

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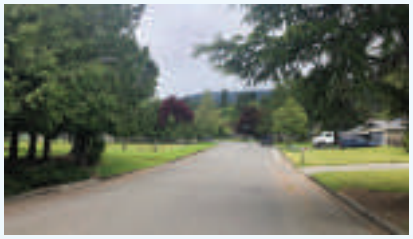
KEY VULNERABILITIES

Industrial waterline west of Ediz Hook

Winter storms have long placed coastal infrastructure at risk (left). Over time, winter storms and bluff erosion have once again exposed the industrial waterline (right). More frequent, severe storms are expected to exacerbate existing risks to coastal infrastructure such as homes, roads, trails, and other structures, like this pipeline.



Canyon Edge Drive

Canyon Edge Drive is wide and flat (left), and can flood quickly during the heavy rains that are becoming more common with climate change. Here, an atmospheric river isolated homes and flooded yards in December 2020 (right),

Flooding outside Shore Aquatic Center

Heavy rain events, like this storm in December 2020, are becoming more common and flooding areas of downtown.

Across all sectors, we view our carbon footprint as a new metric to measure community resiliency.

A smaller footprint will indicate an increased ability to provide basic goods, services, and an overall high quality of life to the Port Angeles community and the ecosystems on which the community depends, even as the climate changes and other stressors become more visible. A larger footprint will make it harder to provide those same goods and services and sustain an overall high quality of life.

Port Angeles communities and the broader North Olympic Peninsula are increasingly experiencing the economic, health, and ecosystem impacts of sea-level rise, declining snowpack, prolonged heatwaves, and destructive flooding events. With 26 miles of marine coastline and 17 miles of streams, we are particularly vulnerable to the combined impacts of rising sea level, storm surge, and coastal erosion, which threaten homes, businesses, roads and other critical infrastructure, and critical habitat for local species.

To ensure Port Angeles can effectively prepare for and bounce back from these climate impacts, we intentionally focus the Resiliency Plan on pursuing climate resilience opportunities that the community identified as high priorities: Community Resilience and Wellbeing, Ecosystem Health, and Transportation. At the same time, the Plan identifies actions that reduce emissions and build resilience across all sectors.

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Our Resiliency Solutions

The strategies and actions in this Plan were developed and refined iteratively over the course of the Plan development process. We identified an initial action list using existing City plans and comparable regional plans, previous work from the Climate Action Planning Group, emerging best practices on climate action, and community feedback. Of the approximately 70 initial actions, we evaluated 40 actions using a qualitative multi-criteria analysis —a scoring system which ranks actions against a set of evaluation criteria (presented in the table below). The Climate Action Planning Group and the City carefully selected and vetted the criteria and their weights to align with community priorities around building resiliency.

Multi-Criteria Analysis Approach

The multi-criteria analysis process was designed to assess a representative set of priority actions as well as actions that may be controversial or need additional refinement. This means that some of the most promising actions were excluded from the multi-criteria analysis because we were confident they would be included in the Plan. It also means that less promising actions (e.g., less impactful, more controversial) were included in the multi-criteria analysis to gather more data on whether they were appropriate for Port Angeles to pursue. Therefore, whether or not an action was evaluated with the multi-criteria analysis is not an indicator of its overall level of priority, impact, or importance; all actions in the Plan are recommended for implementation.

We used a three-step process to complete the multi-criteria analysis:

1 Determine criteria, criteria definitions, and criteria weights	2 Conduct analysis and quality control	3 Determine priority "short list" of actions
Based on professional experience and City and community priorities, the project team proposed criteria and criteria definitions to evaluate the benefits and costs of proposed actions. The Climate Action Planning Group and the City reviewed and approved the criteria and definitions, with changes to clarify how actions would be evaluated. The Climate Action Planning Group also completed a survey to determine criteria weights; City staff reviewed the proposed weights and the project team made final adjustments to reflect community and City values and priorities through the criteria weights.	Two project team evaluators independently reviewed and scored criteria for the same 25 actions, a third evaluator reviewed and scored another 15 actions, and City staff reviewed and scored three additional actions using a 1 (low) to 5 (high) scale. Each evaluator documented a brief rationale for each score based on clear criteria definitions and professional judgement drawing from available literature, peer city case studies, knowledge of City context, engagement results, and individual expertise and experience. A fourth evaluator from the project team mediated a review session to address any discrepancies in scoring between the independent evaluations to arrive at a consensus score.	We used the multi-criteria analysis results, as well as input from the Climate Action Planning Group and a public workshop, to determine which actions (of the total list of 70 actions) to include in the Plan. In total, 55 actions were recommended and are included in this Plan. The City will develop a separate Implementation Plan to determine the implementation timeline, funding mechanisms, responsible parties, and key partners.

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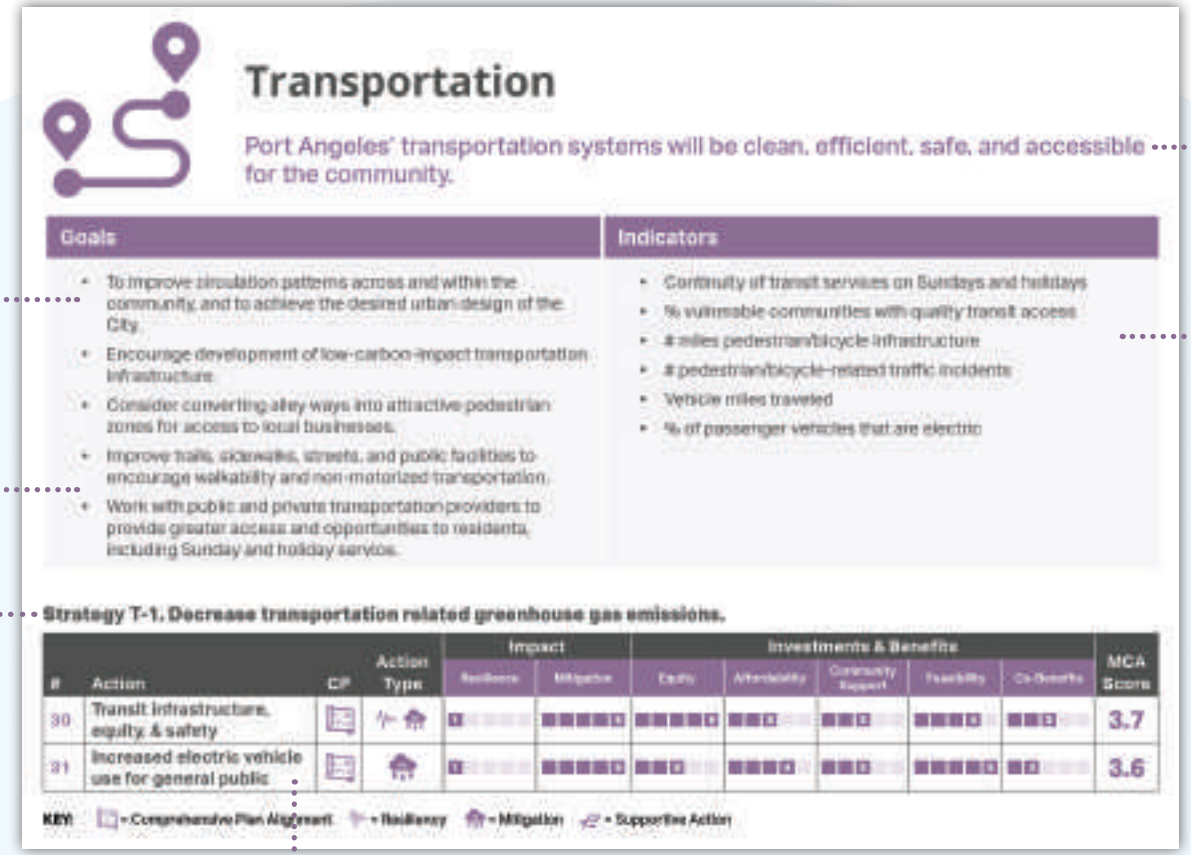
How to Read the Strategies and Actions



Transportation

Port Angeles' transportation systems will be clean, efficient, safe, and accessible for the community.

Goals	Indicators
• To improve circulation patterns across and within the community, and to achieve the desired urban design of the City. • Encourage development of low-carbon-impact transportation infrastructure. • Consider converting alley ways into attractive pedestrian zones for access to local businesses. • Improve trails, sidewalks, streets, and public facilities to encourage walkability and non-motorized transportation. • Work with public and private transportation providers to provide greater access and opportunities to residents, including Sunday and holiday service.	• Continuity of transit services on Sundays and holidays • % vulnerable communities with quality transit access • # miles pedestrian/bicycle infrastructure • # pedestrian/bicycle-related traffic incidents • Vehicle miles traveled • % of passenger vehicles that are electric

Strategy T-1. Decrease transportation related greenhouse gas emissions.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
30	Transit infrastructure, equity & safety										3.7
31	Increased electric vehicle use for general public										3.6

KEY: = Comprehensive Plan Alignment = Resiliency = Mitigation = Supportive Action

City Goals:
Interim and final targets to track City progress

Community Goals:
Interim and final targets to track community progress

Strategy Name:
The key ways the City and community will work toward the Overall Goal

Action(s):
How the City and community will work toward the Overall Goal and Strategy

Overall Goal:
What the focus area is working toward.

Indicators:
What will be measured to track progress

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Multi-Criteria Analysis Results Reporting

We use the following system to report the results of the multi-criteria analysis, categorize actions that we did not evaluate with the multi-criteria analysis, and indicate which actions to consider integrating in the next Comprehensive Plan update.

Criteria	Weight	Definition
	25%	**Impact**: The scope and likelihood that the action will reduce greenhouse gas emissions or enhance resiliency.
	20%	**Equity**: How the action impacts vulnerability across different populations and addresses historitc inequalities; how fairly benefits and costs are distributed across the community.
	20%	**Affordability**: The affordability for the community and City; the costs of inaction.
	15%	**Feasibility**: Regulatory, political, or technological constraints related to action implementation as well as the City's level of control over implementation.
	10%	**Community Support**: Stakeholder, partner, and resident support.
	10%	**Co-benefits**: Secondary support for public health, green economy, and healthy natural systems.

Action Performance

1	= low	2	= low/medium	3	= medium	4	= medium/high	5	= high

Categorization of Actions

	Strong resilience-building action		Strong greenhouse gas emissions reduction action		Supportive action that helps ensure success of other actions and/or has low resilience-building or emissions reductions

Comprehensive Plan Alignment

Consider for integration in the Comprehensive Plan (look for CP and this icon)

Community Resilience and Wellbeing

Port Angeles' communities will be better prepared to adapt and respond to climate change impacts.

Goals	Indicators

• Ensure that every Port Angeles resident has a safe and affordable place to live.
• Prioritize business support through enhancement of our commercial districts:
  • Adopt and identify city actions to make downtown walkable, clean, safe, and vibrant.
  • Prioritize multiple commercial centers while maintaining the multimodal needs of people and commerce.
• Build capacity of the City to better meet the community's needs, invest in improvements, focus on improving economic outcomes, and maintain what we have.
• Recover from the COVID-19 pandemic in a way that emphasizes partnerships, innovation, and growth as tools to meet the community's needs.
• Prioritize high-performing relationships and partnerships so that the entire city will better achieve these goals while increasing trust and cohesion for City Council, stakeholders, and the broader community.
	• Average housing and utility cost
	• Residents are more financially secure
	• Established land use plan and policies to meet housing needs for all demographics over next 20 years.
	• % of population that can be accommodated in community safety hubs or other disaster relief centers
	• Regional focus on success of local business.
	• Infrastructure and policies that allow for multiple commercial centers to succeed.
	• Air quality
	• Drinking water quality
	• # of Community Paramedic contacts that have successful referral to services
	• # of REdisCOVERY contacts that have successful referral to services
	• Stabilize revenue.
	• Capital facilities backlog reduced.
	• We have moved from planning to action.
	• We are all focused on (achieving) the plan.
	• Partners (i.e. business, nonprofit, tribal, advisory committees, residents, other governments) are at the table.
	• We move at the speed of trust.
	• Everyone is focused on strong relationships and partnerships.
	• Community sees Port Angeles as a respectful team player.

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Strategy CRW-1. Increase community capacity to respond to future climate change.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
1	City price on carbon	✓		4	2	2	3	2	4	3	2.8
2	Local food security	✓	✓	4	2	4	3	5	4	3	3.4
3	County-City coordination		✓	(not evaluated with multi-criteria analysis)							N/A
4	Climate migration preparation	✓	✓	5	1	4	5	3	4	3	3.8
5	Water supply monitoring & enhancement	✓	✓	4	1	5	3	4	4	3	3.5
6	Sea level rise vulnerability assessment of City assets		✓	5	1	3	4	4	5	3	3.5
7	Community Rating System participation		✓	(not evaluated with multi-criteria analysis)							N/A
8	City asset vulnerability tool		✓	3	1	4	4	4	5	2	3.3
9	Comprehensive climate outreach & education		✓	4	1	5	4	3	4	3	3.6
10	Comprehensive Plan priorities	✓	✓	(not evaluated with multi-criteria analysis)							N/A
11	Housing Action Plan implementation	✓	✓	5	1	5	4	5	4	4	4.0
12	Hazard Mitigation Plan implementation		✓	3	1	4	3	4	4	4	3.3

KEY: ✓ = Comprehensive Plan Alignment ✓ = Resiliency ✓ = Mitigation ✓ = Supportive Action

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Strategy CRW-2. Prepare Port Angeles for future extreme events.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
13	Wildland urban interface			3	1	3	4	3	5	3	3.4
14	Climate resilience & emergency planning			3	1	4	5	4	5	3	3.7

KEY:  = Comprehensive Plan Alignment  = Resiliency  = Mitigation  = Supportive Action

Strategy CRW-1. Increase community capacity to respond to future climate change.

1. City price on carbon

MCA 2.8

Assess the role of carbon pricing in driving equity and resilience outcomes. Build explicit price of carbon in City procurement decisions.

2. Local food security

MCA 3.4

Make Port Angeles food secure by promoting sustainable agriculture and multiple sources for food procurement. This may include:

- Partner with North Olympic Development Council to designate funding to promote and establish urban sustainable agriculture/food forests.
- Encourage partnerships between local farms/farmers and residents to establish local food production projects.
- Work with the Community and Economic Development Department and Engineering Department to develop policies that foster agreement and resource availability systems for allowing gardening for food, habitat, or both in the right-of-way (e.g., planting strips) and explore irrigation incentives.
- Leverage existing zoning regulations that encourage land use overlays for food production.
- Explore the feasibility of water utility pricing incentives and grey water to conserve and reuse water.

3. County-City coordination

MCA N/A

Coordinate and partner with Clallam County, Tribal partners, and Olympic Medical Center to implement regional climate resilience policies.
Review the County-Wide Planning Process agreement for its climate preparedness.

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4. Climate migration preparation

MCA 3.8

Assess climate migration impacts with forecasting every 5 years. Integrate those findings into the Comprehensive Plan, infrastructure plans, revenue and expense forecasting, and housing assessments.

5. Water supply monitoring & enhancement

MCA 3.5

Work with county- and state-level partners to identify monitoring needs and enhance water supply monitoring (e.g., improve forecasting for future water supply and demand under climate change, study ways to enhance water storage and groundwater aquifer recharge in the city). Develop and implement a local groundwater strategy that includes study of the local aquifer and actions to address groundwater issues near bluffs.

6. Sea level rise vulnerability assessment of City assets

MCA 3.5

Conduct a sea level rise evaluation in conjunction with Clallam County and the North Olympic Development Council to evaluate the vulnerability of City assets including roads (motorized & non-motorized), other infrastructure (sewage treatment, water, buildings), and marine access. This includes:

- Reference the City Emergency Mitigation Plan to identify vulnerable infrastructure.
- Analyze sewer system capacity and vulnerability to sea level rise and identify actions to increase resilience.
- Evaluate roads and structures along bluff crests for erosion threat with sea level rise for planned retreat and ecosystem restoration; minimize realignment and protection.
- Identify areas for action through the Capital Facilities Plan.

7. Community rating system participation

MCA N/A

Participate in the Federal Emergency Management Agency's (FEMA's) Community Rating System.

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8. City asset vulnerability tool

MCA 3.3

Create a tool to evaluate vulnerability of City assets, projects, and activities. Incorporate the tool into City workflow (e.g., permits and expenditures), updates of the Hazard Mitigation Plan, and Capital Facilities Plan. Include training for City staff, Council, and committees in the use of the tool.

9. Comprehensive climate outreach and education

MCA 3.6

Develop comprehensive climate outreach & education programs. The City will partner with North Olympic Development Council to leverage resources for technical and expert advice plus outreach and education. To build additional capacity, the City will also make a budget request for a full-time resiliency plan coordination (see Getting Started).

10. Comprehensive Plan priorities

MCA N/A

Use the Resiliency Plan to inform Comprehensive Plan updates:

- Include a climate change resilience element in the Port Angeles Comprehensive Plan.
- Develop policy in the Comprehensive Plan that sites infrastructure outside of current and future hazard areas.
- Meet HB 1099 requirements regarding integration of climate change (granted it passes in future legislative session).

11. Housing Action Plan Implementation

MCA 4.0

Implement key provisions of the Port Angeles Housing Action Plan. This includes:

- Provide additional (height) floor and increased site coverage for mixed-use projects that provide on or off-site affordable housing units within appropriate land use districts and overlays such as the Planned Residential Development, Planned Low Impact Development, Mixed Commercial Overlay, and Infill Overlay Zone.
- Model accessory dwelling unit plans to build accessible housing.
- Pilot a City-led project on affordable housing.

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12. Hazard Mitigation Plan implementation

MCA 3.3

Implement key provisions of the 2019 Hazard Mitigation Plan:

- Promote FireWise building design for construction in the Vision Master Plan and Housing Programs.
- Develop alternate water supplies to provide reserve water sources to be used in event of drought or water shortage.
- Develop advanced warning systems.
- Identify elders and other vulnerable populations to prioritize for mitigation and disaster assistance.
- Develop and/or improve Emergency Plans such as Evacuation Plans, Tribal Records Protection Plan, Continuity of Operations Plan, etc.
- Update flood assessment.
- Create and expand water efficiency/conservation programs.

Strategy CRW-2. Prepare Port Angeles for future extreme events.

13. Wildland urban interface

MCA 3.4

Provide education and incentives for new construction and incentivize existing buildings to install venting and other features that resist ember wash ignition.

14. Climate resilience & emergency planning

MCA 3.7

Continue to collaborate with emergency planning partners to:

- Integrate climate considerations into emergency and hazard mitigation planning.
- Implement city-wide emergency planning exercises and education (i.e., Map Your Neighborhood) to build community resilience during emergency events.
- Create climate resiliency hubs at key locations (e.g., library) to support residents during extreme events, such as flooding or heat waves.

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Ecosystem Health

Port Angeles' ecosystems will sustain fish, wildlife, and people, with the ability to bounce back from stressors.

Goals	Indicators
• Publicly recognize the many benefits that trees provide in an urban setting and identify opportunities to plant trees. • Plant trees along residential streets, in parking lots, and in other areas as opportunities arise. Trees should be retained whenever possible and maintained using best management practices as appropriate for each tree type. • Work in partnership with community members as stewards of the area's unique environment and quality of life. • Consider the policies adopted in the Water Resources Inventory Area 18 Watershed Management Plan, including the provision of water supply to the urban areas in and between the Elwha River and Morse Creek drainage basins. • Protect air and water quality by minimizing pollution from new and existing sources, including climatic change impacts. • Preserve and enhance the City's shoreline, its natural vegetation, and wildlife, and mitigate for present and planned impacts in a manner consistent with the State Shoreline Management Act and the City's Shoreline Master Program.	• % tree canopy • % of residents living within one-third mile of park, trail, or green space • Net carbon stored (MT CO2e) • pH of Port Angeles Harbor and nearby marine waters

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Strategy EH-1. Increase opportunities for carbon sequestration and storage.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
15	Forest and marine habitat preservation			5	5	4	3	5	3	4	3.9

KEY: = Comprehensive Plan Alignment = Resiliency = Mitigation = Supportive Action

Strategy EH-2. Restore and protect shoreline, aquatic, and forest habitat.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
16	Urban tree canopy, parks, and open space			2	1	4	4	4	5	4	3.6
17	Native plant landscaping			1	1	3	2	3	5	3	2.7
18	Climate-sensitive tree species			(not evaluated with multi-criteria analysis)							N/A
19	Critical area protection			4	1	3	4	4	4	3	3.2
20	Coastal erosion reduction			5	2	3	3	3	5	3	3.4
21	Shoreline Master Program updates			4	1	3	4	4	4	3	3.3
22	Submerged habitat monitoring			(not evaluated with multi-criteria analysis)							N/A
23	Salmon habitat protection			5	1	3	3	5	3	3	3.0
24	Land-based pollutant reduction			(not evaluated with multi-criteria analysis)							N/A
25	Culvert replacement			(not evaluated with multi-criteria analysis)							N/A

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#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
26	Capital Facilities Plan implementation			(not evaluated with multi-criteria analysis)							N/A

KEY: = Comprehensive Plan Alignment = Resiliency = Mitigation = Supportive Action

Strategy EH-3. Address sea level rise.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
27	Resilience of clean-up sites			(not evaluated with multi-criteria analysis)							N/A
28	Cost-benefit analysis of shoreline armor repair			(not evaluated with multi-criteria analysis)							N/A
29	Boat launch repair			(not evaluated with multi-criteria analysis)							N/A

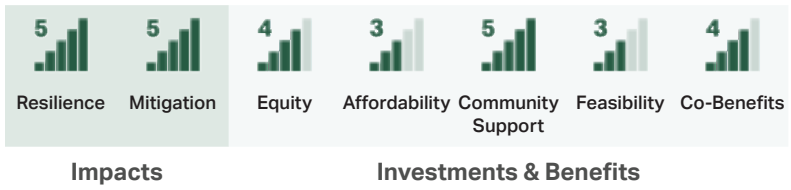
KEY: = Comprehensive Plan Alignment = Resiliency = Mitigation = Supportive Action

Strategy EH-1. Increase opportunities for carbon sequestration and storage.

15. Forest and marine habitat preservation

MCA 3.9

Partner with organizations and individuals (e.g., National Marine Sanctuary, Olympic National Park Service/National Forest, National Oceanic and Atmospheric Association, Puget Sound Partnership, Washington Department of Natural Resources, Washington Department of Fish & Wildlife, Feiro Marine Life Center, and private timber landholders) and the Lower Elwha Klallam Tribe to preserve forest and marine habitats, developing new strategies where needed.



Strategy EH-2. Restore and protect shoreline, aquatic, and forest habitat.

16. Urban tree canopy, parks, and open space

MCA 3.6

Protect urban tree canopy, parks, and open space. This may include:

- Develop a tree protection ordinance that emphasizes older trees.
- Incentivize urban tree planting, especially in public areas (e.g., street planting strips).

17. Native plant landscaping

MCA 2.7

Incentivize use of native plants landscaping in residential, commercial, and industrial settings within the City (e.g. partner with the County, Clallam Conservation District, and Lower Elwha Klallam Tribe's Natural Resources Department).

18. Climate-sensitive tree species

MCA N/A

Consult with tree experts to utilize climate-sensitive (adaptable) trees and native species in riparian buffers.

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19. Critical area protection

MCA 3.2

Add climate impact overlays to existing "Critical Areas." Create critical area flood mapping beyond Federal Emergency Management Agency's (FEMA's) historical flood data to inform future development and support prohibition of permanent infrastructure in those areas.

20. Coastal erosion reduction

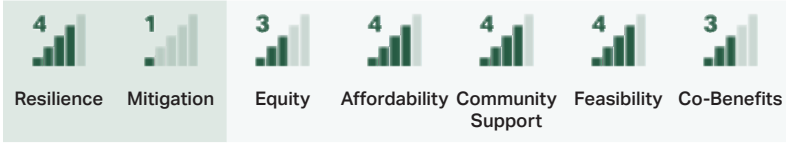
MCA 3.4

Encourage soft armoring of shorelines to protect infrastructure and habitat, particularly along Ediz Hook. Implement native vegetation and other natural resource management practices to reduce landslides and coastal erosion.

21. Shoreline Master Program updates

MCA 3.3

Incorporate climate change more explicitly into the Shoreline Master Program. For City projects, prioritize net ecological gain when possible.



22. Submerged habitat monitoring

MCA N/A

Incentivize use of native plants landscaping in residential, commercial, and industrial settings within the City (e.g. partner with the County, Clallam Conservation District, and Lower Elwha Klallam Tribe's Natural Resources Department).

23. Salmon habitat protection

MCA 3.0

Work with local ecological restoration partners (e.g., Clallam County Streamkeepers) to monitor and analyze climate change impacts at salmon stream restoration sites and 6 creeks in the City. Use the Habitat Recovery Pilot Program to support restoration efforts.

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24. Land-based pollutant reduction

MCA N/A

Reduce land-based pollutants that enhance acidification in marine waters.

25. Culvert replacement

MCA N/A

Replace undersized culverts to anticipate climate influenced run-off events and renovate outdated culverts to support fish populations.

26. Capital Facilities Plan implementation

MCA N/A

Implement key provisions of the 2022-2027 Preliminary Capital Facilities Plan Transportation Improvement Plan. This includes:

- H Street stormwater outfall: Identify an alternative alignment for failing pipe between Marine Drive and reduce flooding near Crown Park neighborhood.

Strategy EH-3. Increase opportunities for carbon sequestration and storage.

27. Resilience of clean-up sites

MCA N/A

Evaluate and address sea level rise in local clean-up sites. This includes:

- Rayonier Mill: Evaluate the Rayonier Mill contamination remediation site and settling pond for sea level rise resilience. Reduce any vulnerabilities found from the evaluation.
- Western Port Angeles Harbor: Address sea level rise in Clean-up Actions.
- K Ply properties: Clean-up plans for K Ply properties should address sea level rise.
- Marine Drive: Clean-up plans should address sea level rise.
- Marine Trades Area: Clean-up should address sea level rise.
- Assess Capital Facilities Plan project on: (1) how it modifies greenhouse gas emissions or sequestration? (2) how it helps us adapt to increased natural hazards (coastal flooding, winter freezes, summer heat, wildfire, drought)? And (3) how it contributes to a resilient low-energy-use urban landscape?

28. Cost-benefit analysis of shoreline armor repair

MCA N/A

Conduct cost-benefit analysis of shoreline armor repairs along Olympic Discovery Trail, Hill Street West, and both sides of Ediz Hook. Address concerns related to Native American burial remains on the shoreline.

29. Boat launch repair

MCA N/A

Repair the boat launch at Ediz Hook, incorporating sea level rise and coastal storm projections to ensure resilience to future conditions.

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Transportation

Port Angeles' transportation systems will be clean, efficient, safe, and accessible for the community.

Goals

- Improve circulation patterns across and within the community and achieve the desired urban design of the City.
- Encourage development of low-carbon-impact transportation infrastructure.
- Consider converting alley ways into attractive pedestrian zones for access to local businesses.
- Improve trails, sidewalks, streets, and public facilities to encourage walkability and non-motorized transportation.
- Work with public and private transportation providers to provide greater access and opportunities to residents, including Sunday and holiday service.

Indicators

- Continuity of transit services on Sundays and holidays
- % of vulnerable communities with quality transit access
- # of miles of pedestrian/bicycle infrastructure
- # of pedestrian/bicycle-related traffic incidents
- Vehicle miles traveled
- % of passenger vehicles that are electric

Strategy T-1. Decrease transportation related greenhouse gas emissions.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
30	Transit infrastructure, equity, & safety			1	5	5	3	3	4	3	3.7
31	Increased electric vehicle use for the general public			1	5	3	4	3	5	2	3.6

KEY: = Comprehensive Plan Alignment = Resiliency = Mitigation = Supportive Action

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#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
32	Biking and walking infrastructure			1	5	3	3	5	4	3	3.4
33	Municipal fleet electrification & idle reduction			4	1	5	3	4	3	3	3.4
34	Regional transport electrification			(not evaluated with multi-criteria analysis)							N/A
35	Port electrification			(not evaluated with multi-criteria analysis)							N/A
36	City employee commute emissions			(not evaluated with multi-criteria analysis)							N/A
37	Medium- and heavy-duty vehicle decarbonization			(not evaluated with multi-criteria analysis)							N/A

KEY: = Comprehensive Plan Alignment = Resiliency = Mitigation = Supportive Action

Strategy T-2. Enhance transportation resiliency by promoting public transit and active transportation.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
38	Transportation vulnerability			4	1	4	4	5	4	3	3.3

KEY: = Comprehensive Plan Alignment = Resiliency = Mitigation = Supportive Action

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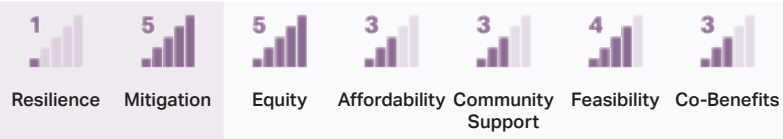
Strategy T-1. Decrease transportation related greenhouse gas emissions.

30. Transit infrastructure, equity, & safety

MCA 3.7

Support Clallam Transit in expanding public transit infrastructure and services to ensure access to buses is available at all times and decrease the need for travel in single-occupancy vehicles. This includes:

- Develop strategies that promote transit equity and community safety by considering the most vulnerable, then design and implement transit to support pedestrians, bicycles, mass transit, and individual cars, in that order.
- Increase use of the park and ride system.
- Implement fare-free transit within Port Angeles city limits.
- Explore a high-occupancy vehicle lane on Highway 101 between Carlsborg and the Port Angeles Urban Growth Area.
- Explore the feasibility of adding a high-speed electric or hybrid passenger ferry to Seattle.
- Reference Clallam Transit's Comprehensive Operational Analysis for implementation.

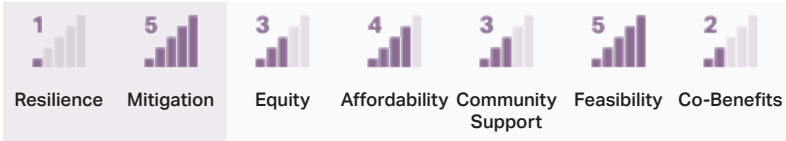


31. Increased electric vehicle use for the general public

MCA 3.6

Work with Peninsula Regional Transportation Planning Organization to develop strategies and expand infrastructure to increase use of electric vehicles. This includes:

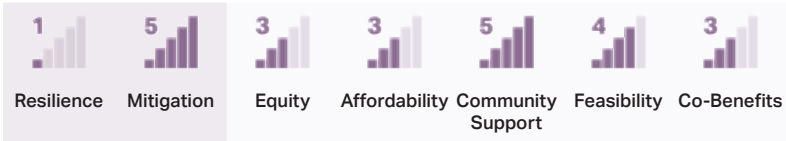
- Develop and implement an electric vehicle infrastructure plan.
- Identify top barriers to electric vehicle adoption and develop a plan to address them.
- Explore changes to code to incentivize or require electric vehicle charging in municipal facilities and some land use zones (in exceedance of current state law). Investigate feasibility and impact of tying EV charging equipment to the community renewable energy grid (action #45) and/or City Light Operations to support networked clean power generation and storage.



32. Biking and walking infrastructure

MCA 3.4

Develop and expand infrastructure to support biking, walking, and e-mobility (e.g., scooters), including walkability and bikeability across highways, busy interchanges, and other busy streets (e.g., Blyn).



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33. Municipal fleet electrification & idle reduction

MCA 3.4

Support and incentivize electrification and lower emissions of transportation in the City:

- Create incentives to move City transportation fleet toward electrification in order to reduce greenhouse gas emissions and improve local air quality (e.g., reduce local car tabs for electric vehicles and develop electrical charging stations around the City).
- Where vehicle electrification with battery electric vehicles is technically infeasible, consider replacement with alternative low- and zero-carbon vehicles (e.g., clean hydrogen, which is not generated from fossil fuels).
- Establish a reduced idling policy for all government vehicles and offer incentives for drivers to reduce idling times. Provide fleet operators with education on the benefits of reduced idling.
- Incentivize carpooling and trip reduction.
- Identify municipal operations that could be accomplished without a vehicle or with a less carbon-intense fuel source (e.g., e-scooter, transit, or low- or zero-emissions vehicle for meter readers).

34. Regional transport electrification

MCA N/A

Encourage the County, school districts, Olympic National Park, private sector (e.g., delivery), mass transit on Hurricane Ridge Road, and others to move towards electric fleets.

35. Port electrification

MCA N/A

Incentivize electrification of the city's Port infrastructure and allow marine electrification (plugs on docks for idling ships).

36. City employee commute emissions

MCA N/A

Implement a vehicle trip reduction policy incorporating teleconferencing/ telecommuting and alternative work schedules where practical. Establish video and/or web conferencing abilities in all major City and County facilities. Consider incentivizing teleworking, providing free bus passes for City employees, and offering City employees 0% or low-interest loans to purchase electric or hybrid cars/e-bikes/bikes.

37. Medium- and heavy-duty vehicle decarbonization

MCA N/A

Work with state and local partners (e.g., Ecology, vehicle sellers) to support implementation of the Washington Advanced Clean Trucks policy, which requires 75% of medium-duty vehicles (e.g., box trucks) and 40% of heavy-duty vehicles (e.g., semis) delivered to Washington to be zero-emission vehicles by 2035. For example, leverage alternative modes of transportation where available.

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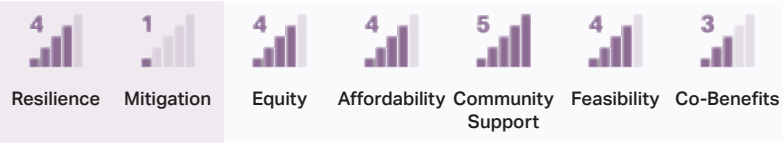
Strategy T-2. Enhance transportation resiliency by promoting public transit and active transportation.

38. Transportation vulnerability

MCA 3.3

Expand the Washington State Department of Transportation climate vulnerability assessment to include non-state roads and other transportation systems to ensure that transportation investments are resilient to future climate impacts.



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Buildings & Energy

Port Angeles will increase renewable energy use and energy efficiency in new and existing buildings.

Goals	Indicators
• Consider potential environmental consequences, such as greenhouse gas emissions and carbon footprints, when encouraging new commercial developments and businesses. • Encourage the use of renewable energy in both the private and public sectors, providing all reasonable support and advocacy at the state level for regulations and incentives that encourage such installations. • Review all new development for impacts on climate change and adaptation to sea level rise. • Promote and utilize environment-enhancing conservation practices. Those practices may include waste reduction, use of energy-efficient and -conserving materials, and energy conservation techniques. They should also encourage the development and use of alternative forms of energy and transportation. • Promote the use of alternative energy, energy conservation technology, and smart energy grid. • Encourage businesses with low-carbon footprints.	• # and % of overall housing units • Renewable energy consumption • Energy use per capita

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Strategy BE-1. Reduce building-related greenhouse gas emissions.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
39	Energy efficiency retrofits	✓	✓	3	2	4	2	3	5	2	3.1
40	Energy-efficient home heating sources	✓	✓	3	2	5	2	3	5	2	3.2
41	Bonneville Power Administration renewal agreement		✓	1	2	4	2	3	3	3	2.9
42	Electric vehicle parking requirements	✓	✓	1	5	5	3	2	4	3	3.4
43	Low-impact development	✓	✓	(not evaluated with multi-criteria analysis)							N/A
44	Green incentive program	✓	✓	(not evaluated with multi-criteria analysis)							N/A

KEY: ✓ = Comprehensive Plan Alignment ✓ = Resiliency ✓ = Mitigation ✓ = Supportive Action

Strategy BE-2. Support energy resilience by investing in renewable energy and community-scale energy projects.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
45	Community renewable energy grid	✓	✓ ✓	4	2	5	3	3	4	4	3.6
46	Climate-smart building and finance policies	✓	✓	5	1	4	3	4	4	3	3.3
47	Tailored approaches for coastal infrastructure resilience	✓	✓	5	1	4	3	4	4	3	3.5

KEY: ✓ = Comprehensive Plan Alignment ✓ = Resiliency ✓ = Mitigation ✓ = Supportive Action

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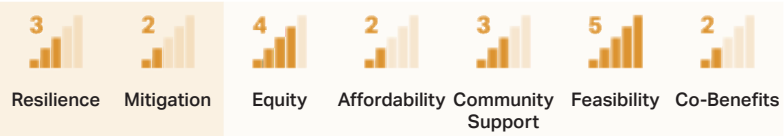
Strategy BE-1. Reduce building-related greenhouse gas emissions.

39. Energy efficiency retrofits

MCA 3.1

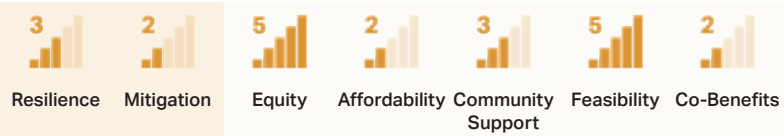
Incentivize redevelopments to include energy-efficient retrofits, such as weatherization and energy efficient appliances, while avoiding the split incentive.[1] Prioritize based on conservation potential and ability to alleviate financial stress for those who are energy-burdened.



40. Energy-efficient home heating sources

MCA 3.2

Incentivize homeowners to switch heating sources from wood-burning stoves and propane to high-efficiency electrical heaters and other less carbon-intensive sources. This may include incentivizing active and passive solar building design. Leverage existing Bonneville Power Administration programs (e.g., energy efficiency incentives) and state and federal funding sources.



41. Bonneville Power Administration renewal agreement

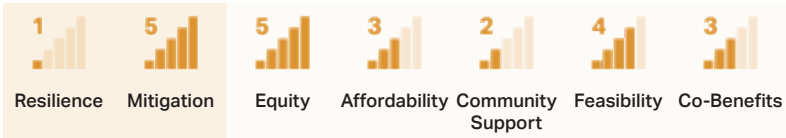
MCA 2.9

Review and renegotiate the Bonneville power franchise agreement, consistent with the Western Public Agency Group's Post-2028 Concept Paper. Ensure renewable, resilient, and low-greenhouse gas emission sources that protect healthy habitat for salmon and other aquatic species. Include the option to purchase green energy from the grid and other power providers.

42. Electric vehicle parking requirements

MCA 3.4

Mandate that all multifamily housing and other types of housing have electric vehicle parking capacity. Include incentives in the code to support bicycle storage (i.e., racks) and rideshare amenities.



[1] A "split incentive" occurs when neither landlord nor tenant is incentivized to pay for retrofits or upgrades to electrify buildings or reduce energy use, which can stand in the way of energy-efficient retrofits altogether. Often property owners will not pay for energy-efficient equipment because they lack financial incentive to do so, even though retrofits would lower energy bills for tenants. Split incentives often result in renters—who are often low- to moderate-income—living in less efficient buildings with higher energy bills.

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43. Low-impact development

MCA N/A

Eliminate barriers that prevent the use of low-impact development techniques and best management practices, such as vegetated roofs, permeable pavement, straw-bale homes, tiny homes, and bioretention, while maintaining safety and aesthetic quality in the building process (e.g., work with financial institutions to lower barriers to non-traditional, green building practices; incentivize owner-built projects). Provide low-impact development demonstration/education sites on City property.

44. Green incentive program

MCA N/A

Develop green incentive programs for residential and commercial development.

Strategy BE-2. Support energy resilience by investing in renewable energy and community-scale energy projects

45. Community renewable energy grid

MCA 3.6

Explore and invest in capital projects that develop community energy projects (e.g., local microgrids, local solar projects) to ensure there is energy supply redundancy, especially when the City or neighborhoods lose power. Consider partnerships with Clallam Public Utility District and low- or zero-rate homeowner credit.

46. Climate-smart building and finance policies

MCA 3.3

Disincentivize building in high-risk areas such as those prone to erosion, landslide, and flooding (e.g., marine bluff toe, bluff crests), add filing to property record to document potential climate-related risks to property and on-site development, and financially prepare for development that may still continue in high-risk areas, such as stream ravines and marine bluffs (e.g., require long-term bonds).

47. Tailored approaches for coastal infrastructure resilience

MCA 3.3

Pursue alternatives for more resilient existing coastal development in high-risk areas that are prone to erosion, landslide, and flooding. For example, both development at both the top of bluff and marine bluff toe are affected by erosive activities of undercutting from sea level rise and wave action and extreme weather events. This action would be informed by the sea level rise vulnerability assessment and may include:

- Disincentivize development and remove existing infrastructure in the coastal nearshore (i.e., managed retreat). If not possible, retrofit infrastructure for coastal flooding and sea level rise.

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Consumption & Waste

Port Angeles will develop pathways toward sustainable consumption, zero waste, and increased recycling.

Goals	Indicators
• Seek strategies and technologies which reduce greenhouse gas emissions by city facilities and operations.	• Waste diversion rate • % of food recovered • Water consumption

Strategy CW-1. Reduce waste-related greenhouse gas emissions from landfills.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
48	Wastewater facility emissions reduction			5	1	3	5	4	5	4	3.7
49	Beneficial materials reuse			(not evaluated with multi-criteria analysis)							N/A
50	Circular economy action plan			(not evaluated with multi-criteria analysis)							N/A

KEY: = Comprehensive Plan Alignment = Resiliency = Mitigation = Supportive Action

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Strategy CW-2. Promote sustainable consumption, such as using less plastic and incentivizing recycling and compost.

#	Action	CP	Action Type	Impact		Investments & Benefits					MCA Score
				Resilience	Mitigation	Equity	Affordability	Community Support	Feasibility	Co-Benefits	
51	Residential food waste diversion programs			1	3	3	4	4	5	3	3.3
52	Commercial food waste diversion programs			2	3	4	3	4	5	3	3.3
53	City and community sustainable purchasing			3	5	3	3	4	5	3	3.7
54	Plastic packaging reductions			(not evaluated with multi-criteria analysis)							N/A
55	Water consumption education/incentives			(not evaluated with multi-criteria analysis)							N/A

KEY: = Comprehensive Plan Alignment = Resiliency = Mitigation = Supportive Action

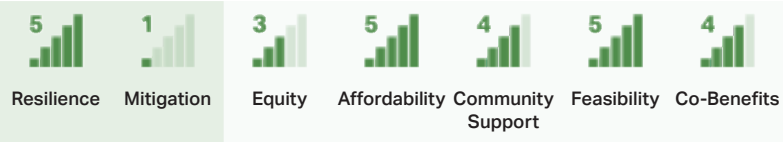
Strategy CW-1. Reduce waste-related greenhouse gas emissions from wastewater and landfills.

48. Wastewater facility emissions reduction

MCA 3.7

Evaluate wastewater facility to reduce greenhouse emissions and build resilience to climate impacts such as landslides. This includes:

- Maximize the co-generation and on-site utilization of natural gas from anaerobic digesters and other methods of harnessing energy in wastewater treatment. This will reduce vulnerability to power and fuel shortages, as well as reduce emissions.
- Reduce vulnerability of access routes to the treatment plant and consider identifying alternative routes should primary routes be compromised.



49. Beneficial materials reuse

MCA N/A

Develop a procedure that encourages various groups and organizations to salvage, recover or reclaim materials before they are sent to the landfill to support a circular economy, promote reuse, and divert waste.

- Donate materials to local organizations, such as Around-Again, Habitat Store, Goodwill, Serenity House Thrift Store.
- Conduct a waste feasibility study to identify waste diversion rates and reuse opportunities.

50. Circular economy action plan

MCA N/A

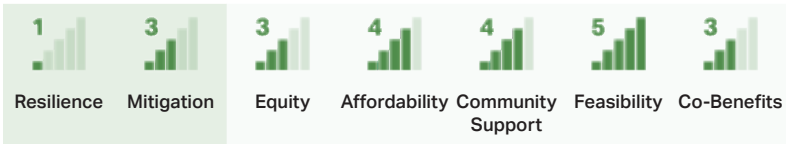
Develop a circular economy action plan. Initial ideas to explore include a public-private enterprise incubator, grant, subsidy, and/or prize program to convert locally generated waste into recycled products. The recycled products could then be used in City operations as part of the sustainable purchasing policy (action #53) to help support broader use in the community.

Strategy CW-2. Promote sustainable consumption, such as using less plastic and incentivizing recycling and compost.

51. Residential food waste diversion programs

MCA 3.3

Consistent with the County Solid Waste Management Plan, develop a food waste diversion program for households such as using green waste bins for compost to eliminate landfilling of food waste that causes methane emissions.



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52. Commercial food waste diversion programs

MCA 3.3

Consistent with the County Solid Waste Management Plan, work with the County to develop food waste diversion and composting programs for commercial businesses, such as diverting food waste to donation programs, placing compost collection bins around the city, implementing education programs to encourage proper sorting, and identifying end-use applications for compost, to reduce climate-changing gases that are emitted when organics rot in landfills.

53. City and community sustainable purchasing

MCA 3.7

Utilize a "Green Team" model to develop sustainable purchasing policies for the City and community.

54. Plastic packaging reductions

MCA N/A

Limit plastic packaging in conjunction with state and federal programs.

55. Water consumption education/incentives

MCA N/A

Reduce water consumption through education and incentive programs. For example:

- Create a smart grid water use system and share data with consumers to increase conservation.
- Promote and incentivize smart irrigation technologies for golf courses and parks.
- Update water rates to discourage watering lawns.
- Provide incentives for efficient food cultivation.

A Sustainable Purchasing Green Team

A Green Team is a committee that collaborates on a climate- or sustainability-related projects. In this case, the City of Port Angeles will convene a Green Team for two purposes: to create a sustainable purchasing plan to guide City purchasing decisions and to draft policies that will promote sustainable materials in the community. Most Green Teams are made up of representatives across City departments to improve adoption of recommendations. At a minimum, Green Team members are responsible for developing the purchasing plans and considering how they will best be implemented in Port Angeles. They may also serve as lead implementers within their departments or as knowledge resources for others who lead implementation. The Green Team may involve community members as well, especially to provide input on community-wide policies.

To decide what will be included in a sustainable purchasing plan, the Green Team will first understand what goods and services represent the largest climate opportunities. Then, they will determine what requirements are feasible and meet additional criteria, such as social, economic, and/or health benefits. City sustainable purchasing plans often prioritize building materials, vehicles, furniture, food, and electronics. They sometimes set requirements for City contractors to follow, and they may address end-of-life management for items the City purchases.

A City sustainable purchasing plan will prepare the City to begin to implement a price on carbon (see CRW Action #1) by transitioning the City away from carbon-intensive goods and services. The specifics of how City purchasing will be impacted by a price on carbon will depend on how the City decides to structure that measure. For example, a price on carbon may raise costs on the most carbon-intensive goods and activities, acting as an incentive to find climate-friendly alternatives. Similarly, low-carbon alternatives that may have higher short-term costs could be subsidized to support their near-term adoption.

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Getting Started

The Resiliency Plan is a culmination of many years' work in Port Angeles and the surrounding North Olympic Peninsula. We are eager to **sustain the momentum** that we generated while preparing this plan as its implementation begins. The City is already engaged in implementation planning with support from key partners, including the North Olympic Development Council. By end of 2022, we will have an Implementation Plan that will help guide our work and that of our partners.

To ensure we are on our pathway to carbon neutrality and a resilient community, we will need to **measure our progress and adjust** based on what we find. Measuring resilience means measuring our ability to continue to provide for community needs, goods, and services and sustain our quality of life. We have prioritized metrics the City and community already use to track progress and will develop new metrics to monitor and evaluate our performance. The table below summarizes the indicators the City is considering and which departments will monitor them.

Sector	Lead Monitoring Department	Indicators
Community Resilience & Well-being	**Community & Economic Development**	• Average housing and utility cost • Residents are more financially secure • Established land use plan and policies to meet housing needs for all demographics over next 20 years. • % of population that can be accommodated in community safety hubs or other disaster relief centers • Regional focus on success of local business. • Infrastructure and policies that allow for multiple commercial centers to succeed. • Capital facilities backlog reduced. • We have moved from planning to action. • We are all focused on (achieving) the plan. • Partners (i.e. business, nonprofit, tribal, advisory committees, residents, other governments) are at the table. • We move at the speed of trust. • Everyone is focused on strong relationships and partnerships. • Community sees Port Angeles as a respectful team player.
	Public Works & Utilities	• Air quality • Drinking water quality
	Fire Department	• # of Community paramedic contacts that have successful referral to services
	Police Department	• # of REdisCOVERY contacts that have successful referral to services
	Finance	• Stabilize revenue

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Sector	Lead Monitoring Department	Indicators
Ecosystem Health	**Parks & Recreation**	• % tree canopy • Net carbon stored (MT CO_2e)
	Public Works & Utilities	• % of residents living within one-third mile of park, trail, or green space
Transportation	**Community & Economic Development** **partner with Clallam Transit*	• Continuity of transit services on Sundays and holidays* • % of vulnerable communities with quality transit access* • # of miles pedestrian/bicycle infrastructure • # of pedestrian/bicycle-related traffic incidents • Vehicle miles traveled • % of passenger vehicles that are electric
Buildings & Energy	**Community & Economic Development**	• # and % of overall housing units
	Public Works & Utilities	• Renewable energy consumption • Energy use per capita
Consumption & Waste	**Public Works & Utilities**	• Waste diversion rate • % of food recovered • Water consumption

To facilitate alignment across ongoing City efforts, this Plan uses an icon to identify and prioritize actions that will be integrated with the Comprehensive Plan in 2023-2024. Creating cohesion between actions in this Plan and the Comprehensive Plan will help drive implementation for standalone climate change actions and bolster overall community resilience by elevating actions that easily integrate within existing planning efforts, initiatives, and programs.

This icon indicates the action is well-suited to integration in the next Comprehensive Plan update.

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As the City and community move into the implementation phase, we also recommend the following initial implementation actions:

- **Formalize the Climate Action Planning Group** as a community advisory group to support implementation and help sustain ongoing community involvement needed for success. Look to add paid participation from community members who represent those most vulnerable to climate impacts, whether as part of Climate Action Planning Group or a separate effort.
- **Make a budget request for a full-time position** to hire a coordinator in 2023 to help support climate resilience actions that require community or volunteer capacity. The specifics of the position are not yet known, however, we do know we need support in 2023 and beyond.
- **Identify sensible, early-win actions.** Many actions or key building blocks of actions, such as foundational planning efforts or analyses, are achievable within 1-2 years. An early-win action list should include a mix of high-impact, high-support, and foundational actions. Benefit-cost analysis should be considered for higher cost actions and will be further addressed during implementation planning.
- **Begin planning and seeking funding now** for major infrastructure resilience projects. While we will need time to complete foundational assessments prior to implementation and to evaluate benefits and costs of projects, having planning and funding efforts underway for design and construction will help speed up implementation of major resilience projects. Current and ongoing projects implemented through Clallam County's hazard mitigation planning efforts align with the following Plan actions:

  CRW-1: Action 12: Hazard Mitigation Plan implementation

  CRW-2: Action 13: Wildland urban interface

  CRW-3: Action 14: Climate resilience & emergency planning
- **Determine a frequency for measuring and reporting success that works for the City.** It will be important to develop a monitoring and reporting process that is thorough, efficient, and tailored for Port Angeles needs. A cumbersome reporting process can limit the work of implementing the Resiliency Plan, especially in an environment where staff capacity is constrained.

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