Appendix G
Catalog of Potential Hazard Mitigation Plan Actions

Hazard Type: Extreme Temperature									
No.	Action	NFIP	New Bldg/Infra	Existing Bldg/Infra	Prevention	Property Protection	Public Education	Resource Protection	Structural
4	Maintain, establish, and enhance heating and cooling centers to serve the current and future population.		✕	✕					✕
2	Prepare an "Excessive Heat Response Plan," including such items as: 1) identification of vulnerable populations; and, 2) conducting pre-season public information campaigns.				✕		✕		
3	Evaluate and improve heat advisory and warning methodology.						✕		
5	Work with PG&E and MID to require that electricity and water are not shut off for nonpayment during heat events.		✕	✕	✕		✕		
2	Identify vulnerable residents in Merced and community groups working with vulnerable populations (e.g. hospitals, schools, Meals on Wheels) and ensure heat emergency outreach & education programs work with them						✕		
4	Assess transportation options for residents (especially vulnerable populations) to reach cooling zones and improve access and awareness where possible, or provide rebates or incentives at cooling centers.						✕		✕

Hazard Type: Fog									
No.	Action	NFIP	New Bldg/Infra	Existing Bldg/Infra	Prevention	Property Protection	Public Education	Resource Protection	Structural
1	Continue to work with weather forecasting and public safety agencies to provide warning and protective information to schools, residents, travelers, and visitors about the severe valley fog conditions.						✕		
2	Install Automated Fog Warning System.								✕

Hazard Type: Storm-Related Hazard									
No.	Action	NFIP	New Bldg/Infra	Existing Bldg/Infra	Prevention	Property Protection	Public Education	Resource Protection	Structural
2	Conduct a detailed vulnerability assessment in the future in order to accurately identify the extent of damages to vulnerable buildings, infrastructure, and critical facilities.			✕					
1	Pursue program of conversion of overhead utilities to underground service that serve critical facilities or other sensitive sites to reduce exposure to hazards.								✕

Hazard Type: Earthquakes									
No.	Action	NFIP	New Bldg/Infra	Existing Bldg/Infra	Prevention	Property Protection	Public Education	Resource Protection	Structural
4	Develop inventories of historic buildings, governmental buildings, industrial buildings, unreinforced buildings, etc. to speed and target post-disaster response inspections and recovery efforts.			✕					✕
4	Implement programs to retrofit or upgrade unreinforced masonry buildings.			✕	✕				✕
2	Include retrofitting and replacement of critical system elements in capital improvement program (CIP)			✕	✕				✕
2	Perform building-specific, structural seismic vulnerability assessment of City-owned critical facilities constructed prior to 1980 (including infrastructure).			✕					✕
3	Seismically retrofit or replace County ramps and bridges that are categorized as structurally deficient by Caltrans and are necessary for first responders to use during an emergency.			✕	✕				✕

Hazard Type: Wildfire									
No.	Action	NFIP	New Bldg/Infra	Existing Bldg/Infra	Prevention	Property Protection	Public Education	Resource Protection	Structural
2	Become a “Firewise” community.				✕		✕		
1	Identify high fire hazard interface areas, then create and maintain defensible space around structures and infrastructure through site and building design requirements, such as the use of fire-retardant building materials.		✕	✕	✕				✕
3	Purchase a minimum 4,000-gallon water tender with wildfire fighting capability.								✕

Hazard Type: Flooding (page 1)									
No.	Action	NFIP	New Bldg/Infra	Existing Bldg/Infra	Prevention	Property Protection	Public Education	Resource Protection	Structural
3	Prepare an Update to the City's Storm-water Drainage Master Plan.	✕			✕				
3	Require a master drainage plan as part of the approval process for all specific plans and large development projects. The plan's intent is to ensure that the overall rate of runoff from a project does not exceed predevelopment levels.	✕			✕				
4	List Specific Flood Control Projects Needed:_____	✕			✕				
6	Acquire, relocate, elevate, and/or flood-proof critical facilities located within the 100-year floodplain.	✕		✕	✕				
6	Reinforce City ramps, bridges, and roads from flooding through protection activities which may include elevating the road and installing culverts beneath the road or building a bridge across the area that experiences regular flooding.	✕			✕				
5	Increase participation in the NFIP by entering the Community Rating System program which through enhanced floodplain management activities would allow property owners to receive a discount on their flood insurance.	✕							

Hazard Type: Flooding, (page 2)									
No.	Action	NFIP	New Bldg/Infra	Existing Bldg/Infra	Prevention	Property Protection	Public Education	Resource Protection	Structural
5	Update the EOP to address emergency evacuation routes relative to flood and dam failure hazards.	✕			✕				
6	Review public warning procedures and methods to improve the citywide flood surveillance and early warning system.	✕			✕		✕		
4	Provide storm-water drainage improvements to reduce frequent flooding, such as storm-water drains, basins, trunk lines, auxiliary pipes, and interconnections.	✕			✕				

Hazard Type: Emergency Management Capability (Part 1, Emergency Operations)									
No.	Action	NFIP	New Bldg/Infra	Existing Bldg/Infra	Prevention	Property Protection	Public Education	Resource Protection	Structural
4	Regularly review, revise, and validate the City of Merced Emergency Operations Plan (EOP).				✕				
4	Establish a codified employee Emergency Response Training Program, and increase the frequency and complexity of planned and spontaneous drills and exercises. Provide cross-training between jurisdictions to improve capabilities.				✕				
6	Annually prepare a “gap analysis” assessment of EOC organization needs and implement recommended actions.				✕				
3	Strengthen emergency operations by increasing collaboration and coordination among public agencies, non-profit organizations, businesses, and industries.				✕				
4	Add redundancy to emergency communication systems.								✕
7	Purchase portable equipment to allow live two-way picture and sound to be transmitted to the Emergency Operation Center from the site of an emergency situation.				✕				
3	Standardize systems among agencies to provide for better interoperability.				✕				
5	Inspect key critical facilities for vulnerability to major hazards, and upgrade or replace critical facilities as necessary.			✕	✕				

Hazard Type: Emergency Management Capability (Part 2, Resiliency)									
No.	Action	NFIP	New Bldg/Infra	Existing Bldg/Infra	Prevention	Property Protection	Public Education	Resource Protection	Structural
6	Develop strategies for debris management following an emergency or disaster.							✕	✕
6	Compile a directory of out-of-area contractors to help with repairs/reconstruction so that restoration occurs in a timely manner.			✕					✕
4	Coordinate with medical community to quicken the reporting of damage to a medical facility office, pharmacy (and so on). This involves both life safety items and hazardous material concerns.								
3	Perform assessment of critical facility vulnerability to establish a program and schedule for implementing recommended follow-ups, including standby power needs or ability to reroute power supply, for example, installation of battery back-up systems at select traffic signals.			✕	✕				✕
6	Design, retrofit, or replace essential water and sewer facilities and systems to minimize the potential for disruption during a disaster, including seismic-related impacts.			✕	✕				✕
7	Warehouse critical infrastructure components such as pipe, power line, and road repair materials.			✕					✕
5	Adopt a Post-Disaster Recovery Plan.								
5	Provide redundancy for critical functions and infrastructure.		✕	✕					✕
2	Identify the most vulnerable critical business and infrastructure facilities to natural disasters, and encourage preparation of hazard reduction and response plans to protect against economic loss and speedy recovery.			✕	✕	✕			

Hazard Type: Prevent Future Hazard Related Losses of Life and Property									
No.	Action	NFIP	New Bldg/Infra	Existing Bldg/Infra	Prevention	Property Protection	Public Education	Resource Protection	Structural
3	Support management and land use planning practices with hazard mitigation to protect life.				✕				
3	Discourage inappropriate development in hazard areas.		✕		✕				
3	Encourage property protection measures for all structures located in hazard areas.			✕	✕				
4	Preserve, rehabilitate, and enhance natural systems to serve hazard mitigation functions.							✕	
3	Assess suitability (vulnerability to hazards and provision of services) of select public education buildings and sites as places for people to go to during emergency situations.			✕					✕
4	Develop Functional Assessment Service Team (FAST) to appropriately shelter and respond to the needs of people with disabilities and older adults.				✕				

Hazard Type: Public Education									
No.	Action	NFIP	New Bldg/Infra	Existing Bldg/Infra	Prevention	Property Protection	Public Education	Resource Protection	Structural
2	Develop and implement education and outreach programs to increase public awareness of the risks associated with natural, human-caused, and technological hazards.						✕		
3	Institute a Disaster Preparedness Education Program for the Public.						✕		
3	Develop Community Emergency Response Teams (CERT) of residents and businesses to aid first responders and volunteers.						✕		
3	Identify and develop a series of initiatives, incentives, programs, and procedures to assist residents, property owners, and businesses to prepare for and recover after a natural disaster.						✕		

Potential List Of Mitigation Strategies

The Disaster Council and the general public were asked to review, modify, and/or add to the above Mitigation Action Items. The following suggestions for potential actions were received from Disaster Council members and through public outreach venues:

Hazard Type: Extreme Temperature

Work with and establish a place of refuge for those who are without power, (i.e. school districts.)

Recommended Word change for the fourth Action (above) to read: "Work with PG&E and MID to ~~require~~ **ensure** that electricity and water are not shut off for nonpayment during heat events."

Recommend adding a new column to the right entitled, "Emergency Services".

The Bus is providing free transportation to and from cooling centers this year.
Access to Cooling Center is the biggest hurdle. Young and old do not have the means to reach cooling centers.

Not shutting the power off is the most important.

Multiply the sites for cooling centers.

The 2nd and the 5th Action Items is basically the same thing.

Question as to why "New" Building/Infrastructure is being proposed (see column)? Why not just retro-fit existing buildings? Not supportive of new building/infrastructure (refer Rater #12).

The 5th and 6th Action Items (respectively) are inter-related to the 2nd Action Item and need to be a coordinated effort.

Regarding the 6th (or last) Action Item (above), who are the rebates for?

Shouldn't Action Item #4 regarding PG&E/MID's shutting off electricity and water include both extreme heat and "cold" events?

Hazard Type: Fog

Provide tips for driving, walking, biking, etc., in the fog both in the City and freeway.

Technology is the key here, mass communication both electronically and community base; Social media and electronic billboards!

Recommend deleting the 2nd Action Item (does not feel it's necessary or appropriate in the City).

Provide educational information through high schools, DMV, law enforcement, and media efforts regarding vehicle safety tips while driving in fog.

Hazard Type: Storm-Related Hazard

Designate one of the High Schools or Schools as an Emergency Operations Center (EOC) during storms.

Informational material to inform people of what to do, not to do, protocols, etc. during a severe storm.

Recommended addition to second Action (above) to read: "Pursue program of conversion of overhead utilities to underground service that serve critical facilities or other sensitive sites to reduce exposure to hazards **where possible**."

I'm concerned about where critical facilities are located. The Police Department is between two railroad tracks and located next to Bear Creek – flooding. We need a facility that is protected from natural and man-made disasters.

Hazard Type: Earthquakes

Include schools and hospitals in retrofit plan.

Implement/enforce that all future constructions be earthquake proof – including homes.

Identify vulnerable residents in Merced and community groups working with vulnerable populations and ensure earthquake preparation and emergency outreach and education programs work with them.

Prepare an earthquake response plan.
Delete the word, "County" and replace it with the word "City" for Action Item #5 above.

Recommend that the 2nd and 5th Action Items be deleted since the Cost eliminates these two Actions from reality.

Hazard Type: Wildfire

Work with Health & Asthma Coalition/organization to devise informational material on health/asthma impact or implications.

Recommend explanation language to Action one (above) - [Better define what becoming a "Firewise" community means for the community]

Two Raters requested an explanation of "Firewise" community (not sure what this is).

Recommend deletion of Action Item 3 above as we are not in the County.

Question: Does the Fire Department think they need the water tender? If so, it should be their priority input.

Continue with weed abatement efforts with fines for those who are noncompliant.

Hazard Type: Flooding

Recommend removal of the second and third Actions (above) as follows:

~~Require a master drainage plan as part of the approval process for all specific plans and large development projects. The plan's intent is to ensure that the overall rate of runoff from a project does not exceed predevelopment levels.~~

~~List Specific Flood Control Projects Needed: _____~~

Add to third Action as Needed (above): Haystack Dam Alternative on Black Rascal Creek

Implement a "Regional" flood plain management program.

Identify vulnerable residents in Merced and community groups working with vulnerable populations and ensure flood emergency outreach and education programs work with them.

Prepare a "flooding plan" and include such items as: 1) Identification of vulnerable populations, and 2) conducting pre-season public information campaigns.

Recommend deletion of the 2nd Action Item (i.e., Require a master drainage plan as part of the approval process……)

Add the following to Action #3 – List Specific Flood Control Projects, Needed –
Bear Creek MID/ West Town / Black Rascal (do an assessment in these areas to find out what the needs are).

Implement a Master Storm Water Fee for all uses with infrastructure needs.
Capacity of our floodways and Correct Pinch Points for flood (i.e., do you fix the pinch points or limit the flow)?

The 3rd and 7th Action Items (respectively) are inter-related or are sub-sets of an overall action – the 1st Action Item. The key is to approach them in a coordinated effort. This also pertains to the last two Actions (listed on Page 2 of the Flooding Hazard Type) with the 7th Action Item being a subset of the 6th Action.

Need to provide better warning signs on flooded streets.
Stressed the importance of the 9th (or last) Action Item (above).

More sandbag locations are recommended; and, the need for a better job of informing citizens where to get sandbags.
Need to do a better job of dealing with flooded streets and a better job with responding.

More sandbag locations needed.
The drainage systems need to be checked as they clog up with leaves and cause water to flood. City workers should focus more on areas that are more likely to flood during heavy storms. More warnings should be given to county residents.

Hazard Type: Public Education

Run Incident Command System (ICS) Training utilizing Merced Union High School District (MUHSD) Emergency Management Team.

Educate community on general evacuation routes/means/options for evacuation.

Use technology for education programs; Social media/electronic billboards.

CAER – Community Awareness & Emergency Response
"Working Together for a Safe & Informed Public"

The 1st Action Item is the "Activity" needed to fulfill the 2nd Action Item. And, the 3rd Action is part of the activities needed to accomplish the 4th Action Item.

Hazard Type: Emergency Management Capability (Part 1, Emergency Operations)

Establish one or more of the High Schools as an Emergency Operations Center (EOC) to serve during emergencies.

Identify central emergency shelter locations and inform public.

Establish an emergency or info hotline where people can call in for updates on the situation or to connect families that are separated.

The 7th and 2nd Action Items (respectively) are subsets of Action #4. The 8th and 3rd Action items (respectively) are subsets of the 1st Action Item. Since the Action Items are inter-related, they need to be approached in a coordinated effort.

Hazard Type: Emergency Management Capability (Part 2, Resiliency)

For the 2nd Action Item (above) consider deleting "out-of-area" as local contractors may be able to respond. Maybe have 2 or 3 lists based on distance (i.e., 0-20 miles, 20-50 miles, over 50 miles).

Has the City of Merced decided on an Emergency Alarm System/EAS (i.e., Reverse 911, Everbridge)?

The 9th, 4th, and 3rd Actions (respectively) are inter-related or subsets of the 7th Action Item. Also, the 5th Action is inter-related or a subset to the 8th Action Item. As such, the key is to approach these Actions in a coordinated effort.

Hazard Type: Prevent Future hazard Related Losses of Life and Property

Two raters recommend adding a new column to the right entitled, "Emergency Services".