

A CLIMATE RESILIENCE ELEMENT RESOURCE GUIDE FOR COMPREHENSIVE PLANS

Introduction

Because of its location, low elevations, and dependence on the coast, Maryland's Eastern Shore is incredibly vulnerable to the effects of Sea Level Rise (SLR), loss of low-lying land and structures, saltwater intrusion into surface water and groundwater, and increased flooding from storm events. Maryland's Eastern Shore is the third most threatened region in the United States by sea-level rise. Each year summers are getting hotter, droughts are longer and less predictable, and storm events bring more extreme precipitation. Consequently, our infrastructure and emergency systems are increasingly strained under these new and stressful conditions and need resiliency planning through resources like "Community Lifelines." As shorelines have become more developed, an increasing number of people and assets are located in vulnerable flood zones. As our landscape has been developed we have increased impervious surfaces leading to stormwater flooding. Across the region, the effects of localized periodic flooding, shoreline erosion, and permanent inundation have altered the character of the shoreline. In recent decades, coastal communities have had to contend with an increase in the frequency of flood events.

Climate Change will impact existing infrastructure and natural resources in the short term, while also posing challenges to the durability of future development with long-term design life. Long-range planning and accounting for changes in sea level and ~~annual~~-precipitation will help lead to informed decisions for public and private investments by minimizing risk and potential for damage to both existing and future resources. Adapting to the changing climate and building resilience into our comprehensive planning will be crucial for the sustainable growth and well-being of Maryland's ~~Eastern Shore~~-communities.

In Maryland, counties and municipalities exercising planning and zoning authority do so under State enabling legislation known as the [Land Use Article](#). The Land Use Article [Subsection (§) 3-201] charges local Planning Commissions with the responsibility to prepare a comprehensive plan (amendment or update), prescribes mandatory plan elements (e.g. land use, transportation), and permits the Planning Commission to develop optional elements, such as a climate resilience element. Before forwarding a recommended comprehensive plan or update to the elected officials the jurisdiction must submit the draft plan for a State 60-day clearinghouse review (60-day review). Following the 60-day review period the Planning Commission is required to hold a public hearing for comments on the draft plan. Following the 60-day review period, the Planning Commission must conduct a public hearing (and may make changes to the draft plan amendment or update, in consideration of the 60-day review and the local public hearing testimony). The Planning Commission then forwards its recommended plan for adoption by the local elected officials, and

the elected officials must hold a public meeting to consider, remand, modify, reject, or adopt the final comprehensive plan.

Document Overview & Objectives

The Climate Resilience Element (CRE) is designed to support county and town planning commissions in their comprehensive plan updates. As communities face the growing challenge of climate change and its impacts, this document serves as a tool to assist in integrating these critical considerations into planning efforts either as an added element or addressed in specific chapters. This document provides a list of specific strategies and action items to enhance climate resiliency, along with references to other plans and assessments that serve as exemplary models. By utilizing this document, the CRE aims to guide and inspire planning commissions as they navigate the complexities of climate resilience and ensure the long-term sustainability and preparedness of our communities.

The CRE lays the groundwork for:

- A resilient community that is adaptable to the impacts of climate change, and recognizes and protects physical, economic, and social value
- Proactively anticipating and addressing future coastal threats that may affect the security and prosperity of future generations
- Increased public understanding and reassurance through a comprehensive response to climate change impacts
- Interagency, regional, and federal collaboration and partnerships that are coordinated, transparent, and focused on delivering implementable and innovative solutions
- Capacity building that enables leadership and staff to implement effective solutions
- Develop key elements in comprehensive plans to help local governments apply for funding and technical assistance
- Encourage public-private partnerships in climate resilience projects and best management practices

How to Use:

Sections I – V below outline the various sectors of our communities that will be impacted by climate change. Each section lists suggestions as to how communities can plan for mitigation and resilience.

Each jurisdiction should understand the nuance of how climate change will impact their communities, neighborhoods, and stakeholders.

Where appropriate, your comprehensive plan should reference your jurisdiction's needs to be resilient. This document offers suggestions as to which elements in your comprehensive plan should outline your needs.

Climate change will impact all sectors of our communities so it is important for climate resilience to be woven throughout your comprehensive plan as opposed to listed as a stand-alone element.

Climate Resilience Strategies

I. Hazard Mitigation Actions

The following strategies may be suitable for the "Areas of Critical State", "Housing", "Implementation", "Transportation", and "Sensitive Area" sections of Comprehensive Plans:

Planning Integration and Coordination

Effective hazard mitigation involves integrating resilience measures into comprehensive planning and fostering collaboration among stakeholders. By aligning efforts and incorporating post-disaster redevelopment plans, communities can proactively address risks and enhance their adaptive capacity.

- Integrate hazard mitigation planning with comprehensive planning:
 - Align resilience measures into land use, development, and infrastructure decisions.
 - Incorporate hazard mitigation strategies, including post-disaster redevelopment plans, into comprehensive plans.
 - Develop FEMA Community Lifelines.
 - Develop plan implementation funding needs, including stormwater conveyance upgrades, source water protection, flood management, studies, etc.
- Foster collaboration and coordination:
 - Establish ongoing coordination between planning departments and emergency management agencies.
 - Encourage collaboration among stakeholders to align efforts and enhance adaptive capacity.
 - Establish coordination with local military installations or other federal landowners as necessary.

Data Management and Research

Accurate data collection, analysis, and sharing are essential for informed decision-making and targeted mitigation strategies. By implementing comprehensive tracking systems and fostering scientific research, communities can better understand risks and optimize their mitigation efforts.

- Comprehensive data tracking and analysis:
 - Establish a robust tracking system to monitor and document hazard events, damages, and repair costs.
 - Use collected data to inform decision-making, prioritize mitigation measures, and allocate resources effectively.
- Scientific research and data sharing:
 - Support scientific efforts to monitor and map coastal climate change impacts.
 - Collaborate with research institutions, government agencies, and stakeholders to gather and analyze data.
 - Transparently share collected data and research findings to support evidence-based decision-making.
- Cross-jurisdictional collaboration:
 - Enhance collaboration and information sharing across jurisdictions to mitigate cross-border impacts.
 - Foster partnerships and regional initiatives for collective resilience in shared watersheds.
 - Foster collaboration with federal landowners, particularly military installations when relevant.
 - Coordinate emergency response plans and preparedness efforts for a unified approach.

Resilient Infrastructure and Policy

Building resilient infrastructure and integrating hazard mitigation principles into policies are vital for long-term resilience. By enhancing infrastructure, preserving cultural and historical assets, and integrating climate change considerations, communities can create a robust framework for sustainable and adaptive development.

- Infrastructure resilience:
 - Enhance waterfront areas to adapt to hazard events and climate change impacts.
 - Enhance resilience to stormwater flooding in areas with large amounts of impervious surfaces and near rivers and streams that experience poor water quality due to stormwater runoff.
 - Integrate nature-based solutions and resilient design principles for waterfront structures.

- Prioritize the maintenance of streams, culverts, and waterways to mitigate hazards.
- Commercial and Residential Property disclosure and septic system and water wells management:
 - Implement real estate disclosure requirements for properties in flood-prone areas.
 - Conduct site assessments, resilient system design, and regulatory measures to avoid septic system submersion.
 - Raise public awareness through education campaigns about septic system vulnerabilities and mitigation measures.
- Cultural and historical preservation:
 - Incorporate cultural and historical preservation into coastal resiliency planning.
 - Protect significant sites, including cemeteries, from hazard events and climate change impacts.
 - Collaborate with preservation organizations and stakeholders for integrated resilience planning.
- Climate change integration in planning:
 - Encourage the integration of climate change and natural hazard planning into private and public planning documents.
 - Advocate for policies and regulations that require climate change considerations.
 - Ensure long-term resilience by incorporating climate change into planning operations, and maintenance.

II. Land Use Planning & Zoning Actions

The following strategies may be suitable for the “Land Use”, “Housing”, and “Implementation” sections of Comprehensive Plans:

Land Use Planning

Effective land use planning is essential for fostering climate resilience in communities. By incorporating climate-related factors into land use plans, communities can prioritize resilient development, protect critical areas, and enhance their adaptive capacity.

- Modify urban landscaping requirements:
 - Increase permeable surfaces to reduce stormwater runoff and promote groundwater recharge.
 - Promote the use of green infrastructure, such as rain gardens, bioswales, and green roofs, to manage stormwater and enhance biodiversity.
- Mixed-use development:

- Encourage mixed-use development patterns that promote compact, walkable communities.
- Integrate residential, commercial, and recreational spaces to reduce reliance on automobiles and enhance accessibility.
- Preservation of open space:
 - Prioritize the preservation and protection of open spaces, greenbelts, and natural areas to enhance carbon sequestration & biodiversity conservation as well as expand recreational opportunities.
 - Incorporate green infrastructure networks and ecological corridors to enhance connectivity and resilience of natural habitats.
- Sustainable Growth principles:
 - Embrace Sustainable Growth principles that promote infill development, compact land use patterns, and transit-oriented design to optimize land use, minimize urban sprawl, and support sustainable transportation options.
- Implement resource conservation practices:
 - Integrate energy-efficient and sustainable measures in all publicly owned buildings to reduce energy consumption and carbon emissions.
 - Promote water conservation practices, such as rainwater harvesting, greywater reuse, and efficient irrigation systems.
 - Conduct educational outreach to raise awareness among private property owners about resource conservation practices, energy-efficient retrofits, and sustainable landscaping.

Zoning Regulations and Guidance Documents

Zoning regulations and Guidance Documents play a crucial role in guiding land use and development within a community, particularly given that implementation ordinances (i.e. zoning, subdivision regulations, water and sewer master plans) are to be “consistent with” or have “consistency with” a comprehensive plan. By incorporating climate-related factors into zoning regulations, communities can promote sustainable land use practices, protect vulnerable areas, and enhance resilience.

- Comprehensive environmental assessments:
 - Conduct environmental assessments to evaluate climate change impacts and identify areas at risk from hazards like sea-level rise, storm surge, and flooding.
 - Use assessment findings to inform land use and zoning decisions and prioritize areas for resilience planning.
 - Include a multi-parcel perspective to allow watershed-scale management.
- Coastal Resilience Zones:

- Establish a “Coastal Resilience Zone” (or overlay zone) within zoning regulations that anticipate future climate change impacts, such as permanent inundation, frequent flooding, significant damage from storms, storm surge, or wave action.
- Define clear guidelines and regulations for preferred or required activities, infrastructure, and development within coastal resilience zones.
- Encourage water-related activities, low-impact uses, and marsh migration zones.
- Specify exclusions for critical infrastructure and hazardous materials to mitigate risk.
- Stricter construction regulations:
 - Develop and implement construction regulations specifically tailored to climate resilience objectives.
 - Condition zoning on developer willingness to fund stormwater conveyance capacity.
 - Enhance the resilience of structures against multiple hazards.
- Exceed FEMA Flood Map requirements:
 - Surpass minimum requirements set by FEMA flood maps and locally adopted floodplain ordinances, to enhance resilience and/or apply stringent building codes associated with V zones to A zones (also referred to as the regulatory floodplain).
 - Under the FEMA National Floodplain Insurance Program (NFIP), a local jurisdiction may voluntarily enter into the Community Rating System (CRS). By establishing a local CRS, the jurisdiction may adopt various ‘standards’ above the minimum Federal requirements, which may increase resilience from flood-related damage throughout that community, and potentially reduce the NFIP insurance premium rate throughout that jurisdiction.
 - Implement higher freeboard standards for additional safety against flooding and wave impacts.
 - Consider property buyouts or voluntary acquisition programs in flood-prone areas.
 - Extend regulatory measures to encompass the 500-year floodplain to account for long-term climate projections.
- Prioritize strategic land acquisition:
 - Develop a prioritized list of properties for strategic land acquisition based on vulnerability and resilience enhancement (see Florida Statute 163.3178(7)).
 - Consider ecological services, buffering, and hazard mitigation.
- Incorporate climate considerations:
 - Implement an ordinance that mandates climate change and sea-level rise considerations in permitting, land use, and capital investment decisions.
 - Ensure that future projects align with long-term resilience objectives.

- Integrate climate resilience into the decision-making process for sustainable and adaptive development.

Building Codes and Standards

Building codes and standards are essential in ensuring effective and safe structures in the face of climate-related hazards. Strategies to update and strengthen building codes and standards aim to address climate risks, promote energy efficiency, and support resilient construction practices. By adopting robust building codes, communities can enhance the long-term sustainability and resilience of their built environment.

- Enhance resilience standards:
 - Develop and enforce codes that prioritize climate resilience and consider multiple specific hazards such as high winds and flooding.
 - Incorporate climate data and projections into building design requirements to account for future climate conditions.
- Sustainable design and construction:
 - Incorporate energy-efficient and sustainable design principles into building codes, encouraging the use of energy-saving technologies, passive design strategies, and renewable energy systems.
 - Promote the use of sustainable materials and construction practices that minimize environmental impacts and enhance durability.
 - Encourage the adoption of green building certification programs, such as LEED (Leadership in Energy and Environmental Design) or equivalent, to incentivize sustainable construction practices.
- Guidance & support:
 - Provide guidance and technical support to architects, engineers, buildings, and developers to ensure compliance with resilient design and construction standards.
 - Collaborate with industry professionals, local associations, and stakeholders to foster knowledge sharing, innovation, and best practices in resilient construction.

III. Infrastructure

The following strategies may be suitable for the “Development Regulation”, “Housing”, “Public Facilities & Services”, ~~and~~ “Transportation”, “Water Resources” sections of Comprehensive Plans:

Transportation

As the impacts of climate change continue to manifest on the East Coast, it is essential to prioritize transportation systems that are adaptable, resilient, and sustainable. By integrating climate considerations into transportation planning and design, communities can better withstand and respond to the challenges posed by extreme weather events and changing climate conditions.

- Multi-modal transportation planning:
 - Prioritize plans that prioritize and integrate various transportation modes, including walking, cycling, public transit, and shared mobility options.
 - Enhance connectivity and accessibility between different transportation modes to provide diverse and flexible travel choices.
- Climate-resilient road design:
 - Evaluate and improve road infrastructure to withstand the impacts of climate change, such as increased flooding, storm surge, and temperature extremes.
 - Incorporate climate projections into road design, considering factors like sea-level rise, changing precipitation patterns, and extreme heat.
 - Implement green infrastructure elements, such as bioswales and permeable pavements, to manage stormwater and reduce flooding risks.
- Emergency evacuation routes:
 - Identify and designate primary and secondary evacuation routes that are resilient to climate-related hazards.
 - Develop emergency response plans that consider potential disruptions to transportation infrastructure and ensure efficient evacuation processes.
 - Coordinate with relevant agencies, local and Federal ~~and~~ stakeholders to implement evacuation plans and conduct regular drills to test their effectiveness.

Energy & Utilities

Climate resilient energy & utilities infrastructure aim to address both climate impact challenges while ensuring the availability of sustainable and reliable energy, especially during emergencies. These strategies aim to reduce greenhouse gas emissions, optimize energy usage, improve infrastructure reliability, and promote the adoption of clean and resilient energy sources.

- Renewable energy integration:
 - Promote the adoption of renewable energy sources, such as solar, wind, and geothermal, to diversify the energy mix and reduce reliance on fossil fuels.
 - Encourage the development of local renewable energy projects and incentivize their installation in residential, commercial, and industrial sectors.
- Energy efficiency measures:
 - Promote energy efficiency programs to reduce energy consumption in buildings, transportation, and infrastructure systems.
 - Develop energy conservation initiatives and promote smart grid technologies to optimize energy usage and reduce peak demand.

- Grid resilience & redundancy:
 - Evaluate and enhance the resilience of energy infrastructure, including power grids, substations, and transmission lines, to withstand climate-related hazards like storms and floods.
- Critical infrastructure resiliency:
 - Ensure critical facilities, such as hospitals, emergency response centers, and water treatment plants, have reliable backup power systems to operate during power outages or other disruptions.
 - Evaluate and improve the resiliency of liquid fuels infrastructure.
- Climate-informed utility planning:
 - Collaborate with utility providers to integrate climate data and projections into long-term planning processes for energy supply, distribution, and infrastructure development.
 - Evaluate and address potential risks to energy infrastructure, such as SLR impacts or increased temperature.
 - Develop climate adaptation and resilience plans for utility providers to mitigate risks, maintain service continuity, and support the needs of the community during climate-related events.

Water & Wastewater

The impacts of climate change, such as increased precipitation, sea-level rise, and extreme weather events, pose significant challenges to water and wastewater infrastructure. To address these challenges, it is essential to integrate climate considerations into the planning, design, and operation of water and wastewater systems.

- Infrastructure resilience:
 - Evaluate and improve the resilience of water supply and distribution systems.
 - Assess and upgrade wastewater treatment facilities for climate resilience.
 - Implement flood protection measures for water and wastewater infrastructure.
- Integrated water management:
 - Develop integrated water resource management plans considering climate impacts.
 - Implement water conservation and efficiency measures to address water scarcity.
 - Enhance stormwater management systems to mitigate flood risks and pollution.
- Water quality protection:
 - Implement measures to reduce pollutants and protect water quality.
 - Enhance monitoring programs for early detection of water contamination events.
- Asset management & maintenance:
 - Implement proactive asset management practices for water and wastewater infrastructure.
 - Conduct regular inspections and maintenance to ensure system reliability during climate events (i.e., storms, flooding, extreme heat, and cold).

- Assess and upgrade aging infrastructure to address vulnerabilities and improve resilience.

Communication and Technology

Effective communication systems and advanced technologies play a crucial role in enhancing community resilience and response. This subcategory focuses on strategies to leverage communication tools and technological advancements to improve emergency response, increase public awareness, and facilitate efficient decision-making to enhance community preparedness and adaptability to climate hazards.

- Emergency communication systems:
 - Enhance communication systems for timely and reliable emergency notifications during sudden extreme weather events.
 - Establish redundant communication networks for uninterrupted connectivity during emergencies.
 - Coordinate communications with local, state, and federal agencies and partners to ensure uniformity of emergency messaging.
- Data management & analysis:
 - Develop data management systems to collect, analyze, and share climate-related data.
 - Implement Geographic Information System (GIS) tools for mapping and visualizing climate impacts.
- Digital infrastructure:
 - Support broadband access expansion to ensure connectivity for all community members.
 - Foster innovation in digital infrastructure for efficient data management and communication.

IV. Natural Systems

The following strategies may be suitable for the “Environmental Resources” & “Water Resources Element” sections of Comprehensive Plans:

Ecosystem Conservation & Restoration

Areas within this category focus on the conservation, restoration, and sustainable management of key ecosystems, including wetlands, riparian zones, and forests. These natural systems play a crucial role in enhancing climate resiliency in coastal communities by providing benefits such as flood protection, water filtration, habitat preservation, and carbon sequestration. By prioritizing actions in this category, communities can safeguard these valuable ecosystems and promote their long-term health and functionality.

- Wetland protection & restoration:
 - Identify and prioritize the protection of existing wetland areas.

- Restore and enhance degraded wetlands to improve their ecological functions.
- Implement measures to prevent wetland loss and degradation due to development and other human activities.
- Riparian zone management:
 - Develop and enforce regulations for the protection and sustainable management of riparian zones.
 - Implement vegetation restoration projects along streams, rivers, and shorelines to stabilize banks, reduce erosion, and enhance water quality.
 - Promote buffer zones to minimize the impact of land uses on riparian areas and maintain healthy aquatic ecosystems.
- Forest conservation and management:
 - Develop strategies for conserving and managing forested areas within the community.
 - Establish tree canopy goals and implement tree planting initiatives within the community to increase forest cover.
 - Promote sustainable forestry practices that balance economic interests with ecological considerations.
- Wildlife habitat conservation:
 - Identify critical wildlife habitats, such as nesting areas, migratory routes, and breeding grounds, that will be impacted by climate change, such as through SLR, and plan for their protection or migration.
 - Implement measures to minimize habitat fragmentation and promote wildlife corridors.
 - Encourage the use of wildlife-friendly design principles in new development projects.

Water Quality Protection

Water quality protection is crucial for maintaining the health of coastal ecosystems and safeguarding the well-being of communities. By implementing strategies to protect and improve water quality, Eastern Shore communities can mitigate pollution, enhance habitat conservation, and ensure the availability of clean water resources.

- Update the Water Resource Element (WRE) based on the MD Department of Planning Guidance
 - Conduct a comprehensive review of the current WRE and incorporate the updated guidance provided by the Maryland Department of Planning
 - Ensure that the WRE reflects the latest recommendations, regulations, and best practices for water quality protection, considering factors such as stormwater management, buffer zones, wastewater treatment, agricultural practices, shoreline protection, and water monitoring
- Stormwater management:
 - Increase green infrastructure for effective stormwater management.
 - Promote permeable surfaces to facilitate natural infiltration and groundwater recharge.
- Wastewater treatment and management:

- Encourage decentralized wastewater treatment systems where suitable.
- Agricultural and land management:
 - Establish buffer zones and riparian buffers to filter agricultural runoff.
 - Promote educational/technical/financial assistance programs focused on soil and water conservation.
- Shoreline and riparian zone protection:
 - Preserve and create new coastal buffer efforts and support the creation of more wetlands and soft shorelines within coastal areas.
 - Implement stricter setback requirements and vegetative buffers to protect water quality.
- Water monitoring and assessment:
 - Establish comprehensive water quality monitoring programs to assess local waterways.
 - Integrate climate change impacts and natural hazards into small watershed action plans (SWAPs).
 - Conduct ongoing detailed analysis of climate information, storm event trends, and local hydrology to support the creation of an interconnected network of green spaces to support biodiversity and watershed-based water quality management.

Green Infrastructure Development

Green infrastructure refers to the strategic planning, design, and implementation of natural systems and features to enhance ecosystem services, improve resilience, and promote sustainable development. Incorporating green infrastructure in comprehensive plans helps to address climate change impacts, mitigate flooding, improve water quality, enhance biodiversity, and provide social and economic benefits within a community.

- Urban greening:
 - Increase tree canopy cover in urban areas to mitigate urban heat island effects.
 - Develop and maintain green spaces, parks, and urban forests to provide recreational opportunities and enhance air quality.
 - Promote the development of green infrastructure in public spaces/buildings, such as green roofs and vertical gardens, to improve stormwater management and energy efficiency.
- Natural corridors and wildlife habitat:
 - Protect and restore natural corridors and wildlife habitats to maintain ecological connectivity.
 - Integrate green corridors and parks strategically within the landscape to enhance the protection of surrounding communities from the impacts of hazard events.
 - Create an interconnected network of green spaces to support biodiversity and watershed-based water quality management.
- Sustainable land use:

- Encourage low-impact development practices to minimize soil erosion and stormwater runoff.
- Promote mixed land use planning to create walkable communities and reduce reliance on automobiles.
- Incorporate green infrastructure into new development projects (green roofs, rain gardens, permeable pavements).

V. Public Services

The following strategies may be suitable for the “Community Facilities & Services” sections of Comprehensive Plans:

Emergency Management and Response

Effective emergency management and response are vital for minimizing the impacts of hazard events. By strengthening coordination among local government, NGOs, and private entities, updating emergency operations plans, and enhancing the capabilities of emergency workers, communities can improve their readiness and response to natural hazards.

- Strengthen coordination between local government, NGOs, ~~and~~ private entities, State and Federal agencies:
 - Regularly review and update the Emergency Operations Plan (EOP) and related Emergency Support Functions (ESF) to integrate climate resilience considerations.
 - Establish clear communication channels and protocols that prioritize climate-related hazards and their impacts.
- Enhance emergency worker capabilities:
 - Provide regular training and exercises focused on climate-related hazards and their implications.
 - Equip emergency workers with the necessary resources and tools to effectively respond to climate-related events.

Public Health and Safety

Protecting public health and safety is paramount, particularly in the face of climate-related challenges. Anticipating and addressing potential disease outbreaks, ensuring the protection of residents during hazard events, and promoting flood insurance and preparation awareness are essential components of comprehensive public health and safety planning.

- Anticipate and address potential disease outbreaks:
 - Develop protocols and plans for responding to health challenges caused by extreme weather events and changing climatic conditions, considering climate resilience strategies.

- Collaborate with healthcare providers and agencies to ensure healthcare services are climate-resilient and can adequately respond to changing health risks.
- Protect residents and employees within the jurisdiction during hazard events:
 - Develop evacuation plans and shelters considering the long-term impacts of climate change and future hazards.
 - Implement early warning systems and public communication strategies that incorporate climate projections and promote adaptive actions.
 - Coordinate communications for emergency evacuations with major employers, main street groups, and downtown associations.
 - Ensure the specific needs of vulnerable populations are addressed in emergency planning and response efforts.
- Improve awareness and education:
 - Conduct outreach campaigns to educate residents about the links between climate change, hazard events, and public health.
 - Provide resources and guidelines for residents to protect their health and safety during climate-related hazards, emphasizing resilience-building measures.

Social Services and Community Support

Social services and community support are critical for vulnerable populations and the overall well-being of communities. Designating community leaders and organizations for assistance during hazard events, increasing community food security, and developing hazard protections for critical facilities are key strategies to ensure that social services are accessible, effective, and responsive to the needs of the community.

- Designate community leaders and organizations for assistance:
 - Identify and train individuals who can provide support and assistance to community members during climate-related hazards.
 - Establish partnerships with community-based organizations to integrate climate resilience into social service programs.
- Increase community food security:
 - Develop strategies to enhance local food production and access considering climate impacts on agriculture and food systems.
- Implement hazard protections for critical facilities:
 - Conduct risk assessments to identify critical facilities such as hospitals, fire stations, and police stations that are vulnerable to climate-related hazards.
 - Develop and implement measures to protect these facilities from current and future climate impacts.

Education and Outreach

Education and outreach initiatives are essential for raising awareness, promoting resilience, and fostering community engagement. By developing hazard awareness programs, conducting climate and emergency planning education, and improving knowledge about flood insurance,

communities can empower residents with the necessary information to make informed decisions and take proactive measures.

- Develop hazard awareness programs:
 - Create educational materials and resources that highlight the relationship between climate change and hazard events, promoting climate resilience measures.
- Conduct climate, resiliency, and emergency planning education:
 - Offer educational programs that address the impacts of climate change on hazards and promote adaptation and mitigation strategies.
 - Foster partnerships with academic institutions to support research, education, and innovation in climate resilience and emergency planning.
- Improve awareness about flood insurance and preparation:
 - Collaborate with insurance providers and community organizations to raise awareness about flood insurance as a climate resilience strategy.

Suggested Reading List/Resources

- [CDC Climate & Health- Regional Health Effects](#)
- [QAC Sea Level Rise & Coastal Vulnerability & Implementation Plan](#)
- [Ocean City Hazard Mitigation Plan](#)
- [San Francisco SLR Action Plan](#)
- [EPA Protecting Water Resources with Smart Growth](#)
- [Department of Defense Strategy for Resilience and Health Defense Communities](#)
- [FEMA Community Lifelines](#)

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