

## Chapter 4: Design and Development

### What is this chapter about?

The goals and policies in this chapter convey the City's intent to:

- Encourage building and site design that promotes human and environmental health, public safety, and responds to local context.
- Promote strong links among building and site design, streets, and the public realm.
- Guide historic and cultural resource and scenic view preservation.
- Encourage the integration of nature into the built environment.
- Reduce carbon emissions and promote energy- and resource-efficient neighborhoods and buildings.

### Why is this important?

Development and design shapes how Portland looks and functions. Past development, in combination with the natural landscape, has shaped how people experience the city. Future development, and the treatment of built and natural heritage, has the potential to create a better, healthier, more efficient, and more pleasant Portland. New development and redevelopment can promote vibrant, accessible urban places for people of all ages, abilities, and backgrounds, while also enhancing natural resources, protecting health and safety, and promoting resilience.

As a growing city, Portland faces design and development challenges as well as opportunities. The policies in this chapter encourage development that respects context, preserves historic and cultural resources, reduces carbon emissions, improves resource efficiency, minimizes risk from natural hazards, limits impacts to wildlife and natural systems, and integrates nature into the urban environment.

# Table of Contents

## Goals

Goal 4.A	Context-sensitive design and development
Goal 4.B	Historic and cultural resources
Goal 4.C	Human and environmental health
Goal 4.D	Urban resilience

## Policies

### Context

Policy 4.1	Pattern areas
Policy 4.2	Community identity
Policy 4.3	Site and context
Policy 4.4	Natural features and green infrastructure
Policy 4.5	Pedestrian-oriented design
Policy 4.6	Street orientation
Policy 4.7	Development and public spaces
Policy 4.8	Alleys
Policy 4.9	Transitional urbanism

### Health and safety

Policy 4.10	Design for active living
Policy 4.11	Access to light and air
Policy 4.12	Privacy and solar access
Policy 4.13	Crime-preventive design
Policy 4.14	Fire prevention and safety

### Residential areas

Policy 4.15	Residential area continuity and adaptability
Policy 4.16	Scale and patterns
Policy 4.17	Demolitions
Policy 4.18	Compact single-family options
Policy 4.19	Resource efficient and healthy residential design and development

### Design and development of centers and corridors

Policy 4.20	Walkable scale
Policy 4.21	Street environment
Policy 4.22	Relationship between building height and street size
Policy 4.23	Design for pedestrian and bicycle access
Policy 4.24	Drive-through facilities
Policy 4.25	Residential uses on busy streets
Policy 4.26	Active gathering spaces

- Policy 4.27 Protect defining features
- Policy 4.28 Historic buildings in centers and corridors
- Policy 4.29 Public art

**Transitions**

- Policy 4.30 Scale transitions
- Policy 4.31 Land use transitions
- Policy 4.32 Industrial edge

**Off-site impacts**

- Policy 4.33 Off-site impacts
- Policy 4.34 Auto-oriented facilities, uses, and exterior displays
- Policy 4.35 Noise impacts
- Policy 4.36 Air quality impacts
- Policy 4.37 Diesel emissions
- Policy 4.38 Light pollution
- Policy 4.39 Airport noise
- Policy 4.40 Telecommunication facility impacts

**Scenic resources**

- Policy 4.41 Scenic resources
- Policy 4.42 Scenic resource protection
- Policy 4.43 Vegetation management
- Policy 4.44 Building placement, height, and massing
- Policy 4.45 Future development

**Historic and cultural resources**

- Policy 4.46 Historic and cultural resource protection
- Policy 4.47 State and federal historic resource support
- Policy 4.48 Continuity with established patterns
- Policy 4.49 Resolution of conflicts in historic districts
- Policy 4.50 Demolition
- Policy 4.51 City-owned historic resources
- Policy 4.52 Historic Resources Inventory
- Policy 4.53 Preservation equity
- Policy 4.54 Cultural diversity
- Policy 4.55 Cultural and social significance
- Policy 4.56 Community structures
- Policy 4.57 Economic viability
- Policy 4.58 Archeological resources

**Public art**

- Policy 4.59 Public art and development

## **DESIGN AND DEVELOPMENT**

---

### **Resource-efficient design and development**

- Policy 4.60 Rehabilitation and adaptive reuse
- Policy 4.61 Compact housing
- Policy 4.62 Seismic and energy retrofits
- Policy 4.63 Life cycle efficiency
- Policy 4.64 Deconstruction
- Policy 4.65 Materials and practices
- Policy 4.66 Water use efficiency
- Policy 4.67 Optimizing benefits
- Policy 4.68 Energy efficiency
- Policy 4.69 Reduce carbon emissions
- Policy 4.70 District energy systems
- Policy 4.71 Ecodistricts
- Policy 4.72 Energy-producing development

### **Designing with nature**

- Policy 4.73 Design with nature
- Policy 4.74 Flexible development options
- Policy 4.75 Low-impact development and best practices
- Policy 4.76 Impervious surfaces
- Policy 4.77 Hazards to wildlife
- Policy 4.78 Access to nature

### **Hazard-resilient design**

- Policy 4.79 Natural hazards and climate change risks and impacts
- Policy 4.80 Geological hazards
- Policy 4.81 Disaster-resilient development
- Policy 4.82 Portland Harbor facilities
- Policy 4.83 Urban heat islands
- Policy 4.84 Planning and disaster recovery

### **Healthy food**

- Policy 4.85 Grocery stores and markets in centers
- Policy 4.86 Neighborhood food access
- Policy 4.87 Growing food
- Policy 4.88 Access to community gardens

## Goals

### Goal 4.A: Context-sensitive design and development

New development is designed to respond to and enhance the distinctive physical, historic, and cultural qualities of its location, while accommodating growth and change.

### Goal 4.B: Historic and cultural resources

Historic and cultural resources are identified, protected, and rehabilitated as integral parts of an urban environment that continues to evolve.

### Goal 4.C: Human and environmental health

Neighborhoods and development are efficiently designed and built to enhance human and environmental health: they protect safety and livability; support local access to healthy food; limit negative impacts on water, hydrology, and air quality; reduce carbon emissions; encourage active and sustainable design; protect wildlife; address urban heat islands; and integrate nature and the built environment.

### Goal 4.D: Urban resilience

Buildings, streets, and open spaces are designed to ensure long-term resilience and to adjust to changing demographics, climate, and economy, and withstand and recover from natural disasters.

## Policies

### Context

Portland’s neighborhoods have distinct characteristics and street environments that provide a sense of place and that are a setting for public life. The following policies guide building and site design to respond to positive characteristics of their context and promote accessible and attractive public environments. They also support designing development to contribute to the quality of the public realm of streets and other open spaces, and encourage the integration of natural elements into the built environment.

- Policy 4.1**     **Pattern areas.** Encourage building and site designs that respect the unique built natural, historic, and cultural characteristics of Portland’s five pattern areas described in Chapter 3: Urban Form.
- Policy 4.2**     **Community identity.** Encourage the development of character-giving design features that are responsive to place and the cultures of communities.
- Policy 4.3**     **Site and context.** Encourage development that responds to and enhances the positive qualities of site and context — the neighborhood, the block, the public realm, and natural features.

## DESIGN AND DEVELOPMENT

---

- Policy 4.4**     **Natural features and green infrastructure.** Integrate natural and green infrastructure such as trees, green spaces, ecoroofs, gardens, green walls, and vegetated stormwater management systems, into the urban environment. Encourage stormwater facilities that are designed to be a functional and attractive element of public spaces, especially in centers and corridors.
- Policy 4.5**     **Pedestrian-oriented design.** Enhance the pedestrian experience throughout Portland through public and private development that creates accessible, safe, and attractive places for all those who walk and/or use wheelchairs or other mobility devices.
- Policy 4.6**     **Street orientation.** Promote building and site designs that enhance the pedestrian experience with windows, entrances, pathways, and other features that provide connections to the street environment.
- Policy 4.7**     **Development and public spaces.** Guide development to help create high-quality public places and street environments while considering the role of adjacent development in framing, shaping, and activating the public space of streets and urban parks.
- Policy 4.8**     **Alleys.** Encourage the continued use of alleys for parking access, while preserving pedestrian access. Expand the number of alley-facing accessory dwelling units.
- Policy 4.9**     **Transitional urbanism.** Encourage temporary activities and structures in places that are transitioning to urban areas to promote job creation, entrepreneurship, active streets, and human interaction.

### Health and safety

The design of buildings, site layout, and other development choices can affect the safety, health, and quality of life. The following policies guide building and site design to protect the health and livability of building users and neighbors, including minimizing risks of crime and fire. *Related policies specific to residential development are located in Chapter 5: Housing.*

- Policy 4.10**     **Design for active living.** Encourage development and building and site design that promotes a healthy level of physical activity in daily life.
- Policy 4.11**     **Access to light and air.** Provide for public access to light and air by managing and shaping the height and mass of buildings while accommodating urban-scale development.

- Policy 4.12 Privacy and solar access.** Encourage building and site designs that consider privacy and solar access for residents and neighbors while accommodating urban-scale development.
- Policy 4.13 Crime-preventive design.** Encourage building, site, and public infrastructure design approaches that help prevent crime.
- Policy 4.14 Fire prevention and safety.** Encourage building and site design that improves fire prevention, safety, and reduces seismic risks.

## **Residential areas**

Even in relatively stable lower-density residentially-zoned areas, there will be development and change. These policies encourage design and development that provides continuity with existing development patterns in lower-density residentially-zoned areas outside of centers and corridors. They also support these areas' continuing evolution as places that provide additional housing opportunities to meet the diverse needs of Portlanders but that will not be places of major change in urban form and scale.

- Policy 4.15 Residential area continuity and adaptability.** Encourage more housing choices to accommodate a wider diversity of family sizes, incomes, and ages, and the changing needs of households over time. Allow adaptive reuse of existing buildings, the creation of accessory dwelling units, and other arrangements that bring housing diversity that is compatible with the general scale and patterns of residential areas.
- Policy 4.16 Scale and patterns.** Encourage design and development that complements the general scale, character, and natural landscape features of neighborhoods. Consider building forms, scale, street frontage relationships, setbacks, open space patterns, and landscaping. Allow for a range of architectural styles and expression.
- Policy 4.17 Demolitions.** Encourage alternatives to the demolition of sound housing, such as rehabilitation and adaptive reuse, especially affordable housing, and when new development would provide no additional housing opportunities beyond replacement.
- Policy 4.18 Compact single-family options.** Encourage development and preservation of small resource-efficient and affordable single-family homes in all areas of the city.
- Policy 4.19 Resource efficient and healthy residential design and development.** Support resource efficient and healthy residential design and development. *See other related policies later in this chapter and in Chapter 5: Housing.*

### Design and development of centers and corridors

Centers and corridors are places where large numbers of people live, work, and visit. Careful attention to the design of centers and corridors is necessary to ensure that they become places where people want to live and gather, and where getting around by walking, biking, or wheelchair is an attractive choice. These policies also encourage the development of centers as places that reflect the character and cultures of the surrounding neighborhoods.

- Policy 4.20**    **Walkable scale.** Focus services and higher-density housing in the core of centers to support a critical mass of demand for commercial services and more walkable access for customers.
- Policy 4.21**    **Street environment.** Encourage development in centers and corridors to include amenities that create a pedestrian-oriented environment and provide places for people to sit, spend time, and gather.
- Policy 4.22**    **Relationship between building height and street size.** Encourage development in centers and corridors that is responsive to street space width, thus allowing taller buildings on wider streets.
- Policy 4.23**    **Design for pedestrian and bicycle access.** Provide accessible sidewalks, high-quality bicycle access, and frequent street connections and crossings in centers and corridors.
- Policy 4.24**    **Drive-through facilities.** Prohibit drive through facilities in the Central City, and limit new development of new ones in the Inner Ring Districts and centers in order to support a pedestrian-oriented environment.
- Policy 4.25**    **Residential uses on busy streets.** Improve the livability of places and streets with high motor vehicle volumes. Encourage landscaped front setbacks, street trees, and other design approaches to buffer residents from street traffic.
- Policy 4.26**    **Active gathering places.** Locate public squares, plazas, and other gathering places in centers and corridors to provide places for community activity and social connections. Encourage location of businesses, services, and arts adjacent to these spaces that relate to and promote the use of the space.
- Policy 4.27**    **Protect defining features.** Protect and enhance defining places and features of centers and corridors, including landmarks, natural features, and historic and cultural resources, through application of zoning, incentive programs, and regulatory tools.
- Policy 4.28**    **Historic buildings in centers and corridors.** Identify, protect, and encourage the use and rehabilitation of historic resources in centers and corridors.

**Policy 4.29 Public art.** Encourage new development and public places to include design elements and public art that contribute to the distinct identities of centers and corridors, and that highlight the history and diverse cultures of neighborhoods.

## **Transitions**

These policies address transitions between areas of differing types of activity and scale of development, such as where centers and corridors interface with adjacent lower-intensity residential zones.

**Policy 4.30 Scale transitions.** Create transitions in building scale in locations where higher-density and higher-intensity development is adjacent to smaller-scale single-dwelling zoning. Ensure that new high-density and large-scale infill development adjacent to single dwelling zones incorporates design elements that soften transitions in scale and limit light and privacy impacts on adjacent residents.

**Policy 4.31 Land use transitions.** Improve the interface between non-residential uses and residential uses in areas where commercial or employment uses are adjacent to residentially-zoned land.

**Policy 4.32 Industrial edge.** Protect non-industrially zoned parcels from the adverse impacts of facilities and uses on industrially zoned parcels through the use of a variety of tools, including but not limited to vegetation, physical separation, land acquisition, and insulation to establish buffers between industrial sanctuaries and adjacent residential or mixed use areas to protect both the viability of long-term industrial operations and the livability of adjacent areas.

## **Off-site impacts**

These policies address the consideration and mitigation of off-site impacts from uses and development.

**Policy 4.33 Off-site impacts.** Limit and mitigate public health impacts, such as odor, noise, glare, light pollution, air pollutants, and vibration that public facilities, land uses, or development may have on adjacent residential or institutional uses, and on significant fish and wildlife habitat areas. Pay particular attention to limiting and mitigating impacts to under-served and under-represented communities.

**Policy 4.34 Auto-oriented facilities, uses, and exterior displays.** Minimize the adverse impacts of highways, auto-oriented uses, vehicle areas, drive-through areas, signage, and exterior display and storage areas on adjacent residential uses.

## DESIGN AND DEVELOPMENT

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- Policy 4.35**    **Noise impacts.** Encourage building and landscape design and land use patterns that limit and/or mitigate negative noise impacts to building users and residents, particularly in areas near freeways, regional truckways, major city traffic streets, and other sources of noise.
- Policy 4.36**    **Air quality impacts.** Encourage building and landscape design and land use patterns that limit and/or mitigate negative air quality impacts to building users and residents, particularly in areas near freeways, regional truckways, high traffic streets, and other sources of air pollution.
- Policy 4.37**    **Diesel emissions.** Encourage best practices to reduce diesel emissions and related impacts when considering land use and public facilities that will increase truck or train traffic. Advocate for state legislation to accelerate replacement of older diesel engines.
- Policy 4.38**    **Light pollution.** Encourage lighting design and practices that reduce the negative impacts of light pollution, including sky glow, glare, energy waste, impacts to public health and safety, disruption of ecosystems, and hazards to wildlife.
- Policy 4.39**    **Airport noise.** Partner with the Port of Portland to require compatible land use designations and development within the noise-affected area of Portland International Airport, while providing disclosure of the level of aircraft noise and mitigating the potential impact of noise within the affected area.
- Policy 4.40**    **Telecommunication facility impacts.** Mitigate the visual impact of telecommunications and broadcast facilities near residentially-zoned areas through physical design solutions.

*Additional policies about environmental quality are found in Chapter 7: Environment and Watershed Health.*

### Scenic resources

Portland's signature views of Mt. Hood and other mountain peaks, bridges, and rivers are important to the city's identity. These views strengthen connections to the local and regional landscape. The policies below encourage the recognition, enhancement, and protection of public views and significant scenic resources, as designated in the Scenic Resources Inventory and Protection Plans.

- Policy 4.41**    **Scenic resources.** Enhance and celebrate Portland's scenic resources to reinforce local identity, histories, and cultures and contribute toward way-finding throughout the city. Consider views of mountains, hills, buttes, rivers, streams, wetlands, parks, bridges, the Central City skyline, buildings, roads, art, landmarks, or other elements valued for their aesthetic appearance or symbolism.

- Policy 4.42 Scenic resource protection.** Protect and manage designated significant scenic resources by maintaining scenic resource inventories, protection plans, regulations, and other tools.
- Policy 4.43 Vegetation management.** Maintain regulations and other tools for managing vegetation in a manner that preserves or enhances designated significant scenic resources.
- Policy 4.44 Building placement, height, and massing.** Maintain regulations and other tools related to building placement, height, and massing in order to preserve designated significant scenic resources.
- Policy 4.45 Future development.** Encourage new public and private development to create new public viewpoints providing views of Portland’s rivers, bridges, surrounding mountains, hills and buttes, the Central City skyline, and other landmark features.

## **Historic and cultural resources**

Portland has several thousand designated historic resources, including landmarks and historic and conservation districts. These special places help create a sense of place, contribute to neighborhood character, and recognize Portland’s history. More than half of Portland’s buildings are over 50 years old, creating a vast pool of potentially significant properties that may be designated in the future. These policies support the identification, protection, and rehabilitation of historic and culturally significant resources in a city that continues to grow and change.

- Policy 4.46 Historic and cultural resource protection.** Within statutory requirements for owner consent, identify, protect, and encourage the use and rehabilitation of historic buildings, places, and districts that contribute to the distinctive character and history of Portland’s evolving urban environment.
- Policy 4.47 State and federal historic resource support.** Advocate for state and federal policies, programs, and legislation that would enable stronger historic resource designations, protections, and rehabilitation programs.
- Policy 4.48 Continuity with established patterns.** Encourage development that fills in vacant and underutilized gaps within the established urban fabric, while preserving and complementing historic resources.
- Policy 4.49 Resolution of conflicts in historic districts.** Adopt and periodically update design guidelines for unique historic districts. Refine base zoning in historic districts to take into account the character of the historic resources in the district.

## DESIGN AND DEVELOPMENT

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- Policy 4.50 Demolition.** Protect historic resources from demolition. When demolition is necessary or appropriate, provide opportunities for public comment and encourage pursuit of alternatives to demolition or other actions that mitigate for the loss.
- Policy 4.51 City-owned historic resources.** Maintain City-owned historic resources with necessary upkeep and repair.
- Policy 4.52 Historic Resources Inventory.** Within statutory limitations, regularly update and maintain Portland’s Historic Resources Inventory to inform historic and cultural resource preservation strategies.
- Policy 4.53 Preservation equity.** Expand historic resources inventories, regulations, and programs to encourage historic preservation in areas and in communities that have not benefited from past historic preservation efforts, especially in areas with high concentrations of under-served and/or under-represented people.
- Policy 4.54 Cultural diversity.** Work with Portland’s diverse communities to identify and preserve places of historic and cultural significance.
- Policy 4.55 Cultural and social significance.** Encourage awareness and appreciation of cultural diversity and the social significance of both beautiful and ordinary historic places and their roles in enhancing community identity and sense of place.
- Policy 4.56 Community structures.** Encourage the adaptive reuse of historic community structures, such as former schools, meeting halls, and places of worship, for arts, cultural, and community uses that continue their role as anchors for community and culture.
- Policy 4.57 Economic viability.** Provide options for financial and regulatory incentives to allow for the productive, reasonable, and adaptive reuse of historic resources.
- Policy 4.58 Archaeological resources.** Protect and preserve archaeological resources, especially those sites and objects associated with Native American cultures. Work in partnership with Sovereign tribes, Native American communities, and the state to protect against disturbance to Native American archaeological resources.

## Public art

Public art and cultural amenities enrich people’s lives. They offer educational experiences, enliven public spaces, and foster creativity. This helps build a sense of community and identity for an area. This policy supports including public art in development.

**Policy 4.59 Public art and development.** Create incentives for public art as part of public and private development projects.

## Resource-efficient design and development

These policies support resource-efficient design and development, from the location of development to the types of building materials. They apply to new development as well as to the continued and adaptive reuse of existing buildings.

**Policy 4.60 Rehabilitation and adaptive reuse.** Encourage rehabilitation and adaptive reuse of buildings, especially those of historic or cultural significance, to conserve natural resources, reduce waste, and demonstrate stewardship of the built environment.

**Policy 4.61 Compact housing.** Promote the development of compact, space- and energy-efficient housing types that minimize use of resources such as smaller detached homes or accessory dwellings and attached homes.

**Policy 4.62 Seismic and energy retrofits.** Promote seismic and energy-efficiency retrofits of historic buildings and other existing structures to reduce carbon emissions, save money, and improve public safety.

**Policy 4.63 Life cycle efficiency.** Encourage use of technologies, techniques, and materials in building design, construction, and removal that result in the least environmental impact over the life cycle of the structure.

**Policy 4.64 Deconstruction.** Encourage salvage and reuse of building elements when demolition is necessary or appropriate.

**Policy 4.65 Materials and practices.** Encourage use of natural, resource-efficient, recycled, recycled content, and non-toxic building materials and energy-efficient building practices.

**Policy 4.66 Water use efficiency.** Encourage site and building designs that use water efficiently and manage stormwater as a resource.

**Policy 4.67 Optimizing benefits.** Provide mechanisms to evaluate and optimize the range of benefits from solar and renewable resources, tree canopy, ecoroofs, and building design.

## DESIGN AND DEVELOPMENT

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- Policy 4.68 Energy efficiency.** Encourage and promote energy efficiency significantly beyond the Statewide Building Code and the use of solar and other renewable resources in individual buildings and at a district scale.
- Policy 4.69 Reduce carbon emissions.** Encourage a development pattern that minimizes carbon emissions from building and transportation energy use.
- Policy 4.70 District energy systems.** Encourage and remove barriers to the development and expansion of low-carbon heating and cooling systems that serve multiple buildings or a broader district.
- Policy 4.71 Ecodistricts.** Encourage ecodistricts, where multiple partners work together to achieve sustainability and resource efficiency goals at a district scale.
- Policy 4.72 Energy-producing development.** Encourage and promote development that uses renewable resources, such as solar, wind, and water to generate power on-site and to contribute to the energy grid.

*Goals and policies related to energy infrastructure can be found in Chapter 8: Public Facilities and Services.*

### Designing with nature

Incorporating natural features and functions into development improves human and ecological health, yielding tangible social, environmental, and economic benefits. Designing with nature provides or enhances ecosystem services, such as stormwater management, cooling of air and water, reduction of landslide, wildfire and flooding risks, protection or enhancement of fish and wildlife habitat, and opportunities for Portlanders to enjoy nature in their daily lives. These policies apply to a broad range of land uses and development sites, encouraging development designed to enhance the identity and beauty of Portland's neighborhoods, business districts, and industrial districts, while improving watershed health and resilience to climate change.

*Additional goals and policies about the integration of nature into the built environment and infrastructure are found in Chapter 7: Environment and Watershed Health, Chapter 8: Public Facilities and Services, and Chapter 9: Transportation.*

- Policy 4.73 Design with nature.** Encourage design and site development practices that enhance, and avoid the degradation of, watershed health and ecosystem services and that incorporate trees and vegetation.
- Policy 4.74 Flexible development options.** Encourage flexibility in the division of land, the siting and design of buildings, and other improvements to reduce the impact of development on environmentally-sensitive areas and to retain healthy native and beneficial vegetation and trees.

- Policy 4.75** **Low-impact development and best practices.** Encourage use of low-impact development, habitat-friendly development, bird-friendly design, and green infrastructure.
- Policy 4.76** **Impervious surfaces.** Limit use of and strive to reduce impervious surfaces and associated impacts on hydrologic function, air and water quality, habitat connectivity, tree canopy, and urban heat island effects.
- Policy 4.77** **Hazards to wildlife.** Encourage building, lighting, site, and infrastructure design and practices that provide safe fish and wildlife passage, and reduce or mitigate hazards to birds, bats, and other wildlife.
- Policy 4.78** **Access to nature.** Promote equitable, safe, and well-designed physical and visual access to nature for all Portlanders, while also maintaining the functions and values of significant natural resources, fish, and wildlife. Provide access to major natural features, including:
- Water bodies such as the Willamette and Columbia rivers, Smith and Bybee Lakes, creeks, streams, and sloughs.
  - Major topographic features such as the West Hills, Mt. Tabor, and the East Buttes.
  - Natural areas such as Forest Park and Oaks Bottom.

## **Hazard-resilient design**

Portland has varied topography, with hills, buttes, abundant trees, and vegetation. It is also located at the confluence of two major river systems. As a result, there are periodic floods, wildfires, and landslides. The city is also in a seismically-active region, at risk for earthquakes from local faults and the Cascadia Subduction Zone in the Pacific Ocean. These policies direct development away from hazard-prone areas, seek to reduce hazard risks and impacts, and improve resilience to disasters and climate change.

- Policy 4.79** **Natural hazards and climate change risks and impacts.** Limit development in or near areas prone to natural hazards, using the most current hazard and climate change-related information and maps.
- Policy 4.80** **Geological hazards.** Evaluate slope and soil characteristics, including liquefaction potential, landslide hazards, and other geologic hazards.
- Policy 4.81** **Disaster-resilient development.** Encourage development and site-management approaches that reduce the risks and impacts of natural disasters or other major disturbances and that improve the ability of people, wildlife, natural systems, and property to withstand and recover from such events.

## DESIGN AND DEVELOPMENT

---

- Policy 4.82**    **Portland Harbor facilities.** Reduce natural hazard risks to critical public and private energy and transportation facilities in the Portland Harbor.
- Policy 4.83**    **Urban heat islands.** Encourage development, building, landscaping, and infrastructure design that reduce urban heat island effects.
- Policy 4.84**    **Planning and disaster recovery.** Facilitate effective disaster recovery by providing recommended updates to land use designations and development codes, in preparation for natural disasters.

### Healthy food

Access to healthy food is important for many reasons. A nourishing diet is critical to maintaining good health and avoiding chronic disease. This leads to better long-term public health outcomes and lower healthcare costs. Food behaviors are shaped at an early age. Children who are exposed to healthy foods and eating are more likely to develop healthful food behaviors than those who are not.

In spite of these benefits, many Portlanders do not have good access to healthy food. These policies promote a range of approaches for improving access to healthy food through buying and growing. The policies help meet the Portland Plan goal for 90 percent of Portlanders to live within a half-mile of a store or market that sells healthy food.

- Policy 4.85**    **Grocery stores and markets in centers.** Facilitate the retention and development of grocery stores, neighborhood-based markets, and farmers markets offering fresh produce in centers. Provide adequate land supply to accommodate a full spectrum of grocery stores catering to all socioeconomic groups and providing groceries at all levels of affordability.
- Policy 4.86**    **Neighborhood food access.** Encourage small, neighborhood-based retail food opportunities, such as corner markets, food co-ops, food buying clubs, and community-supported agriculture pickup/drop-off sites, to fill in service gaps in food access across the city.
- Policy 4.87**    **Growing food.** Increase opportunities to grow food for personal consumption, donation, sales, and educational purposes.
- Policy 4.88**    **Access to community gardens.** Ensure that community gardens are allowed in areas close to or accessible via transit to people living in areas zoned for mixed-use or multi-dwelling development, where residents have few opportunities to grow food in yards.