

Section 1: Introduction

Ozark Border Electric Cooperative (OBEC) was established in 1938 to provide electric service to rural areas of southeast Missouri. It is governed by a board of twelve directors. OBEC is headquartered in Poplar Bluff, Missouri, and provides service to members in all of Carter and Ripley counties, as well as parts of Bollinger, Butler, Dunklin, New Madrid, Oregon, Reynolds, Shannon, Stoddard and Wayne counties. Towns included in the service area include Ellsinore, Van Buren, Grandin, Qulin, Neelyville, Puxico, Naylor, Doniphan, Williamsville, Fisk, Dudley, and Campbell.

Ozark Border provides electric service to more than 38,800 accounts and owns and operates more than 5,800 miles of distribution line. 78% of this distribution line is overhead, and the remaining 22% is underground. The majority of OBEC’s customers are residential (83.7%), an additional 8.5% of accounts are irrigation, and the remaining accounts are commercial and governmental.

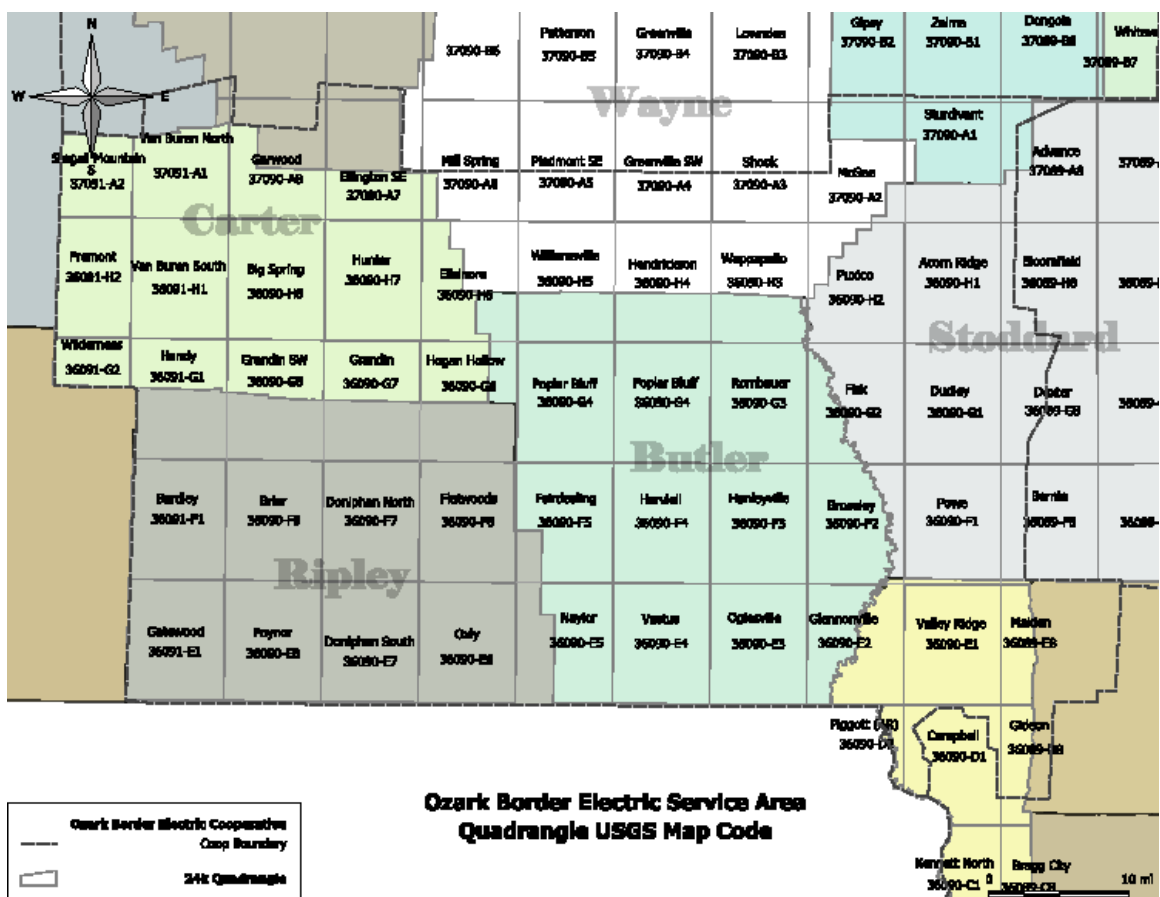


Figure 1

Table 1.1	Meters by Missouri County
County	Number of meters
Bollinger	831
Butler	14,778
Carter	4,001
Dunklin	3,214
New Madrid	380
Oregon	22
Reynolds	286
Ripley	7,761
Shannon	12
Stoddard	4,377
Wayne	3,216

Geographically, the western portion of OBEC's territory is hilly and rocky, while the eastern portion tends to be flatter and sandier. Three rivers cut through the cooperative's service area: the Current River, Black River and St. Francis River. All three are susceptible to flooding and have caused significant problems and damage for Ozark Border during those times. The cooperative service area also contains Wappapello Lake, which has created its own set of problems – particularly when extreme flooding caused the emergency spillway to overflow in 1945 and again in 2011.

The average daily customer usage for OBEC was 53 kilowatt-hours (kWh) in 2010. Annual total usage of OBEC customers in 2010 was 751,350,081 kWh. Population density for the cooperative service area is depicted in Figure 2 (*Map source: U.S. Census 2010*).

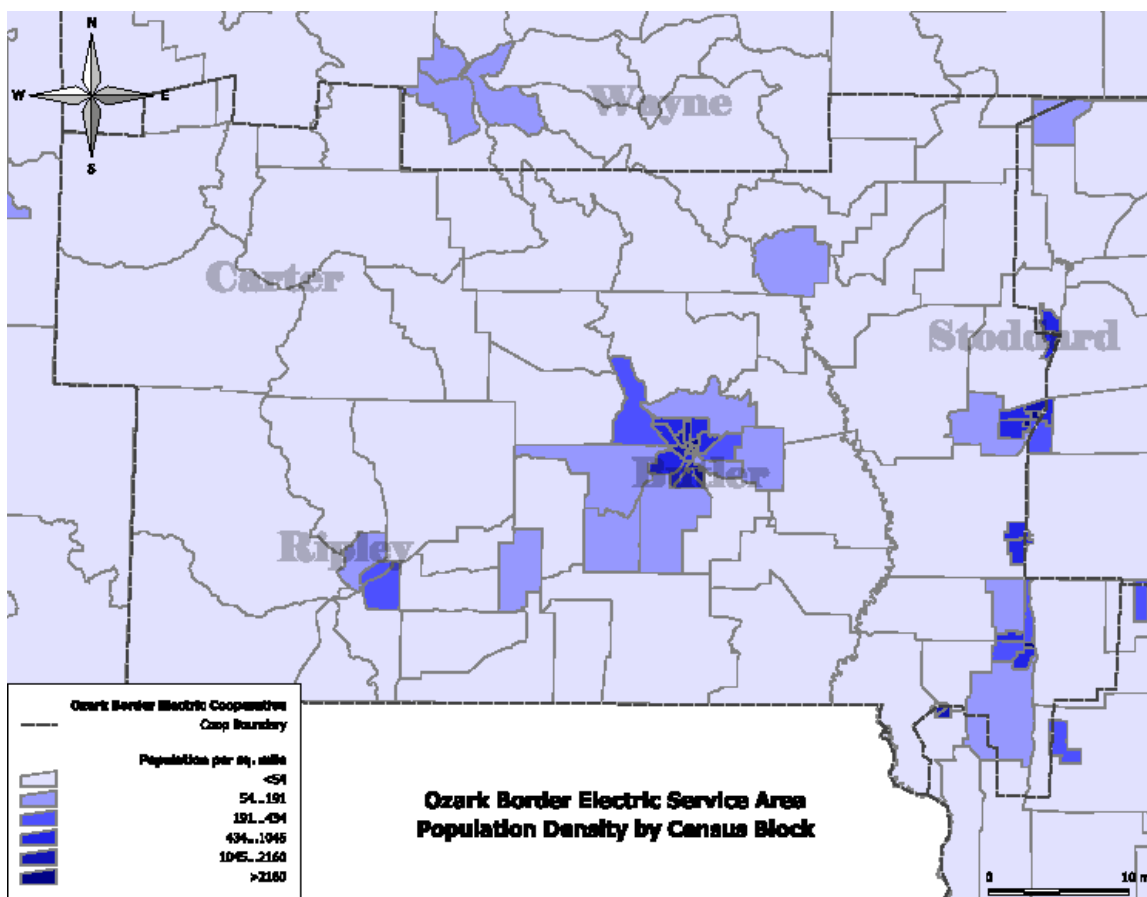


Figure 2

Section 2: Planning process:

Through a partnership between the Association of Missouri Electric Cooperatives and the Missouri Association of Councils of Government, the Ozark Foothills Regional Planning Commission was contracted to facilitate a hazard mitigation planning process for OBEC. The initial meeting between the two entities was held on January 19, 2011 as part of a regional kick-off meeting for southeast 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.

Three additional planning meetings were held at the OBEC offices in Poplar Bluff, Missouri throughout the months of August and September. Table 1.2 summarizes the attendees and topics of each meeting. Meeting minutes are available in the chapter appendix.

Table 1.2 OBEC Planning Meeting Synopsis		
Meeting Date	Attendees, Title, Organization	Topics of discussion
August 1, 2011	Hollye Abner, Accounting Supervisor, OBEC David Shremp, Manager, Finance and Accounting, OBEC Stanley Estes, General Manager, OBEC John Walker, Jr. Staff Engineer, OBEC Steve Seematter, Engineering Supv., OBEC Matt Winters, OFRPC	OBEC business structure Customer information Critical facilities information Asset inventory by type and location Data collection assignments
August 24, 2011	Hollye Abner, Accounting Supervisor, OBEC David Shremp, Manager, Finance and Accounting, OBEC Stanley Estes, General Manager, OBEC John Walker, Jr. Staff Engineer, OBEC Steve Seematter, Engineering Supv., OBEC Matt Winters, OFRPC	Data collection review Current mitigation strategies Establishment of goals, actions, and objectives
September 16, 2011	Hollye Abner, Accounting Supervisor, OBEC David Shremp, Manager, Finance and Accounting, OBEC Stanley Estes, General Manager, OBEC John Walker, Jr. Staff Engineer, OBEC Steve Seematter, Engineering Supv., OBEC Matt Winters, OFRPC	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. OBEC 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:

- Bollinger County Commission,
- Butler County Commission,
- Carter County Commission,
- Dunklin County Commission,
- New Madrid County Commission,
- Oregon County Commission,
- Reynolds County Commission,
- Ripley County Commission,
- Shannon County Commission,
- Stoddard County Commission,
- Wayne County Commission, and
- local emergency management directors.

OBEC provides service to many critical facilities such as senior housing complexes, fire stations, highway patrol substations, and schools. To notify these critical customers and the general public, a copy of this chapter was posted on the OBEC website for public

comments. Additionally, OBEC's mitigation plan was included in the public comment period for the combined AMEC plan.

Section 3: Asset inventory

Ozark Border Electric Cooperative has a wide variety of assets by type. Real estate owned by the company includes office buildings, warehouses, garages, and other outbuildings throughout the service area. Fifty-nine vehicles provide access to customers and infrastructure. OBEC does not own any electric generation or transmission infrastructure. Five thousand eight-hundred and twenty-five miles of distribution lines are owned and maintained by OBEC. Table 1.3 provides information concerning total asset valuation.

Asset	Total Replacement Cost	Cost breakdown
Total OBEC Assets	\$176,443,078	Buildings and vehicles - \$8,076,811 Overhead assets - \$123,719,776 Underground assets - \$44,646,490
Distribution Lines	\$29,541,878 OH \$31,841,985 UG	OH Single-phase lines - \$25,502,849 UG Single-phase lines - \$31,399,667 OH Three-phase lines - \$4,039,029 UG Three-phase lines - \$442,318
Supporting Infrastructure	\$106,982,404	Meters - \$19,306,347 Poles - \$29,435,881 OH Transformers - \$26,202,615 UG Transformers - \$12,804,505 Guys/Anchors - \$7,732,226 Cross-arms - \$5,257,107 Regulators - \$1,523,716 SP Oil-Circuit Reclosures - \$1,642,010 3phase Oil-Circuit Reclosures - \$2,413,563 Capacitors - \$664,433
Office Buildings	\$2,576,278	
Warehouses	\$589,846	
Vehicles	\$4,910,687	
<i>Source: Internal Ozark Border Accounting and Insurance records, 2011</i>		

Ensuring quality distribution to its customers, Ozark Border 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	Ozark Border Asset Inventory by service county												
Asset	Emergency Replacement Cost per unit or mile	Bollinger County	Butler County	Carter County	Dunklin County	New Madrid	Oregon County	Reynolds County	Ripley County	Shannon County	Stoddard County	Wayne County	Total
Meter	\$227.35	831	14,778	4,001	3,214	380	22	286	7,761	12	4,377	3,216	38,878
Poles	\$287.61	2,968	35,104	12,588	6,243	2,354	287	12,998	8,505	215	12,998	8,085	102,345
SP Distribution Lines	\$12,500.25	141.94	1,508.51	529.33	263.23	112.40	16.65	732.94	293.65	12.26	540.84	400.36	4,552
TP Dist. Lines	\$3,518.94	29.90	474.40	190.70	95.10	21.02	0.00	9.97	193.50	0.00	196.70	61.80	1,273
Transformers	\$1,017.90	1,111	13,144	4,713	2,338	881	107	4,867	3,184	80	4,867	3,027	38,319
Guys/Anchors	\$122.45	1,831	21,658	7,767	3,852	1,452	177	8,019	5,247	133	8,019	4,988	63,143
Cross-Arms	\$137.01	1,113	13,161	4,719	2,341	882	107	4,873	3,188	81	4,873	3,031	38,369
Regulators	\$4,979.47	9	105	38	19	7	1	39	25	1	39	23	297
Capacitors	\$1,260.78	15	181	65	32	12	1	67	44	1	67	42	512

Section 4: Identified Hazards and Risk Assessment Methodology

Natural hazards in southeast 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 impact of any natural disaster regardless of onset time. The following natural hazards have been identified as potential threats for the service region of the Ozark Border Electric Cooperative:

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

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 OBEC because of asset types and geographic location in the state of Missouri. Those hazards eliminated for the OBEC service region include:

- Drought
- Heat Wave
- Landslides

Although drought can potentially impact southeast Missouri, water availability does not directly impact the distribution of electric service by OBEC. 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 OBEC 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.

For the purpose of this risk assessment, the identified hazards for the OBEC 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 Ozark Border, hazards with historical data include tornadoes, severe thunderstorms/high

wind/hail, flood and levee failure, severe winter weather, wildfire and land subsidence/sinkholes.

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 OBEC, hazards without historical data include earthquakes and dam failure.

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 OBEC 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 Distribution infrastructure assets and buildings
 - Used for Tornado damage assessments
 - Valued at \$131,796,587
- Overhead Distribution infrastructure assets only

- Used for:
 - Severe Thunderstorm / High Wind / Hail
 - Flood
 - Severe Winter Weather
 - Valued at \$123,719,776

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 Ozark Border 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 Damage Extent of	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 Ozark Border Electric Cooperative Service Interruption 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 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, 180 tornadoes have been reported within the Ozark Border cooperative boundaries. Figure 3 provides a pictorial representation of all recorded tornado touchdown sites and recorded path. (*Data for map collected from NOAA.*)

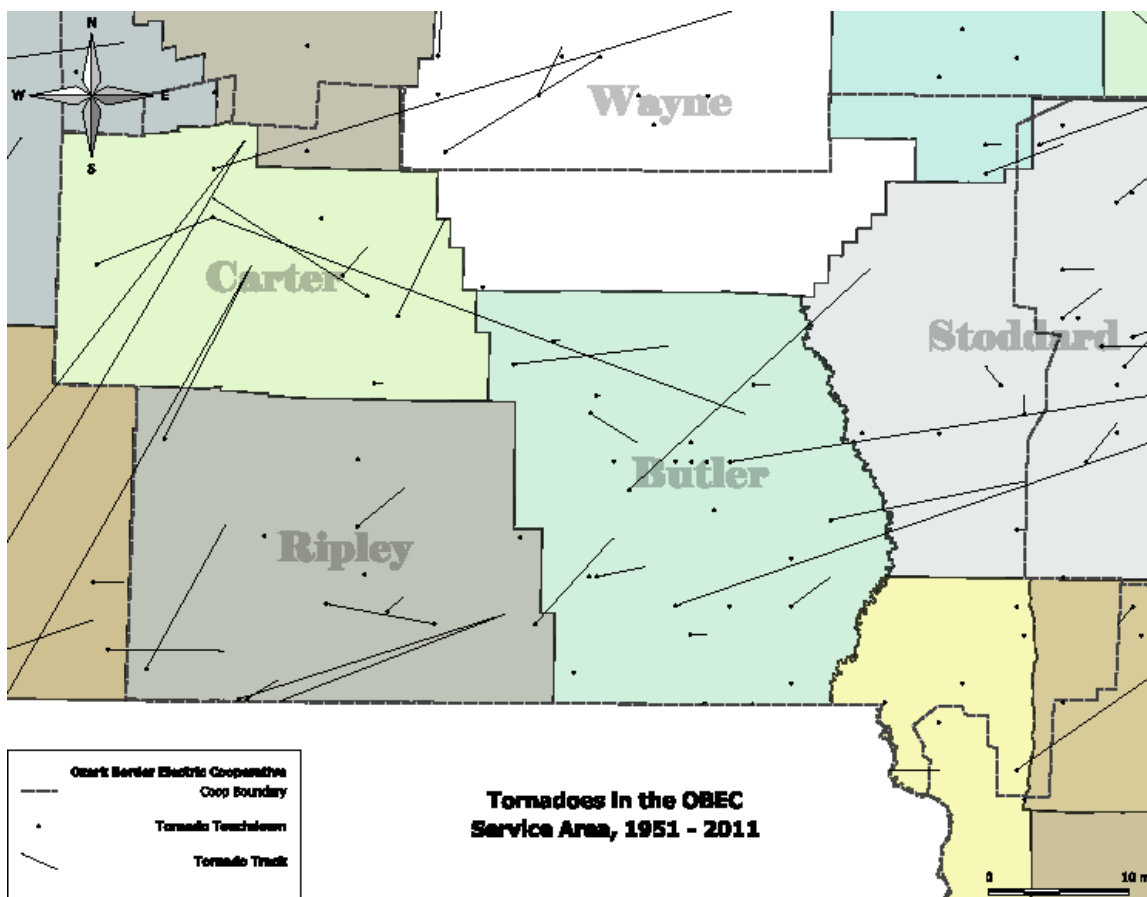


Figure 3

A data insufficiency exists, however, between 1968 and 1990 in both historical hazard records and 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 1990-2010, Ozark Border’s service area within the state of Missouri has experienced a total of 84 tornadic events. Using the previously described methodology, the probability of a tornadic event in the Ozark Border service area in any given year is greater than 100% (84 events / 20 years = 420%). Estimated cooperative material damages associated with each of these events were compiled by OBEC staff. Four of the five occurrences caused damage to cooperative assets, resulting in an 80% 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 OBEC Tornadic Event Summary			
Date of event	EF Scale rating	Damage estimates	Outages Reported
May 1990	F2	\$175,000	7,000
January 1996	F1	\$100,000	500
April 2002	F2	\$400,000	1,100
February 2008	F2	\$65,000	1,110
<i>Data provided based on internal OBEC records which reflect cost from the referenced event year.</i>			

Based upon the last twenty years of historical event records, the average tornado to affect the cooperative will include an EF1-EF2 rating, causing an average damage cost of

\$185,000 per event (\$740,000/4 events = \$185,000). This averaged amount accounts for less than 1% of OBEC’s total overhead assets and building valuation (\$185,000 /\$ 131,796,587 = .0014). Table 1.8 demonstrates the probability of occurrence in conjunction with the potential extent of damage.

Table 1.8 Ozark Border Electric Cooperative Infrastructure Vulnerability Assessment Matrix Hazard: <u>Tornado</u>		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 2,427 customers reported outages during recorded tornadoes since 1990. When compared with the total number of customers served by OBEC, 38,878, it can be projected that less than 1% 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 Ozark Border Electric Cooperative Service Interruption Vulnerability Assessment Matrix Hazard: <u>Tornado</u>		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 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

From 1990-2010, Ozark Border’s service area within the state of Missouri has experienced a total 755 hail events and 826 thunderstorm/high wind events. Therefore, the probability of a hail event in the Ozark Border service area in any given year is greater than 100% (755 events / 20 years = 3,775%) while the probability of a thunderstorm/high wind event in any given year is also greater than 100% (826 events / 20 years = 4,130%). Estimated material damages associated with each of these events were compiled by OBEC staff. Table 1.10 provides a summary of those thunderstorm/high wind events which caused damage to cooperative infrastructure by date, cost estimate of damage, and reported outages. Nine of the 826 occurrences caused damage to cooperative assets, resulting in a 1.08% probability that any given thunderstorm/high wind event occurrence will produce damage. (9/826=1.08%) No damages or outages were reported as a result of the 755 hail events.

Based upon historical records, the average thunderstorm/high wind event to affect the cooperative will cause an average damage cost of \$223,222 (\$2,009,000/9 events = \$223,222). This averaged amount accounts for less than 1% of OBEC’s total overhead asset valuation (\$ / \$123,719,776 = 0.0018). Table 1.11 demonstrates the vulnerability of OBEC assets.

Table 1.10		OBEC Thunderstorm/High Wind Event Summary	
Event date	Damage estimates	Outages reported	
June 1993	\$325,000	15,000	
January 1999	\$90,000	5,000	
May 2000	\$275,000	12,000	
May 2004	\$260,000	8,000	
June 2004	\$210,000	8,500	
March 2006	\$115,000	4,639	
April 2006	\$80,000	1,768	
January 2008	\$100,000	10,427	
September 2008	\$554,000	24,983	
<i>Data provided based on internal OBEC records which reflect cost from the referenced event year.</i>			

Table 1.11 Ozark Border Electric Cooperative Infrastructure Vulnerability Assessment Matrix Hazard: <u>Thunderstorm/High Wind/Hail</u>		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
Poten tial	Less than 10% of damage to system				

	10-25% damage of system				
	26-50% damage of system				
	More than 50% damage of system				

A total of 90,317 customers reported outages during the nine hail, thunderstorm, and high wind events since 1990 that resulted in customer outages. The average number of outages for those events is 10,035 (90,317/9events=10,035). When compared with the total number of customers served by OBEC, it can be projected that approximately 25% of all customers may report outages during a hail, thunderstorm, or high wind event resulting in damages to OBEC assets. Table 1.12 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.12 Ozark Border Electric Cooperative Service Interruption 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 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 carry, perhaps, the greatest ongoing potential threat to the existing infrastructure of the Ozark Border Electric Cooperative. Large portions of the 11 county service area of OBEC are located directly within the 100 year floodplain. There are four rivers in the service area that magnify this risk, the St. Francis River, Black River, Little Black River, and the Current River. Figure 4 below depicts the 100 year floodplain in relation to the cooperative’s boundaries. (Map sources: FEMA HAZUS-MH; DFIRMS; Missouri Office of Administration, and Association of Missouri Electric Cooperatives.) Currently, inundation data for levee failure is lacking due to issues surrounding mapping, appropriate models, and its close association with flooding events. Accurate data is unavailable to provide maps of the area’s levees. Levees have been constructed across the state and the region by a variety of public and private entities with varying levels of protection, oversight and maintenance. There is no single comprehensive inventory of all of the levees located in the area, or in the State of Missouri.

From 1993-2010, OBEC’s service area has experienced 403 flooding events. 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% (403 events / 18 years = 2,238%). Estimated material damages associated with each of these events were compiled by OBEC staff.

Event date	Damage estimates	Reported Outages
November 2003	\$40,000	200
May 2004	\$65,000	400
March 2008	\$700,000	500
<i>Data provided based on internal OBEC records which reflect cost from the referenced event year.</i>		

Table 1.13 summarizes flood event dates by month, damage cost estimates, and a description of repair work done. Three of the 403 occurrences caused damage to cooperative assets, resulting in a less than 1% probability that any given flood occurrence will produce damage (3/403 = .74%). The most significant flood event in the area just occurred in May 2008. Damages were approximately \$700,000 with 500 customers reporting outages during the event.

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 1.14. Although a flood or levee event is almost certain in at least a portion of OBEC’s service area, given the large territory covered by OBEC assets, any given flood or levee failure will result in less than 10% damage to the cooperative’s total assets as demonstrated in Table 1.15.

Ozark Border Electric Cooperative Infrastructure Vulnerability Assessment Matrix Hazard: <u>Flood</u>		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	≥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				

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 1.15. Based upon historical records, the average flood/levee failure event to affect the cooperative will cause an average damage cost of \$268,333 (\$805,000/3 events=\$268,333). This averaged amount accounts for less than 1% of OBEC’s overhead asset valuation (\$268,333/\$123,719,776=0.21%). Table 1.15

demonstrates the probability of occurrence in conjunction with the potential extent of damage.

A total of 1,100 customers reported outages during the three flooding events since 1990 that resulted in damages to OBEC assets. When compared with the total number of customers served by OBEC, it can be projected that 2.8% of all customers may report outages during any given flooding event. Table 1.16 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.15 Ozark Border Electric Cooperative Service Interruption 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 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				

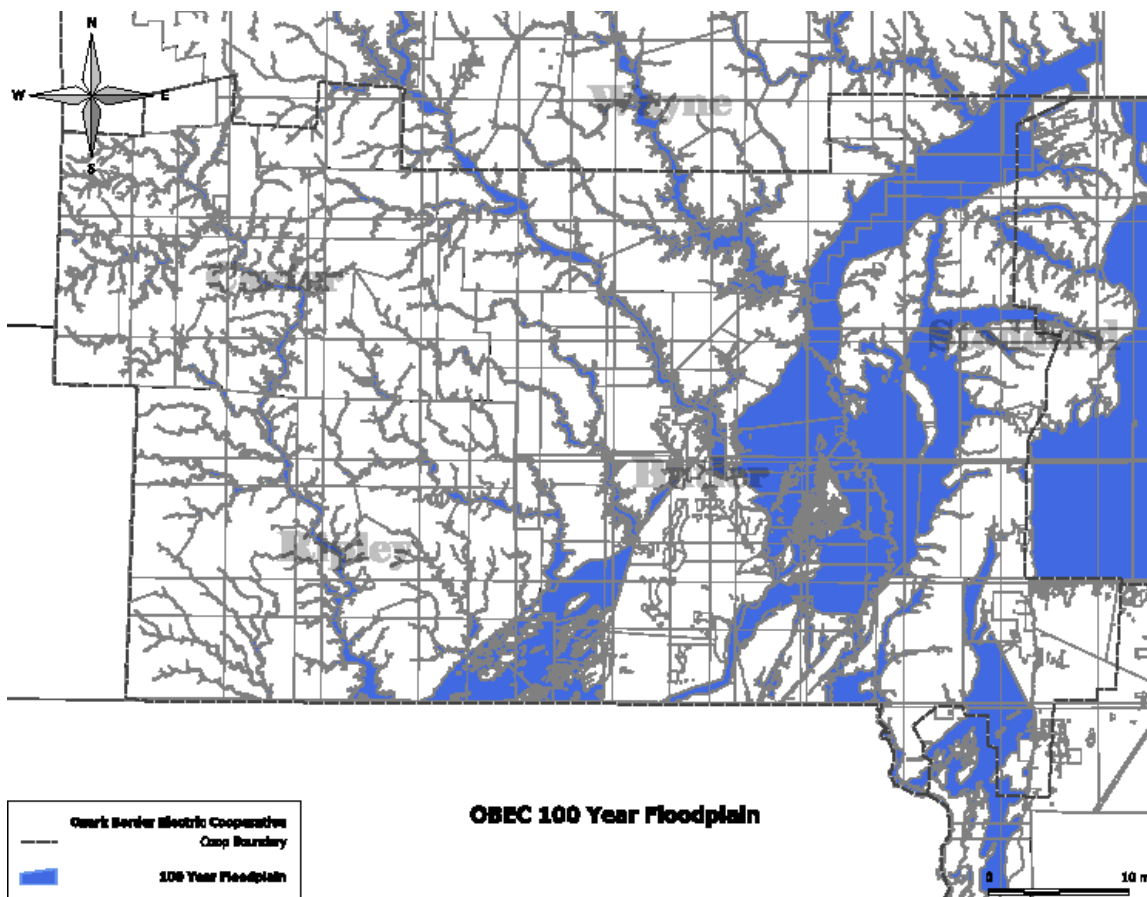


Figure 4

Severe Winter Weather

From 1990-2010, OBEC’s service area has experienced a total of 102 severe winter weather events, including significant snowfall and ice storms. Therefore, the probability of a severe winter weather event in the OBEC service area in any given year is near 100% (102 events / 20 years = 510%). Of these 102 recorded severe winter weather events, eight resulted in damages and customer outages. Table 1.16 provides a summary of event dates, types, associated damage estimates, and customer outages. Based on historical data, there is a 7.8% probability that any given severe winter weather occurrence will produce damage. (8 / 102 = 7.8%)

Table 1.16 OBEC Severe Winter Weather Event Summary			
Event date	Event type	Damage estimates	Outages reported
November 1993	Ice	\$150,000	8,000
October 1993	Snow	\$132,000	7,500
January 1994	Ice	\$180,000	7,500
January 1999	Ice	\$200,000	10,000
March 1999	Snow	\$165,000	12,000
December 2003	Ice	\$150,000	6,000

February 2008	Ice	\$900,000	9,971
January 2009	Ice	\$19,000,000	27,884
<i>Data provided based on internal OBEC records which reflect cost from the referenced event year.</i>			

The severe ice storm of January 2009 was the most catastrophic weather event in the history of Ozark Border Electric Cooperative. The amount of damages sustained and the number of outages reported are exponentially greater than any other recorded event. Because this disaster and its resulting damages would drastically inflate the average damages of severe winter weather events, the associated damages and outages are not included in the assessment. Based upon the remaining seven historical events, the average severe winter weather event to affect the cooperative will cause an average damage cost of \$268,142 ($\$1,877,000/7 \text{ events} = \$268,142$). This averaged amount accounts for less than 1% of OBEC’s total overhead asset valuation ($\$268,142/\$123,719,776=0.21\%$). Table 1.17 demonstrates the probability of occurrence in conjunction with the potential extent of damage.

Table 1.17 Ozark Border Electric Cooperative Infrastructure Vulnerability Assessment Matrix Hazard: <u>Severe Winter Weather</u>		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				

A total of 60,971 customers reported outages during the recorded seven severe winter weather events since 2000 that resulted in damages and outages. This resulted in an average of 8,710 customer outages per event ($60,971/7=8,710$). When compared with the total number of customers served by OBEC, it can be projected that 22% of all customers may report outages during any given severe winter weather event that results in damages to OBEC assets. Table 1.18 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.18 Ozark Border Electric Cooperative Service Interruption Vulnerability Assessment Matrix Hazard: <u>Severe Winter Weather</u>		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 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 OBEC service area presents a unique risk assessment. Wildfire events have occurred in each of the three counties. According to the Missouri Department of Conservation, Atchison, Holt, and Nodaway counties have experienced wildfires between 2004 and 2008. Table 1.19 summarizes the incidences of wildfire within the three counties. Therefore, the probability of a wildfire event in the Ozark Border service area in any given year is near 100% (1,523 events / 5 years = 30,460%). Although OBEC has not recorded any damages as a result of wildfires, for the purposes of this assessment, wildfire and its associated impacts cannot be eliminated from the realm of possible damages.

County	# of Wildfires, 2004-08	Average Annual # of Wildfires	Likelihood (1-5)	Acres Burned	Average Annual Acres Burned	Total Buildings Damaged	Vulnerability
Bollinger	85	17	1	777.4	155	2	Medium-Low
Butler	462	92.4	4	2,685.31	537	3	Medium-High
Carter	29	5.8	1	528	106	1	Medium-low
Dunklin	5	1	1	1.6	0	0	Low
New Madrid	52	10.4	1	76.5	15	1	Low
Oregon	187	37.4	2	1,714.16	343	7	Medium-Low
Reynolds	180	36	2	9,256.3	1,851	2	Medium-High
Ripley	90	18	1	804.45	161	3	Medium-High
Shannon	156	31.2	2	3,090.47	618	5	Medium
Stoddard	196	39.2	2	1,377.28	275	0	Medium
Wayne	81	16.2	1	1,510.5	30	0	Medium-Low
Total	1,523	304.6	1.6	21,821.97	4,364.39	22	Medium

Source: Missouri State Hazard Mitigation Plan, 2010

The potential extent of damage caused by wildfire is difficult to determine. Like earthquakes, wildfires have had no measurable impact upon the OBEC service area. Between 2004 and 2008, 1,523 fires have burned a total of 21,821.97 acres, for an average of 14.32 acres affected per event. OBEC 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 14 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 1.20). Further study will be required to create a model for damage assessments related to wildfire.

Table 1.20 Ozark Border Electric Cooperative Infrastructure Vulnerability Assessment Matrix Hazard: <u>Wildfire</u>		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 OBEC, it can be projected that less than 10% of all customers may report outages during any given wildfire event. Table 1.21 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.21 Ozark Border Electric Cooperative Service Interruption Vulnerability Assessment Matrix Hazard: <u>Wildfire</u>		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
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/Sinkholes

The incident of sinkholes varies widely when comparing the historical occurrences. The southeastern section of the service area is immune to sinkholes, while Shannon County has 817 sinkholes reported in the Missouri State Hazard Mitigation Plan, 2010. The total number of reported sinkholes reported in the Plan for the eleven county service area of Ozark Border is 1,509. Table 1.22 below details the number of sinkholes by county according to the 2010 Missouri State Hazard Mitigation Plan.

County	Number of Sinkholes
Bollinger	4
Butler	6
Carter	73
Dunklin	0
New Madrid	0
Oregon	489
Reynolds	67
Ripley	35
Shannon	817
Stoddard	0
Wayne	18
Total	1,509

Source: 2010 Missouri State Hazard Mitigation Plan

Although there are a significant number of sinkholes in several of the counties, damages are rarely associated with these events. Ozark Border Electric Coop has no reported damages as a result of sinkholes. Although OBEC has not recorded any damages as a result of sinkholes, for the purposes of this assessment, sinkholes and their associated impacts cannot be eliminated from the realm of possible damages. Due to the number of sinkholes reported in the area, there is a high probability that they will occur in the future. When considering the historical data available, the probability of damage to OBEC facilities is low. This initial assessment assumes a limited impact upon electric distribution infrastructure of less than 10% (Table 1.23). Further study will be required to create a model for damage assessments related to wildfire.

Table 1.23	Probability of Hazard Occurrence
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Ozark Border Electric Cooperative Infrastructure Vulnerability Assessment Matrix Hazard: <u>Sinkholes</u>		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 as a result of sinkholes. When compared with the total number of customers served by OBEC, it can be projected that less than 10% of all customers may report outages due to any given sinkhole event. Table 1.24 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.24 Ozark Border Electric Cooperative Service Interruption Vulnerability Assessment Matrix Hazard: <u>Sinkhole</u>		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 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 southeast Missouri is the New Madrid Seismic Zone, which is the most active zone impacting Missouri and also the most active seismic area in the United States east of the Rocky Mountains. The New Madrid Seismic Zone runs from northern Arkansas through southeast Missouri and western Tennessee and Kentucky to the Illinois side of the Ohio River Valley. It is estimated that about 200 earthquakes are detected every year in the New Madrid Seismic Zone. Although the majority can only be detected by sensitive instruments, the area experiences an earthquake once or twice every 18 months that is strong enough to crack plaster in buildings. The most severe earthquakes occurred in the area during a period between December 1811 and March 1812. Two of the earthquakes during this period rank number seven and nine among the largest earthquakes in the United States. Although the

New Madrid Seismic Zone is a rather active zone, no damages have ever been reported to have occurred to OBEC’s facilities. However, the seismic zone has the potential to produce a damaging earthquake, profoundly impacting the Ozark Border Electric Cooperative.

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 Seismic Zone 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 7.6 rating, the region would experience Level X in Mississippi, New Madrid and Pemiscot Counties, Level IX in Dunklin, Scott, and Stoddard Counties, Level VIII in Butler, Bollinger, and Cape Girardeau Counties, and Level VII and VI in the remaining counties of the service area. The destruction of the area would range from completely catastrophic in the eastern section of the service area that would experience Level X and IX which would amount to almost all buildings sustaining significant damage or collapse. Overhead distribution lines would collapse or sustain considerable damage rendering them out-of-service. 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 1.25.

Table 1.25 Ozark Border Electric Cooperative Infrastructure Vulnerability Assessment Matrix Hazard: <u>Earthquake</u>		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 100% of OBEC’s customers could report outages related to an earthquake event. When compared with the total number of customers served by OBEC and the distribution cooperatives served by OBEC, it can be projected that 100% of all customers may report outages during any given seismic event. Table 1.26 demonstrates the probability of occurrence in conjunction with the potent extent of impact upon local customers.

Table 1.26	Probability of Hazard Occurrence
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Ozark Border Electric Cooperative Service Interruption Vulnerability Assessment Matrix Hazard: <u>Earthquake</u>		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

According to Missouri DNR’s Dam Safety Division, 203 dams currently exist within the cooperative boundaries, of these dams, 33 are regulated by the State of Missouri and two dams located in Wayne County are regulated by the US Army Corps of Engineers. Figure 6 shows the locations of all known dams located within M & A’s service area. (Map sources: www.msdis.missouri.edu; www.dnr.mo.gov/env/wrc.)

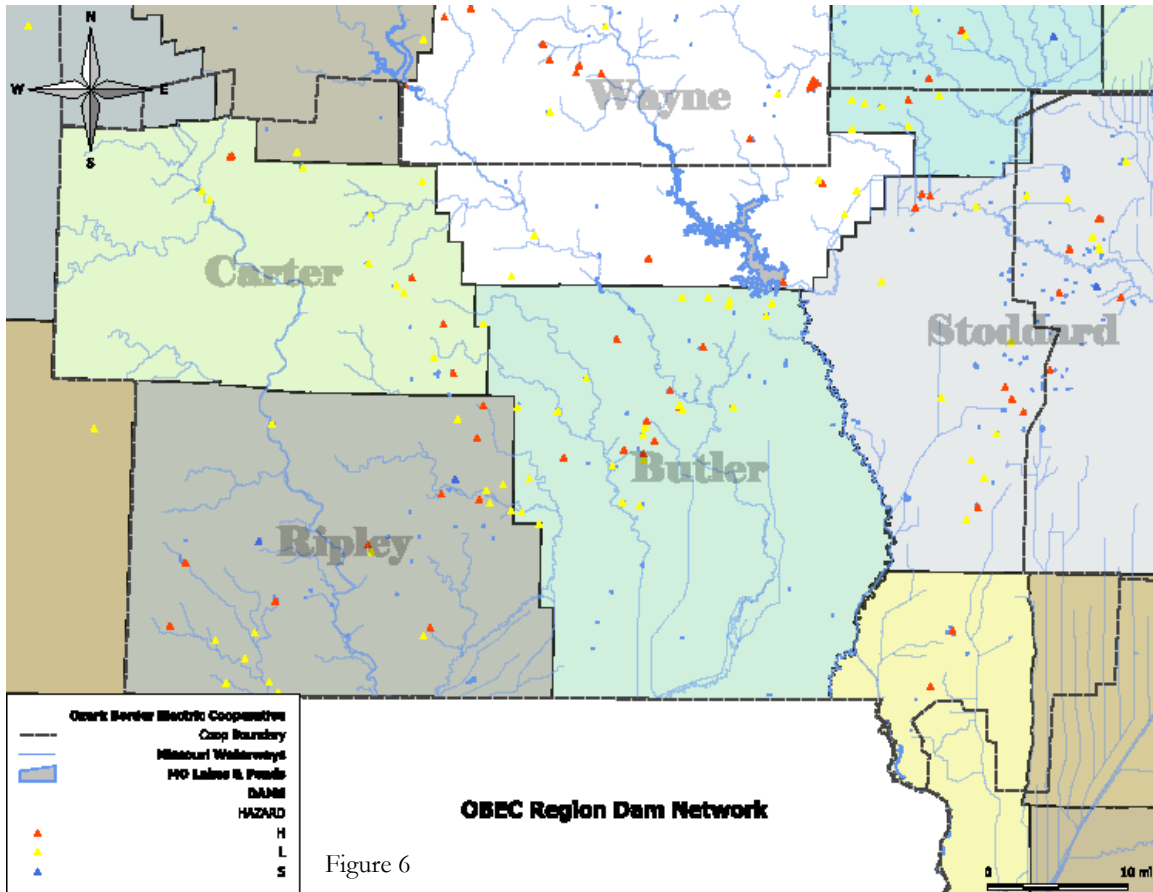


Figure 6

There has only been one dam failure reported in the seventeen counties in which M & A facilities are located. On December 14, 2005, the Taum Sauk reservoir dam owned by AmerenUE of St. Louis failed creating a 600-foot breach in the northwest side of the reservoir and releasing 1.5 billion gallons of water into the Johnson Shut-Ins State Park. The reservoir is a federally regulated dam that is located in Reynolds County on the Black River. The failure destroyed the state park and the superintendent’s home. OBEC reported no damages to their facilities and no power outages were reported in connection with this failure. Although no damages or outages have been reported as a result of a dam failure in the OBEC service area, 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%.

Table 1.27 Ozark Border Electric Cooperative Infrastructure Vulnerability Assessment Matrix Hazard: <u>Dam Failure</u>		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				

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. This initial assessment assumes a limited impact upon electric transmission infrastructure of less than 10% for both infrastructure damage and service interruption. (Tables 1.27 and 1.28).

Table 1.28 Ozark Border Electric Cooperative Service Interruption Vulnerability Assessment Matrix Hazard: <u>Dam Failure</u>		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 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 OBEC, 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. Ozark Border 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 OBEC 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, OBEC 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 OBEC mitigation planning committee, with assistance from OFRPC 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 1.29 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 1.29	OBEC goals and objectives
Identified Goals	Identified Objectives
Goal 1: Protect the health and safety of the community.	Objective 1: Prevent injury, loss of life, and damage to property.
	Objective 2: Reduce outage time to critical facilities.
Goal 2: Reduce future losses due to natural hazard events.	Objective 1: Protect and maintain existing infrastructure.
	Objective 2: Research and develop plans for future infrastructure improvements, seeking implementation where feasible.
	Objective 3: Research and develop plans for future communication and data collection improvements where feasible.
Goal 3: Improve emergency management capabilities and enhance local partnerships.	Objective 1: Improve assessment of outages and reduce response time.
	Objective 2: Create or maintain partnerships with outside agencies.
Goal 4: Continue to promote public awareness and education.	Objective 1: Utilize media resources to promote public education.
	Objective 2: Continue interaction with local schools and civic groups.

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 OBEC.
- **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 1.30, 1.31, and 1.32 provide lists of action items by tier as well as the goals and objectives identified with each.

Tier 1			
<i>Action item:</i>	<i>Goal/ Objective</i>	<i>Timeframe for completion</i>	<i>Cost-benefit score</i>
Upgrade line crossings over roadways to be more reliable. This includes shortening span length at the road crossing, installing stronger structures and guying either side of the roadway, and in some cases replacing an overhead crossing with underground construction.	Goal 1/Objective 1	Ongoing effort Dependent on additional funding	Medium Cost High Benefit Score: 8
Install deadend structures and/or guying for the purpose of minimizing cascading of structures (storm guying)	Goal 1 /Objective 1 Goal 1/Objective 2 Goal 2/Objective 1	Ongoing effort Dependent on additional funding	Medium Cost Medium Benefit Score: 5
Install tie downs and bolted attachments to secure equipment to concrete pads and structure platforms to minimize damage resulting from movement during an earthquake.	Goal 1/Objective 1 Goal 1/Objective 2 Goal 2/Objective 1	Ongoing effort	Low cost Medium benefit Score: 6
Raise or relocate electrical equipment (transformers, junctions, meters, et.) located in flood prone areas to prevent interruption of service and/or electrical hazards during flooding.	Goal 1 / Objective 1 Goal 1/Objective 2 Goal 2 / Objective 1	Dependent on additional funding	Medium Cost Medium Benefit Score: 5
Install alternate sources. This includes construction of power lines to permit backfeeding and in some cases, installation of transfer facilities to automatically transfer the load to the alternate source.	Goal 1 / Objective 1 Goal 1 / Objective 2 Goal 2 / Objective 2	Ongoing effort; Completed as funding allows.	High Cost High Benefit Score: 7
Rebuild Existing lines which are unreliable or vulnerable to damages. This includes replacing damaged and old conductors, replacing structures and guying, and	Goal 1 / Objective 1 Goal 1 / Objective 2 Goal 2 / Objective 1	Ongoing effort; Dependent upon funding.	High cost High benefit Score: 7

possibly revising the line route to provide better reliability. In some cases, it may also include replacing part or all of the existing line with underground construction			
Replace critical wood structures with concrete or steel structures.	Goal 1 / Objective 1 Goal 1 / Objective 2 Goal 2 / Objective 1	Dependent on additional funding	Medium Cost Medium Benefit Score: 5
Complete annual inspection of lines and poles and make necessary repairs	Goal 1 / Objective 1 Goal 1 / Objective 2 Goal 2 / Objective 1	Ongoing	Medium Cost High Benefit Score: 8
Upgrade/install protection devices (reclosers, breakers, fuses, smart electronic controls, etc.) which will automatically disconnect damaged line sections and protect critical facilities from unnecessary outages.	Goal 1 / Objective 1 Goal 1 / Objective 2 Goal 2 / Objective 1	Dependent upon additional funding	Medium Cost Medium Benefit Score: 5
Use vegetation management to prevent interference with delivery of power	Goal 1 / Objective 1 Goal 1 / Objective 2 Goal 2 / Objective 1	Ongoing	Medium Cost High Benefit Score: 8

Table 1.31 Prioritized Mitigation Actions for Ozark Border Electric Cooperative – Tier 2

Tier 2			
<i>Action item:</i>	<i>Goal/Objective</i>	<i>Timeframe for completion</i>	<i>Cost-benefit Score</i>
Provide safety and reporting information to the general public through varying methods: <ul style="list-style-type: none"> • Company website • Local newspapers • Presentations • Publications 	Goal 1 / Objective 1 Goal 4 / Objective 1	Ongoing effort	Low Cost High Benefit Score: 9
Increase number of generators owned for use in critical asset outages	Goal 1 / Objective 1 Goal 1 / Objective 2 Goal 2 / Objective 2	Dependent upon additional funding.	Medium Cost Medium Benefit Score: 6
Maintain mutual aid agreements with other rural electric cooperatives.	Goal 3 / Objective 2	Ongoing effort.	Low Cost High Benefit Score: 9
Partner with county emergency management agencies to ensure power for local shelters, fuel stations, and public safety.	Goal 1 / Objective 1 Goal 1 / Objective 2 Goal 3 / Objective 2	Ongoing effort.	Low Cost Medium Benefit Score: 6
Cooperate with local law enforcement and government officials to reduce the impact of power outages.	Goal 1 / Objective 1 Goal 3 / Objective 2	Ongoing effort.	Low Cost High Benefit Score: 1
Development of outage information section for Cooperative’s web page.	Goal 4/Objective 1	Dependent on additional funding	Low Cost High Benefit Score: 9
Maintain and improve Cooperative’s emergency response procedure.	Goal 3/Objective 2	Ongoing effort	Low Cost High Benefit Score: 9

Table 1.32 Prioritized Mitigation Actions for Ozark Border Electric Cooperative – Tier 3

Tier 3			
<i>Action item:</i>	<i>Goal/Objective</i>	<i>Timeframe for completion</i>	<i>Cost-benefit</i>
Research flood maps to determine electric lines and equipment susceptible to flooding.	Goal 2 / Objective 2	Ongoing effort.	Low Cost High Benefit Score: 9
Research locations for back-up control center and call center.	Goal 3/Objective 1 Goal 3/Objective 2	Ongoing Effort	Low Cost High Benefit Score: 9
Research key lines to determine areas where concrete or steel poles will improve reliability.	Goal 1/Objective1 Goal 1/ Objective 2 Goal 2/Objective 2	Dependent upon additional funding.	Low Cost Medium Benefit Score: 6
Research key lines to determine areas where in-line switches will improve sectionalizing.	Goal 1/Objective1 Goal 1/ Objective 2 Goal 2/Objective 2	Ongoing Effort Dependent upon additional funding.	Low Cost High Benefit Score: 9
Monitor developments in data availability concerning the impact of dam failure and wildfire upon the OBEC service area through local, state, and federal agencies.	Goal 1 / Objective 1 Goal 2 / Objective 1	Ongoing effort.	Low Cost Medium Benefit Score: 6
Collect GPS Data for all existing electric lines and equipment	Goal 3/Objective 1	Dependent on additional funding	High Cost Medium Benefit Score: 4
Utilize GIS technology to reduce site identification and response time.	Goal 3/Objective 1	Dependent on additional funding	High Cost Medium Benefit Score: 4
Purchase stand-by generators for the Cooperative’s four sub-offices	Goal 3/Objective 1	Ongoing effort Dependent on additional funding	High Cost High Benefit Score: 7

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 OBEC employment level as the organization strives to ensure quality service to their customers.

Other Local Planning Mechanisms

Beyond the OBEC plan, few planning mechanisms exist at the local level. The eleven Missouri counties of Ozark Border’s service area 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 counties are also included in their respective Regional Transportation Plan (RTP)

as well as a Comprehensive Economic Development Strategy (CEDS). OBEC's plan can be easily incorporated into these local plans and allow for coordination across agencies in the event of an emergency.

OBEC is located within the rural portions of third-class counties which are prohibited from enforcing building codes and zoning by the state of Missouri. The cities and towns served by OBEC are small, rural communities. The majority of these small incorporated areas have some level of building codes and zoning laws. This plan complies with all of these building codes and zoning requirements. Comprehensive plans and Capital Improvement plans do not exist inside of the OBEC service areas.

Plan Maintenance

Ozark Border 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

Ozark Border 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 OBEC.