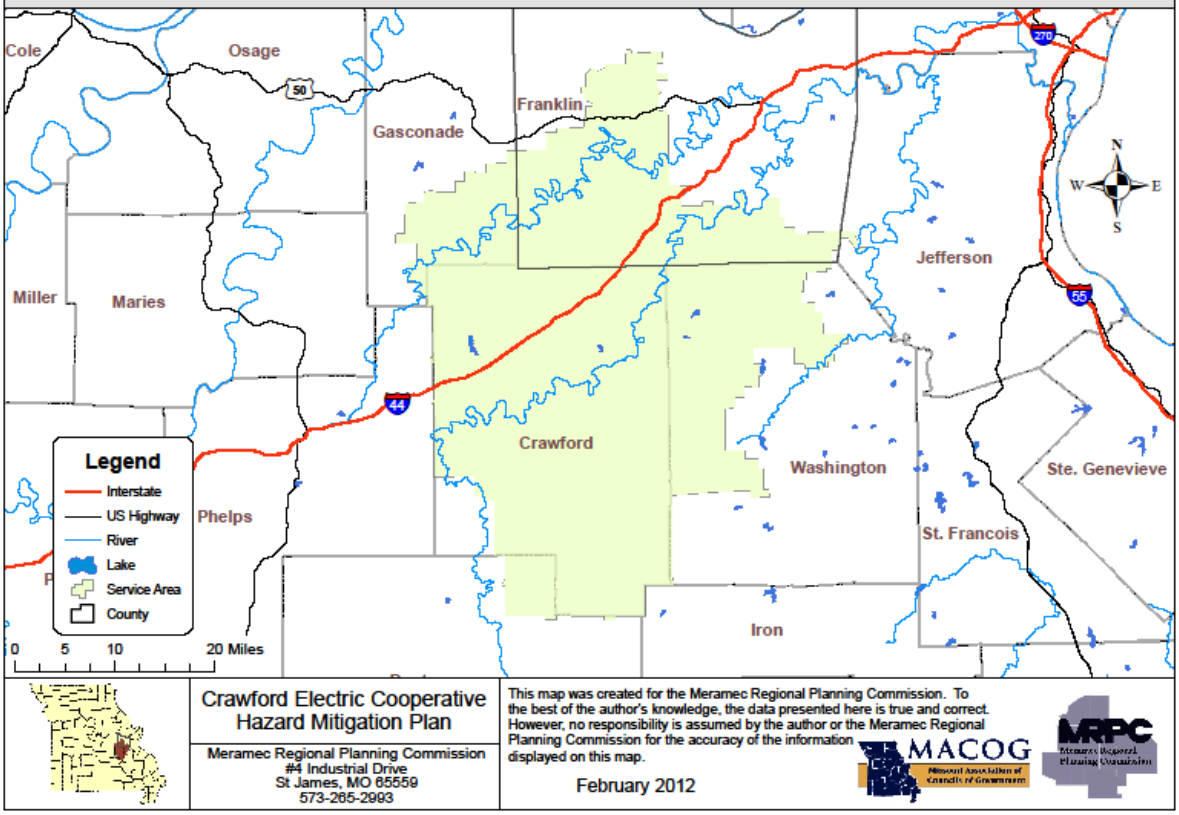
Section 1: Introduction

Crawford Electric Cooperative (CEC) was incorporated in 1940 to provide electric service to the rural areas of six east-central Missouri counties. A Touchstone Energy Cooperative, CEC is headquartered in Bourbon, Missouri, and provides service to customers in Crawford County and parts of Dent, Gasconade, Franklin, Jefferson and Washington counties. The cooperative is run by a board of nine directors which approve the company's mission and internally developed business policy:

> *"To provide high-quality electricity and other services at a competitive price while enhancing the quality of rural life for our member-owners and their communities. CEC will accomplish this through innovative thinking, open communications and accountability to the membership."*

CEC's service boundaries within the state of Missouri include all of Crawford County, a small portion of northeastern Dent County, the northwest corner of Washington County, portions of southwest Franklin and Jefferson counties, and part of southern Gasconade County. The cooperative owns more than 3,300 miles of distribution line within these counties. Figure 1 depicts the geographic boundaries of the cooperative.

Crawford Electric Cooperative Service Area Figure 1

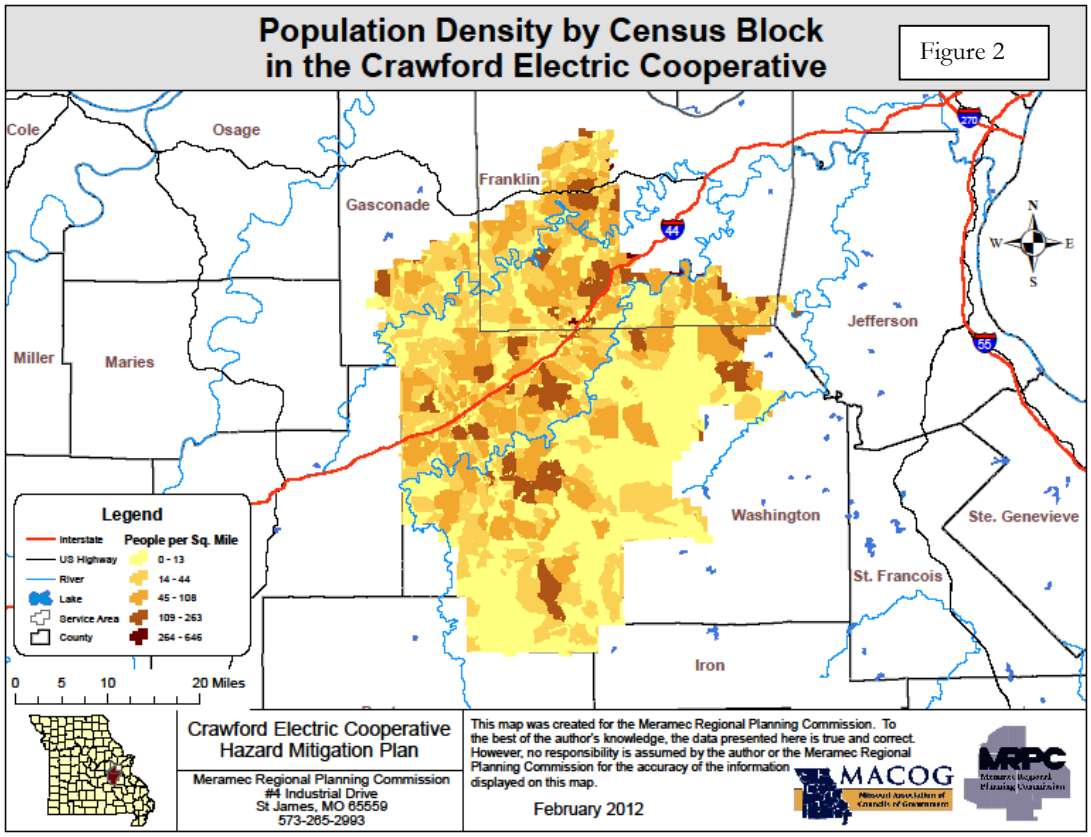


The customer base of CEC currently exceeds 30,000 Missourians served by 19,690 meters. The CEC system also includes the City of Bourbon, which has a population of 1,632 according to the 2010 US Census. Residential customers account for 92 percent of electric accounts, or 18,033 meters; while non-residential customers make up the remaining 8 percent, or 1,657 meters. Table 1.1 provides the summary of metered customers by Missouri county.

Table 1.1 Meters by Missouri County

County	Residential Meters	Non-Residential Meters	Total Meters
Crawford	10,288	1,063	11,351
Dent	70	9	79
Franklin	6,085	435	6,520
Gasconade	978	47	1,025
Jefferson	19	3	22
Washington	2,250	100	2,350

The average daily customer usage for CEC is 1,236 kilowatt-hours (kWh). Annual total usage of CEC customers in 2010 was 309,133,300 kWh of service. Population density for the cooperative service area is depicted in Figure 2 (*Map source: U.S. Census 2010*).



Section 2: Planning process:

Through a partnership between the Association of Missouri Electric Cooperatives and the Missouri Association of Councils of Government, the Meramec Regional Planning Commission was contracted to facilitate a hazard mitigation planning process for CEC. The initial meeting between the two entities was held on January 18, 2011 as part of a regional kick-off meeting for southwest Missouri. This informational meeting provided the basic responsibilities for each agency and allowed for initial discussion concerning the project timelines, data collection and other pertinent topics.
Two additional planning meetings were held with CEC staff during the months of April and August. Table 1.2 summarizes the attendees and topics of each meeting. Meeting minutes are available in the chapter appendix.

Table 1.2	CEC Planning Meeting Synopsis	
Meeting Date	**Attendees, Title, Organization**	**Topics of discussion**
January 18, 2011	Mike Biggins, Manager of Member Services Bonnie Prigge, Asst. Director, MRPC Lesley Bennish, Regional Planner, MRPC Tamara Snodgrass, Enviro. Programs Mgr., MRPC	Overview of project Assignment of responsibilities
April 25, 2011	Mike Biggins, Manager of Member Services Frank Burkhardt, Information Systems Technician Connie Willman, Planner, MRPC Tamara Snodgrass, Enviro. Programs Mgr., MRPC	Data collection review
August 26, 2011	Mike Biggins, Manager of Member Services Jerry Wellington, Operations manager Mark Voss, Manager, Engineering Terry Gordon, Right-of-Way Superintendent David Harrison, Line Superintendent Tamara Snodgrass, Enviro. Progr. Mgr., MRPC	Method of prioritization Prioritization of goals, actions, and objectives

Public Involvement

As with all public hazard mitigation plans, public involvement was encouraged through a variety of methods. CEC posted their local chapter on the company's website, inviting both cooperative members and the general public to provide comment. Print copies of the chapter were also made available upon request through the local office. Comments from neighboring jurisdictions were also solicited using the standardized AMEC letter which was mailed to the appropriate contacts, including:

- Crawford County Commission
- Dent County Commission
- Franklin County Commission
- Gasconade County Commission
- Jefferson County Commission
- Washington County Commission
- Local emergency management directors, and
- Local Red Cross chapter

CEC provides service to the City of Bourbon, including their police department, city hall and volunteer fire department. In addition, there are several rural volunteer fire departments located within their service area that depend upon CEC for electric. However, CEC does not provide service to any hospitals, higher education institutions or large industrial centers. Additionally, CEC's mitigation plan was included in the public comment period for the combined AMEC plan.

Section 3: Asset inventory

Crawford Electric Cooperative has a wide variety of assets by type. Real estate owned by the company includes an office building, two warehouses, garages, and other outbuildings located around the CEC headquarters in Bourbon, Mo. The coop owns 17 pickups and vans, 11 bucket trucks and 6 digger trucks. CEC does not own any electric generation or transmission infrastructure. 3,338 miles of distribution lines are owned and maintained by CEC. Table 1.3 provides information concerning total asset valuation.

Table 1.3	**Crawford Electric Cooperative Asset Inventory Valuation Summary**	
Asset	**Total Replacement Cost**	**Cost breakdown**
Total CEC Assets	$193,639,844	Buildings and vehicles - $8,427,650 Furniture & equipment - $260,000 Overhead assets - $173,023,719 Underground assets - $11,928,475
Distribution Lines	$35,302,934 OH $11,512,475 UG	OH Single-phase lines - $18,887,934 UG Single-phase lines - $10,772,475 OH Three-phase lines - $16,415,000 UG Three-phase lines - $740,000
Supporting Infrastructure	$138,136,785	Meters - $4,176,005 Poles - $74,715,280 OH Single-phase Transformers - $18,487,700 UG Single-phase Transformers - $341,000 OH Three-phase Transformers - $1,000,000 UG Three-phase Transformers - $75,000 Guys/Anchors - $27,876,072 Cross-arms - $4,998,200 Regulators - $452,503 Reclosures - $1,298,125 Meter Loops - $2,322,900 DD Lights - $2,394,000
Office Buildings	$3,030,000	
Warehouses	$1,500,450	
Other buildings	$1,148,400	
Vehicles	$2,748,800	
Source: Internal Crawford Electric Cooperative Accounting and Insurance records, 2011		

Ensuring quality distribution to its customers, Crawford Electric Cooperative maintains not only distribution lines, but also the supporting infrastructure as well. Table 1.4 includes a list of asset types, emergency replacement cost per unit or mile, the asset inventory by service county, and total infrastructure numbers.

Table 1.4	Crawford Electric Cooperative Asset Inventory by service county							
Asset	**Emergency Replacement Cost per unit or mile**	**Number of units or miles: FRANKLIN**	**Number of units or miles: CRAWFORD**	**Number of units or miles: WASHINGTON**	**Number of units or miles: GASCONADE**	**Number of units or miles: DENT**	**Number of units or miles: JEFFERSON**	**Total number of units or miles:**
Meters	$185/unit	6,613	11,655	3,048	1,139	99	19	22,573
Poles	$1,112/unit	20,157	34,940	8,063	3,360	504	166	67,190
SP*** distribution line	$7,053/mile OH $61,557/mile UG	804 OH** 53 UG***	1,393 OH 91 UG	321 OH 21 UG	134 OH 10 UG	20 OH 0 UG	7 OH 0 UG	2,679 OH 175 UG
TP**** distribution line	$35,000/mile OH $185,000/mile UG	141 OH 1 UG	244 OH 3 UG	56 OH 0 UG	24 OH 0 UG	4 OH 0 UG	1 OH 0 UG	470 OH 4 UG
SP Transformers	$1,100 OH $2,500 UG	5,042 OH 93 UG	8,740 OH 161 UG	2,017 OH 37 UG	840 OH 16 UG	126 OH 3 UG	42 OH 0 UG	16,808 OH 310 UG
TP Transformers	$4,500 OH $5,000 UG	120 OH 5 UG	208 OH 10 UG	48 OH 0 UG	20 OH 0 UG	4 OH 0 UG	0 OH 0 UG	400 OH 15 UG
Guys/anchors	$511/unit	16,366	28,367	6,546	2,728	409	136	54,552
Cross-arms	$373	4,020	6,968	1,608	670	101	33	13,400
Regulators	$4,229	32	56	13	5	1	0	107
Reclosures	$1,675	233	403	93	38	6	2	775
Meter Loops	$522/unit	1,335	2,314	534	223	33	11	4,450
DD Lights	$315	2,280	3,952	912	380	57	19	7,600
Total Replacement Value by county		$51,892,960 OH $3,574,821 UG	$89,962,522 OH $6,383,787 UG	$20,814,219 OH $1,333,397 UG	$8,670,956 OH $633,170 UG	$1,304,555 OH $3,300 UG	$373,507 OH $0 UG	$173,023,719 OH $11,928,475 UG

**OH = overhead ***UG = underground ***SP = Single phase ****TP – Three phase

Source: Internal Crawford Electric Cooperative Accounting and Maintenance records

Section 4: Identified Hazards and Risk Assessment Methodology

Natural hazards in east-central Missouri vary dramatically with regard to intensity, frequency, and the scope of impact. Some hazards, like earthquakes, happen without warning and do not provide any opportunity to prepare for the threat. Other hazards, such as tornadoes, flooding, or severe winter storms, provide a period of warning which allows for public preparation prior to their occurrence. Regardless, hazard mitigation planning can lessen the negative of any natural disaster regardless of onset time. The following natural hazards have been identified as potential threats for the service region of the Crawford Electric Cooperative:

- Tornadoes
- Severe Thunderstorms, Hail, and High Winds
- Flood
- Severe Land Subsidence
- Severe Winter Weather
- Earthquakes
- Wildfire
- Dam Failure

Likewise, a number of hazards may be eliminated from consideration in their local plan due to the state's geographic location including tsunamis, hurricanes, coastal storms, volcanic activity, avalanche, and tropical storms. Additionally, a number of hazards may be eliminated specifically for CEC because of asset types and geographic location in the state of Missouri. Those hazards eliminated for the CEC service region include:

- Drought
- Heat Wave
- Landslides
- Levee Failure

The planning group determined that none of their assets were vulnerable to dam failure, so that hazard was removed. Although drought can potentially impact northwest Missouri, water availability does not directly impact the delivery of electric service to CEC customers. Similarly, heat wave has been eliminated. Though it may result in additional usage and potentially tax the system, heat waves do not usually cause infrastructure damage to cooperative assets. The results of a heat wave in the CEC service area may be considered cascading events rather than damage caused directly by the hazard itself. Landslides have also been eliminated based upon local soil structure categorization by the USGS. As there are no levees in the CEC service area, levee failure has also been eliminated.

For the purpose of this risk assessment, the identified hazards for the CEC service area have been divided into two categories: **historical and non-historical hazards**.

Historical Hazards are those hazards with a measurable previous impact upon the service area. Damage costs per event and a chronology of occurrences are available. The associated vulnerability assessments utilize the number of events and cost of each event to establish an average cost per incident. For CEC, hazards with historical data include tornadoes, severe thunderstorms/high wind/hail, flood, severe winter weather, and wildfire.

Non-historical Hazards are hazards with no previous record of impact upon the local service area. As such, the associated vulnerability assessments for each of these hazards will have an occurrence probability of less than 1% in any given year, but the extent of damage will vary considerably. For CEC, hazards without historical data include earthquakes and severe land subsidence.

Probability of Occurrence

In determining the potential frequency of occurrences, a simple formula was used. For historical events, the number of recorded events for the service area was divided by the number of years of record. This number was then multiplied by 100 to provide a percentage. This formula was used to determine future probability for each hazard. For events that have not occurred, a probability of less than 1% was automatically assigned as the hazard cannot be excluded from the possibility of occurrence. Likewise, when discussing the probable risk of each hazard based upon historical occurrences, the following scale was utilized:

- Less than 1% chance of an event occurrence in any given year.
- 1-10% chance of an event occurrence in any given year
- 10-99% chance of an event occurrence in any given year
- Near 100% chance of an event occurrence in any given year

The number of occurrences was further refined to focus on damage-causing events. Those occasions which had reported damages were divided by the total number of recorded events to obtain a percentage of total storms which result in infrastructure damage. (Formula: Number of damage-causing events / total number of events = Percentage of occurrences which cause damage.)

Potential Extent of Damage

Vulnerability Assessment matrices for each hazard are included on the following pages. These worksheets detail loss estimates for each hazard affecting the cooperative's service area. Loss estimates were calculated using the asset summary created by internal CEC accounting records. Each hazard has a unique impact upon the service area, requiring each hazard to utilize a different valuation amount depending upon the level of impact. Non-historical hazards assume damage to all general assets. For Historical Hazards, assets were divided into two groups based upon historical impact which were utilized in the hazard damage analysis:

- Overhead infrastructure assets and buildings
  - Used for Tornado damage assessments
  - Valued at $181,451,369
- Overhead infrastructure assets only
  - Used for:
    - Severe Thunderstorm / High Wind / Hail
    - Flood
    - Severe Winter Weather
  - Valued at $173,023,719

In addition, historical hazards with recorded damages were used to identify an average cost per event. (Formula: Total cost of damages / total number of events = Average damage cost per event.) When discussing the extent of potential damages for all hazards, the following scale was utilized:

- Less than 10% potential damages to total cooperative infrastructure
- 10-25% potential damages to total cooperative infrastructure
- 25-50% potential damages to total cooperative infrastructure
- More than 50% potential damages to total cooperative infrastructure

Regardless of hazard categorization, the following matrix (Table 1.5) will be utilized to identify the potential damage extent and likelihood of occurrence for each natural hazard type.

Table 1.5 **Sample Crawford Electric Cooperative Infrastructure Vulnerability Assessment Matrix Hazard: _____**		Probability of Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	Near 100% probability in any given year
Potential Extent of Damage	Less than 10% of damage to system				
	10-25% damage of system				
	26-50% damage of system				
	More than 50% damage of system				

In many instances, natural hazard events occur without causing significant damage to the cooperative's infrastructure. The more significant impact of natural hazard episodes comes in the form of reported customer outages. The infrastructure may not be significantly harmed by an ice storm, but may result in prolonged and widespread outages

in the cooperative's service area. In considering the potential impact of a hazard, loss of function provides a more concise picture for comparison of events and geographic regions of the state. In addition to system damage, each hazard will be evaluated on the average number of reported or estimated outages per event occurrence. (Formula: Average number of outages reported / Total number of customers = Average percentage of outages reported per event).

Table 1.6 **Sample Crawford Electric Cooperative Service Interruption Vulnerability Assessment Matrix Hazard: _____**		Probability of Damage-causing Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	> Near 100% probability in any given year
Potential Extent of Impact	Less than 10% of customers report outages				
	10-25% of customers report outages				
	26-50% of customers report outages				
	More than 50% of customers report outages				

Section 5: Risk Assessment

A) Historical Hazards:

Tornadoes

In the last 60 years, 57 tornadoes have been reported within the Crawford Electric Cooperative boundaries. Figure 3 provides a pictorial representation of all recorded tornado touchdown sites and recorded path. *(Data for map collected from NOAA.)*

A data insufficiency exists, however, between 1968 and 1990 in historical hazard records and prior to 2000 in cooperative records concerning damage estimates. For the purpose of this assessment, the years for which records exist for both data sets have been used. From 2000-2011, CEC's service area has experienced a total of 25 tornadic events. Using the previously described methodology, the probability of a tornadic event in the Crawford Electric Cooperative service area in any given year is 100 percent (25 events / 11 years = 227%). Estimated cooperative material damages associated with each of these events were compiled by CEC staff. Two of the 25 occurrences caused damage to cooperative assets, resulting in an eight percent probability that any given tornadic occurrence will produce damage. Table 1.7 provides a summary of event dates, EF-scale ratings, damage cost estimates and outages reported.

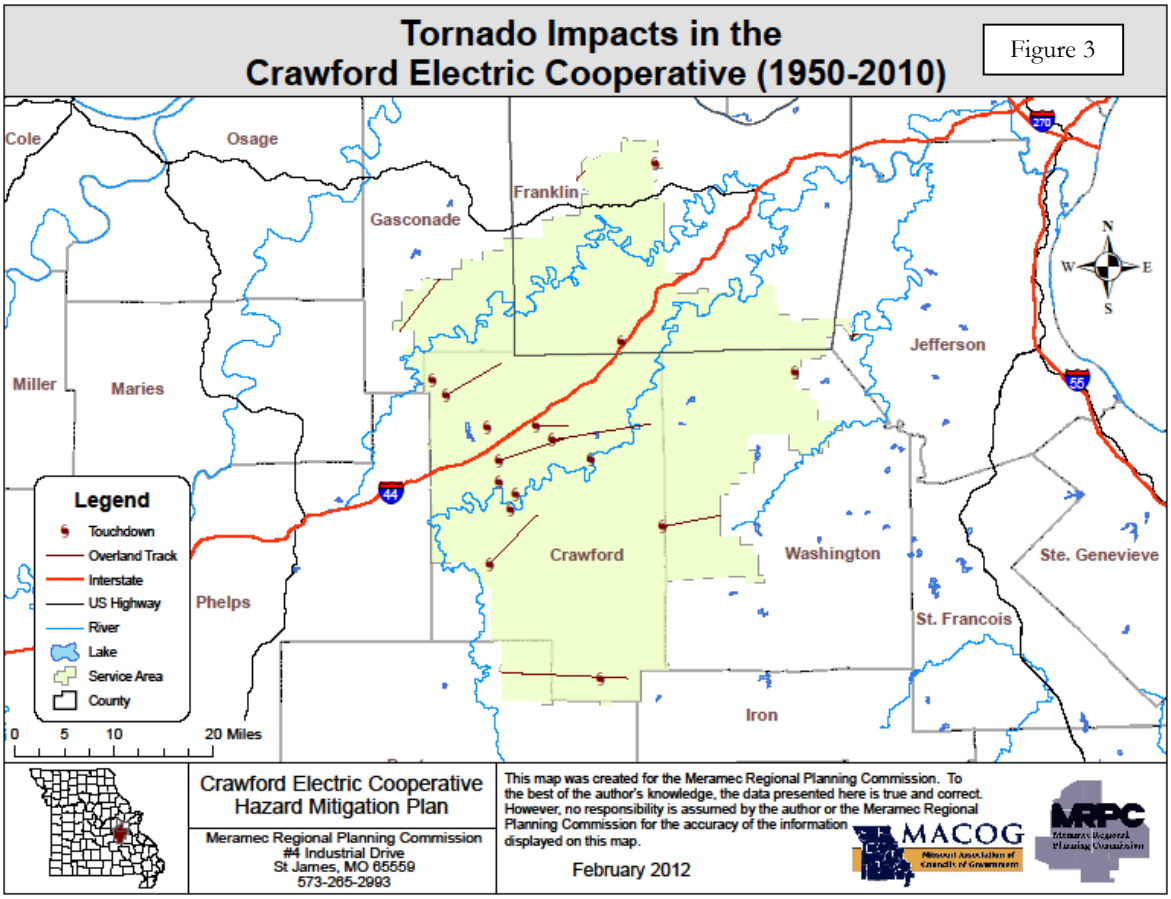


Table 1.7	CEC Tornadic Event Summary		
Date of event	**EF Scale rating**	**Damage estimates**	**Outages Reported**
5/7/2003	F1	$322,272	6,065
6/10/2003	F0	$0	1,912
Data provided based on internal CEC records which reflect cost from the referenced event year.			

Based upon the historical event records for 2000 - 2011, the average tornado to affect the cooperative will include an EF0-EF1 rating, causing an average damage cost of $161,136 per event ($322,272 / 2 events = $161,136). This averaged amount accounts for less than 1% of CEC's total overhead assets and building valuation ($322,272 / $181,451,369 = 0.17%). Table 1.8 demonstrates the probability of occurrence in conjunction with the potential extent of damage.

Table 1.8 **Crawford Electric Cooperative Infrastructure Vulnerability Assessment Matrix** **Hazard: Tornado**		Probability of Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	Near 100% probability in any given year
Potential Extent of Damage	Less than 10% of damage to system				
	10-25% damage of system				
	26-50% damage of system				
	More than 50% damage of system				

An average of 3,988 customers reported outages during recorded tornadoes since 2000. When compared with the total number of customers served by CEC, it can be projected that 20 percent of all customers may report outages during any given tornadic event. Table 1.9 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.9 **Crawford Electric Cooperative Service Interruption Vulnerability Assessment Matrix** **Hazard: Tornado**		Probability of Damage-causing Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	> Near 100% probability in any given year
Potential Extent of Impact	Less than 10% of customers report outages				
	10-25% of customers report outages				
	26-50% of customers report outages				
	More than 50% of customers report outages				

Severe Thunderstorms, High Wind, and Hail

According to the National Oceanic and Atmospheric Administration (NOAA), from 2000-2011, CEC's service area has experienced a total 378 hail events and 262 thunderstorm/ high wind events. Therefore, the probability of a hail event in the Crawford Electric Cooperative service area in any given year is near to 100% (378 events

/ 11 years = 3,436%) while the probability of a thunderstorm/high wind event in any given year is near to 100% (262 events / 11 years = 2,381%). Estimated material damages associated with each of these events were compiled by CEC staff. CEC's records are by month, not by event. Since January 2000, CEC has had no damage related to hail.

Table 1.10	CEC Thunderstorm/High Wind/Hail Event Damage Summary By Month/Date								
Event date	Damage estimates	Outages reported		Event date	Damage estimates	Outages reported		Event date	Damage estimates	Outages reported
2/2000	$0	71		3/2004	$0	263		12/2007	$0	71
3/2000	$0	262		4/2004	$0	42		1/2008	$0	55
4/2000	$0	231		5/2004	$0	471		2/2008	$0	473
5/2000	$0	289		6/2004	$0	611		3/2008	$0	202
6/2000	$0	340		7/2004	$0	227		4/2008	$0	225
7/2000	$0	583		8/2004	$0	571		5/2008	$0	741
8/2000	$0	653		9/2004	$0	35		6/2008	$0	603
9/2000	$0	76		10/2004	$0	158		7/2008	$0	1,293
10/2000	$0	115		11/2004	$0	653		8/2008	$0	145
12/2000	$0	49		1/2005	$0	51		9/14/08	$197,913.55	7,642
4/2001	$0	759		3/2005	$0	43		12/2008	$0	1,043
5/2001	$0	617		4/2005	$0	1,103		2/2009	$0	24
6/2001	$0	269		6/2005	$0	634		3/2009	$0	116
7/2001	$0	168		7/2005	$0	1,017		5/2009	$0	570
8/2001	$0	972		8/2005	$0	1,709		5/8/09	$55,716.31	2,261
9/2001	$0	349		9/2005	$0	1,123		6/2009	$0	335
10/2001	$0	120		10/2005	$0	821		7/2009	$0	150
11/2001	$0	44		11/2005	$0	129		8/2009	$0	813
3/2002	$0	1,036		12/2005	$0	156		9/2009	$0	768
4/2002	$0	374		1/2006	$0	53		10/2009	$0	184
5/2002	$0	3,850		2/2006	$0	54		11/2009	$0	9
6/2002	$0	1,282		3/2006	$0	469		4/2010	$0	278
7/2002	$0	3,401		4/2006	$0	6,269		5/2010	$0	963
8/2002	$0	4,357		5/2006	$0	1,789		6/2010	$0	857
9/2002	$0	24		6/2006	$0	333		7/2010	$0	1,387
12/2002	$0	6		7/2006	$0	3,786		8/2010	$0	897
3/2003	$0	501		8/2006	$0	228		9/2010	$0	130
4/2003	$0	144		9/2006	$0	3,672		10/2010	$0	175
5/2003	$0	651		11/2006	$0	1,477		11/2010	$0	114
6/2003	$0	1,780		3/2007	$0	95		2/2011	$0	448
7/2003	$0	8		4/2007	$0	322		3/2011	$0	119
8/2003	$0	315		5/2007	$0	796		4/2011	$0	885
9/2003	$0	36		6/2007	$0	1,947		4/19/11	$19,482.35	2,880
10/2003	$0	102		8/2007	$0	978		5/2011	$0	286
11/2003	$0	88		9/2007	$0	79		6/2011	$0	714
12/2003	$0	51		10/2007	$0	119		8/2011	$0	922
1/2004	$0	22		11/2007	$0	9		**TOTAL**	**$273,112.21**	
Data provided based on internal CEC records which reflect cost from the referenced event year.										

Based upon historical records, the average hail event to affect the cooperative will cause an average damage cost of $0 ($0 / 387 events = $0). This averaged amount accounts for less than 1% of CEC's total overhead asset valuation ($0 / $181,451,369 = 0).
Table 1.10 provides a summary of those thunderstorm/high wind events which caused damage to cooperative infrastructure by month/date, cost estimate of damage, and reported outages. 110 of the 262 occurrences caused outages, resulting in a 38.5% probability that any given thunderstorm/high wind occurrence will produce damage and/or outages. (110 / 262 = 38.5%)

Based upon historical records, the average thunderstorm/high wind event will result in more outages than physical damage. However, those storms which result in physical damage to the cooperative will cause an average damage cost of $91,037.40 ($273,112.21 / 3 events = $91,037.40). This averaged amount accounts for less than one percent of CEC's overhead asset valuation ($91,037.40 / $173,023,719 = 0.0052%). Table 1.11 demonstrates the probability of occurrence in conjunction with the potential extent of damage for both hail and thunderstorm/high wind events.

Table 1.11 **Crawford Electric Cooperative Infrastructure Vulnerability Assessment Matrix** **Hazard: Thunderstorm/High Wind/Hail**		Probability of Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	Near 100% probability in any given year
Potential Extent of Damage	Less than 10% of damage to system				
	10-25% damage of system				
	26-50% damage of system				
	More than 50% damage of system				

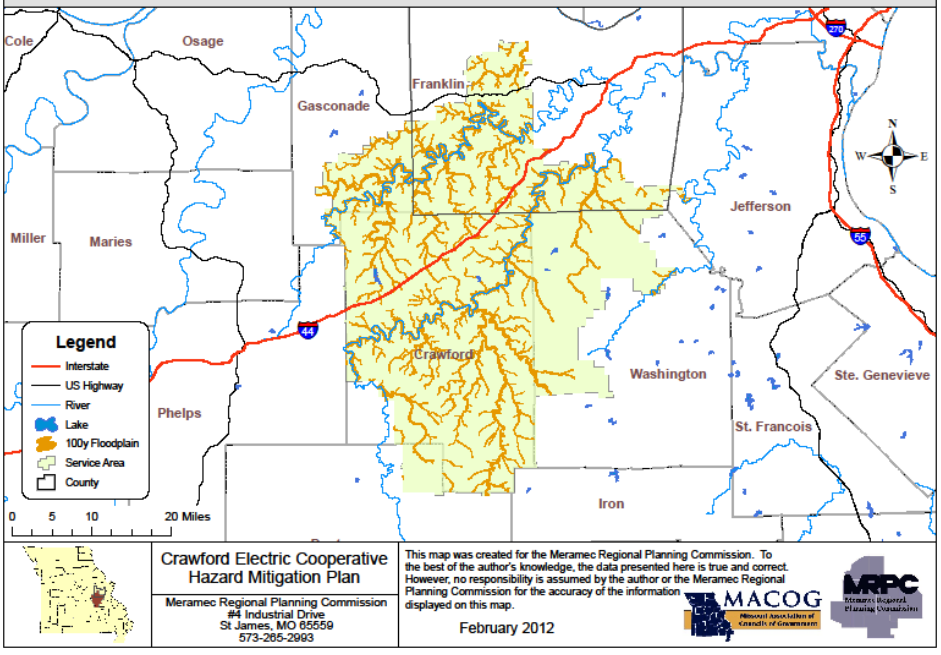
An average of 325 customers reported outages during recorded hail, thunderstorm, and high wind events since 2000. When compared with the total number of customers served by CEC, it can be projected that two percent of all customers may report outages during any given hail, thunderstorm, or high wind event. Table 1.12 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.12 **Crawford Electric Cooperative Service Interruption Vulnerability Assessment Matrix** **Hazard: Thunderstorm/High Wind/Hail**		Probability of Damage-causing Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	> Near 100% probability in any given year
Potential Extent of Impact	Less than 10% of customers report outages				
	10-25% of customers report outages				
	26-50% of customers report outages				
	More than 50% of customers report outages				

Flood and Levee Failure

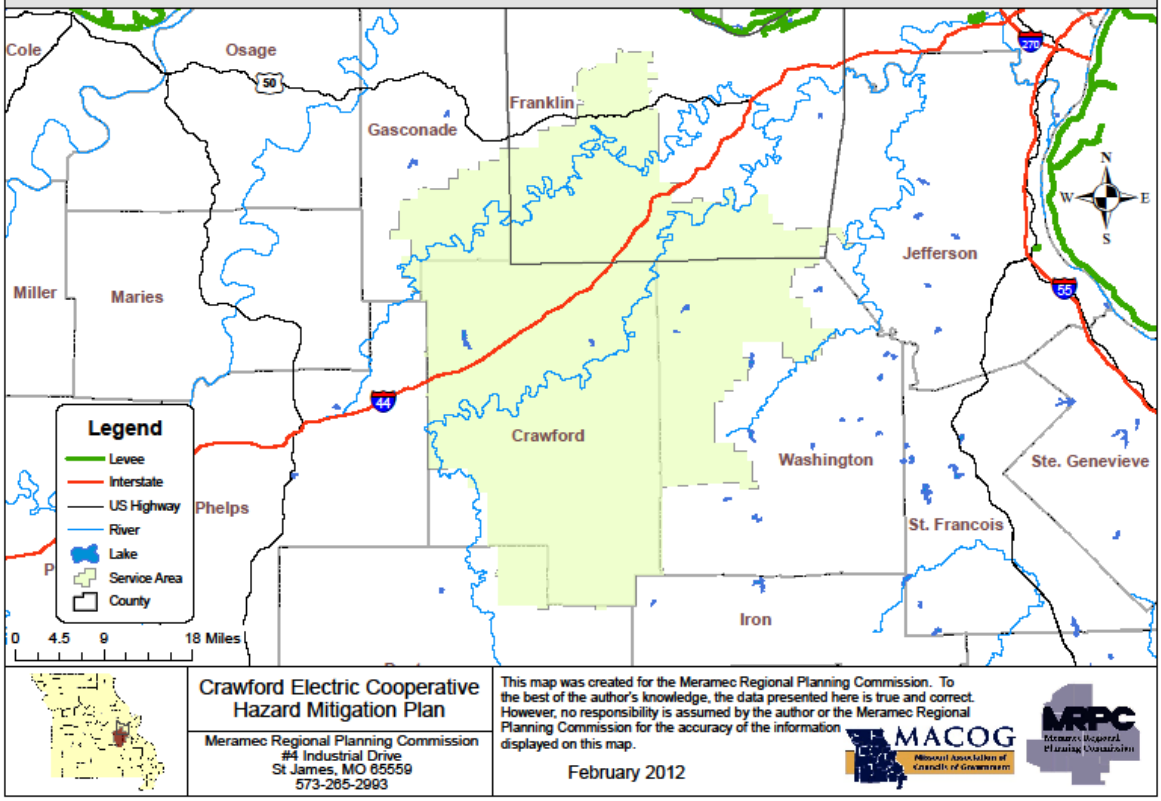
Flood and levee failure are both potential threats to the existing infrastructure of the Crawford Electric Cooperative. CEC's service territory is bordered on the north by the Missouri River, on the east by the Mississippi River and is crisscrossed by the Meramec and Bourbeuse rivers. Significant portions of the service area are located in the 100 year floodplain. Figure 4 below depicts the 100 year floodplain in relation to the cooperative's boundaries. (*Map sources: FEMA HAZUS-MH; DFIRMS)*

Floodplain in the Crawford Electric Cooperative Figure 4



Currently, inundation data for levee failure is lacking due to issues surrounding mapping, appropriate models, and its close association with flooding events. Figure 5 below provides the location of known state and federal levees within the cooperative's boundaries. All levees are located along the Missouri and Mississippi rivers on the north and east borders of the service area. *Map sources: FEMA HAZUS-MH; DFIRMS, US Corps of Engineers).*

Levees near the Crawford Electric Cooperative Figure 5



From 2000-2011, CEC's service area has experienced 103 flooding events, including both floods and flash floods. Currently, no data concerning levee failure damage can be separated from flood damage data. Therefore, the probability of a flood/levee failure event affecting the cooperative assets in any given year is near 100% (103 events / 11 years = 936%). Estimated material damages associated with each of these events were compiled by CEC staff. Table 1.13 summarizes flood event dates by month, damage cost estimates, and reported outages. One of the 103 occurrences caused damage

Table 1.13	CEC Flood Event Summary	
Event date	**Damage estimates**	**Outages reported**
3/21/2008	$64,976.30	208
Data provided based on internal CEC records which reflect cost from the referenced event year.		

to cooperative assets, resulting in a near 100 percent probability that any given flood occurrence will produce damage. (1 / 103 = 0.9%)

Flood and levee failure events vary widely based upon numerous factors including, but not limited to, annual precipitation and extent of levee damage. Not all events, however, are extensive as evidenced in Table 1.13, which shows only one incident in the last 11 years that resulted in damage for CEC assets. Based upon historical records, the average flood/levee failure event to affect the cooperative will cause an average damage cost of $64,976.30 ($64,976.30 / 1 events = $64,976.30). This averaged amount accounts for less than 1% of CEC's overhead asset valuation ($64,976.30 / $173,023,719 = 0.037%). Table 1.14 demonstrates the probability of occurrence in conjunction with the potential extent of damage.

Table 1.14 **Crawford Electric Cooperative Infrastructure Vulnerability Assessment Matrix** **Hazard: Flood**		Probability of Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	Near 100% probability in any given year
Potential Extent of Damage	Less than 10% of damage to system				
	10-25% damage of system				
	26-50% damage of system				
	More than 50% damage of system				

An average of 208 customers reported outages during recorded flooding events since 2000. When compared with the total number of customers served by CEC, it can be projected that one percent of all customers may report outages during any given flooding event. Table 1.15 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.15 **Crawford Electric Cooperative Service Interruption Vulnerability Assessment Matrix** **Hazard: Flood**		Probability of Damage-causing Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	> Near 100% probability in any given year
Potential Extent of Impact	Less than 10% of customers report outages				
	10-25% of customers report outages				
	26-50% of customers report outages				
	More than 50% of customers report outages				

Severe Winter Weather

From 2000-2011, CEC's service area has experienced a total of eighteen severe winter weather events, including significant snowfall and ice storms. Therefore, the probability of a severe winter weather event in the Crawford Electric Cooperative service area in any given year is near 100% (18 events / 11 years = 163%). Estimated material damages associated with each of these events were compiled by CEC staff. Damage estimates are available from 2000-2011 only. In some cases, CEC records only have outages by month. Table 1.16 provides a summary of event dates, types, associated damage estimates, and reported outages. Ten of the 30 occurrences caused either physical damage to cooperative assets or outages, resulting in a 5.5 percent probability that any given severe winter weather occurrence will produce damage. (10 / 18 = 55.5%)

Table 1.16	**CEC Severe Winter Weather Event Summary**		
Event date	**Event type**	**Damage estimates**	**Outages reported**
2/2001	Ice storm	$0	122
11/28/01	Winter storm	$0	24
1/19/02	Winter storm	$0	43
2/10/02	Winter storm	$0	5
12/2002	Winter storm	$0	93
1/18/03	Winter storm	$0	42
12/25/05	Winter storm	$0	113
1/13/07	Ice storm	$653,176.13	11,779
12/9/07	Winter storm	$0	86
2/11/09	Winter storm	$0	8
Data provided based on internal CEC records which reflect cost from the referenced event year.			

In the past 10 years the cooperative has had outages attributed to winter weather 10 times, but only one of those ten events resulted in significant physical damage to CEC

infrastructure. Based upon these historical records, the average severe winter weather event to result in physical damage to the cooperative will cause an average damage cost of $653,176.13 ($653,176.13 / 1 event = $653,176.13). This averaged amount accounts for less than 1% of CEC's total overhead asset valuation ($653,176.13 / $173,023,719 = 0.37)%. Table 1.17 demonstrates the probability of occurrence in conjunction with the potential extent of damage.

Table 1.17 **Crawford Electric Cooperative Infrastructure Vulnerability Assessment Matrix** **Hazard: Severe Winter Weather**		Probability of Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	Near 100% probability in any given year
Potential Extent of Damage	Less than 10% of damage to system				
	10-25% damage of system				
	26-50% damage of system				
	More than 50% damage of system				

An average of 1,232 customers reported outages during recorded severe winter weather events since 2000. When compared with the total number of customers served by CEC, it can be projected that six percent of all customers may report outages during any given severe winter weather event. Table 1.18 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.19 **Crawford Electric Cooperative Service Interruption Vulnerability Assessment Matrix** **Hazard: Severe Winter Weather**		Probability of Damage-causing Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	> Near 100% probability in any given year
Potential Extent of Impact	Less than 10% of customers report outages				
	10-25% of customers report outages				
	26-50% of customers report outages				
	More than 50% of customers report outages				

Wildfire

The incidence of wildfire in the CEC service area presents a unique risk assessment. According to the Missouri Department of Conservation, Crawford, Dent, Franklin, Gasconade, Jefferson and Washington counties have all experienced wildfires between 2004 and 2008. Although there is anecdotal information that wildfire has damaged some poles, CEC does not have hard data on any wildfire damage that has occurred in the past 10 years. Table 1.20 summarizes the incidences of wildfire within the six counties. Therefore, the probability of a wildfire event in the Crawford Electric Cooperative service area in any given year is near 100% (1,856 events / 4 years = 46,400%). Although CEC does not have records of any significant damage from wildfires, for the purposes of this assessment, wildfire and its associated impacts cannot be eliminated from the realm of possibility.

Table 1.20 Wildfire summary by county

County	# of Wildfires, 2004-08	Average Annual # of Wildfires	Likelihood (1-5)	Acres Burned	Average Annual Acres Burned	Total Buildings Damaged	Vulnerability
Crawford	374	74.8	3	3,266.36	653	6	Medium-high
Dent	142	28.4	1	2,954.645	591	5	Medium
Franklin	334	66.8	3	914.74	183	7	Medium
Gasconade	48	9.6	1	395	79	2	Low
Jefferson	291	58.2	2	790.233	158	2	Medium-low
Washington	667	133.4	5	5,688.7	1,138	5	High
Totals	1,856	61.86	2-3	14,009.678	467	27	Medium

Source: Missouri State Hazard Mitigation Plan, 2010

The potential extent of damage caused by wildfire is difficult to determine. Like earthquakes and dam failure, wildfires have had no measurable impact upon the CEC service area. Between 2004 and 2008, 1,856 fires have burned a total of 14,009.678 acres, for an average of 7.5 acres affected per event. CEC sustained no damage related to wildfires in its service area during this time period. Cooperative assets are located throughout the service area rather than being located at a single central site. With an average of 7.5 acres per fire in the service area, it is unlikely that infrastructure damage would exceed 1% based upon asset location and unlikeliness of an uncontrollable wildfire. This initial assessment assumes a limited impact upon electric distribution infrastructure of less than 10% (Table 1.21). Further study will be required to create a model for damage assessments related to wildfire.

Table 1.21 **Crawford Electric Cooperative Infrastructure Vulnerability Assessment Matrix** **Hazard: Wildfire**		Probability of Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	Near 100% probability in any given year
Potential Extent of Damage	Less than 10% of damage to system				
	10-25% damage of system				
	26-50% damage of system				
	More than 50% damage of system				

No customers have reported outages during recorded wildfires between 2004 and 2008. When compared with the total number of customers served by CEC, it can be projected that less than 1 percent of all customers may report outages during any given wildfire event. Table 1.22 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.22 **Crawford Electric Cooperative Service Interruption Vulnerability Assessment Matrix** **Hazard: Wildfire**		Probability of Damage-causing Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	> Near 100% probability in any given year
Potential Extent of Impact	Less than 10% of customers report outages				
	10-25% of customers report outages				
	26-50% of customers report outages				
	More than 50% of customers report outages				

B. Non-historical Hazards

Earthquakes

The closest source of earthquake risk in the CEC service area is the New Madrid Fault, which runs from Northern Arkansas through Southeast Missouri and Western Tennessee and Kentucky to the Illinois side of the Ohio River Valley. The other major earthquake

fault in Missouri is the Nemaha Uplift which affects the northwest and western side of the state. Most of Missouri's earthquake activity has been concentrated in the southeast corner of the state, which lies within the New Madrid seismic zone.

The New Madrid fault has the potential to cause damage throughout the state of Missouri, including the CEC service area. Scientists from the U.S. Geological Survey (USGS) and the Center for Earthquake Research and Information (CERI) at the University of Memphis have estimated the probability of a magnitude 6.0 or greater earthquake from the New Madrid Fault is 25-40 percent through the year 2053. The probability of an earthquake increases with each passing day.

The projected earthquake intensity ratings for the cooperative region changes based upon the Modified Mercalli Scale. Given a New Madrid earthquake with a 6.7 rating, the region would experience Level V - VI intensity characteristics. In the event of an earthquake with a 7.6 rating, the region would experiences Level VI - VII intensity characteristic while an earthquake with an 8.6 rating would most likely cause Level VII - VIII intensity characteristics.

In the event of an earthquake with a 7.6 rating, the CEC service area would most likely experience minor building damage as well as damage to the electrical distribution system.

This damage would most likely be significantly less when compared with the southeast corner of the state, with more damage occurring in Jefferson and Washington counties. Distribution lines overhead and underground could become disconnected or severed, and transformers could be damaged. Though the probability of occurrence is very small, the potential extent of damage could significantly impact both the cooperative and its customers as demonstrated in Table 1.23.

Table 1.23 **Crawford Electric Cooperative Infrastructure Vulnerability Assessment Matrix** **Hazard: Earthquake**		Probability of Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	Near 100% probability in any given year
Potential Extent of Damage	Less than 10% of damage to system				
	10-25% damage of system				
	26-50% damage of system				
	More than 50% damage of system				

Based upon information from CERI, FEMA, and SEMA, it may be estimated that up to 5,000 customers could report outages related to an earthquake event. When compared with the total number of customers served by CEC, it can be projected that 10 – 25

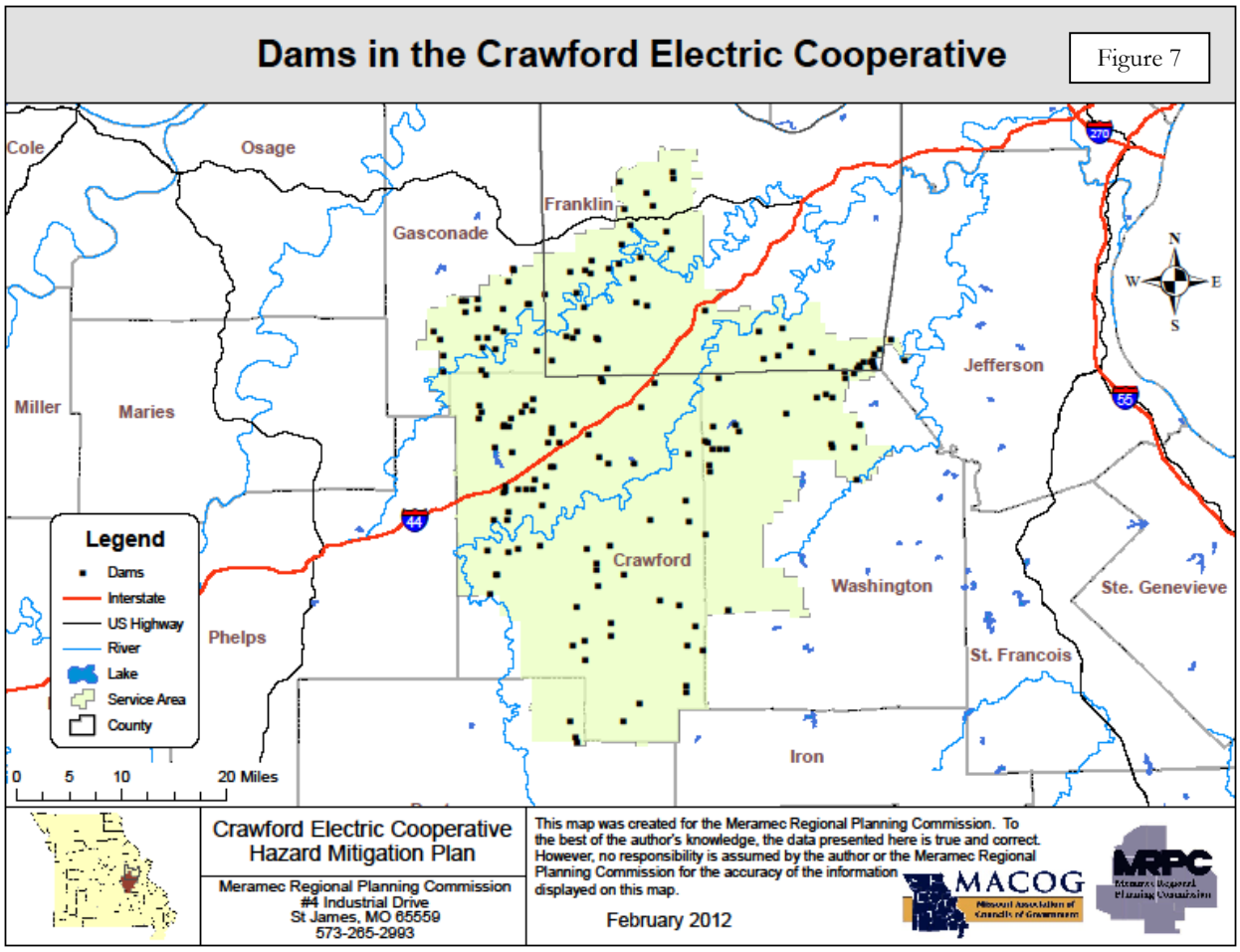
percent of all customers may report outages during any given seismic event. Table 1.24 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.24 **Crawford Electric Cooperative Service Interruption Vulnerability Assessment Matrix** **Hazard: Earthquake**		Probability of Damage-causing Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	> Near 100% probability in any given year
Potential Extent of Impact	Less than 10% of customers report outages				
	10-25% of customers report outages				
	26-50% of customers report outages				
	More than 50% of customers report outages				

Dam Failure

Like earthquakes, dam failures have had no measurable impact upon the CEC service area to date. According to Missouri DNR's Dam Safety Division, 609 dams currently exist within the cooperative boundaries: 77 in Crawford County, 36 in Dent County, 144 in Franklin County, 83 in Gasconade County, 150 in Jefferson County and 119 in Washington County. Of these dams, 10 in Crawford County, four in Dent County, 24 in Franklin County, 14 in Gasconade County, 37 in Jefferson County and 57 in Washington County are regulated by the state due to the fact that they are non-agricultural, non-federal dams which exceed 35 feet in height. Figure 7 shows the locations of all known dams located within CEC's service area. *(Map sources: www.msdis.missouri.edu; www.dnr.mo.gov/env/wrc.)*

26 dam failures have occurred within the state of Missouri over the past 100 years. However, no such event has occurred within or near the cooperative's boundaries. However, for the purposes of this assessment, dam failure and its associated impacts cannot be eliminated from the realm of possibility. In order to allow for a risk assessment, the probability of this event has been included as less than 1%.



Determining the potential extent of dam failure is currently impossible due to a lack of data concerning inundation zones. Further study concerning existing dams and their impact is required to make a more comprehensive assessment of potential damages. Based on discussions with CEC staff on location of infrastructure relative to dams, this initial assessment assumes a limited impact upon downstream electric distribution infrastructure of less than 10% for both infrastructure damage and service interruption. (Tables 1.25 and 1.26).

Table 1.25 **Crawford Electric Cooperative Infrastructure Vulnerability Assessment Matrix** **Hazard: Dam Failure**		Probability of Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	Near 100% probability in any given year
Potential Extent of Damage	Less than 10% of damage to system				
	10-25% damage of system				
	26-50% damage of system				
	More than 50% damage of system				

Table 1.26 **Crawford Electric Cooperative Service Interruption Vulnerability Assessment Matrix** **Hazard: Dam Failure**		Probability of Damage-causing Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	> Near 100% probability in any given year
Potential Extent of Impact	Less than 10% of customers report outages				
	10-25% of customers report outages				
	26-50% of customers report outages				
	More than 50% of customers report outages				

Land Subsidence (Sinkhole Collapse)

CEC's location in the southern half of Missouri places it squarely in a region where karst topography is common. This type of geological feature is characterized by springs, caves and sinkholes – the result of the collapse of a cave ceiling. Although there have not been any reported incidents of sinkholes collapsing and causing personal injury or damage to CEC infrastructure, this type of land subsidence has occurred before in Missouri.

Determining the potential impact of land subsidence on CEC infrastructure is currently impossible due to a lack of historical data. Further study concerning land subsidence and its impact on power generation is required to make a more comprehensive assessment of potential damage. The fact that CEC does extensive engineering and environmental

impact studies prior to construction of infrastructure also reduces the potential threat of damage from land subsidence. If an incident of land subsidence occurred, it would be localized to a relatively small area which would further limit its impact on the cooperative. This initial assessment assumes a limited impact upon infrastructure of less than 1%, and less than 1% of service interruption. (Tables 1.30 and 1.31).

Table 1.30 Crawford Electric Cooperative, Inc. Infrastructure Vulnerability Assessment Matrix Hazard: Land Subsidence		Probability of Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	Near 100% probability in any given year
Potential Extent of Damage	Less than 10% of damage to system				
	10-25% damage of system				
	26-50% damage of system				
	More than 50% damage of system				

Table 1.31 **Crawford Electric Cooperative, Inc. Service Interruption Vulnerability Assessment Matrix** **Hazard: Land Subsidence**		Probability of Damaging-causing Hazard Occurrence			
		Less than 1% in any given year	1-10% chance in any given year	10- 99% chance in any given year	> Near 100% probability in any given year
Potential Extent of Impact	Less than 10% of customers report outages				
	10-25% of customers report outages				
	26-50% of customers report outages				
	More than 50% of customers report outages				

Section 6: Mitigation strategies

Previous efforts at mitigation

For organizations like CEC, mitigation is considered to be part of prudent business operations. In order to ensure the delivery of a quality product and minimize service interruptions, a number of mitigation strategies are continually utilized. Routine maintenance and upgrades to existing equipment are completed as part of daily tasks. Vegetation management is utilized to limit the cascading effects of natural hazards. Safety and reporting information are disseminated to the public through various types of media. Mutual aid agreements and partnerships create relationships which provide for future support in the event of a natural disaster.

Additionally, mitigation is considered prior to any expansion of service into special hazard areas. Before any service is build, it is first "staked out" in coordination with local builders and property owners. This process, completed by the Line Superintendent and contracted engineers, identifies and addresses foreseeable hazards and safety issues before any new service lines area constructed. USDA-RUS specifications regarding operation and safety are utilized in every step of the process. Steps are taken to practically minimize the exposure of equipment to loss due to foreseeable hazards, particularly flooding. Customers who reside in the floodplain are not charged for repairs or losses associated with flooding unless they purposefully destroy or restrict the cooperative from protecting their distribution system assets.

Existing and potential resources

As stated above, mitigation is a key component of good business practices. Crawford Electric Cooperative includes mitigation strategies as part of regular work activities to ensure service with minimal interruptions. Funding for these activities is provided through the cooperative's normal budgetary process for maintenance.

In order to expand mitigation efforts beyond normal maintenance, it is likely that CEC will need to seek outside funding sources. These may include private, state, or federal programs which provide grant and loan funding. Upon passage of this plan, CEC will be eligible for funding through FEMA in the following categories:

- Hazard Mitigation Grant Program
- Flood Mitigation Assistance Program
- Pre-Disaster Mitigation Program
- 406 Stafford Act

Development of goals, objectives, and actions

Establishing mitigation goals, objectives, and actions for a business entity requires a slightly different approach than public agencies. Certainly, a number of similarities exist; both entities must consider which hazards most commonly occur and have the greatest

potential for causing disruption to members or residents. They must also consider which types of actions will maximize benefits and minimize costs, how mitigation strategies will be implemented, who will enforce implementation, and how the overall plan will be maintained and updated.

The CEC mitigation planning committee, with assistance from MRPC staff, worked to identify goals, actions, and objectives which addressed hazard mitigation issues. The committee first identified ongoing mitigation strategies as well as potential strategies which seek to improve service and limit disruptions resulting from natural hazards. Action items were then analyzed for common characteristics and summarized to create nine objectives. Likewise, these nine objectives were grouped into similar categories and used as the basis for the four overarching goals. Table 1.27 provides a simple synopsis of the goals and objectives before prioritization.

Traditionally, the STAPLEE (Social, Technical, Administrative, Political, Legal, Environmental, and Economic) method is used to prioritize mitigation actions. These categories, however, do not necessarily align with the private sector in the same way they are applicable to governmental agencies. A number of action items could be included with multiple goals and objectives, for example. As a result, the committee chose to use a different method to prioritize their mitigation strategy.

Table 1.27	**CEC goals and objectives**
Identified Goals	**Identified Objectives**
Goal 1: Reduce the impact from hazards on critical infrastructure.	**Objective 1:** Physically strengthen critical utility infrastructure.
Goal 2: Minimize electric service disruption and associated impacts to consumers.	**Objective 1**: Reduce future losses due to natural hazard events.
	Objective 2: Improve communication accessibility and reliability
	Objective 3: Improvement of cooperative response/service restoration plan
	Objective 4: Review of Emergency Restoration Plan (ERP) using guidance from the Rural Utility Service.

After identifying ongoing and potential action items, the committee created three priority tiers:

- **First tier** actions focus on physical infrastructure protection and improvements which ensure continued, quality service and seek to reduce power outages. These types of actions are the highest priority of CEC.
- **Second tier** actions create and maintain working relationships to reduce and prevent the impact of power outages. These include improvements to safety and reporting information, mutual aid agreements, and other efforts which seek to expand and improve both customer service and disaster planning.
- **Third tier** actions identify potential projects for other system improvements. These include mapping efforts, technological improvements, and research related to the expansion of mitigation efforts.

Actions within each tier may be funded through regular budgetary methods or identified outside sources. Tables 1.28, 1.29, and 1.30 provide lists of action items by tier as well as the goals and objectives identified with each.

Table 1.28 Prioritized Mitigation Actions for Crawford Electric Cooperative – Tier 1

Tier 1			
Action item:	*Goal/Objective*	*Timeframe for completion*	*Cost-benefit score*
Perform routine maintenance and utilize upgraded equipment where possible to physically strengthen system. Tasks may include part replacement and/or upgrades. Identified work includes, but is not limited to: • Replace damaged poles with higher-rated poles of the same or different material. • Install larger poles • Strengthen distribution lines and poles. • Continue vegetative management program.	Goal 1 / Objective 1 Goal 2 / Objective 1	Ongoing effort	Low cost High benefit Score: 9
Replace existing lines with heavier/stronger wire and shorten spans.	Goal 1 / Objective 1 Goal 2 / Objective 1	Dependent upon additional funding.	High cost High benefit Score: 7
Increase the rate of removal of dangerous trees in and the right-of-way.	Goal 1 / Objective 1 Goal 2 / Objective 1	Ongoing effort	Low cost Medium benefit Score: 6
Complete annual inspections of lines and poles.	Goal 1 / Objective 1 Goal 2 / Objective 1	Completed annually.	Low cost Medium benefit Score: 6
Install Dead-End structures.	Goal 1 / Objective 1 Goal 2 / Objective 2	Ongoing effort; Completed as funding allows.	Low cost High benefit Score: 9
Convert overhead lines to underground lines or vice versa in troubled areas based on vulnerability.	Goal 1 / Objective 1 Goal 2 / Objective 1 Goal 2 / Objective 4	Dependent upon funding.	Medium cost High benefit Score: 8
Relocate infrastructure to reduce risks in areas vulnerable to hazards.	Goal 1 / Objective 1 Goal 2 / Objective 1 Goal 2 / Objective 4	Ongoing effort	Medium cost High benefit Score: 8
Provide looped distribution system where possible.	Goal 1 / Objective 1 Goal 2 / Objective 4	Ongoing effort	Medium cost High benefit Score: 8

Table 1.29 Prioritized Mitigation Actions for Crawford Electric Cooperative – Tier 2			
Tier 2			
Action item:	*Goal/Objective*	*Timeframe for completion*	*Cost-benefit Score*
Implement system to provide remote facility control.	Goal 2 / Objective 2	Dependent upon additional funding.	High cost Medium benefit Score: 4
Improve communications system.	Goal 2 / Objective 2	Ongoing effort.	High cost High benefit Score: 7
Implement load reduction strategies.	Goal 2 / Objective 2	Dependent upon additional funding.	High cost Low benefit Score: 1
Review of Emergency Restoration Plan (ERP) using guidance from the Rural Utility Service.	Goal 2 / Objective 3	Ongoing effort.	Low cost High benefit Score: 9

Table 1.30 Prioritized Mitigation Actions for Crawford Electric Cooperative – Tier 3			
Tier 3			
Action item:	*Goal/Objective*	*Timeframe for completion*	*Cost-benefit*
Evaluate remote and problem locations for possible widening of rights-of-way.	Goal 2 / Objective 1	Ongoing effort.	Low cost High benefit Score: 9
Utilize GPS and GIS technology to reduce site identification and response time.	Goal 1 / Objective 1	Ongoing effort.	High cost Medium benefit Score: 4
Monitor developments in data availability concerning the impact of levee failure, dam failure, tornados, sinkholes, and wildfire upon the CEC service area through local, state, and federal agencies.	Goal 1 / Objective 1 Goal 2 / Objective 1	Ongoing effort.	Low cost Low benefit Score: 3

Section 7 – Plan Implementation and Maintenance

Plan incorporation

The goals, objectives, and actions of the previous section identify both ongoing efforts at mitigation and potential methods for expanding efforts. The plan has been reviewed and adopted by the Board of Directors as part of the company's operations policy. This mitigation plan necessitates involvement from every CEC employment level as the organization strives to ensure quality service to their customers.

Other Local Planning Mechanisms

Beyond the CEC plan, few planning mechanisms exist at the local level. The Missouri counties of Crawford, Dent, Franklin, Gasconade, Jefferson and Washington each have a FEMA-approved Natural Hazard Mitigation Plan in place. County emergency management directors have Local Emergency Operations Plans which seek to mitigate the same hazards for residents. These same counties are also included in the Regional Transportation Plan (RTP) as well as a Comprehensive Economic Development Strategy (CEDS). CEC's plan can be easily incorporated into these local plans and allow for coordination across agencies in the event of an emergency.

CEC is located within the rural portions of third-class counties which are prohibited from enforcing building codes and zoning by the state of Missouri. They do not provide service to any municipality within these counties. Comprehensive plans and Capital Improvement plans do not exist inside of the CEC service areas.

Plan Maintenance

Crawford Electric Cooperative will conform to the requirements established by the Association of Missouri Electric Cooperatives (AMEC) for monitoring, evaluating, and updating the plan.

Continued Public Involvement Opportunities

Crawford Electric Cooperative will conform to the requirements established by the Association of Missouri Electric Cooperatives (AMEC) for continued public involvement. Opportunities for public comment will continue to be offered through various media outlets, the cooperative's website, and the physical office of CEC.