

Vulnerability Code Key									Climate Hazard Key						
A	B	T	E	R	N	H	L	W							
Agriculture	Buildings and Landscape	Business, Recreation, Tourism	Ecosystems	Emergency Prep. and Response	Energy	Health	Land Use Planning	Water	Wildfire	Wildfire Smoke	Higher temperatures	Drier summers and drought	Wetter winters/springs + flooding	Climate variability	Population increase and climate migration

	Goal + Strategy	Vulnerability Code + Climate Hazard	Mitigation Benefit
wildfire smoke, heat, + health	Improve indoor air quality in homes during wildfire smoke events.	B10, T9, R3, R7, H14, H15, H18, H19, H20, H21	
	Educate homeowners about options to create safe indoor air (MERV 13 air filters, portable air cleaners).	      	
	Make portable air cleaners more accessible.	      	
	Improve indoor air quality in (and access to) public and commercial buildings during wildfire smoke and heat events.	B10, T9, R3, R7, H2, H14, H15, H18, H19, H20, H21	
	Develop voluntary measures and incentives, such as a certification program for clean air buildings, to encourage safe indoor air in public buildings, schools, and businesses.	      	
	Find, develop and promote indoor recreation, exercise and creative activity spaces that are available to individuals and recreational programs (youth and adult) that are accessible to all income levels.	      	
	Improve health and safety of outdoor workers during heat and smoke events.	B10, T9, R3, R7, H2, H14, H15, H18, H19, H20, H21	
	Encourage employers to change workplace environment to reduce wildfire smoke and heat exposure, for example by adapting work hours, following Cal/OSHA guidance and/or providing pop-up clean air shelters and/or appropriate safety equipment (PPE) for employees.	      	
	Increase awareness of physical health impacts of wildfire smoke.	T9, H2, H3, H14, H15, H19, H20	
	Educational campaign about air quality data, health risks of wildfire smoke, connection between smoke and heat, and activity guidelines.	      	
Collaborate with healthcare providers to develop and promote wildfire smoke exposure checklist; educate providers who are unaware.	      		

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wildfire smoke, heat, + health	Encourage healthcare providers to work with sensitive subgroups to reduce controllable exposures (smoking, radon) and have a plan in place before wildfire smoke arrives.		
	Increase awareness of mental health impacts of climate change.	A13, T9, H18, H20, H21	
	Educate the public and healthcare providers about the mental health impacts of wildfire smoke and other climate vulnerabilities, including those specific to agricultural community.		
	Increase healthcare system capacity to respond to wildfire smoke events, wildfires, floods, and other climate impacts.	H3, H20	
	Assess existing mental health resources and increase as needed, such as network of providers, integration with general practitioners and emergency responders, screenings, and capacity of inpatient and outpatient care, scalable to smoke events.		
	Increase awareness of health impacts of heat.	A6, H2, H4, H9, H11, H12, H18	
	Educational campaign about the prevention of and signs of heat related illness for the most vulnerable populations.		
	Educational campaign for healthcare, public safety, and emergency response communities about the connection between heat and aggression.		
buildings + land use	Balance competing land use needs in the context of population growth.	A21, B7, T3, E21	
	Incorporate climate migration in population growth projections in growth policy and other planning efforts.		
	Ensure that city and county land use plans adequately protect habitat, open space, and agricultural land.		
	Encourage urban gardens and small-scale agriculture to preserve the ability to grow food in Missoula County.		

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buildings + land use	Reduce development in floodplain.	B5, R2, H5, H16, H17, P1, P2, W8, W9, W10	
	Prevent or restrict new development in floodplain.	      	
	Work with federal partners on education and buy-out programs in floodplain areas where there is a history of repetitive loss.	      	
	Reduce cooling costs by increasing efficiency of building stock.	B11, N6, H9, H11, H12	
	Develop programs to implement and incentivize more energy efficient building practices (new and retrofits) that are accessible to all socio-economic groups, including weatherization and cool roofs.	       	
	Develop an educational campaign to increase consumers' energy efficiency, with a focus on cooling.	       	
	Reduce vulnerability of buildings to wildfire.	B4, R9, R10, R11, P8	
	Adopt regulations and programs to address the home ignition zone (structure and surroundings), such as neighborhood ambassadors, WUI building codes, WUI zoning codes, and WUI standards in building, zoning, and subdivision codes.	      	
	Restrict and regulate new development in high wildfire hazard areas.	      	
	Address urban heat island effect and maintain and grow healthy, diverse urban forests that account for social equity considerations.	B6, B8, B9, H9, H11, H12, H18, P5	
	Create incentives and programs to decrease urban heat island effect for example through building siting, shade and vegetation.	       	
Develop and promote an educational campaign to build shared understanding of value of urban forests and encourage planting appropriate species, watering, and care.	       		

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water	Conserve water through water conservation plans, practices, regulations and strategic/guided growth.	A8, A22, H8, P5, P7, W4, W7, W8, W9, W11, W12	
	Implement Missoula Water's plan to reduce infrastructure water loss (leaks, losses, theft, aging meters).	      	
	Take water availability into account in county growth policy and zoning.	      	
	Develop educational materials and incentives to increase water use efficiency during drought and flood conditions.	      	
	Articulate water use best practices in real time, across user groups (ag producers, outfitters), based on drought conditions.	      	
	Create community-wide water (rather than individual wells) in developed or developing areas.	      	
	Expand storage (natural and human created, e.g. reservoirs, wetlands, beavers, and beaver mimicry).	      	
	Preserve water quality through improved stormwater management, prioritizing green infrastructure over traditional methods.	B5, T4, H16, H17, P1, P2, W6, W8, W10	
	Develop a funding mechanism to support green infrastructure.	      	
	Implement low-impact development standards to encourage fewer impervious surfaces.	      	
	Improve and expand stormwater facilities (potential for new land use regulations).	      	
	Preserve water quality through efficient wastewater treatment, water delivery systems, education and regulation.	H7, H16, W4, W8, W9, W12	

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water (cont.)	Create and support community-wide wastewater systems (rather than septic) in developed or developing areas.		
	Create, fund, and implement a well contamination response plan (identify at-risk wells, potential contaminants, places to restrict new well construction).		
	Balance competing water needs in the context of population growth.	A8, A22, T7, P5, P7, W4, W7, W11, W12	
	Enhance/incentivize more effective, multi-stakeholder (recreation and agriculture) approach to drought response planning.		
	Advocate for state water policies that provide innovation and flexibility in encouraging water conservation and resiliency.		
ecosystems (terrestrial + aquatic) + wildfire	Build understanding of forest, terrestrial and aquatic ecosystems and appropriate, site/landscape-specific management options that account for climate change.	E3, E4, E5, E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E18, E19, E20, E21, E22, E23, E24, E25, E26	
	Analyze current and departure from historical conditions to identify and prioritize where to resist, accept, or facilitate site or ecosystem change, considering cultural values.		
	Create and implement watershed management plan(s) based on climate projections that prioritizes habitats to protect (include restoration strategies, human access considerations, and agricultural best management practices).		
	Maintain and enhance connected habitat corridors.		
	Reduce high severity wildfires and their impact in high risk areas/landscapes.	B4, T8, E23, E26, R4, R9, R10, R11, R12, N7, H6, P3, P6, P8, W5	
	Increase prescribed fire and/or thinning where appropriate.		
	Implement best practices such as prescribed fire, streamside buffers, and support of beavers to increase watershed resilience to fire.		

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ecosystems + wildfire (cont.)	Build a shared understanding of the realities of wildfire and our expectations of wildfire response.	P3, P8	
	Grow educational and outreach efforts within and between agencies, community partners, and public to build support for forest management options (including allowing natural fires to burn), considering divergent values (for example, Wildfire Adapted Missoula).	      	
	Ensure ecological integrity during and after fire, and/or fire suppression activities.	E3, E4, E18, E20, E23, E25, E26	
	Create watershed reinvestment fund to support restoration after wildfire.	      	
agriculture	Increase adoption of ecologically sound and climate smart practices for Missoula County agriculture.	A7, A8, A10, A11, A12, A14, A16, A17, A18, A19, A20, A22	
	Identify and promote ecologically sound agricultural best practices in a 1-stop shop, considering pests, pathogens, heat, drought, smoke.	       	
	Promote regenerative soil building to revitalize soil quality.	      	
	Develop and communicate water-use best practices for agricultural producers in real time to inform plant and animal water needs, improve efficiency, and reduce water loss.	       	
	Increase economic resilience of Missoula County agriculture given climate change.	A8, A9, A10, A11, A12, A14, A15, A16, A17, A18, A19, A20, A22	
	Promote diversification of farm income sources.	      	
	Increase access to locally sourced food through aggregation, storage and distribution of agricultural products.	      	
	Encourage support for locally sourced food through education and outreach, economic incentives, and other programs.	      	

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ag. (cont.)	Strengthen social connectivity between farmers, ranchers, and community members.	A13	
	Create a farmer and rancher support network at regional or sub-regional level, considering economic and mental health needs of agricultural community.	      	
emergency preparedness + response	Ensure “hard” infrastructure (roads, bridges, power lines, telecommunications, etc.) is resilient to climate change.	R12, N3, N4, N7, P1, P6	
	Assess infrastructure needs and vulnerabilities to inform infrastructure strategic plan (protect, enhance, develop redundancies).	      	
	Ensure “soft” infrastructure (systems, people, partnerships, communication, plans, etc.) is resilient to climate change.	R2, R5, R6, R7, R10, R12	
	Enhance emergency communication capabilities and evacuation strategies, routes, and safety zones.	      	
	Connect with and support Invest Health, Missoula College, Missoula Emergency Services Inc., Missoula City-County Health Dept. and partners regarding preventative health measures (upstream health response).	      	
	Ensure public safety and emergency response communities have the necessary tools to provide care, outreach and/or referrals.	      	
	Ensure sufficient emergency response personnel within rural areas of Missoula County.	      	
business, recreation, + tourism	Prepare tourism and recreational industries for changing climate.	T1, T2, T4, T5, T6, T7, T8	
	Increase agility of existing tourism and recreational businesses to adapt to changing conditions (timing and location of activities).	      	
	Diversify tourism and recreational industries by identifying, investing in, and promoting new, sustainable-oriented opportunities.	      	
	Develop and market flexible indoor recreation and tourism opportunities.	      	