

Chapter 6: Action Plan

44 CFR Requirements met:

Requirement §201.6(c)(3): The plan **shall** include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

Requirement §201.6(c)(3)(ii): [The mitigation strategy **shall** include a] section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.

Requirement: §201.6(c)(3)(ii): [The mitigation strategy] **must** also address the jurisdiction's participation in the National Flood Insurance Program (NFIP), and continued compliance with NFIP requirements, as appropriate.

Requirement: §201.6(c)(3)(iii): [The mitigation strategy section **shall** include] an action plan describing how the actions identified in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization shall include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.

Requirement §201.6(c)(3)(iv): For multi-jurisdictional plans, there **must** be identifiable action items specific to the jurisdiction requesting FEMA approval or credit of the plan.

Included in this Chapter:

- 6.1 [Mitigation Measures](#)
- 6.2 [Unincorporated Canadian County Prioritized Action Plan](#)

6.1 Mitigation Measures

Canadian County, the Towns of Calumet, Okarche and Union City, the Cities of El Reno and Piedmont, the Public School Districts of Banner, Calumet, Darlington, El Reno, Maple, Mustang, Okarche, Piedmont and Union City, and the post-secondary educational institutions of Canadian Valley Technology Center District No. 6 and Redlands Community College have reviewed and analyzed the risk assessment studies for the natural hazards and hazardous material events that may impact them. The community Hazard Mitigation Advisory Committees prioritized the mitigation measures using the STAPLEE process (see Chapter 5), and developed an Action Plan for the highest priority measures.

Statement of Mitigation Measures

Table 6-1 places each numbered mitigation measure listed in the following pages with the respective hazard or hazards the measure is to address. As will be seen, certain mitigation measures are recommended for multiple hazards and multiple communities

Table 6-1: Measures per Hazard

Hazard	Measures Addressing	Hazard	Measures Addressing
Floods	1,2,3,4,5,6,8,35,36,39,40,41,42,43,44,45,46	Expansive Soil	1,4,6,24,36,37,38

Hazard	Measures Addressing	Hazard	Measures Addressing
Tornadoes	1,2,3,4,5,6,8,13,14,15,16,17,18,19,20,21,22,23,25,26,27,28,29,30,32,35,36,39,43	Urban Fires	1,2,3,5,8,18,35,39
High Wind Events	1,2,3,4,5,6,8,13,14,15,16,17,18,19,20,21,22,25,26,27,28,29,30,35,36,39,43	Wildfires	1,2,3,5,6,18,33,35,36,39,47,48
Lightning	1,2,3,4,6,9,10,11,12,18,25,26,27,28,29,30,35,36,39	Earthquakes	1,2,3,4,5,6,13,14,16,17,18,19,22,27,28,29,30,35,36,39,43
Hail	1,2,3,4,6,13,14,18,31,35,36,43	Fixed Site HazMat	1,2,3,4,5,6,8,18,35,39
Severe Winter Storms	1,2,3,4,5,6,18,25,26,27,28,29,30,32,35,36,39,43	Transportation	1,3,4,5,6,18,35
Extreme Heat	1,3,4,5,6,18,25,27,28,29,30,34,35,36	Drought	1,3,4,5,7,35,36
Dam Failure	1,2,44,45,46		

The tables in this section indicate which jurisdictions are affected by the hazards addressed in the Mitigation Measures. For example, Mitigation Measures 1-6 apply to all hazards and all jurisdictions. In order to distinguish which hazards the jurisdiction is addressing in each respective Mitigation Measure, a matrix has been created. If the mitigation measure addresses only general hazards, a matrix will not be used because all participating jurisdiction are at risk. If the Mitigation Measure addresses a site site-specific hazard(s), only those jurisdictions at risk to one or more of the identified hazards will be checked in the matrix.

Mitigation Measure # 1-4 Community → Hazard ↓	Unincorporated Canadian County	Town of Callumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City	Banner Public Schools	Calumet Public Schools	Darlington Public School	El Reno Public Schools	Maple Public Schools	Mustang Public Schools	Okarche Public Schools	Piedmont Public Schools	Union City Public Schools	Redlands Community College	Canadian Valley Technology Center
Floods	X	X	X	X	X	X	X		X		X		X		X	X	X	X
Tornadoes	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
High Winds	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Lightning	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hail	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Severe Winter Storms	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Extreme Heat	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Drought	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Expansive Soils	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Urban Fires	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Wildfires	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Earthquakes	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hazardous Material Sites	X	X	X	X	X	X	X				X		X	X		X		X
Dam Failures	X	X	X	X		X			X	X	X						X	X
Transportation Hazards	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

1. Develop an All-Hazard Public Information, Education, and Awareness Program.

Lead: County Emergency Management, Local Emergency Management, Schools Emergency Management

Time Schedule: 2012-2015

Estimated Cost: \$ 14,250

Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: An All-Hazards Public Information and Education Strategy to inform the public of the imminent natural and man-made hazards, and actions the public can take to protect themselves and their property from damage and destruction, and themselves from injury and death.

Resource: Appendix B.1.1 Public Information Program Strategy

2. Educate the public on the importance of a Family Disaster Plan and Supply Kit.

Lead: City Manager/County Emergency Manager

Time Schedule: 2012- On Going

Estimated Cost: Undetermined

Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: An informed public that understands the importance of having a Family Disaster Plan and an emergency supply kit.

Resource: Appendix B.1.2 Educational Programs

3. Develop and Distribute a Family Emergency Preparedness Guide to all families.

Lead: City Manager/County Emergency Manager

Time Schedule: 2012- On Going

Estimated Cost: Undetermined

Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: An informed public about preparedness, response, mitigation and recovery activities and actions that can be taken by families and citizens to better protect themselves from disasters.

Resource: Appendix B.1.3 Outreach Projects

4. Develop distribution centers in local libraries, government facilities, and other public buildings where information and safety guidance on natural and man made hazards can be provided to citizens.

Lead: County Emergency Manager

Time Schedule: 2012- On going

Estimated Cost: \$ 750

Source of Funding: Local/General budget, State Emergency Management, Red Cross, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: Informational kiosks and display racks easily available to the public that contain brochures and materials on various natural and man-made hazards, and how citizens can prepare for, mitigate, respond to, and recover from disasters.

Mitigation Measure # 5-6 Community → Hazard ↓	Unincorporated Canadian County	Town of Calumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City	Banner Public Schools	Calumet Public Schools	Darlington Public School	El Reno Public Schools	Maple Public Schools	Mustang Public Schools	Okarche Public Schools	Piedmont Public Schools	Union City Public Schools	Redlands Community College	Canadian Valley Technology Center
Floods	X	X	X	X	X	X	X		X		X		X		X	X	X	X
Tornadoes	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
High Winds	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Lightning	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hail	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Severe Winter Storms	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Extreme Heat	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Drought	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Urban Fires	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Wildfires	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Hazardous Material Sites	X	X	X	X	X	X	X				X		X	X		X		X
Dam Failures	X	X	X	X		X			X	X	X						X	X
Transportation Hazards	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Resource: Appendix B.1.3 Outreach Projects

5. Develop an inventory, registry and database of Special Needs Populations (elderly, poor, deaf, blind, etc.) that may require special assistance, that tie in with 9-1-1, GIS Systems, etc., so that vulnerable populations within the community can be checked on, notified, or evacuated effectively in the event of disasters.

Lead: Community; Oklahoma Department of Human Services; County Health Department

Time Schedule: 2012-Ongoing

Estimated Cost: \$16,000.00

Source of Funding: Grant programs administered by FEMA or other State and local agencies

Work Product/Expected Outcome: Identification and location of most vulnerable populations and incorporation of response plan with existing emergency response providers' response operations.

6. Acquire and distribute NOAA Weather Radios to all Critical Facilities and the public.

Lead: Emergency Management/School Superintendents

Time Schedule: 2012 - Ongoing
 Estimated Cost: \$40,000
 Source of Funding: Local and FEMA HMGP/PDM.

Work Product/Expected Outcome: All Critical and Essential Facilities, and the public would have NOAA Weather Radios in the offices, businesses and residences to be warned of eminent hazardous weather events

Resource: Appendix B.5.2 Warning Systems

Mitigation Measure # 7 Community → Hazard ↓	Unincorporated Canadian County	Town of Calumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City
Drought	X	X	X	X	X	X	X

7. Develop a public information program designed to communicate the potential severity of a drought, and the appropriate responses by the local population, including voluntary water conservation measures the public can take.

Lead: City Manager/Emergency Manager

Time Schedule: 2012 – On-Going

Estimated Cost: \$2,380

Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA), U.S. Soil Conservation Service, PDM and/or HMGP.

Work Product/Expected Outcome: Development of a public information program and materials designed to communicate the potential severity of a drought, and the appropriate responses the local population can make, including voluntary water conservation.

Resource: Appendix B.2.16 Drought

Mitigation Measure # 8 Community → Hazard ↓	Unincorporated Canadian County	Town of Calumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City	Darlington Public School	Maple Public Schools	Redlands Community College	Canadian Valley Tech
Floods	X	X	X	X	X	X	X			X	X
Tornadoes	X	X	X	X	X	X	X	X	X	X	X
High Winds	X	X	X	X	X	X	X	X	X	X	X
Lightning	X	X	X	X	X	X	X	X	X	X	X
Hail	X	X	X	X	X	X	X	X	X	X	X
Urban Fires	X	X	X	X	X	X	X	X	X	X	X

Mitigation Measure # 8 Community ⇒ Hazard ↓	Unincorporated Canadian County	Town of Calumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City	Darlington Public School	Maple Public Schools	Redlands Community College	Canadian Valley Tech
Wildfires	X	X	X	X	X	X	X	X	X	X	X
Hazardous Material Sites	X	X	X	X	X	X	X				X
Dam Failures	X	X	X	X		X		X		X	X
Transportation Hazards	X	X	X	X	X	X	X	X	X	X	X

8. Evaluate, upgrade and maintain community-wide outdoor omni-directional voice/siren warning systems.

Lead: Emergency Management

Time Schedule: 2012 - Ongoing

Estimated Cost: \$75,000

Source of Funding: Local and FEMA HMGP/PDM.

Work Product/Expected Outcome: 1) Identify locations where warning siren coverage is less than adequate; 2) Routinely test sirens for operational adequacy and maintenance/system required

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Lightning

9. Provide lightning warning systems for Community public outdoor sports areas, pools, golf courses, and parks.

Lead: Parks Department/ County Emergency Management

Time Schedule: 2012-2015

Estimated Cost: \$52,000

Source of Funding: Local, FEMA HMGP and PDM

Work Product/Expected Outcome: Lightning sensing and warning systems for parks, and golf courses.

Resource: Appendix B.2.10 Lightning Warning Systems

Banner Public Schools, Calumet PS, Darlington PS, El Reno PS, Maple PS, Mustang PS, Okarche PS, Piedmont PS, Union City PS, Canadian Valley Tech, Redlands Community College

Lightning

10. Provide lightning warning systems for Public Schools outdoor sports areas and play grounds.

Lead: Public Schools/Emergency Management

Time Schedule: 2012 - Ongoing

Estimated Cost: \$36,000

Source of Funding: Local, FEMA HMGP and PDM

Work Product/Expected Outcome: Lightning sensing and warning systems for public schools.

Resource: Appendix B.2.10 Lightning Warning Systems

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City; Banner Public Schools, Calumet PS, Darlington PS, El Reno PS, Maple PS, Mustang PS, Okarche PS, Piedmont PS, Union City PS, Canadian Valley Tech, Redlands Community College

Lightning

11. Provide surge and lightning protection for computer-reliant critical facilities (e.g. City Hall, 911 Center, EOC, Police and Fire stations, water/wastewater treatment plant and public works buildings).

Lead: City Manager

Time Schedule: 2012- On Going

Estimated Cost: To be determined

Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: Computer-reliant systems in government and public critical facilities are protected from lightning and power surges.

Resource: Appendix B.4.9 Lightning Protection Systems; B.4.10 Surge Protection

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Lightning

12. Educate the Public, and encourage the Utility Companies to provide information to their clients on Whole House Surge and Lightning Protection.

Lead: City Manager

Time Schedule: 2012- On Going

Estimated Cost: Undetermined

Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: An educated Public, informed about the importance of Whole House Surge and Lightning Protection.

Resource: Appendix B.4.9 Lightning Protection Systems; B.4.10 Surge Protection

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Tornadoes, High Winds, Hail, Earthquakes

13. When replaced, install Break/Shatter Resistant Glass in Government Offices, and critical facilities.

Lead: City Manager

Time Schedule: 2012 On-Going

Estimated Cost: To be determined
Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: Impact-, break- and shatter-resistant windows and frames in Government Offices and administrative buildings that protect staff, and First Responders from broken glass and projectiles resulting from tornadoes, high winds, and earthquakes.

Resource: Appendix B.4.7 Impact Resistant Windows & Doors

Banner Public Schools, Calumet PS, Darlington PS, El Reno PS, Maple PS, Mustang PS, Okarche PS, Piedmont PS, Union City PS, Canadian Valley Tech, Redlands Community College

Tornadoes, High Winds, Hail, Earthquakes

14. Install Break/Shatter Resistant Glass in new Schools, and existing Schools when replaced.

Lead: Superintendent, Public Schools
Time Schedule: 2012 On-Going
Estimated Cost: To be determined
Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: Impact-, break- and shatter-resistant windows and frames in schools and administrative buildings that protect staff, teachers, and students from broken glass and projectiles resulting from tornadoes, high winds, and earthquakes.

Resource: Appendix B.4.7 Impact resistant Windows & Doors

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Tornadoes, High Winds

15. Provide employee shelters/safe-rooms at critical facilities, such as 911 Center, fire stations and police stations to protect first responders.

Lead: City Manager/ County Emergency Management/City Engineer
Time Schedule: 2012-1015
Estimated Cost: Unknown
Source of Funding: HMGP, PDM, Local Share

Work Product/Expected Outcome: Construction of shelters or safe rooms with the intent of protecting first responders from tornadoes and high winds.

Banner Public Schools, Calumet PS, Darlington PS, El Reno PS, Maple PS, Mustang PS, Okarche PS, Piedmont PS, Union City PS, Canadian Valley Tech, Redlands Community College

Tornadoes, High Winds, Earthquakes

16. Perform tornado and high wind and earthquake evaluations of schools to determine the best ways to retrofit or remodel buildings to make them more disaster resistant.

Lead: Public Schools
Time Schedule: 2012 - 2014
Estimated Cost: \$12,000
Source of Funding: Local Funds and FEMA PDM and/or HMGP
Work Product/Expected Outcome: A comprehensive structural evaluation of all Canadian County Public Schools to determine their structural integrity and vulnerability to natural hazards.

Banner Public Schools, Calumet PS, Darlington PS, El Reno PS, Maple PS, Mustang PS, Okarche PS, Piedmont PS, Union City PS, Canadian Valley Tech, Redlands Community College

Tornadoes, High Winds, Earthquakes

17. Install Safe-Rooms in new and retrofit existing Schools.

Lead: Superintendent, Public Schools
Time Schedule: 2012-ongoing
Estimated Cost: Undetermined
Source of Funding: School Bond Issues/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.
Work Product/Expected Outcome: Safe Rooms in, or in close proximity to all Public School buildings, to provide safe shelter for staff and students in the event of High Winds, Tornadoes, and Earthquakes.

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Tornadoes, High Winds, Hail, Severe Winter Storms

18. Develop an Individual Safe Room Program for vulnerable populations that will withstand hazards, including Home owners, Special Needs Populations, elderly, mobile home residents, etc.

Lead: City Manager/ County Emergency Manager
Time Schedule: 2012- On Going
Estimated Cost: Undetermined
Source of Funding: Local/General budget, FEMA PDM and/or HMGP.
Work Product/Expected Outcome: Construction of in-ground and above-ground individual safe rooms, designed and constructed to FEMA specifications and standards, that provide shelter to vulnerable populations from tornadoes, high winds, and earthquakes.

Resource: Appendix B.3.1 Safe Rooms

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Tornadoes, High Winds, Earthquakes

19. Adopt an ordinance requiring registration of Safe Rooms, and create a data base and GIS (lat/long) map to locate Safe Rooms in the event of a disaster.

Lead: City Manager/Emergency Management

Time Schedule: 2012- On Going

Estimated Cost: \$3,500

Source of Funding: Local/General budget.

Work Product/Expected Outcome: An Ordinance requiring the registration of all individual Safe Rooms, and a GIS location map and data base showing their locations, in the event of a disaster.

Resource: Appendix B.3.1 Safe Rooms

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Tornadoes, High Winds

20. Provide technical assistance in obtaining grants for storm shelters/safe rooms in mobile home parks.

Lead: Emergency Manager

Time Schedule: 2012-2017

Estimated Cost: \$10,000

Source of Funding: Grant Funds as Available/Local Funds

Work Product/Expected Outcome: Construction of safe rooms in vulnerable facilities with the intent of protecting citizens from tornadoes.

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Tornadoes, High Winds

21. Adopt an Ordinance requiring new Mobile Home Parks to provide storm shelters/safe rooms for their residents.

Lead: City Manager

Time Schedule: 2012-2014

Estimated Cost: \$10,000

Source of Funding: Local Funds

Work Product/Expected Outcome: Construction of safe rooms in new Mobile Home Parks facilities with the intent of protecting the most vulnerable populations/housing from High Winds and Tornadoes.

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City; Banner Public Schools, Calumet PS, Darlington PS, El Reno PS, Maple PS, Mustang PS, Okarche PS, Piedmont PS, Union City PS, Canadian Valley Tech, Redlands Community College

Tornadoes, High Winds, Earthquakes

22. Educate residents, building professionals and safe room vendors on the International Codes Council/National Storm Shelter Association’s “Standard for the Design and Construction of Storm Shelters” and incorporate this Standard into current regulatory ordinances.

Lead: City Manager,/Code Enforcement
Time Schedule: 2012- On Going
Estimated Cost: Undetermined
Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: An educated citizenry and professional building and design community as to the advantages and requirements of the ICC/NSSA “Standard for the Design and Construction of Storm Shelters,” and the adoption of an ordinance requiring that all safe rooms comply with the ICC/NSSA standard.

Resource: Appendix B.3.1 Safe Rooms

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Tornados and High Winds

23. Identify and develop public information and education programs and provide materials and mitigation measures that protect a building’s roof, all outside openings, and the building envelope. Also research ways to improve quality of construction related to wind resistance. Top priority should be given to protection of the roof system, typically the most vulnerable and most expensive component to replace.

Lead: Community Development Departments, Code Enforcement,
Time Schedule: 2012-Ongoing
Estimated Cost: \$12,000
Source of Funding: Local, HMGP, Insurance Companies, Home Builders Associations

Work Product/Expected Outcome: Publications and seminars for the public and homebuilders about the affordability and importance of design and construction of more disaster-resistant construction techniques.

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City; Banner Public Schools, Calumet PS, Darlington PS, El Reno PS, Maple PS, Mustang PS, Okarche PS, Piedmont PS, Union City PS, Canadian Valley Tech, Redlands Community College

Tornadoes, High Winds, Lightning, Severe Winter Storms, Extreme Heat

- 24. Develop an Emergency Back-up Generator Hazard Mitigation Plan Annex to the Multi-Hazard Mitigation Plan for the community, assessing and prioritizing generator needs for critical facilities, both public and private. Assessment should include emergency generator needs, costs of installation for pads/transfer panels only, or for complete generator assembly installation.**

Lead: County Emergency Management

Time Schedule: 2013

Estimated Cost: \$8,500

Source of Funding: Local Funds and FEMA HMGP, and PDM.

Work Product/Expected Outcome: An Emergency Back-up Generator Hazard Mitigation Plan Annex that inventories Critical Facilities, including City Hall, Police Station, Public Works, County EMS, Nursing Homes, Early Childhood Centers, Community Emergency Shelters; sets priorities, evaluates current electrical usage, emergency electrical load/needs, fuel sources (natural gas/diesel/propane), pad location, wiring, transfer switches, contract or on-site, and generator type and size.

Resource: Appendix B.2.12 Back-Up Generators

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City; Banner Public Schools, Calumet PS, Darlington PS, El Reno PS, Maple PS, Mustang PS, Okarche PS, Piedmont PS, Union City PS, Canadian Valley Tech, Redlands Community College

Tornadoes, High Winds, Lightning, Severe Winter Storms

- 25. Obtain emergency generators for continuity of government/use during disaster power outages for critical facilities including Emergency Operations Centers, City Hall, Dispatch, Police, Fire, Community Centers used for emergency housing during disasters, critical facilities, lift stations, water treatment plants, and community medical facilities, as identified in the Emergency Back-up Generator Hazard Mitigation Plan Annex.**

Lead: Department of Public Works

Time Schedule: 2012-Ongoing

Estimated Cost: To be determined

Sources of Funding: Local, FEMA HMGP/PDM

Work Products/Expected Outcome: This will provide sufficient generators or access to generators during a disaster that will provide sufficient power for critical community functions. This will aid in the recovery and response effort after a disaster.

Resource: Appendix B.2.12 Back-Up Generators

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City; Banner Public Schools, Calumet PS, Darlington PS, El Reno PS, Maple PS, Mustang PS, Okarche PS, Piedmont PS, Union City PS, Canadian Valley Tech, Redlands Community College

Tornadoes, High Winds, Lightning, Severe Winter Storms, Extreme Heat, Earthquakes

26. Identify and encourage Private Critical Facilities (Financial Institutions, Elder Care Facilities, Designated/Potential Community Emergency Shelters, etc.) to have generator pad, wiring/transfer switches and Emergency Back-Up Generators, or Reliable Contracts to provide Back-Up Generators.

Lead: City Manager
Time Schedule: 2012-2016
Estimated Cost: Undetermined
Source of Funding: Local/General budget.

Work Product/Expected Outcome: Private critical facilities (financial institutions, elder care facilities, designated/potential community emergency shelters, etc.) have generator pads, wiring and transfer switches, and emergency back-up generators, or reliable contracts for the provision of back-up generators, in the event of power failure.

Resource: Appendix B.2.12 Back-Up Generators

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Tornadoes, High Winds, Lightning, Severe Winter Storms, Extreme Heat, Earthquakes

27. Adopt an Ordinance requiring generator pad and wiring/transfer switches for Elder Care Facilities and Nursing Homes, to accommodate Emergency Back-Up Generators in the event of prolonged power outages.

Lead: Community Manager
Time Schedule: 2012- On Going
Estimated Cost: Undetermined
Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: Adoption of an Ordinance requiring generator pad and wiring/transfer switches for Elder Care Facilities and Nursing Homes, to accommodate Emergency Back-Up Generators in the event of prolonged power outages.

Resource: Appendix B.2.12 Back-Up Generators

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Tornadoes, High Winds, Lightning, Severe Winter Storms, Extreme Heat, Earthquakes

28. Identify and/or encourage key important private service facilities (gas stations, convenience stores, etc.) to have wiring/transfer switches and emergency back-up generators installed, or reliable contracts for the provision of back-up generators, in the event of disasters or power outages.

Lead: Community Manager

Time Schedule: 2012-2016

Estimated Cost: Undetermined

Source of Funding: Local/General budget.

Work Product/Expected Outcome: Key important private service facilities (gas stations, convenience stores, etc.) have wiring, transfer switches and emergency back-up generators, or reliable contracts for the provision of back-up generators, to ensure continued operation of essential services in times of emergency, disaster, or power outage.

Resource: Appendix B.2.12 Back-Up Generators

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Tornadoes, High Winds, Lightning, Severe Winter Storms, Extreme Heat, Earthquakes

29. Develop Memorandums of Understanding (MOUs) with private sector gasoline service facilities to provide priority fuel to emergency/critical vehicles (government, Police, Fire, ambulance, etc.) in times of emergency or power outage.

Lead: Community Manager

Time Schedule: 2012

Estimated Cost: None anticipated

Source of Funding: None anticipated

Work Product/Expected Outcome: Memorandums of understanding (MOUs) with private sector gasoline service facilities to provide priority fuel to emergency/critical vehicles (government, Police, Fire, ambulance, etc.) in times of emergency or power outage, so that emergency and First Responder personnel can meet the needs of the community.

Resource: Appendix B.5.8 Mutual Aid/Inter Agency Agreements

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Hail

30. Provide covered shelters for City First Response/government vehicles to protect against hail damage.

Lead: Community Manager

Time Schedule: 2012 - 2014
Estimated Cost: To be determined
Source of Funding: Local, HMGP, PDM

Work Product/Expected Outcome: Covered parking to provide protection against Hail Damage for emergency/critical vehicles (government, Police, Fire, ambulance, etc.), so that emergency and First Responder/City personnel can meet the needs of the community in times of emergency.

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City

Severe Winter Storms, Tornadoes, High Winds

31. Provide routine trimming of trees to reduce power outages during storms.

Lead: Community Manager/ Public Works Director/ Electric Utility
Time Schedule: On going
Estimated Cost: Undetermined
Source of Funding: Local/General budget, local Utility Providers.

Work Product/Expected Outcome: The City of will inspect feeder lines to the individual building weatherheads, and provide routine trimming of overhanging trees to reduce power outages during Tornadoes, High Winds, and Severe Winter and Ice Storms.

Resource: Appendix B.2.11 Power Outages from Winter Storms

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City; Banner Public Schools, Calumet PS, Darlington PS, El Reno PS, Maple PS, Mustang PS, Okarche PS, Piedmont PS, Union City PS, Canadian Valley Tech, Redlands Community College

Wildfires

32. Develop a contingency plan for evacuating population endangered by a wildfire.

Lead: Fire Chief, Emergency Manager, Police Chief
Time Schedule: 2012-2014
Estimated Cost: \$20,000
Source of Funding: Local Funds/Grant if available

Work Product/Expected Outcome: Updated warning and evacuation plans for areas at risk by identifying key evacuation routes and shelter locations outside of wildfire hazard

Canadian County, Calumet, El Reno, Mustang, Okarche, Piedmont, Union City; Banner Public Schools, Calumet PS, Darlington PS, El Reno PS, Maple PS, Mustang PS, Okarche PS, Piedmont PS, Union City PS, Canadian Valley Tech, Redlands Community College

Extreme Heat

33. Develop a Heat Emergency Action Plan/Heat Emergency Annex to the Emergency Operations Plan for the jurisdiction.

Lead: Emergency Management
Time Schedule: 2012 - 2013

Estimated Cost: To be determined

Source of Funding: Local and FEMA HMGP/PDM.

Work Product/Expected Outcome: Minimize the loss of life due to the extreme heat of summer months in Oklahoma.

Mitigation Measure # 34 Community ⇒ Hazard ↓	Unincorporated Canadian County	Town of Calumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City
Floods	X	X	X	X	X	X	X
Tornadoes	X	X	X	X	X	X	X
High Winds	X	X	X	X	X	X	X
Lightning	X	X	X	X	X	X	X
Hail	X	X	X	X	X	X	X
Severe Winter Storms	X	X	X	X	X	X	X
Extreme Heat	X	X	X	X	X	X	X
Drought	X	X	X	X	X	X	X
Expansive Soils	X	X	X	X	X	X	X
Urban Fires	X	X	X	X	X	X	X
Wildfires	X	X	X	X	X	X	X
Earthquakes	X	X	X	X	X	X	X
Hazardous Material Sites	X	X	X	X	X	X	X
Transportation Hazards	X	X	X	X	X	X	X

34. Provide new/retrofit facilities for the 911 Center and the Emergency Operations Center.

Lead: Emergency Management, Fire, Police

Time Schedule: 2012-2016

Estimated Cost: \$300,000

Source of Funding: Local/General budget, Canadian County, Federal Emergency Management Agency (FEMA)

Work Product/Expected Outcome: Modern, secure Emergency Operation Center and 911 Center capable of operating during disasters or man-made emergencies through improved communications equipment, weather warning systems and multiple site and data redundancy.

Mitigation Measure # 35 Community ⇒ Hazard ↓	Unincorporated Canadian County	Town of Calumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City
Floods	X	X	X	X	X	X	X
Tornadoes	X	X	X	X	X	X	X
High Winds	X	X	X	X	X	X	X
Lightning	X	X	X	X	X	X	X
Hail	X	X	X	X	X	X	X
Severe Winter Storms	X	X	X	X	X	X	X
Extreme Heat	X	X	X	X	X	X	X
Drought	X	X	X	X	X	X	X
Expansive Soils	X	X	X	X	X	X	X
Wildfires	X	X	X	X	X	X	X
Earthquakes	X	X	X	X	X	X	X

35. Train/Educate builders, developers, architects and engineers in techniques of disaster-resistant homebuilding, such as the Fortified Home standards developed by the Institute for Business & Home Safety (IBHS), the Blueprint for Safety guidelines developed by the Federal Alliance for Safe Homes (FLASH).

Lead: City Manager/Code Enforcement

Time Schedule: 2012- On Going

Estimated Cost: Undetermined

Source of Funding: Local/General budget, FEMA, PDM and/or HMGP.

Work Product/Expected Outcome: Enhanced construction practices for residences that will result in homes that will withstand most hazards.

Resource: Section B.2.6 IBHS Fortified Home Program

Mitigation Measure # 36 Community ⇒ Hazard ↓	Unincorporated Canadian County	Town of Calumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City	Banner Public Schools	Calumet Public Schools	Darlington Public School	El Reno Public Schools	Maple Public Schools	Mustang Public Schools	Okarche Public Schools	Piedmont Public Schools	Union City Public Schools	Redlands Community College	Canadian Valley Technology Center
Expansive Soils	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

36. Educate builders on appropriate foundation types for soils with different degrees of shrink-swell potential. For example, using "post-tensioned slab-on-grade" or "drilled pier" vs. standard "slab-on-grade" or "wall-on-grade" foundations.

Lead: City Manager/Code Enforcement/School Superintendent
 Time Schedule: 2012- On Going
 Estimated Cost: Undetermined
 Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: Enhanced construction practices for residences that will result in homes built with foundations appropriate for the soil conditions, and will withstand the shrinking and swelling of highly expansive soils found in the area.

Resource: Appendix B.2.6 IBHS Fortified Homes program

Mitigation Measure # 37-38 Community ⇒ Hazard ↓	Unincorporated Canadian County	Town of Calumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City	Banner Public Schools	Calumet Public Schools	Darlington Public School	El Reno Public Schools	Maple Public Schools	Mustang Public Schools	Okarche Public Schools	Piedmont Public Schools	Union City Public Schools	Redlands Community College	Canadian Valley Technology Center
Expansive Soils	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

37. Implement/enforce an administrative procedure/ordinance to require permits for foundation repair.

Lead: City Manager/ Public Works Director/ Schools Superintendent
 Time Schedule: 2012-On going
 Estimated Cost: Undetermined
 Source of Funding: Local/General budget

Work Product/Expected Outcome: 1) Track foundation damages caused by expansive soils, 2) determine the magnitude of the expansive soils problem within the community.

38. Establish an administrative procedure or change in City codes/ School standard that require builders to check for expansive soils when applying for new residential construction permits, and to consider the use of foundations that mitigate expansive soil damages when in a moderate to high-risk area.

Lead: City Manager/Code Enforcement/ Schools Superintendent
 Time Schedule: 2012
 Estimated Cost: Minimal

Source of Funding: Local/General budget, Federal Emergency Management Agency (FEMA) PDM and/or HMGP.

Work Product/Expected Outcome: Adoption of an ordinance, administrative procedure or City code that requires builders to check for expansive soils when applying for new residential building permits, and to consider the use of foundations that mitigate expansive soil damage in moderate to high-risk areas.

Resources: Appendix B.2.6 IBHS Fortified Homes program

Mitigation Measure # 39 Community ⇒ Hazard ↓	Unincorporated Canadian County	Town of Calumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City
Floods	X	X	X	X	X	X	X
Tornadoes	X	X	X	X	X	X	X
High Winds	X	X	X	X	X	X	X
Lightning	X	X	X	X	X	X	X
Severe Winter Storms	X	X	X	X	X	X	X
Urban Fires	X	X	X	X	X	X	X
Earthquakes	X	X	X	X	X	X	X
Hazardous Material Sites	X	X	X	X	X	X	X

39. Based on the results of the Emergency Back-up Generator Hazard Mitigation Plan Annex, provide wiring and transfer switches to accommodate emergency generators during disaster power outages for critical facilities including Emergency Operations Centers, City Hall, Dispatch, Police, Fire, Community Centers used for emergency housing during disasters, critical facilities, lift stations, water treatment plants, and community medical facilities.

Lead: Department of Public Works

Time Schedule: 2012- Ongoing

Estimated Cost: Costs to be determined based on findings of the Emergency Back-up Generator Hazard Mitigation Plan Annex.

Source of Funding: Local/General budget, FEMA, PDM and/or HMGP.

Work Product/Expected Outcome: Adequate pre-installed wiring and required automatic transfer switches in Critical Facilities that will accommodate emergency generators during power outages in a disaster.

Resource: Appendix B.2.12 Back-Up Generators

Mitigation Measure # 40-42 Community ⇒ Hazard ↓	Unincorporated Canadian County	Town of Callumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City
Floods	X	X	X	X	X	X	X

40. Continue Compliance with, and Participation in the National Flood Insurance Program (NFIP) and the Community Rating System (CRS).

Lead: Community Manager/Floodplain Manager
 Time Schedule: 2012- On Going
 Estimated Cost: Undetermined
 Source of Funding: Local/General budget.

Work Product/Expected Outcome: Compliance with, and enforcement of local storm drainage and floodplain management ordinances and regulations, and requirements of the National Flood Insurance Program and the Community Rating System (CRS).

Resource: Appendix B.4.2 Insurance

41. Prepare a comprehensive basin-wide Flood and Drainage Annex to the Multi-Hazard Mitigation Plan for all watersheds within the jurisdiction. The Annex should identify all flooding problems within the jurisdiction, and recommend the most cost-effective and politically acceptable solutions.

Lead: Department of Public Works
 Time Schedule: 2012-2015
 Estimated Cost: \$450,000
 Source of Funding: Local Funds, FEMA HMGP/PDM

Work Product/Expected Outcome: A comprehensive Flood and Drainage Annex for all watersheds within the community that identifies flooding problems and provides guidance for cost-effective and politically acceptable actions to correct the problems, and to address future development impacts and appropriate mitigation measures

Resource: Appendix B.2.1 Planning

42. Continue to acquire and remove floodplain and (future) repetitive loss properties where the community's Repetitive Loss and Flood and Drainage Annex to the Multi-Hazard Mitigation Plans identify acquisition as the most cost-effective and desirable mitigation measure.

Lead: Public Works
 Time Schedule: 2012-Ongoing
 Estimated Cost: To be determined
 Source of Funding: Local Funds and FEMA HMGP/PDM

Work Product/Expected Outcome: Acquisition of the community's most severely vulnerable flood-risk properties, and relocation of flood victim families to safe homes out of the floodplain and harm's way.

Mitigation Measure # 43 Community ⇒ Hazard ↓	Unincorporated Canadian County	Town of Calumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City
Floods	X	X	X	X	X	X	X
Tornadoes	X	X	X	X	X	X	X
High Winds	X	X	X	X	X	X	X
Hail	X	X	X	X	X	X	X
Severe Winter Storms	X	X	X	X	X	X	X
Earthquakes	X	X	X	X	X	X	X

43. Develop / Review / Update the Debris Management Plan.

Lead: Community Manager/Public Works

Time Schedule: 2012-2014

Estimated Cost: \$ 8,500

Source of Funding: Local Budget

Work Product/Expected Outcome: 1) Identify locations clean-up crews can deposit debris before a final disposal. Public safety and efficiency in relocating debris piles should be considered; 2) Assess priorities for clearing routes involving critical structures or facilities.3) Purchase tub grinder for areas serviced by Landfill.

Resource: Appendix B.5.10 Debris Management

Mitigation Measure # 44-46 Community ⇒ Hazard ↓	Unincorporated Canadian County	Town of Calumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City	Banner Public Schools	Calumet Public Schools	Darlington Public School	El Reno Public Schools	Maple Public Schools	Mustang Public Schools	Okarche Public Schools	Piedmont Public Schools	Union City Public Schools	Redlands Community College	Canadian Valley Technology Center
Floods	X	X	X	X	X	X	X		X		X		X		X	X	X	X
Dam Failures	X	X	X	X		X			X	X	X						X	X

44. Create and maintain habitat for flora and fauna in flood control projects. Maintaining or developing wetlands may be an effective area to receive or reduce floodwaters.

Lead: Emergency Management/School Superintendent

Time Schedule: 2012 - ongoing

Estimated Cost: To be determined

Source of Funding: Local and FEMA HMGP/PDM.

Work Product/Expected Outcome: A sustainable riverine/riparian ecosystem that provides habitat for plants and animals, and provides storage for floodwaters during flood events.

45. Control erosion during development with vegetation or sediment capture, reducing sedimentation which may fill in channels and lakes, reducing their ability to carry or store floodwaters.

Lead: Emergency Management/ School Superintendent

Time Schedule: 2012 - ongoing

Estimated Cost: To be determined

Source of Funding: Local and FEMA HMGP/PDM.

Work Product/Expected Outcome: A stream system and floodplains that maintain the design flood storage and conveyance capacities.

46. Maintain natural and beneficial functions of streams and floodplains.

Lead: Emergency Management

Time Schedule: 2012 - ongoing

Estimated Cost: To be determined

Source of Funding: Local and FEMA HMGP/PDM.

Work Product/Expected Outcome: A floodplain and stream eco-system that maintains it's natural and beneficial functions of conveyance and storage of floodwaters; maintains wildlife and plant habitat

Mitigation Measure # 47-48 Community ⇒ Hazard ↓	Unincorporated Canadian County	Town of Callumet	City of El Reno	City of Mustang	Town of Okarche	City of Piedmont	Town of Union City	Banner Public Schools	Callumet Public Schools	Darlington Public School	El Reno Public Schools	Maple Public Schools	Mustang Public Schools	Okarche Public Schools	Piedmont Public Schools	Union City Public Schools	Redlands Community College	Canadian Valley Technology Center
Wildfire	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

47. Implement red cedar eradication program (NRCS to assist) to reduce red cedar trees and wild fire potential.

Lead: OSU Extension, Canadian County, NRCS

Time Schedule: 2012 - 2017

Estimated Cost: \$25,000

Source of Funding: Local, FEMA, NRCS

Work Product/Expected Outcome: 1) With NRCS supervised assistance, implement controlled burns of lands containing red cedars; 2). Educate landowners with public awareness materials concerning wild fires, property concerns and eradication programs. 3) Organize staff meetings to facilitate progress with the coordinated agencies.

48. Provide and maintain defensible space around structures vulnerable to wildfires.

Lead: Department of Public Works/ Superintendent, Public Schools

Time Schedule: 2012 - Ongoing

Estimated Cost: Costs to be determined.

Source of Funding: Local/General budget, FEMA, PDM and/or HMGP.

Work Product/Expected Outcome: Minimizes the risk of wildfires to the structures in Okfuskee County.

