Appendix D Implementation Tracking Tool

City of Carmel-by-the-Sea Potential Adaptation Strategies

Background

Carmel-by-the-Sea (City) is currently experiencing, and will continue to experience, climate change impacts, including stronger storms, increased wildfire risk, sea level rise, extended drought conditions, and increased temperature. The City developed a Climate Adaptation Plan to increase resilience of the community and assets in Carmel-by-the-Sea. In September 2019, a Climate Committee was convened to develop and guide the preparation of the Climate Adaptation Plan. The City published a Climate Change Vulnerability Assessment in July 2021. The Vulnerability Assessment characterizes climate hazards that will impact the community and City-owned assets, describes the community's major climate vulnerabilities, and identifies work that has already been done by the City to improve resilience.

This workbook provides the City's Climate Adatpation Goals, Policies and Actions to take to improve the resilience of its community members, natural environment, infrastructure and built environment. The adaptation goals, policies, and actions were developed to address all priority assets at risk in the City's Vulnerability Assessment. The **All Goals, Policies & Actions** tab shows all adaptation goals, policies and actions developed. The **Near-Term, Mid-Term**, and **Long-Term** tabs provides actions to be completed in the near term, mid-term, and long-term, respectively (organized by goal and policy) to support implementation.

Definitions

Goals: Broad statements describing community desires. The Carmel-by-the-Sea adaptation goals are modeled after the Adaptation Vision and Principles developed by the California Governor's Office of Planning and Research (OPR) Integrated Climate Adaptation & Resiliency Program (ICARP). Each goal is focused on increasing the resilience of one of the following broad asset categories: community, natural assets, and infrastructure and the built environment.

Policies: Specific position statements that support the achievement of goals and serve as guides to City Council, Planning Commission, and city staff, when making decisions.

Actions: Specific methods to implement and achieve policies and goals.

City of Carmel-by-the-Sea Adaptation Strategies

Goal/Policy/Action	Climate Hazard	Asset	Metric	Timeframe	Implementation Lead	i Cost	Source
Goal 1. A Healthy, Safe, and Resilient Community Policy 1.1. Provide effective emergency preparedness and response in anticipation of potential climate-related disasters				Near-term (1-2 years); Mid-term (3-5 years); Long-term (5- 10 years)		\$-Low (<\$50K); \$\$- Medium (\$50K - \$100K); \$\$\$-High (>\$100K)	Adapted from the Southern California Adaptation Planning Guide, Appendix F - General. Plan and Local Coastal Plan Model Policies
Action 1.1.1. Maintain and Update Evacuation Plan. Maintain and update an Evacuation Plan every 8 years at a minimum to account for all types of emergencies. The plan should focus on the most vulnerable groups including the elderly community and persons with disabilities.	All	Elderly Population and People with Disabilities, Residents, Service Industry Workers	Evacuation Plan updated every 8 years, with the first update by 2023 Number of block	Near-term (by 2024) and Ongoing	Police & Fire	\$	Suggested by Climate Committee Members
Action 1.1.2. Update Emergency Preparedness. Incorporate climate change risk and impact considerations into Carmel-by-the-Sea CERT programming and materials to promote emergency preparedness at a neighborhood block-by-block scale. CERT to promote block-by-block scale emergency preparedness by organizing City by blocks and recruiting Block Captains. Action 1.1.3. Collaborate with Monterey Fire. Collaborate with Monterey Fire on its inspection and outreach efforts to reduce fire	All	Residents, Local Businesses, Second Homes	captains formed, climate change risk incorporated into Number of meetings	Near-term (by 2024)	Police & Fire	\$	Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions
risks. Continue to coordinate with the CERT program and reach out to new potential outreach partners such as local businesses, community groups, and utilities to help distribute information to increase resident and homeowner awareness and knowledge of how to prepare for emergencies.	Wildfire	Residents, Local Businesses, Second	held with Monterey Fire and CERT program; educational		Dalies & Fire	Ś	Carmel-by-the-Sea Vulnerability Assessment (July 2021)
Action 1.1.4. Publicize Local Evacuation Routes. Publicize both City and Monterey County evacuation routes for the community on the City's website, and in the newsletter and brochures. Target additional outreach to the most vulnerable such as the elderly and people with disabilities in the event of a wildfire or other disaster. Action 1.1.5. Evaluate Evacuation Route Capacity. Evaluate evacuation route capacity, safety, and viability under a range of	All	Elderly Population and People with Disabilities, Residents	Educational materials	, , , ,		\$	Carmel-by-the-Sea Vulnerability Assessment (July 2021)
emergency scenarios and identify and implement mitigating actions in 2022, in accordance with Assembly Bill 747.	All	Elderly Population and People with Disabilities, Residents, Service Industry Workers	Analysis evaluating evacuation route capacity completed	Mid-term (by 2027)	Police & Fire	ss	Assembly Bill 747 Requirement
Action 1.1.6. Evacuation Alternatives and Access. Identify neighborhoods that have single ingress/egress, pursuant to Senate Bill 99, and develop and employ evacuation alternatives, such as a gathering facility, and/or alternative emergency access routes in those neighborhoods. Evaluate potential congestion issues in the event of an evacuation and develop and maintain a list of residents who may have difficulty evacuating. Evaluate options to provide evacuation, such as a shuttle service, for residents with mobility challenges			Analysis identifying neighborhoods that have single ingress/ egress and evacuation alternatives completed:				
Action 1.1.7. Develop Local Partnerships to Increase Resistance to Wildfire Structural Damage. Work with local community groups to publicize the Firewise Community Certification program (e.g., on the City website and in the newsletter and brochures) and encourage		Elderly Population and People with Disabilities, Residents, Service Industry Workers	List of limited- mobility residents developed	Mid-term (by 2027)	Police & Fire	\$\$	Senate Bill 99 Requirement
resident involvement. Policy 1.2. Focus adaptation efforts and engagement on the most vulnerable populations.	Wildfire	Residents, Second Homes	held to publicize Firewise Community Certification	Mid-term (by 2027)	Police & Fire	\$	Carmel-by-the-Sea Vulnerability Assessment (July 2021) Adapted from the Southern California Adaptation Planning Guide, Appendix F - General
							Plan and Local Coastal Plan Model Policies
Action 1.2.1. Establish a Resillence Hub. Formally designate a physical resillence hub, such as the Youth Center or Public Library, and make it available during extreme heat events, poor air quality, severe weather events, and other highly hazardous conditions for use by the community. Provide the following essential resources in the resilience hub(s): health programming and resources, food, refrigeration, charging stations, basic medical supplies, and other emergency supplies. Electrified heating and cooling paired with backup power sources like battery storage providers redundancy and continues services in the event of a power outage. Designate a virtual resilience hub on the City website where residents can access information about the physical resilience hub and resilience efforts. Action 1.2.2. Limit the Impacts of Climate Change on the Most Vulnerable Populations. Develop a framework to define equity in	All	Elderly Population and People with Disabilities, Residents, Service Industry Workers Elderly Population and People with	Resilience Hub established; Existing facilities upgraded to provide all essential resources Carmel-by-the-Sea	Near-term (by 2024)	Public Works / Police & Fire / Library	\$\$	Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions
Carmel-by-the-Sea and develop adaptation approaches that are equitably implemented. Action 1.2.3. Engage the Community. Develop educational materials notifying the community about the resilience hub and how to	All	Disabilities, Residents, Service Industry Workers	Equity Framework developed	Mid-term (by 2027)	Community Planning & Building	\$	Inspired by the City of Berkeley Existing Building Electrification Strategy
access it by sharing updates across city and community channels. Partner with the CERT program and block captains, and community groups, to prioritize disadvantaged/marginalized communities including the elderly and individuals with disabilities. Action 1.2.4. Social Support Network. Collaborate with the Carmel Foundation and other community-based organizations (e.g.,	Ali	Elderly Population and People with Disabilities, Residents, Service Industry Workers	Community engagement plan developed Social support	Near-term (by 2024)	Library / City Hall / Police Department	\$	Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions
Carmel Residents Association) to develop an inventory of locations with isolated elderly residents and people with disabilities and develop a plan for a social support network to increase resilience to climate change, for example by promoting home electrification. Action 1.2.5. Back-up Power for Vulnerable Populations. Coordinate with 3CE, PG&E, and emergency management services to	All	Elderly Population and People with Disabilities	network created; Inventory of location created Number of		Police Department / CERT / Community Planning & Building	\$	Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions
establish backup power and emergency grid shutdown protocols that protect the most vulnerable populations.	All	Elderly Population and People with Disabilities	households with backup power established	Long-term (by 2032)	Police & Fire / Public Works	\$\$\$	Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions
Policy 1.3. Minimize health impacts of climate change.							Adapted from the Southern California Adaptation Planning Guide, Appendix F - General Plan and Local Coastal Plan Model Policies
Action 1.3.1. Partner with Monterey County Health Department. Coordinate with Monterey County Health Department to develop and enhance disaster and emergency early warning systems to incorporate objective data and information for potential health threats such as heat-limes, and illnesses complicated by low air quality due to climate change hazards. Include information on early warning systems and other resilience efforts on the City's virtual resilience hub (Action 1.2.1.) Action 1.3.2. Initiate a Heat Pump Retrofit Program. Create a program to help fund property owners to convert HVAC units to heat	All	Elderly Population and People with Disabilities, Residents, Local Businesses, Service Industry Workers	Emergency early warning systems updated Number of heat	Near-term (by 2024)	Police & Fire	\$	Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions
pumps, which provide water heating and space heating in addition to cooling and can improve indoor air quality and community adaptation to extreme heat. Include a microgrid energy storage component to increase power reliability. Prioritize at-risk populations for retroff incentives. Action 1.3.3. Invest in Improving Resilience in Critical Facilities. Invest in sustainable backup power sources to provide redundancy	Wildfire, Increased Temperature	Elderly Population and People with Disabilities, Residents, Local Businesses, Service Industry Workers	pumps installed; Number of heat pumps serving at risk residents Number of critical	Mid-term (by 2027)	Community Planning & Building	\$\$	inspired by the City of Berkeley Existing Building Electrification Strategy
and continued services for critical facilities, including City Hall, Carmel Police Department, Carmel Fire Department, the Libraries, and assisted living facilities, in the event of a power outage triggered by a climate event.	All	Elderly Population and People with Disabilities, Residents	facilities with sustainable backup power sources.	Mid-term (by2027)	Public Works	\$\$\$	Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions

Action 1.3.4. Conduct a Feasibility Study for Existing Building Electrification and Back-up Power. Perform an electrification feasibility study/existing building analysis in order to understand the potential for, and associated costs of, electrification retrofitting, including heat pumps, along with on-site energy generation and battery storage to provide a more resilient back-up power supply. Establish a plan for reducing or eliminating natural gas from existing buildings, potentially through a reach code, and building refinece to potential electrical grid shutoffs. Action 1.3.5. Improve Resilience in Existing Building Stock. Develop a program for identifying funding and incentives to weatherize residential and commercial buildings that addresses severe weather protection, energy efficiency, indoor air quality improvements, and other housing improvements. Include an outrach campaign as part of this program to advertise the benefits of weatherizing and electrifying buildings. Action 1.3.6. Promote Funding Opportunities. Work with partners like 3CE and PG&E to identify and promote potential resilience opportunities and accessible funding and financing mechanisms to pay for building electrification, weatherization, and battery backups.	Wildfire, Increased Temp All	Elderly Population and People with Disabilities, Residents Elderly Population and People with Disabilities, Residents Elderly Population and People with Disabilities, Residents	Feasibility Study for Existing Building Electrification and Back-up Power completed Nubmer of retrofitted structures Funding identified and promoted to community, Number of projects initiated with incentives.	Mid-term (by 2027) Long-term (by 2032) Near-term (by 2024)	Public Works Community Planning & Building Community Planning and Building/Police and Fire/Public	\$\$ \$\$	Inspired by the City of Berkeley Existing Building Electrification Strategy Adapted from the Southern California Adaptation Planning Guide, Appendix F - General. Plan and Local Coastal Plan Model Policies (City of Placentia policy) Passive House Principles Inspired by the City of Pacifica All-Electric Reach Code
Policy 1.4. Increase economic resilience.		Disabilities, Residents, Local Businesses	with incentives	Near-term (by 2024)	WORKS	>	Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of
Action 1.4.1. Develop Partnerhsips to Provide Support to Displaced Workers. Work in partnership with the Monterey County Workforce Development Board and the Carmel Chamber of Commerce to develop a plan to provide support for displaced workers that establishes education and training partnerships for workers displaced or workers negatively impacted by climate change or climate adaptation policies.	All	Service Industry Workers, Local Businesses	Commitment from business community to develop a plan to support displaced workers	Near-term (by 2024)	Community Planning & Building / City Hall	ss	Adaptation Strategies and Actions Adapted from the Southern California Adaptation Planning Guide, Appendix FGeneral. Plan and Local Coastal Plan Model Policies
Action 1.4.2. Establish Partnerships to Develop a Resilient Economy. Partner with the County of Monterey Economic Development Department, Carmel Chamber of Commerce, and the Monterey County Workforce Development Board, to develop more integrated strategies for protection of jobs, economic sustenance, and for the protection of vulnerable populations more at-risk of temporary or permanent job dislocation due to climate change. Action 1.4.3. Business Resilience Outreach Program. Collaborate with businesses in the city to better understand shared climate risks and identify opportunities to advance shared climate resilience priorities. Partner with the Carmel Chamber of Commerce and Visit	All	Service Industry Workers, Local Businesses	Number of meetings held to develop strategies for job		Community Planning & Building / City Hall		Adapted from the Southern California Adaptation Planning Guide, Appendix F - General. Plan and Local Coastal Plan Model Policies
Carmel to pilot and implement a local business resilience initiative to build small business capacity before a time of crisis by increasing the awareness of, and preparedness for, business continuity risks faced by the city's local businesses, providing a toolki of intervention to help local businesses manage risks and enhance business resilience, and conducting outreach campaigns to engage leaders from the business, government, and community sectors to enhance preparedness for economic resilience. Action 1.4.4. Hire a Grant Writer/Climate Coordinator. Hire a grant writer/Climate coordinator to pursue available grants to fund	All	Service Industry Workers, Local Businesses		Near-term (by 2024)	Community Planning & Building / City Hall	\$\$	Adapted from Gateway Cities Climate Adaptation Model General Plan Language. [December 2018]
climate adaptation implementation and track progress.	All	All	Grant writer/climate coordinator hired	Near-term (by 2024)	City Hall	sss	Suggested at the 11/18/2021 public meeting
Goal 2. A Natural Environment Resilient to Climate Hazards Policy 2.1. Protect and restore climate-vulnerable habitat and ecosystems.							Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of
Action 2.1.1. Increase Funding for Climate Adaptation. Earmark Capital Improvement Program (CIP) funding for design, permitting, and implementation of adaptation projects and strategies, such as those in the 2021 Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) and integrated Regional Watershed Management Program (IRWMP). Action 2.1.2. Increase Urban Forest Resilience. Update and implement the Forest Management Plan to: 1. Beview and consider modifications to the preferred urbanized tree species that would result in improved resilience in the context of the expected climate of the second half of the century, reduce wildfire hazard, and that takes into account aesthetics and the ecological benefits of natives or near-native (e.g., native species from the Southwestern US or Mexico would likely be preferred to European species). 2. Buckude planting and maintenance guidelines to improve tree health, particularly in the public right-of-way 3. Bucopporate tree species that have greater drought and wildfire resistance	All	Urban Forest, Mission Trail Nature Preserve, North Dunes, Carmel Beach, Water Supply	Number of adaptation projects funded through CIP	Near-term (by 2024)	Public Works	\$\$	Adaptation Strategies and Actions Carmel-by-the-Sea Vulnerability Assessment (July 2021)
4. In addition to drought-tolerant landscaping, include landscaping guidelines that reduce wildfire hazard on private property. 5. Enhance carbon sequestration potential Update of the Plan should include collaboration and engagement with stakeholders, such as the Monterey Pine Forest Watch, California State University, Monterey Bay, and vulnerable communities.	Drought, Increased		Forest Management	Near-term (by 2024)	Public Works Forestry Division / Forest and Beach		
Action 2.1.3. Increase Resilience of the Mission Trail Nature Preserve. Update and implement the Mission Trail Nature Preserve Master Plan to consider the potential impacts of climate change and to reduce wildfire risk for neighboring private properties. Coordinate with CAL FIRE and the Monterey Fire Departments to incorporate Best Practices into an annual maintenance plan.	Temp, Wildfire	Urban Forest	Plan Updated Mission Trail Nature Preserve Master Plan	and Ongoing	Commission Community Planning & Building and Public	\$\$	Carmel-by-the-Sea Vulnerability Assessment (July 2021)
Continuities win Cr. rice and the unchanged prince prince of uncolorable esser Paticles into an annual mantenance plan, including cost estimates for implementation and revenue sources for implementation. Action 2.1.4. Increase Resilience of the North Dunes. Continue to fund maintenance and monitoring at the North Dunes to determine how the changing climate will affect dune habitats. Implement enhancement efforts to improve resilience of the North Dunes.	All	Mission Trail Nature Preserve	updated Regular maintenance and monitoring	and Ongoing	Works Community Planning	\$\$	Carmel-by-the-Sea Vulnerability Assessment (July 2021)
Action 2.1.5. Increase Resilience to Stronger Storms. When designing projects in the city, including those recommended in the Mission Trail Stream Stability Study, size improvements to handle larger storms consistent with best available climate change projections.	All	North Dunes	occurring at North Dunes Number of projects sizing improvements to handle larger	Ongoing	& Building and Public Works	\$\$	Carmel-by-the-Sea Vulnerability Assessment (July 2021)
Action 2.1.6. Beach Sand Monitoring Program. Reinstate beach sand monitoring program described in the Shoreline Management Plan.	Stronger Storms	Mission Trail Nature Preserve	storms. Active beach sand monitoring program	Near-term (by 2024)		\$\$	Carmel-by-the-Sea Vulnerability Assessment (July 2021)
Action 2.1.7. Carmel Cove Sand Supply. Partner with local researchers (e.g., California State University Monterey Bay) or other sources to conduct Carmel Cove sand supply dynamics analysis.	Sea Level Rise Sea Level Rise	Carmel Beach	in place Carmel Cove sand supply dynamics analysis completed	Near-term (by 2024) Long-term (by 2032)	Community Planning & Building and Public	\$\$ \$\$	Carmel-by-the-Sea Vulnerability Assessment (July 2021) Carmel-by-the-Sea Vulnerability Assessment (July 2021)
Goal 3. Resilient Infrastructure and Built Environment	oca resei uipe	Correct Deach	analysis completed	cong-term (by 2032)	···OIR3	**	
Policy 3.1. Support greater resilience, redundancy, and reliability of local and regional infrastructure and the built environment. Action 3.1.1. Underground Utilities in Fire Hazard Zones. Determine the feasibility of, and community support for, undergrounding power lines in the Mission Trail Nature Preserve, designated evacuation routes, and in other high priority areas in the Very High Fire Hazard Severity Zone. Develop a plan for undergrounding utilities based on results from the feasibility study and begin implementation in the most vulnerable communities.	Wildfire	Water Supply, Sanitary Sewer System, Power Grid, Overhead Communication, PG&E/Communication Underground Lines gas, cable		Near-term (by 2024)	Community Planning & Building and Public	555	Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions Carmel-by-the-Sea Vulnerability Assessment (July 2021)

Action 3.1.2. Increase Green Infrastructure. Modify Capital Improvement Program (CIP) project design to consistently evaluate the potential for green infrastructure to be incorporated in CIP projects in the public right-of-way and on public lands. Identify and develop a green infrastructure pilot project that will reduce runoff volume and capture and infiltrate stormwater, based on projecte changes in precipitation amounts due to climate change, and incorporates tree and shrub planting to increase carbon sequestration the city. Action 3.1.3. Reduce Stormwater Runoff. Reduce stormwater runoff through implementation of stormwater diversion and infiltrati	n Increased Temp, Wildfire	Urban Forest, Storm Drain System	Change in impervious surface coverage.	Near-term (by 2024)	Public Works	\$\$	Adapted from the Carmel-by-the-Sea Vulnerability Assessment (July 2021)
projects that reduce pollution problems caused by more frequent and intense storms and more extreme flooding events.	Stronger Storms	Storm Drain System, Carmel Beach	Stormwater diversion project implemented	Long-term (by 2032)	Public Works	\$\$\$	Suggested by Climate Committee Members
Action 3.1.4. Storm Drain Repair Funding and Improvements. Earmark Capital Improvement Program (CIP) funding for design, permitting and implementation of Storm drain repairs. Include strategies in the 2021 Multi-Jurisdictional Hazard Mitigation Plan (MIHMP) for potential regional funding. Upsize fortm Orain Master Plan (SDMP) improvements, especially when making repairs in t lower reaches of watersheds, to handle larger storms. Action 3.1.5. Retrofit Existing Critical Buildings and Related Infrastructure. Conduct an evaluation of all first-responder and municip facilities to determine retrofits that may be needed for long-term resilience to climate change hazards including sea-level rise relates	Stronger Storms	Storm Drain System	Number of adaptation projects funded through CIP	Near-term (by 2024)	Public Works	\$\$\$	Carmel-by-the-Sea Vulnerability Assessment (July 2021)
ractinutes to determine retrorits that may be needed for long-term resilience to climate change nazards including sea-level rise related flooding and recrosion, increased wind/storm events, an increase in high heat days, and/or wildfire depending upon location and risk factors. Develop a budget and schedule for retrofits based on the findings of the municipal facilities. Retrofit existing critical building as detailed in the program schedule. Action 3.1.6. Water Conservation. Partner with the Monterey Peninsula Water Management District to reduce water demand and		Emergency Response Facilities – Fire station, EOC, PD, PW, City Hall, etc., Hospital and Emergency Medical Care Facilities	List of critical buildings and related infrastructure requiring retrofits	Near-term (by 2024)	Public Works	\$\$\$	Adapted from the Southern California Adaptation Planning Guide, Appendix F - General Plan and Local Coastal Plan Model Policies
Action 5.1.6. Water Conservation - and re-With the Monterley Pelinisula water Management Institut to Technica water terminal and increase water recycling, such as stormwater capture and grey water reuse, through education and outreach. Provide information a incentives for residential water use reduction, focusing engagement on vulnerable communities first.	nd		Water demand reduced, incentives for grey water reuse developed and		Community Planning & Building and Public		
	Drought	Water Supply	shared	Near-term (by 2024)		\$	Carmel-by-the-Sea Vulnerability Assessment (July 2021)
Action 3.1.7. Bluff Structural Monitoring Program. Implement bluff structural monitoring program and do follow-up monitoring pos storm to identify additional footing stability issues.	t-		Bluff structural monitoring program				
Action 3.1.8. Sea Level Rise Coastal Vulnerability Study. Hire coastal engineer with experience in planning for climate change to: 1. Eondruct research and prepare a Sea-Level Rise Vulnerability Study to further assess the risks to the city's coastal assets, including	Sea Level Rise	Carmel Beach	implemented	Mid-term (by 2027)	Public Works	\$\$	Carmel-by-the-Sea Vulnerability Assessment (July 2021)
the beach, sea walls, revetments, bluffs, stairs and access, public bathrooms, parking areas, drainage infrastructure, and utilities. 2. Betermine adaptation measures and Local Coastal Program policy options, including but not limited to: a) Mostly natural, unarmored North Dunes area; b) mostly armored bluffs along Scenic Roach south of 8th Avenue; c) Unarmored dunes along private property between 8th Avenue and Del Mar Parking Lot; d) Armored private properties on the bluffs at the north end of the City (Pescadero Caryon area). 3. Bualuate the use of thresholds for phasing adaptation projects based on changing coastal conditions. Consider applying an adaptive pathways approach which establishes trigger thresholds for different adaptive measures based on the severity of the impact from flooding and erosion associated with sea-level rise.							
		Carmel Beach, Shoreline Access	Sea-level rise vulnerability study				
Action 3.1.9. Wastewater Treatment. Collaborate with the Carmel Area Wastewater District (CAWD) to increase the facility's resilience to sea level rise and stronger storms. Maintain staff/council personnel as ilaisons to CAWD.	Sea Level Rise	Infrastructure, Seawall and Revetments	completed number of collaboration meetings with CAWD regarding facility's		Community Planning	\$\$\$	Carmel-by-the-Sea Vulnerability Assessment (July 2021)
	Sea Level Rise Sea Level Rise, Stronger Storms	Infrastructure, Seawall and Revetments Water Supply, Storm Drain System	collaboration		Community Planning		Carmel-by-the-Sea Vulnerability Assessment (July 2021) Suggested by Climate Committee Members Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of
resilience to sea level rise and stronger storms. Maintain staff/council personnel as liaisons to CAWD.	Sea Level Rise,		collaboration meetings with CAWD regarding facility's resilience	Near-term (by 2024)	Community Planning & Building and Public		Suggested by Climate Committee Members
resilience to sea level rise and stronger storms. Maintain staff/council personnel as liaisons to CAWD. Policy 3.2. Incorporate climate change adaptation into relevant plans and standards. Action 3.2.1. Development Standards. Evaluate City's development standards for consistency with best practices for reducing climat change risk (e.g., wildfire risk) for both new and existing development, including but not limited to incorporating defensible space design in landscaping guidelines and permitting the use of fire-resistant building materials that may conflict with current Design	Sea Level Rise, Stronger Storms		collaboration meetings with CAWD regarding facility's	Near-term (by 2024) and Ongoing	Community Planning & Building and Public		Suggested by Climate Committee Members Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of
resilience to sea level rise and stronger storms. Maintain staff/council personnel as liaisons to CAWD. Policy 3.2. Incorporate climate change adaptation into relevant plans and standards. Action 3.2.1. Development Standards. Evaluate City's development standards for consistency with best practices for reducing climat change risk (e.g., wildfire risk) for both new and existing development, including but not limited to incorporating defensible space design in landscaping guidelines and permitting the use of fire-resistant building materials that may conflict with current Design Guidelines. Develop a project checklist for building and site adaptation measures. The checklist, included with permit applications, should serve to provide education to permit applicants on modifications to site plans and structures that can improve a project's	Sea Level Rise, Stronger Storms	Water Supply, Storm Drain System Residents, Local Businesses, Second	Number of collaboration meetings with CAWD regarding facility's resilience Number of projects implementing adaptation measures, city development standards consistent with best practices for reducing wildfire	Near-term (by 2024) and Ongoing	Community Planning & Building and Public Works Community Planning	s	Suggested by Climate Committee Members Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions
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Policy 3.2. Incorporate climate change adaptation into relevant plans and standards. Action 3.2.1. Development Standards. Evaluate City's development standards for consistency with best practices for reducing climat change risk (e.g., wildfire risk) for both new and existing development, including but not limited to incorporating defensible space design in landscaping guidelines and permitting the use of fire-resistant building materials that may conflict with current Design Guidelines. Develop a project checklist for building and site adaptation measures. The checklist, included with permit applications, should serve to provide education to permit applicants on modifications to site plans and structures that can improve a project's resilience to existing and potential future climate change hazards. Action 3.2.2. Update City Planning Guidelines. Update the City's municipal code to maintain consistency with current California code (California Building Code Chapter 7 and California Residental Code R337) throughout the City.	Sea Level Rise, Stronger Storms	Water Supply, Storm Drain System Residents, Local Businesses, Second	runine or collaboration meetings with CAWD regarding facility's resilience Number of projects implementing adaptation measures, City development standards consistent with best practices for reducing wildfire risk clipt	Near-term (by 2024) and Ongoing	Community Planning & Building and Public Works Community Planning and Building	s	Suggested by Climate Committee Members Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions
resilience to sea level rise and stronger storms. Maintain staff/council personnel as liaisons to CAWD. Policy 3.2. Incorporate climate change adaptation into relevant plans and standards. Action 3.2.1. Development Standards. Evaluate City's development standards for consistency with best practices for reducing climat change risk (e.g., wildfire risk) for both new and existing development, including but not limited to incorporating defensible space design in landscaping guidelines and permitting the use of fire-resistant building materials that may conflict with current Design Guidelines. Develop a project hecklist for building and site adaptation measures. The checklist, included with permit applications, should serve to provide education to permit applicants on modifications to site plans and structures that can improve a project's resilience to existing and potential future climate change hazards. Action 3.2.1. Update City Planning Guidelines. Dudate the City's municipal code to maintain consistency with current California code.	Sea Level Rise, Stronger Storms e All Wildfire, Stronger	Water Supply, Storm Drain System Residents, Local Businesses, Second Homes Residents, Local Businesses, Second	realizer or collaboration meetings with CAWD regarding facility's resilience Number of projects implementing adaptation measures (Ity development standards consistent with best practices for reducing wildfire risk City municipal code consistent with current California	Near-term (by 2024) and Ongoing Mid-term (by 2027)	Community Planning & Building and Public Works Community Planning and Building	s	Suggested by Climate Committee Members Adapted from the Southern California Adaptation Planning Guide, Appendix B. Matrix of. Adaptation Strategies and Actions Carmel-by-the-Sea Vulnerability Assessment (July 2021)
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City of Carmel-by-the-Sea	

City of Carmel-by-the-Sea Near-Term/Ongoing Adaptation Strate					Implementation .			
Goal J. A Healthy, Safe, and Resilient Community	Climate Hazard	Asset	Metric	Timeframe	tead	Cost	Source Sta	etus Notes
Policy 1.1. Provide effective emergency preparedness and response in anticipation of potential climate-related disasters				Near-term (1-2 years); Mid-term (3- 5 years); Long-term (5-10 years)		\$-Low (<\$50K); \$\$- Medium (\$50K - \$100K); \$\$\$-High (>\$100K)	Adapted from the Southern California Adaptation Planning Guide, Appendix F - General Plan and Local Coastal Plan Model Policies	
Action 1.1. Maintain and Update Execution Plan. Maintain and update an Evacuation Plan every 8 years at a minimum to account for all types of emergencies. The plan should flour on the most uninvasible groups including the elderly community and parsons sufficiently account of calculations.	a h	Elderly Population and People with Disabilities, Residents, Service Industry Workers	Evacuation Plan updated every 8 years, with the first update by 2023	Near-term (by 2024) and Ongoing	Police & Fire	s	Suggested by Climate Committee Members	
Action 1.1.2 Update Emergency Preparedness. Incorporate climate change risk and impact considerations into Carmel-by-the-Sas CERT programming and materials is to promote emergency proparedness at an eniphorhood book by-block scale. CERT to promote block-by-block scale emergency preparedness by organizing CEy by blocks and recruiting Block Captains.	All	Residents, Local Businesses, Second Homes	update by 2023 Number of block captains formed, climate change risk incorporated into	Near-term (bv 2024)		s	Adapted from the Southern California Adaptation Planning Guide. Appendix & Matrix of Adaptation Strategies and Actions	
Action 1.1. Collaborate with Monterey five. Collaborate with Monterey Fire on its inspection and outreach efforts to reduce five risks. Confirms to coordinate with the CEEF program and reach out to new powdent all orderand partners could not community groups, and utilities to help distribute information to increase resident and homeowner awareness and knowledge of how to prepare for emergencies.		Residents, Local Businesses, Second	held with Monterey Fire and CERT program; educational					
Action 1.1.4. Publicite Local Evacuation Routes. Publicite both City and Monterry County evacuation routes for the community on the City's webcile, and in the newsletter and brochures. Target additional outreach to the most vulnerable such as the elderly and oncole with disabilities in the event of a widelite or other disabate. Policy 1.2. Focus applications efforts and engigment on the most vulnerable populations.	Wildfire	Homes Elderly Population and People with Disabilities. Residents	Educational	d Near-term (by 2024)		s	Carmel-br-the-Sea Vulnerability Assessment (July 2021) Carmel-br-the-Sea Vulnerability Assessment (July 2021)	
							Adapted from the Southern California Adaptation Planning Guide, Appendix F - General Plan and Local Coastal Plan Model Policies	
Action 1.1. Creation's Resilience with. Formula' designates a physical resilience halb, clean is No Throit Center or Public Liberay, and make it available desiring externed hard events, for any cleaning control and the properties of the propertie		Elderly Population and People with Disabilities, Residents, Service Industry Workers	Resilience Hub established; Existing facilities upgraded to provid all essential resources	e Near-term (by 2024)	Public Works / Police & Fire / Library	\$5	Adaptes from the Southern California Adaptation Planning Guide Appendix & Matrix of Adaptation Strategies and Attons	
Action 1.2.1. Engage the Community. Develop educational materials notifying the community about the recilience hub and how to access it by sharing updates across Cry and community channels. Putters with the CERT program and block captains, and community groups, to princinels disadventaged/magnitabled communities including the elderly and individuals with disabilities. Policy 1.3. Minimize health impacts of climate change.	y All	Elderly Population and People with Disabilities, Residents, Service Industry Workers	Community engagement plan developed	Near-term (by 2024)	Library / City Hall / Police Department	s	Adapted from the Southern California Adaptation Planning Guide, Appendix 8 Matrix of Adaptation Strategies and Actions Adaptation Planning Guide, Appendix F - General Adapted from the Southern California Adaptation Planning Guide. Appendix F - General	
Action 1.3.1. Partner with Monterey County Health Department. Coordinate with Monterey County Health Department to develop							Adapted from the Southern California Adaptation Planning Guide, Appendix F General, Plan and Local Coastal Plan Model Policies	
and enhance disaster and emergency early warring systems to incorporate objective data and information for potential health threats such a sheal-linest, and filteress complicated byto air qualing due to climate changes health stander. Include information on early warning systems and other recilience efforts on the City's virtual resilience hub (Action 1.2.1.)	All	Elderly Population and People with Disabilities, Residents, Local Businesses, Service Industry Workers	Emergency early warning systems updated	Near-term (by 2024)	Police & Fire	s	Adapted from the Southern California Adaptation Manning Guide, Appendix 8 Matrix of Adaptation Strategies and Actions	
Action 1.1.6. Promote Funding Opportunities. Work with partners like SEE and PGEE to identify and promote potential resilience opportunities and accessible funding and financing mechanisms to pay for building electrification, weatherization, and battery backups.	All	Elderly Population and People with	Funding identified and promoted to community; Number	ır	Community Planning and Building/Police			
Policy 1.4. Increase economic resilience.		Disabilities, Residents, Local Businesses	of projects initiated with incentives	Near-term (by 2024)	and Fire/Public Works	s	Inspired by the City of Pacifica All-Electric Reach Code Adapted from the Southern California Adaptation Planning Guide. Appendix & Matrix of	
Action 1.4.1. Develop Partnerhsips to Provide Support to Displaced Workers. Work in partnership with the Monterey County Workforce Development Board and the Carmel Chamber of Commerce to develop a plan to provide support for displaced workers			Commitment from				Adaptation Strategies and Actions	
that establishes education and training partnerships for workers displaced or workers negatively impacted by climate change or climate adaptation policies.	ΔII	Service Industry Workers, Local	business communit to develop a plan to support displaced		Community Planning & Building / City Hall	44	Adapted from the Southern California Adaptation Planning Guide, Appendix F - General Plan and Local Coistal Plan Model Policies	
Action 1.4.3. Business Resilience Outreach Program. Collaborate with businesses in the city to better understand shared climate risk and identify opportunities to advance shared climate resilience priorities. Partner with the Carnel Chamber of Commerce and Visit Carnel to notice and insulance shared climate resilience priorities. Partner with the Carnel Chamber of Commerce and Visit Carnel to notice and insulance shared in cload business resilience instables to busin small business causactive before a time of crisis to	is		workers Toolkit of intervention developed to help	.wwwww.fft (DV 2024)	_ summer / CIN risil	-	- The second bulleting rest products running	
increasing the awareness of, and preparedness for, business continuity risks faced by the city's local businesses, providing a toolkit of intervention to help local businesses manage risks and enhance business resilience, and conducting outreach campaigns to			support local businesses manage					
engage leaders from the business, government, and community sectors to enhance preparedness for economic resilience. Action 1.4.4. Hire a Grant Writer/Climate Coordinator. Hire a grant writer/Climate coordinator to pursue available grants to fund	All	Service Industry Workers, Local Businesses	risks and enhance resilience	Near-term (by 2024)	Community Planning & Building / City Hall	55	Adapted from Gateway Cities Climate Adaptation Model General Plan Language. [December 2018]	
climate adaptation implementation and track progress. Goal 2. A Natural Environment Resilient to Climate Hazards	All	All	Grant writer/climat coordinator hired	e Near-term (by 2024)	City Hall	SSS	Suggested at the 11/18/2021 public meeting	
Policy 2.1. Protect and restore climate-vulnerable habitat and ecosystems.							Adapted from the Southern California Adaptation Planning Guide, Appendix 8 Matrix of Adaptation Strategies and Actions	
Action 2.1.1. Increase Funding for Climate Adaptation. Earmank Capital Improvement Program (CIP) funding for design, permitting, and implementation of adaptation projects and strategies, such as those in the 2021 Multi-Jurisdictional Hazard Mitigation Plan (MIHHMP) and integrated Regional Watershed Management Program (RWMP).	All	Urban Forest, Mission Trail Nature Preserve, North Dunes, Carmel Beach, Water Supply	Number of adaptation projects funded through CIP	Near-term (by 2024)	Public Works	ss	Carmal-by-the-Sea Vulnerability Assessment (July 2021)	
Action 2.1.2. Increase Urban Forest Besilence. Update and implement the Forest Management Plan to: 1. Beview and consider modifications to the preferred urbanized tree species that would result in improved resilience in the context of the expected circulars of the scendar for differ entury, reclaims while heavand, and that takes into account aesthetes; and the ecological benefits of natives or near-mative (e.g., native species from the Southwestern US or Mexico would likely be preferred to European species.)								
2. Br.dude planting and maintenance guidelines to improve tree health, particularly in the public right of way. 3. Br.topporals tree species that have greater drought and widther or existance. 4. Br. addition to designed hotherant fluoridatings include inducing purpolatines that reduce widther hazard on private property. 5. Britance carbon sequestration potential 5. Britance carbon sequestration potential but the property of the propert					Public Works			
California State University, Monterey Bay, and vulnerable communities. Action 2.1.4. Increase Resilience of the North Dunes. Continue to fund maintenance and monitoring at the North Dunes to	Drought, Increased Temp, Wildfire	Urban Forest	Plan Updated	t Near-term (by 2024) and Ongoing	Forestry Division / Forest and Beach Commission	55	Carmel-by-the-Sea Vulnerability Assessment (July 2021)	
determin how the changing climate will affect dune habitats. Implement enhancement efforts to improve resilience of the North Dunes.	All	North Dunes	Regular maintenant and monitoring occurring at North Dunes	Onzoine	Community Planning & Building and Public Works	SS	Carmel-by-the-Sea Vulnerability Assessment (July 2021)	
Action 2.1.5. Increase Retifience to Stronger Sooms. When designing projects in the city, including these recommended in the Mission Trail Stream Stability Study, size improvements to handle larger storms consistent with best available climate change projections.	Stronger Storms	Mission Trail Nature Preserve	Number of projects sizing improvement to handle larger storms.	s Near-term (by 2024)	Bublic Works	55	Carmel-by-the-Sea Vulnerability Assessment (July 2021)	
Action 2.1.6. Beach Sand Monitoring Program. Reinstate beach sand monitoring program described in the Shoreline Management Plan.			Active beach sand monitoring program	n		55	Carmin-op-tine-sea vicinerability Assessment (July 2021)	
Gool 3. Resilient infestructure and Built Environment Policy 3.1. Support greater resilience, redundancy, and reliability of local and regional infrastructure and the built environment.	Sea Level Rise	Carmel Beach	in place	Near-term (by 2024)	Public Works	SS	Carmel by the Sea Vulnerability Assessment (July 2001) Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of	
Action 3.1.1. Underground Utilities in Fire Hazard Zones. Determine the feasibility of, and community support for, undergrounding							Adjustation Strategies and Actions	
power lines in the Mission Trail Nature Preserve, designated evacuation routes, and in other high priority areas in the Very High Frie Hazard Swinty Zone. Devolop a plan for undergrounding utilities based on results from the feasibility study and begin implementation in the most valuerable communities.		Water Supply, Sanitary Sewer System, Power Grid, Overhead Communication, PS&E/Communication Underground Lin	Feasibility Study completed; Plan developed based or Feasibility Study; es- Number of utilities		Community Planning & Building and Public			
Action 1.1.2 increase Green infrastructure. Modify Capital improvement Program (CPP) project design to consistently evaluate the potential for green infrastructure to be incorporated in CPP projects in the public right-of-way and on public lands, identify) and develop a green infrastructure (bit project) that will return runnif volume and regione and infillate afformative, based on develop a green infrastructure (bit project) that will return runnif volume and regione and infillate afformative, based on	Wildfire Stronger Storms,	gis, cable	moved undergroun	d Near-term (by 2024)	Works	555	Carmel-by-the-Sea Vulnerability Assessment (July 2021)	
projected changes in precipitation amounts due to climate change, and incorporates tree and shrub planting to increase carbon sequestration in the city. Action 3.1.4. Storm Dra'n Repair Funding and Improvements. Earmair Capital Improvement Program (CIP) funding for design, permitting and implementation of storm drain respairs. Include strategies in the 2021 Multi-indictional Hazard Mitigation Plan	Increased Temp, Wildfire	Urban Forest, Storm Drain System	impervious surface coverage. Number of	Near-term (by 2024)	Public Works	SS	Adapted from the Carmel-by-the-Sea Vulnerability Assessment (July 2021)	
(Mithd9) for potential regional funding, Uppins Storm Drain Master Fins (SDMF) improvements, especially when making repairs in the lower real-hear of water-fields, it handle larger storm. Action 1.1.5. Retroffs Existing Critical fluidings and feliated Infrastructure. Conduct an evaluation of all first-responder and manicipal facilities to determine recribes that may be needed for long-term recisions to climate change hazards including usa-level	Stronger Storms	Storm Drain System Emergency Response Facilities – Fire	List of critical	Near-term (by 2024)	Public Works	555	Carmel-by-the-Sea Vulnerability Assessment (July 2021)	
rise related flooding and ensisten, increased wind/storm events, an increase in high heat days, and/or widtfire depending upon location and risk factors. Develop a budget and schedule for retrofils based on the findings of the municipal facilities. Retrofit existing critical buddings as detailed in the program schedule. Action 3.1.8. Water Conservation. Partner with the Montreyr Preiriscula Water Management District to reduce water demand and	All	station, EOC, PD, PW, City Hall, etc., Hospital and Emergency Medical Care Facilities	buildings and relate infrastructure requiring retrofits Water demand	Near-term (by 2024)	Public Works	555	Adapted from the Southern California Adaptation Planning Guide. Appendix F - General. Plan and Local Coastal Plan Model Policies	
increase water recycling, ruch as torrewater capture and grey water rosus, through education and outreach. Provide information and incentives for residential water ruse reduction, focusing engagement on vulnerable communities first.	Drought	Water Supply	Water demand reduced, incentives for grey water reus developed and shared	e Near-term (bv 2024)	Community Planning & Building and Public	4	Carmel-by-the-Sea Vulnerability Assessment Lluly 2021)	
Action 1.1.1 Sea Level Nec Casastal Valence Philip (May Ferror counts registere with experience in planning for climate Analyse to 1. Monders's creases in Angelone 1.2. Monders's Casastal Angelone 1.2. Monders's Casastal Angelone 1.2. Monders's Casastal Angelone 1.2. Monders and Monder	Drought	Water Supply	shared	Near-term (by 2024)	Works	3	Carmil-0+-04s-044 Varietabeth Allacament (Lov 2021)	
(Piecadero Canyon area). 3. Bulaute the use of threshods for phasing adaptation projects based on changing coastal conditions. Consider applying an adaptive pathways approach which establishes trigger thresholds for different adaptive measures based on the severity of the impact from flooding and erosion associated with sea-level rise.			Sea-level rise					
Action 3.1.3. Wastewater Treatment. Collaborate with the Carmel Area Wastewater District (CAWD) to increase the facility's resilience to sea level rise and stronger storms. Maintain staff/council personnel as failsons to CAWD.	Sea Level Rise	Carmel Beach, Shoreline Access Infrastructure, Seawall and Revetments	vulnerability study completed collaboration meetings with CAW	Near-term (by 2024)	Community Planning	555	Carmel-by-the-Sea Vulnerability Assessment (July 2021)	
	Sea Level Rise, Stronger Storms	Water Supply, Storm Drain System	regarding facility's resilience	Near-term (by 2024) and Ongoing	& Building and Public Works	\$	Suggested by Climate Committee Members	
Policy 3.2. Incorporate climate change adaptation into relevant plans and standards. Action 3.2.2. Update City Planning Guidelines. Update the City's municipal code to maintain consistency with current California			City municipal code				Adapted from the Southern California Adaptation Planning Guide, Appendix & Matrix of, Adaptation Strategies and Actions	
codes (California Building Code Chapter 7 and California Residential Code R337) throughout the City. Action 125. Multi-furidictional Hazard Mitgation Plan. Maintain a comprehensive list of projects, based on existing plans and gap	Wildfire, Stronger Storms, Wildfire	Residents, Local Businesses, Second Homes	consistent with current California codes	Near-term (by 2024)	Community Planning and Building	SS	Carmel-by-the-Sea Vulnerability Assessment (July 2021)	
identified in the Vulnerzeility Assessment, to provide to Monterey County during updates to the Monterey County Multi- Jurisdictional Hazard Mitigation Plain in 2022 and beyond.	All	All	Number of adaptation projects included in the Mul Jurisdictional Hazar Mitigation Plan	d	Community Planning & Building, Police, and Public Works		Carmol by the Sak Vulnerability Assessment Buly 2001	

City of Carmel-by-the-Sea Mid-Term Adaptation Strategies

City of Carmel-by-the-Sea Mid-Term Adaptation Strategies Goal/Policy/Action					Implementation				
	Climate Hazard	Asset	Metric	Timeframe	Implementation Lead	Cost	Source	Status	Notes
Goal 1. A Healthy, Safe, and Resilient Community									
Policy 1.1. Provide effective emergency preparedness and response in anticipation of potential climate-related disasters				Near-term (1-2 years); Mid-term (3- 5 years); Long-term (5-10 years)		\$-Low (<\$50K); \$\$- Medium (\$50K - \$100K); \$\$\$-High (>\$100K)	Adapted from the Southern California Adaptation Planning Guide, Appendix F - General Plan and Local Coastal Plan Model Policies		
Action 1.1.5. Evaluate Evacuation Route Capacity, Evaluate evacuation route capacity, safety, and viability under a range of emergency scenarios and identify and implement mitigating actions in 2022, in accordance with Assembly Bill 747.	All	Elderly Population and People with Disabilities, Residents, Service Industry Workers		Mid-term (by 2027)	Police & Fire	ss	Assembly Bill 747 Requirement		
Action 1.1.6. Escuartin-Alternatives and Access. Identify neighborhoods that have single repressingers, pursuant to Sentella 810 and develope and employ execution fluenthesists, who has a pubring facility and problems been represented and develope and employee employee posters cross in their conglidations. Evaluate potential congestion issues in the event of an execution, and develop and maintain a list of residents who registroshoots. Evaluate potential congestion states in the event of an execution, such as a shortle surrice, for residents with mobility of the execution of th		Elderly Population and People with Disabilities, Residents, Service Industry Workers	Analysis identifying neighborhoods that have single ingress/ egress and evacuation alternatives completed; List of limited- mobility residents (seelinged)	Mid-term (by 2027)		**	Social No 60 Biocinionnest		
Action 1.1.7. Develop Local Partnerships to Increase Resistance to Wildline Structural Dumage. Work with local community groups to publicion the Freedra Community Certification program (e.g., on the City website and in the newsletter and brochures) and encourage resident involvement.	All 0	Workers Residents Served Homes	Number of meetings held to publicize Firewise Community Certification			22			
Policy 1.2. Focus adaptation efforts and engagement on the most vulnerable populations.	Wildfire	Residents, Second Homes	Certification	Mid-term (by 2027)	Police & Fire	\$	Carmel by the Sea Vulnerability Assessment (July 2021) Adapted from the Southern California Adaptation Planning Guide, Appendix F - General		
							Plan and Local Coastal Plan Model Policies		
Action 1.2.2. Limit the impacts of Climate Change on the Most Vulnerable Populations. Develop a framework to define equity in Carmel-by-the-Sa and develop adoption approaches that are equitable implemented. Action 1.2.4. Social Support Network. Collaborate with the Carmel Foundation and other community-based organizations (e.g.,	All	Elderly Population and People with Disabilities, Residents, Service Industry Workers	Carmel-by-the-Sea Equity Framework developed Social support	Mid-term (by 2027)	Community Planning & Building	s s	Inspired by the City of Berkeley Existing Building Electrification Strategy		
Carmel Residents Association) to develop an inventory of locations with isolated elderly residents and people with disabilities and develop a plan for a social support network to increase resilience to climate change, for example by promoting home electrification.		Elderly Population and People with	network created; Inventory of		Police Department / CERT / Community		Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of		
	All	Disabilities	locations created	Mid-term (by 2027)	Planning & Building	\$	Adaptation Strategies and Actions		
Policy 1.3. Minimize health impacts of climate change.							Adapted from the Southern California Adaptation Planning Guide, Appendix F - General Plan and Local Coastal Plan Model Policies		
Action 1.3.2. Initiate a Heart Pump Retrofit Program. Create a program to help fund property owners to convert HVAC units to heat pumps, which provide water heating and space heating in addition to cooling and can improve indoor air quality and community adaptation to extreme heat. Include a microgrid energy storage component to increase power reliability. Prioritize at-risk populations for retrofit incentives.	Wildfire, Increased Temperature	Elderly Population and People with Disabilities, Residents, Local Businesses, Service Industry Workers	Number of heat pumps installed; Number of heat pumps serving at ris residents	k Mid-term (by 2027)	Community Planning	3 «	run and Local Statute run motions roston, Inspired by the City of Berkeley Existing Building Electrification Strategy		
Action 1.3.1 hours in Improving Resilience in Critical Facilities, Invest in containable backup power courses to provide redundancy and continued remotes for provide reducing including City Hard, Ceremin Police Department, Carmel Frie Department,	All	Elderly Population and People with Disabilities. Residents	Number of critical facilities with sustainable backup power sources.	Mid-term (by2027)		SSS	Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions		
Action 1.3.4. Conduct a Feasibility Study for Existing Building Electrification and Busk-up Power. Priform an electrification in sizebility tody/existing building analysis in order to understand the potential for, and associated cost of, electrification retrofitting, including heat pumps, lakely may be a more resilient back-up-power supply. Stability plan for reducing or elementary analysis and busk-up-plan for reducing or elementary analysis from existing buildings, potentially through a reach code, and building resilience to	Wildfire, Increased	Elderly Population and People with Disabilities Residents	Feasibility Study for Existing Building Electrification and Back-up Power	Mid-term (hv 2027)		44	Inceired by the City of Radiabay Existing Building Flattoffication Strangey		
Policy 1.4. Increase economic resilience.	Temp	Disabilities. Residents	completed	Mid-term (by 2027)	Public Works	SS	Inspired by the City of Berkeley Existing Building Electrification Strategy Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of		
							Adaptation Strategies and Actions		
Action 1.4.2. Establish Partnersrips to Develop a Resilient Economy. Partner with the County of Monterey Economic Development Department, Cameral Chamber of Commerce, and the Monterey County Workforce Development Board, to develop more integrated totaleges for protection of soft occurrence of the Montered County County Workforce on County Coun		Service Industry Workers, Local	Number of meetings held to develop strategies for job		Community Planning & Building / City Hal		Adiasted from the Southern California Adjustation Planning Guide, Appendix F - General Plan and Local Coastal Plan Model Policies		
Goal 2. A Natural Environment Resilient to Climate Hazards	All	Businesses	protection	Mid-term (by 2027)	& Building / City Hall	3			
Policy 2.1. Protect and restore climate-vulnerable habitat and ecosystems. Action 2.1.3. Increase Resilience of the Mission Trail Nature Preserve. Update and implement the Mission Trail Nature Preserve.							Adapted from the Southern California Adaptation Planning Guide, Appendix 8 Matrix of Adaptation Strategies and Actions		
Masser Plan to consider the potential impacts of climate change and to reduce widtlife in six for neighboring private properties. Coordinate with CAL RIEB and the Monterly Fire Departments to incorporate best fractices into an annual maintenance plan, including cost estimates for implementation and revenue sources for implementation.	All	Mission Trail Nature Preserve	Mission Trail Nature Preserve Master Pla updated	n Mid-term (by 2027) and Oneoine	Community Planning & Building and Publi Works		Carmel-by-the-Sea Vulnerability Assessment (July 2021)		
Policy 3.1. Support greater resilience, redundancy, and reliability of local and regional infrastructure and the built environment.							Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of		
							Adaptation Strategies and Actions		
Action 1.1.7. Bithf Structural Monitoring Program. Implement bluff structural monitoring program and do follow-up monitoring positions to identify additional footing stability issues.	Sea Level Rise	Carmel Beach	Bluff structural monitoring program implemented	Mid-term (by 2027)	Public Works	SS	Carmel-by-the-Sea Vulnerability Assessment (July 2021)		
Policy 3.2. Incorporate climate change adaptation into relevant plans and standards.							Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions		
Adion 3.1.1 Development Standards. Evaluate City, development standards for consistency with best practice for reducing date and the standards of the standards		Residents, Local Businesses, Second Homes	implementing adaptation measures, City development standards consisten with best practices for reducing wildfire risk		Community Planning	B SS	Adaptions to plages and Actions. Carmol by the Sea Vulner ability Assessment Duly 2023		
orosect's recisioned to existing and contential future climate chained reazerds. Action 8.2.3. Interopreted Climate Chainge Adaptation into Local Plans. Prioritize the update of local plans, including the Climate Chainge Vulnerability Assessment, Local Coastal Program, General Plan, Mission Trails Nature Reserve Master Plan, Del Mart Master Plan, Shorilan Management Plan, and drought planning to promote climate change resilience as new information is available.	All	nomes	nsk Number plans updated to incorporate	MIO-WITH EDV 2027	Community Planning & Building / Public		Carmel-by-the-sea vumerability Assessment Duv 20213 Adapted from the Southern California Adaptation Planning Guide, Appendix F - General		
rang, and were management rish, and drought planning to promote camate change resistence as new information is available.	All	All	adaptation	Mid-term (by 2027)		SS	Adapted from the Southern California Adaptation Manning Guide, Appendix F - General Man and Local Coastal Man Model Policies		

City of Carmel-by-the-Sea Long-Term Adaptation Strategies

Goal/Policy/Action	Climate Hazard	Asset	Metric	Timeframe	Implementation Lead C	ost	Source	Status	Notes
Policy 1.2. Focus adaptation efforts and engagement on the most vulnerable populations.							Adapted from the Southern California Adaptation Planning Guide, Appendix F - General Plan and Local Coastal Plan Model Policies	1	
Action 1.2.5. Back-up Prover for Vulnerable Populations. Coordinate with 3CE, PGSE, and emergency management services to establish backup power and emergency grid shutdown protocols that protect the most winerable populations.	All	Elderly Population and People with Disabilities	Number of households with backup power established	Lone-term (by 2032)	Police & Fire / Public Works S	ss	Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions		
Policy 1.3. Minimize health impacts of climate change.							Adapted from the Southern California Adaptation Planning Guide, Appendix F - General Plan and Local Coastal Plan Model Policies	1	
Action 1.3.5. Improve Realisms in Existing Building Stock. Dowlog a program for identifying funding and incremises to examines a residential and commercial buildings that addresses sense weather protection, energy efficiency, indeed and expresses and other housing improvements, include an outrack-campaign as part of this program to advertise the benefits of weatherizing and GON 12.A. Natural existences of Existing to Climate Issuers.		Elderly Population and People with Disabilities, Residents	Nubmer of retrofitted structures	Long-term (by 2032)	Community Planning & Building \$	s	Adapted from the Southern California Adaptation Planning Guide, Appendix F - General Plan and Local Coastal Plan Model Policies (City of Placentia policy) Passive House Principles	1	
Policy 2.1. Protect and restore climate-vulnerable habitat and ecosystems.							Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of Adaptation Strategies and Actions		
Action 2.1.7. Carmel Cove Sand Supply. Partner with local researchers (e.g., California State University Monterey Bay) or other sources									
to conduct Carmel Cove sand supply dynamics analysis.	Sea Level Bise	Carmel Boarh	Carmel Cove sand supply dynamics analysis completed	Lone-term (by 2032)	Community Planning & Building and Public Works S		Carmel, by the Sea Vidnarability Assessment (Leby 2021)		
Goal 3. Resilient infrastructure and Sulft Environment						_			
Policy 3.1. Support greater resilience, redundancy, and reliability of local and regional infrastructure and the built environment.							Adapted from the Southern California Adaptation Planning Guide. Appendix B Matrix of Adaptation Strategies and Actions		
Action 3.1.3. Reduce Stormwater Runoff. Reduce stormwater nunoff through implementation of stormwater diversion and infiltration projects that neduce polistion problems caused by more frequent and intense storms and more extreme flooding events.	Stronger Storms	Storm Drain System. Carmel Beach	Stormwater diversion project implemented	Lone-term (by 2032)	Public Works \$	ss	Supposited by Climate Committee Members		
Policy 3.2. Incorporate climate change adaptation into relevant plans and standards.							Adapted from the Southern California Adaptation Planning Guide, Appendix B Matrix of, Adaptation Strategies and Actions		
Action 3.2.4. Update Shoreline Management Plan. Update Shoreline Management Plan and Local Coletal Program based on results of Sea-Aved Rise Vulnerability Study.	Sea Level Rise	Carmel Boarh	Shoreline Management Plan and Local Coastal Program updated	Lone-term (by 2032)	Community Planning & Building and Public Works S	4	Carmal, by Jha-Sao Virinarability accessment (Into 2021)		
						-			