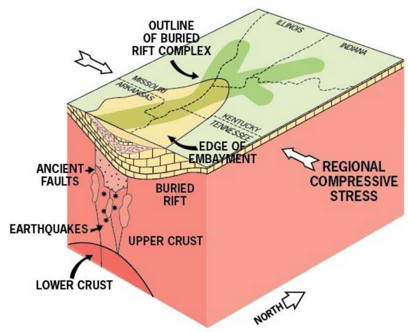
Pages 1 through 54 of Schedule SAW-D-9 are designated confidential per 20 CSR 4240-2.135(2)(A)(4) and 20 CSR 4240-2.135(2)(A)(6). All included documents relate to market specific information regarding services provided to customers and strategies employed in contract negotiations.

MISSOURI
DEPARTMENT OF
NATURAL RESOURCES

# The New Madrid Seismic Zone

Missouri Geological Survey fact sheet number 26 11/2016
Missouri Geological Survey Director: Joe Gillman

The New Madrid Seismic Zone (NMSZ) is the most active earthquake region in the United States east of the Rocky Mountains. It covers parts of Arkansas, Illinois, Kentucky, Missouri and Tennessee. While seismic zones in surrounding states can also affect Missouri, the primary earthquake hazard in the mid-continent is the NMSZ. More than 200 earthquakes occur in the region each year, but most are too small to be felt by humans.  Major earthquakes can occur in the area, with three of the largest earthquakes ever to strike the continent happening in 1811 and 1812 in the NMSZ.




## Earthquakes and seismic zones

A seismic zone is an area with multiple faults that is subject to frequent earthquakes. Earthquakes occur when pressure builds up on both sides of a fault. When the fault sides slip against one another, they cause a sudden release of energy, or earthquake. Earthquake locations are marked by the epicenter, the point on the earth's surface vertically above the movement. The NMSZ is 125 miles long and contains multiple faults that extend from Marked Tree, Arkansas, to Cairo, Illinois. The faults are not visible at the surface, but are buried deeply below thick layers of floodplain sediments deposited by the Mississippi and other rivers. Faults that are not visible at the surface are harder to study, making it difficult to understand the true nature of faults in the NMSZ.

## Earthquake size – Magnitude and Intensity

Magnitude is the total energy released by the ground motion caused by an earthquake and is a scientifically measured number. The Richter Scale is the most widely used magnitude scale. Richter magnitudes are based on a logarithmic scale. This means that for each whole number you go up on the Richter scale, the energy released is 32 times greater and causes 10 times the ground motion. Using this scale, a magnitude 6.0 earthquake would result in 10 times the level of ground shaking as a magnitude 5.0 earthquake. The intensity of an earthquake is related to the damage it causes; therefore, the intensity often depends on the distance from the earthquake's epicenter. The Modified Mercalli Intensity scale (MMI) is used by insurance companies and emergency planners to determine areas of greatest damage. A single earthquake of a specific magnitude will generally have different MMI intensities at different locations.

## Earthquake-related hazards

Most earthquake-related injuries and fatalities occur due to the strong ground motion, which results in destruction of man-made structures including buildings, bridges, roads and dams. Injuries and fatalities also occur due to related effects, such as floods from dam failures, explosions and fires from gas pipeline breaks and dangers from broken power lines. Moving or falling objects such as shelves, furniture and broken glass may also cause injury and death. Transportation, communication, power, water supply and sewer systems may also be disrupted when earthquakes occur. Other hazards caused by earthquakes include ground fractures,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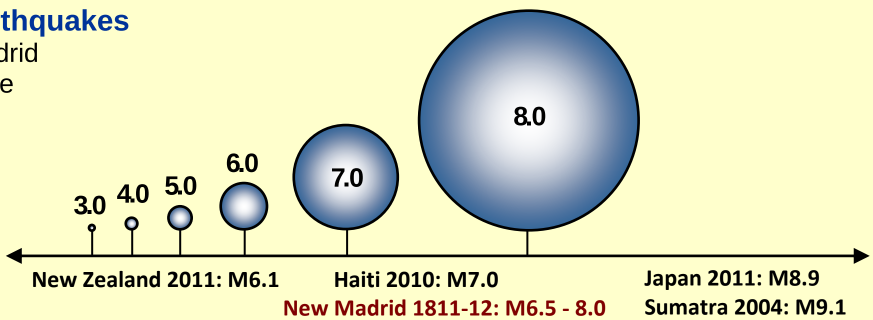
landslides, uplifting or sinking of the ground and liquefaction. Liquefaction occurs when firm soil is shaken by the earthquake and liquefies, resembling quicksand that can flow up to the surface. Liquefaction causes sandblows (eruption of sand from underground layers), landslides, mud flows and sinking of the land, often causing structures to shift on their foundations. The sandy soils in southeast Missouri are very susceptible to liquefaction, posing a serious hazard to structures in the NMSZ. Additional hazards occur when steep slopes collapse, blocking and causing flooding or shifts in river channels. Due to different geology in the central United States, earthquakes in the NMSZ can damage an area approximately 20 times larger than earthquakes in California and most other active seismic zones.

## Historic damaging earthquakes in the New Madrid Seismic Zone

A series of major earthquakes occurred in the NMSZ between December 16, 1811, and March 16, 1812. Fifteen earthquakes with estimated magnitudes of 6.5 to 8.0 occurred during this time, including three to five earthquakes magnitude 7.5 or greater. There were also 189 earthquakes magnitude 5.0 to 6.5 and thousands of smaller earthquakes. Some of the quakes were felt more than 1,000 miles away. In comparison, the 2010 earthquake in Haiti was magnitude 7.0, while the 2011 earthquake in Christchurch, New Zealand was magnitude 6.1. New Madrid was a sparsely populated frontier town in 1811; yet, there was loss of life and damage to buildings. The land was damaged so extensively that it was unusable for the subsistence agriculture of that day. Today, the potential for destruction, death and economic loss in the area is enormous.

**Magnitude of Recent Earthquakes**

How the 1811-1812 New Madrid earthquakes compare with the magnitude of other notable earthquakes. At each step up the magnitude scale, earthquakes release 32 times as much energy.




Source: U.S. Geological Survey

## Earthquake frequency and probability

It is impossible to predict when or where an earthquake might occur. But, by studying evidence from current, historic and prehistoric earthquakes, seismologists can estimate the average long-term frequency of large earthquakes and estimate the probability of future earthquakes. The exact frequency of large earthquakes in the NMSZ is still being debated, but scientists agree that in addition to the 1811-1812 major quakes, two or more additional major earthquakes (magnitude 7.0 or larger) have occurred in the area during the past 2,000 years. Therefore, the probability exists for a future, large magnitude earthquake in the NMSZ. A large magnitude earthquake in the New Madrid Seismic Zone would cause major damage in southeastern and eastern Missouri, northeastern Arkansas, southern Illinois, and western Kentucky and Tennessee. Significant damage could extend north of St. Louis along the Mississippi River valley, up the Ohio and Wabash river valleys into Kentucky and Indiana, and down the Mississippi River valley into Mississippi.

Nothing in this document may be used to implement any enforcement action or levy any penalty unless promulgated or authorized by statute.

## For more information

For geologic information about earthquakes, visit this Department of Natural Resources' Missouri Geological Survey website at dnr.mo.gov/geology. For information about preparedness, visit the State Emergency Management Agency's website at sema.dps.mo.gov.

Pages 57 through 90 of Schedule SAW-D-9 are designated confidential per 20 CSR 4240-2.135(2)(A)(4) and 20 CSR 4240-2.135(2)(A)(6). All included documents relate to market specific information regarding services provided to customers and strategies employed in contract negotiations.

2015 MISSOURI INSURANCE REPORT

# THE STATE OF Earthquake Coverage

Statistics Section
August 2015

DIFP
Department of Insurance, Financial Institutions & Professional Registration

**Jeremiah W. (Jay) Nixon**
Governor

**John M. Huff**
Director

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## Introduction

Missouri is the third largest market for earthquake insurance among the states, exceeded only by California and Washington.[1] The primary earthquake risk in the state is associated with the New Madrid fault, and is greatest in the Southeast quadrant of the state extending from the bootheel northwards to St. Louis and beyond. However, it is precisely in this high-risk area that the market for earthquake insurance has significantly contracted over the past 10 to 15 years – many insurers have left the market entirely while others refuse to issue new policies in the New Madrid area. Among insurers still willing to sell coverage, stricter underwriting standards make some types of dwellings ineligible for coverage. Those who can obtain coverage find that they are required to "self-insure" to a much greater extent than in the past. Deductibles up to 20 percent of the dwelling value are not uncommon, and "stacked" deductibles are often applied separately to the dwelling and contents. While coverage has contracted, the price of coverage has increased significantly, in some counties by more than 500 percent over the last 15 years. In short, coverage has become significantly less available and less affordable in the areas that require it most.

This report presents data on market trends over the past 15 years. Missouri is one of the few states that collect residential insurance data by ZIP code, including data for earthquake coverage. These data afford a fairly precise measure of market penetration and price by geographic region. In addition, these data were supplemented by a survey of Missouri's largest writers regarding market practices related to earthquake coverage.

## Summary of Findings

Earthquake coverage has become less available and less affordable over the last 15 years. Where the coverage is available, prices have significantly increased and consumers are required to self-insure to a greater extent than ever before.

- On average, earthquake premiums in the six counties that comprise the New Madrid area have increased by nearly 500 percent between 2000 and 2014, and in one county by almost 700 percent.

- While rates have increased throughout the state, the rates in the highest risk areas of the state have increased much more rapidly, widening the costs between high and low risk areas. In 2000, average annual premium in the New Madrid area was only 64 percent higher than the lowest risk counties of Missouri. By 2015, premiums were nearly 330 percent higher.

- In 2000, over 60 percent of residences in the New Madrid area had earthquake insurance. By 2014, the rate of coverage had plummeted to just 20 percent.

- In other high risk areas outside of the New Madrid zone, take-up rates also substantially decreased, from 67.6 percent to 52.1 percent over the same period.

[1] Including territories, Puerto Rico also has a somewhat higher premium volume for earthquake insurance. However, Puerto Rico is a special case, in that earthquake insurance is required for most residences.

- A total of 562,734 residences that are not covered for earthquake losses are located in a Missouri county rated 7 or higher on the Mercalli scale (a measurement of vulnerability to earthquakes, see below). The total property value of these unprotected residences, excluding the value of contents that may also be at risk, is estimated to exceed $86 billion.

- Based on the Missouri market share for homeowners insurance,
  - Carriers with 10 percent of the market write no earthquake coverage
  - 19 percent write somewhere in Missouri, but will not provide the coverage in the New Madrid area
  - 44 percent issue some coverage in the New Madrid area, but with significant additional underwriting restrictions, such as refusing to insure masonry homes.
  - Only 26.6 percent of the market issues coverage in New Madrid on the same basis as elsewhere in the state.

- Those able to obtain earthquake insurance must still "self-insure" to a significant degree. No insurer (among those surveyed) offers a deductible of less than 10 percent of the insured value of the residence. Over 40 percent of the market requires a deductible of 20 percent or higher. Often, deductibles are "stacked," such that they apply separately to the building and contents.

- Of those who have earthquake coverage and are located in areas with a risk of 7 or higher on the Mercalli scale, the amount of risk they still retain due to deductibles exceeds $14.8 billion. When this amount is added to homes that have no earthquake coverage, the value of self-insured residential property in moderate to high-risk zones exceeds $100 billion ($86.2 billion with no earthquake insurance + 14.8 billion retained due to deductible).

In the following report, these trends are displayed by Missouri region and by county. More detailed tables can be found in the appendices.

**Missouri's Earthquake Risk**

Over the winter of 1811-1812, the New Madrid area of Missouri experienced a series of powerful earthquakes. By most estimates, these quakes were among the strongest ever experienced on what is now the continental US, at least since its settlement by Europeans. According to the US Geological Survey (USGS), the area of strong ground motion exceeded the 1964 Alaska earthquake by a factor of two to three, and was approximately ten times as large as the 1909 San Francisco earthquake. Because of the lack of instrumentation at the time, estimates of the magnitude of these earthquakes are primarily based on written accounts of those who witnessed the quake or its aftermath. The majority of researchers believe the three primary quakes ranged in magnitude from 7.0 to 7.5, with several aftershocks ranging from 6.0 to 6.5 (see USGS, http://earthquake.usgs.gov/earthquakes/states/events/1811-1812.php ).

Eyewitness accounts of the event(s) vividly describe the extraordinary violence unleashed by the New Madrid fault. One eyewitness close to the epicenter of the December 16, 2011 earthquake details "…a scene truly horrible" in which the Mississippi River reversed course for a time:

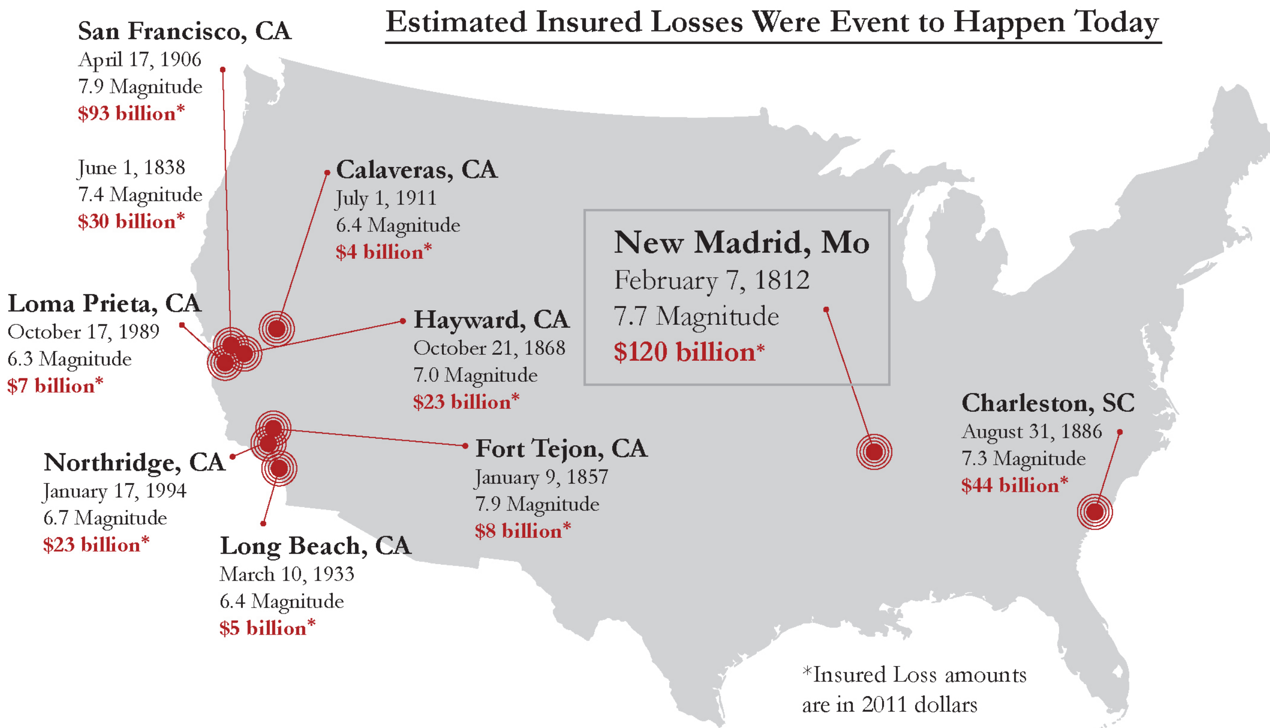
*On the 16th of December, 1811, about two o'clock, A.M., we were visited by a violent shock of an earthquake, accompanied by a very awful noise resembling loud but distant thunder, but more hoarse and vibrating, which was followed in a few minutes by the complete saturation of the atmosphere, with sulphurious vapor, causing total darkness. The screams of the affrighted inhabitants running to and fro, not knowing where to go, or what to do - the cries of the fowls and beasts of every species - the cracking of trees falling, and the roaring of the Mississippi - the current of which was retrograde for a few minutes, owing as is supposed, to an irruption in its bed -- formed a scene truly horrible.*[2]

Strong tremors and some property damage were reported as far away as Cleveland (where a local newspaper reported "serious alarm" at "shocks far more violent than any before experienced"), Alexandria, Pittsburgh, Washington D.C., New York and other eastern cities.

Were an earthquake of similar magnitude to occur today along the New Madrid fault, losses would be staggering. The risk modeling firm AIR Worldwide has estimated that a New Madrid recurrence would produce *insured* losses of $120 billion (2011 dollars). More recently, global reinsurer Swiss Re estimated total insured losses at $150 billion.[3] Such losses would only be rivaled by a repeat of the 1906 San Francisco earthquake, with estimated losses of $93 billion.

[2] Letter from Eliza Bryan, March 22, 1816. Reprinted by USGS, available at http://hsv.com/genlintr/newmadrd/accnt1.htm

[3] Swiss Re. 2015. **Four Earthquakes in 54 Days.** Swiss Re American Holding Corporation. 175 King Street, Armonk, NY 10504.




Source: AIR Worldwide. Estimated losses include property and contents loss, additional living expense, business interruption for residential, mobile home, commercial and automobile losses. Estimates include demand surge and fire following earthquake, and are based on earthquake insurance take-up rates in each area. See http://www.air-worldwide.com/Publications/AIR-Currents/2012/Top-10-Historical-Hurricanes-and-Earthquakes-in-the-U-S---What-Would-They-Cost-Today/

The USGS has estimated that the probability of a magnitude 7.5 or greater earthquake in the New Madrid zone over the next 50 years is between 7-10 percent. The probability of an earthquake exceeding magnitude 6 over the same time period is 25-40 percent.[4] A joint assessment by the Mid-America Earthquake Center of the University of Illinois and the Federal Emergency Management Agency predicted that a major New Madrid event could entail total economic losses of $300 billion, damage 715,000 buildings, and result in 86,000 casualties and 3,500 fatalities. It would constitute the highest total economic loss of any natural disaster in US history.[5]

The Missouri counties most vulnerable to earthquake risk are the six southeastern-most counties in the bootheel: Dunklin, Mississippi, New Madrid, Pemiscot, Scott and Stoddard. Other high risk areas include counties adjacent to the New Madrid Region, extending north to St. Louis. The entire western portion of the state has a relatively lower risk for earthquake damage, a fact important for Missouri's earthquake insurance market.

The Mercalli Scale, a measure of shaking intensity ranging from 1 to 12, is depicted in the map on page 6. If a large New Madrid event were to occur today, large portions of the state would be subjected to shaking ranging from 7 to 10 on this scale. The remainder of the state would be subject to shaking intensity rated at a level of 6. The levels are defined by the intensity of ground movement, as follows:

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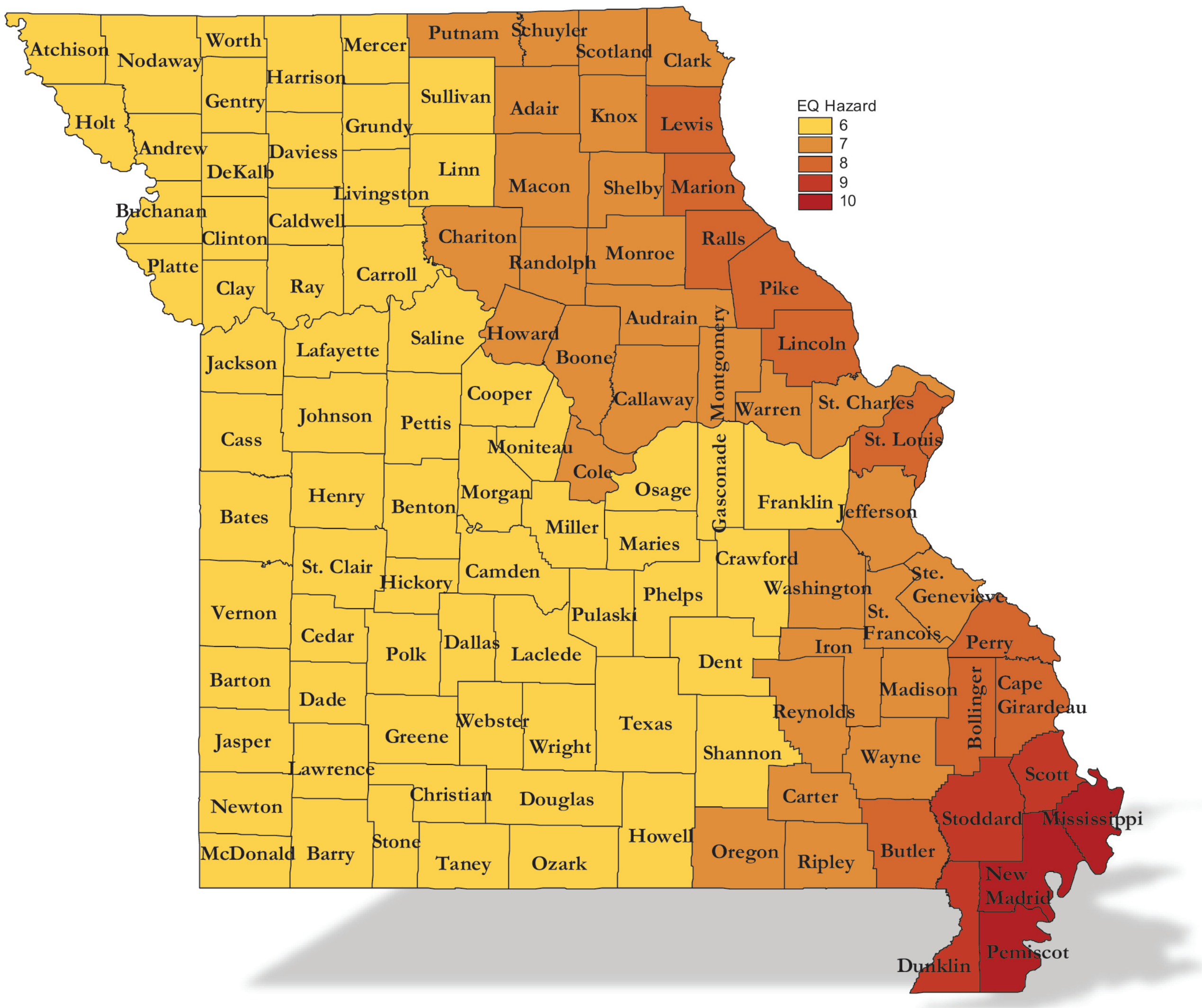
[4] US Geological Survey Fact Sheet FS-131-02. October, 2002.

[5] Elnashai, Amr, Lisa Cleveland, Theresa Jefferson and John Harrald. 2009. Impact of New Madrid Seismic Zone Earthquakes on the Central USA, Vol I & II. MAE Center Report No. 09-03

## Mercalli Scale (Projected Earthquake Intensity)
## Projected Intensity from a 7.6 Magnitude Earthquake in New Madrid




*Source: Adapted from the Missouri State Emergency Management Agency.*



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## Mercalli Intensity Scale

According to the Missouri State Emergency Management Agency, the intensities are described as follows:

1 – People do not feel any Earth movement.

2 – A few people might notice movement.

3 – Many people indoors feel movement. Hanging objects swing.

4 – Most people indoors feel movement. Dishes, windows, and doors rattle. Walls and frames of structures creak. Liquids in open vessels are slightly disturbed. Parked cars rock.

5 – Almost everyone feels movement. Most people are awakened. Doors swing open or closed. Dishes are broken. Pictures on the wall move. Windows crack in some cases. Small objects move or are turned over. Liquids might spill out of open containers.

6 – Everyone feels movement. Poorly built buildings are damages slightly. Considerable quantities of dishes and glassware, and some windows are broken. People have trouble walking. Pictures fall off walls. Objects fall off shelves. Plaster in walls might crack. Some furniture is overturned. Small bells in churches, chapels and schools ring.

7 – People have difficulty standing. Considerable damage in poorly built or badly designed buildings, adobe houses, old walls, spires and others. Damage is slight to moderate in well-built buildings. Numerous windows are broken. Weak chimneys break at roof lines. Cornices from towers and high buildings fall. Loose bricks fall from buildings. Heavy furniture is overturned and damaged. Some sand and gravel stream banks cave in.

8 – Drivers have trouble steering. Poorly built structures suffer severe damage. Ordinary substantial buildings partially collapse. Damage slight in structures especially built to withstand earthquakes. Tree branches break. Houses not bolted down might shift on their foundations. Tall structures such as towers and chimneys might twist and fall. Temporary or permanent changes in springs and wells. Sand and mud is ejected in small amounts.

9 – Most buildings suffer damage. Houses that are not bolted down move off their foundations. Some underground pipes are broken. The ground cracks conspicuously. Reservoirs suffer severe damage.

10 – Well-built wooden structures are severely damages and some destroyed. Most masonry and frame structures are destroyed, including their foundations. Some bridges are destroyed. Dams are seriously damaged. Large landslides occur. Water is thrown on the banks of canals, rivers, and lakes. Railroad tracks are bent slightly. Cracks are opened in cement pavements and asphalt road surfaces.

11 – Few if any masonry structures remain standing. Large, well-built bridges are destroyed. Wood frame structures are severely damaged, especially near epicenters. Buried pipelines are rendered completely useless. Railroads tracks are badly bent. Water mixed with sand, and mud is ejected in large amounts.

12 – Damage is total, and nearly all works of construction are damaged greatly or destroyed. Objects are thrown into the air. The ground moves in waves or ripples. Large amounts of rock may move. Lakes are dammed, waterfalls formed and rivers are deflected.

According to the Missouri State Emergency Management Agency, intensity is a numerical index describing the effects of an earthquake on the surface of the Earth, on man, and on structures built by man. There will actually be a range in intensities within any small area such as a town or county, with the highest intensity generally occurring at only a few sites.

Source: Taken directly from the Missouri State Emergency Management Agency, available at http://sema.dps.mo.gov/docs/programs/Planning-Disaster-Recovery/HazardAnalysis/2013-State-Hazard-Analysis/Annex_F_Earthquakes.pdf.

**Background: Managing Risk with Insurance Markets**

Earthquake insurance markets possess features that depart significantly from what might be called "ideal" insurance markets, and such peculiarities are largely attributable to the nature of the underlying risk. In competitive markets, the price of a product reflects the cost of production plus administrative expenses and a normal rate of return (and, of course, elasticity of demand). Unlike traditional and particularly tangible products, the cost of insurance isn't known with certainty at the time the price is established and the product sold. To price in a meaningful way, insurers require a high degree of confidence that predictions regarding likely losses are accurate. The greater the uncertainty regarding the true risk and ultimate payout in claims, the less well a market will function in the traditional sense. Of course, this same uncertainty regarding the true nature of the risk is shared by consumers, which complicates decisions about incurring a known loss (the premium payment) to avoid a possible greater loss of unknown or uncertain probability.[6]

Traditionally, the most predictable and therefore insurable events are those characterized by high frequency and low severity losses. Statistical models rely on the "law of large numbers," such that the more one is able to observe an event over time, the greater the certainty that meaningful probabilities of loss can be ascertained.[7] In addition, risks are manageable because losses of this kind are *statistically independent events.* The probability that Driver B in Kansas City will be involved in an automobile accident on a given day isn't affected by the fact that Driver A in St. Louis experienced a crash. While automobile and homeowners insurance can be subject to catastrophic large-scale losses due to a single event, such losses are manageable and are generally a small proportion of overall losses when extended over a sufficient time period. Most automobile losses, for example, are due to day-to-day crashes whose costs are highly predictable over time, and where loss probabilities aren't subject to significant swings from year-to-year. In general, prior year losses are a very good predictor of current year losses.

Clearly, earthquake insurance markets depart from the idealized features discussed above in several important ways. First, the likelihood of a significant event cannot be determined with a high degree of confidence and precision, certainly not in a way that is analogous to predicting automobile losses. Secondly, rather than "high frequency / low severity" losses, earthquakes present exactly the opposite risk in which losses are very infrequent (in Missouri) but have the potential to be catastrophic. Nor are losses *independent events* – a loss on one policy will quite possibly entail losses of virtually every policy within the area of risk. Lastly, the earthquake risk in Missouri is largely localized geographically to the southeastern quadrant of the state, so there is little incentive for individuals residing outside of the high risk zone to purchase coverage (and in fact few homeowners in low risk areas have earthquake coverage). It is therefore difficult to spread risk geographically using traditional market mechanisms.

Many of these types of events have at various times in history become uninsurable by private markets. Some risks have been assumed by public bodies in whole or in part when private markets failed to produce adequate or affordable coverage. Examples include flood insurance, crop insurance and the terrorism risk backstop, where at various times such risks were considered too unpredictable and possible losses too

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[6] See the excellent discussion of precisely this problem in Kunreuther, Howard, and Mark Pauly. 2004. Neglecting disaster: Why don't people insure against large losses? **Journal of Risk & Uncertainty.** 28(1): 5-21. The authors discuss "bounded rationality" stemming from information costs, and offer a formal model that explains why people fail to make optimal (in the economic sense) choices regarding the purchase of insurance for catastrophes when probabilities are very uncertain and generally very low.

[7] The "law of large numbers" explains why predictions about the ratio of heads to tales in a coin flip are much more accurate for 1,000 flips than 10 flips; or why larger sample sizes are more precise (have smaller margins of errors).

catastrophic for the private market to insure them via normal market operation. Similarly, after the 1994 Northridge Earthquake, the public California Earthquake Authority was established to stabilize the market, and it currently issues more than three-fourths of all residential earthquake policies in the state.[8]

**Alternative Risk Management Mechanisms –Reinsurance**

As noted above, primary insurance markets cannot easily accommodate risks when hazards are geographically localized. As discussed further below, few individuals residing outside the area of highest risk are likely to purchase coverage, and they are likely to be much more sensitive to price. An insurer willing to provide earthquake coverage will inevitably experience a degree of "adverse selection," and find that insureds are concentrated where the risk is greatest and minimal where the risk is least.

However, there are alternative market mechanisms available. One such mechanism is *reinsurance* - essentially insurance for insurance companies. Large reinsurers operate on a global scale, and primary insurers can transfer significant portions of the risk associated with a book of business to these entities in exchange for a premium. As might be expected, earthquake coverage is highly reinsured. In 2014, a little over 70 percent of direct earthquake premium was ceded to reinsurance.[9] Other mechanisms include catastrophe bonds, or securities issued by insurers to pass risk on to investors. Total outstanding catastrophe bonds amounted to more than $20 billion in 2015 and cover risks such as hurricanes and earthquakes.[10]

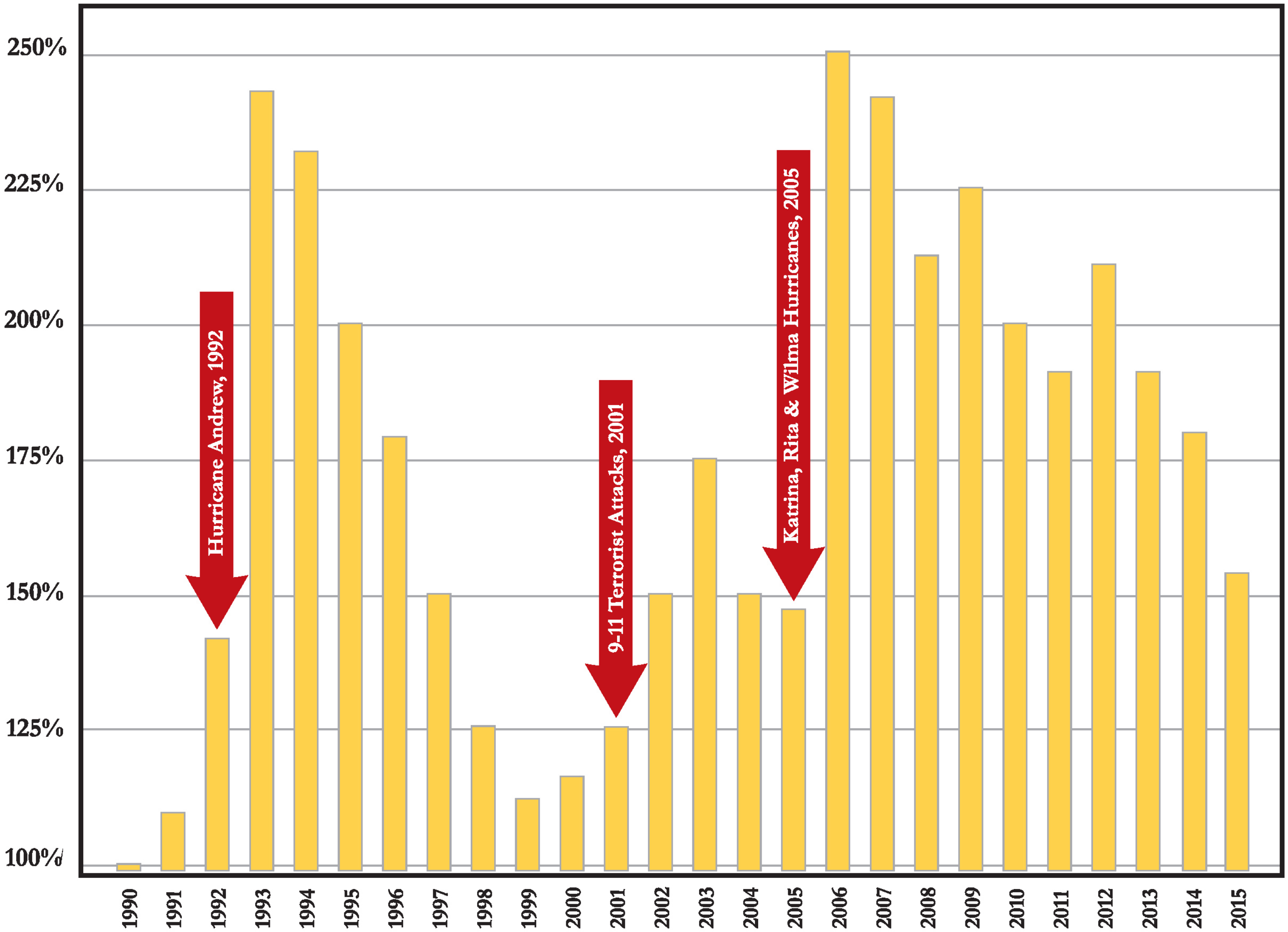
Reinsurance markets work well to manage catastrophic risks such as earthquakes. However, high dependence on reinsurance means that prices and availability of primary coverage is sensitive to the price of reinsurance. This sensitivity means that events unrelated to Missouri's earthquake risk can impact the price of insurance coverage in Missouri. As is apparent in the chart below, reinsurance became more expensive and less available after events such as the 9-11 terrorist attacks and the active 2005 hurricane season that included Katrina. However, the price of reinsurance has been on a downward trend since 2007, and does not appear to account for current market retractions in Missouri.

[8] California Earthquake Authority. 2013 Report to the Legislature. August, 2014. This report can be found on the CEA's website at www.earthquakeauthority.com

[9] Calculated from insurers' financial annual statements, Exhibit of Premium Written.

[10] ARTEMIS. Q1 2015 Catastrophe Bond and ILS Market Report.

Reinsurance Price Index in US
(1990 = 100%)




Source: Adapted from Guy Carpenter.

**Missouri's Contracting Earthquake Insurance Market**

As the previous discussion makes clear, it doesn't appear that anything in reinsurance markets accounts for the deterioration of the Missouri earthquake market, particularly in recent years. Rather, it appears that insurers have either determined that the New Madrid fault presents a risk greater than previously believed or, as is the case of at least one major insurer, have developed less tolerance for all catastrophe risks. Allstate announced in 2006 that it was pulling out of the earthquake market in all states, describing it as a general business decision to reduce exposure to all forms of catastrophe risks.[11] At the time, Allstate provided earthquake insurance to over 37,000 Missouri residences.

Other companies quickly followed Allstate's lead. Between 2000 and 2014, 64 insurers exited the Missouri earthquake market. Between them, these insurers had provided coverage to 113,923 residences in 2000. While 34 insurers entered the market over the same time period, those carriers only insured 53,923

[11] Jolayne Hoytz. Allstate Ends Quake Coverage. **The Seattle Times,** 6/2/2006.

policies in 2014. Over the same period, companies that remained in the market stopped writing in high risk areas or tightened underwriting criteria, scaled back the amount and type of coverage offered, and dramatically increased prices. The net result of these market practices has been a significant decline in the number of earthquake policies issued. Since 2000, the number of homeowners policies with earthquake coverage declined by 21 percent, from 670,968 in 2000 to 529,797 in 2014.

The remainder of this report examines these trends in detail. The figures in the following tables are derived from two primary data sources. Information pertaining to premium and policy counts[12] by geographic region is derived from residential insurance data collected by ZIP Code, pursuant to 20 CSR 600-3.100 (see http://www.sos.mo.gov/adrules/csr/current/20csr/20c600-3.pdf). Additional information was obtained by a survey of the largest homeowners writers in the state. In 2015, insurers with a combined homeowners insurance market share of 80 percent completed a questionnaire regarding market practices with respect to providing earthquake coverage.

**The Rising Cost of Coverage in a Declining Market**

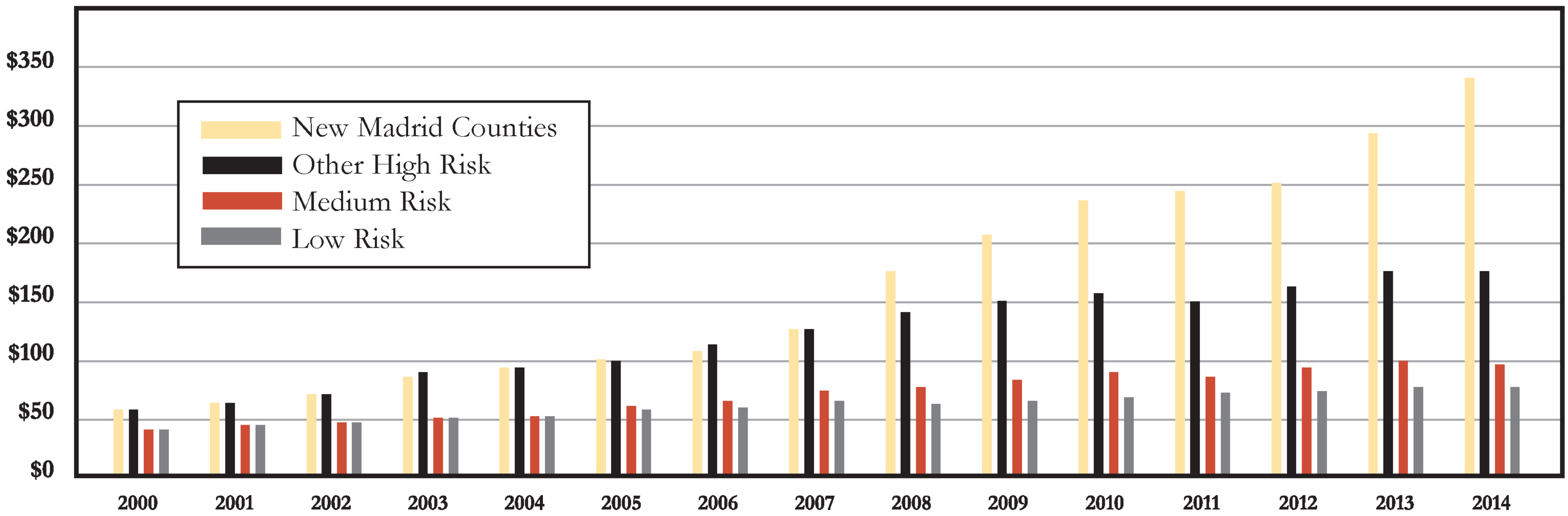
In 2000, residential earthquake coverage was readily available and inexpensive, even in the highest risk areas of the state. In that year, residents in the New Madrid region of Missouri[13] paid on average $57 per year for such coverage, an amount not significantly higher than the $35 annual premium paid by residents of the lowest risk area. Over the next 15 years, rates increased substantially, primarily within higher risk areas. By 2015, the average premium in the New Madrid area had increased by 485% to $335. While premiums also increased elsewhere in the state, the rate of increase was substantially less than experienced in New Madrid. In the lowest risk areas, premiums increased by 123% over the same time period.

[12] Or, more strictly speaking, "exposures" rather than policy counts. The term "exposure" is equivalent to coverage for one residence for one year. Two six month policies issued in a year would count as a single exposure. To avoid overuse of specialized terminology, the terms "policies" or "covered residences" are used in this report.

[13] For purposes of this report, the region is composed of the six southeastern-most counties in Missouri: Dunklin, Mississippi, New Madrid, Pemiscot, Scott and Stoddard.

| Average Annual Premium for Residential Earthquake Coverage | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Region** | **2000** | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **% Chg. 2000-2014** |
| New Madrid Counties | $57 | $60 | $67 | $89 | $98 | $102 | $114 | $124 | $174 | $206 | $236 | $242 | $249 | $293 | $335 | 484.9% |
| Other High Risk | $63 | $66 | $71 | $84 | $93 | $99 | $106 | $122 | $137 | $149 | $155 | $153 | $162 | $175 | $175 | 176.3% |
| Medium Risk | $39 | $41 | $44 | $55 | $60 | $62 | $68 | $76 | $80 | $88 | $90 | $88 | $94 | $98 | $94 | 141.2% |
| Low Risk | $35 | $37 | $40 | $48 | $53 | $56 | $61 | $67 | $66 | $69 | $71 | $74 | $76 | $78 | $78 | 123.3% |
| **Difference - Zone 1 and Zone 4** | **63.9%** | **60.1%** | **67.2%** | **84.5%** | **83.0%** | **81.5%** | **88.3%** | **84.8%** | **164.5%** | **201.1%** | **231.7%** | **228.8%** | **225.8%** | **276.7%** | **329.5%** | |

## Average Annual Premium - Earthquake Insurance



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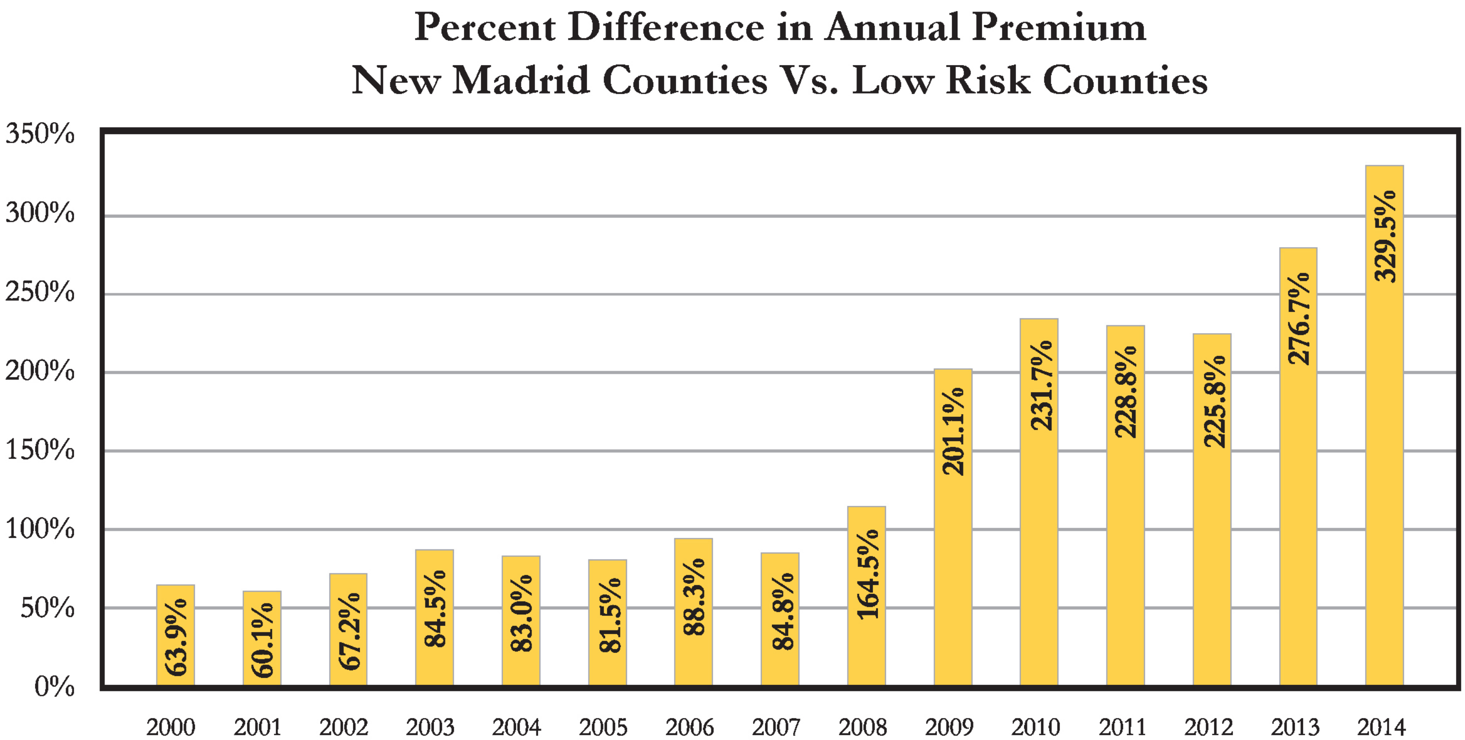
As a result of these trends, the gap in costs widened between high- and low-risk areas. In 2000, premiums in New Madrid were only 64% higher than the lowest-risk areas. The gap increased dramatically in 2008, and by 2015 had grown to 330%.




The map below depicts the change in annual premium by county. The reader will note that the rate of increase was significantly higher in counties most at risk. A table of these same data can be found in Appendix A.



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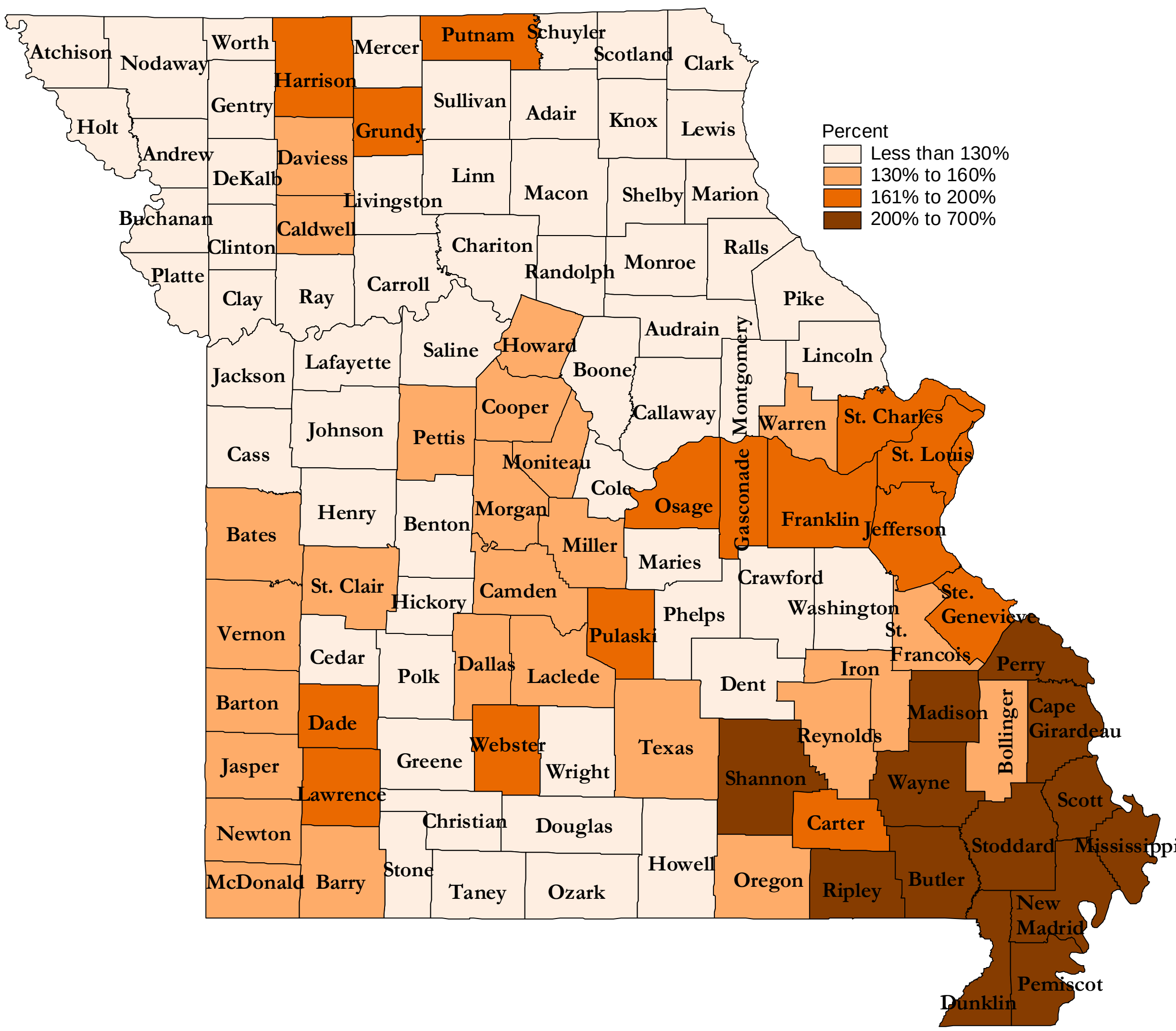
**Schedule SAW-D-9**

# % Change in Average Premium for Earthquake Coverage, 2000-2014



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**Declining Take-up Rates**

In 2000, nearly 44 percent of all Missouri residences had earthquake coverage. In the New Madrid area, over 60 percent were covered, and in other high risk areas, including St. Louis, the take-up rate was almost 70 percent. In New Madrid, the take-up rate had declined to less than 50 percent in 2008, and by 2014 had plummeted to 20 percent. That is, four of every five homes in the six-county New Madrid area lacked earthquake coverage last year. The decline was less precipitous in the second highest risk area, and by 2014 just over half of residences still had coverage. In the lowest risk area, comprised of the western portion of the state, coverage rates declined by nearly 7 percentage points, to 14.9 percent (see illustrations on the following page). As depicted in the following table, only in 7 counties were more than half of residences covered.

| % of Residences With Earthquake Coverage | # of Counties | Number of Owner-Occupied Homes & Mobile Homes* |
|---|---|---|
| Less than 10% | 28 | 117,371 |
| 10% to 19.9% | 50 | 689,290 |
| 20% to 29.9% | 18 | 175,218 |
| 30% to 39.9% | 9 | 115,501 |
| 40% to 49.9% | 3 | 57,216 |
| 50% to 59.9% | 3 | 391,866 |
| 60% to 69.9% | 4 | 142,660 |
| **Total** | **115** | **1,689,122** |

**Based on insured dwellings. A small percentage of homes that have no insurance coverage are excluded.*
*Source: Calculations based on Missouri homeowners and earthquake insurance data collected by ZIP Code*

In moderate to high-risk areas, including all counties with a rating of seven or higher on the Mercalli Scale (see map, page 3), well over half a million private residences (excluding rental properties) lacked earthquake coverage in 2014. The estimated value of these uninsured residences totaled $86 billion, excluding the value of the contents. Even individuals that have earthquake coverage are at risk of significant loss. Assuming an average deductible equal to 15 percent of the value of the insured dwelling, property worth $14.9 billion is self-insured in moderate to high risk areas. Together, these amounts (homes which are completely uninsured for earthquake + risk retained under the typical deductible) total to more than $100 billion.

[14] The assumption is reasonable. Based on survey data discussed below, no insurer offers coverage with a deductible of less than 10 percent, and more than half require a deductible of between 15 and 25 percent.

| Value of Dwellings Not Insured for Earthquake Damage (uninsured homes + value retained under deductible) | | | | |
|---|---|---|---|---|
| **Earthquake Zone (Mercalli Scale)** | **Uninsured Dwellings** | **Uninsured Property Value** | **Value uninsured under a 15% deductible** | **Total Retained Risk** |
| 7 | 299,621 | $45,218,080,000 | $6,542,653,188 | $51,760,733,188 |
| 8 | 223,808 | $36,479,436,667 | $8,090,103,813 | $44,569,540,480 |
| 9 | 27,272 | $3,222,370,000 | $175,807,500 | $3,398,177,500 |
| 10 | 12,034 | $1,262,486,250 | $46,279,625 | $1,308,765,875 |
| **Total 7 - 9** | **562,734** | **$86,182,372,917** | **$14,854,844,126** | **$101,037,217,043** |

*Source: Estimates produced by DIFP.*



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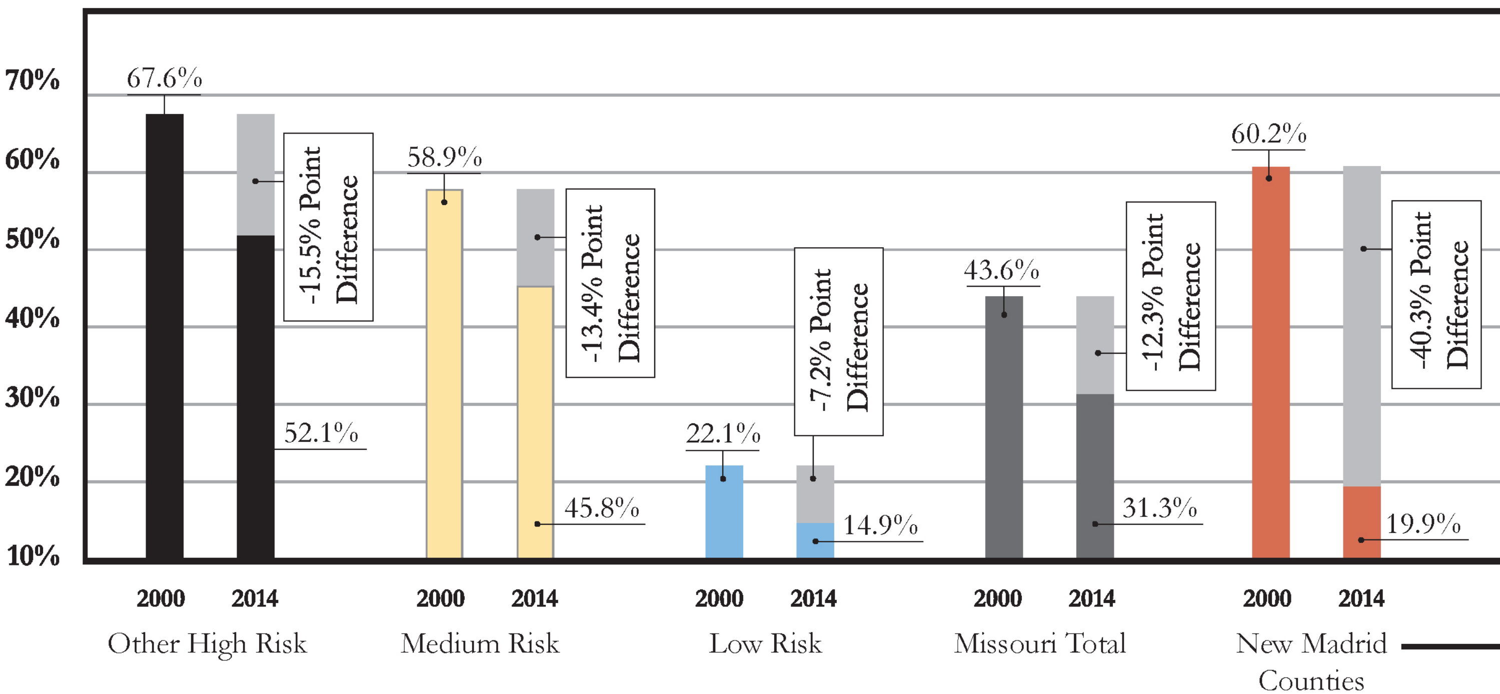
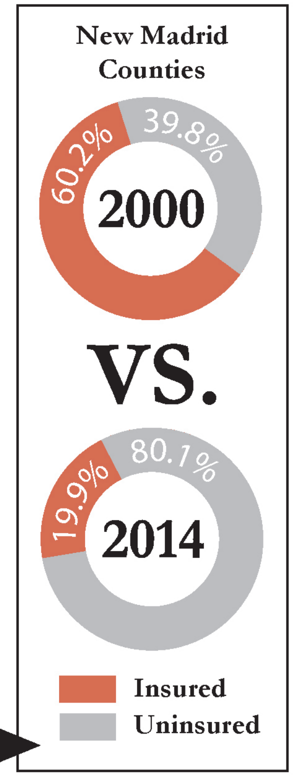
| % of Residences With Earthquake Coverage | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Missouri Region** | **2000** | **2001** | **2002** | **2003** | **2004** | **2005** | **2006** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **Percentage Point Difference, 2000-2014** |
| New Madrid | 60.2% | 59.3% | 59.0% | 57.7% | 57.1% | 57.1% | 52.9% | 53.9% | 48.6% | 44.9% | 34.3% | 33.3% | 32.2% | 25.9% | 19.9% | -40.3% |
| Other High Risk | 67.6% | 67.8% | 68.1% | 67.2% | 66.1% | 64.7% | 61.3% | 55.8% | 56.5% | 58.1% | 56.6% | 57.2% | 56.1% | 54.6% | 52.1% | -15.5% |
| Medium Risk | 58.9% | 58.0% | 58.3% | 57.6% | 56.5% | 55.6% | 52.9% | 50.0% | 49.7% | 50.4% | 48.5% | 48.8% | 48.5% | 47.6% | 45.8% | -13.4% |
| Low Risk | 22.1% | 21.3% | 20.6% | 19.5% | 18.5% | 17.8% | 16.9% | 16.1% | 15.9% | 15.8% | 15.5% | 16.1% | 16.2% | 15.7% | 14.9% | -7.2% |
| **Missouri Total** | **43.6%** | **43.0%** | **42.7%** | **41.7%** | **40.7%** | **39.8%** | **37.7%** | **35.2%** | **35.0%** | **35.4%** | **34.2%** | **34.6%** | **34.4%** | **33.2%** | **31.3%** | **-12.3%** |

## Percentage Point Difference, 2000-2014



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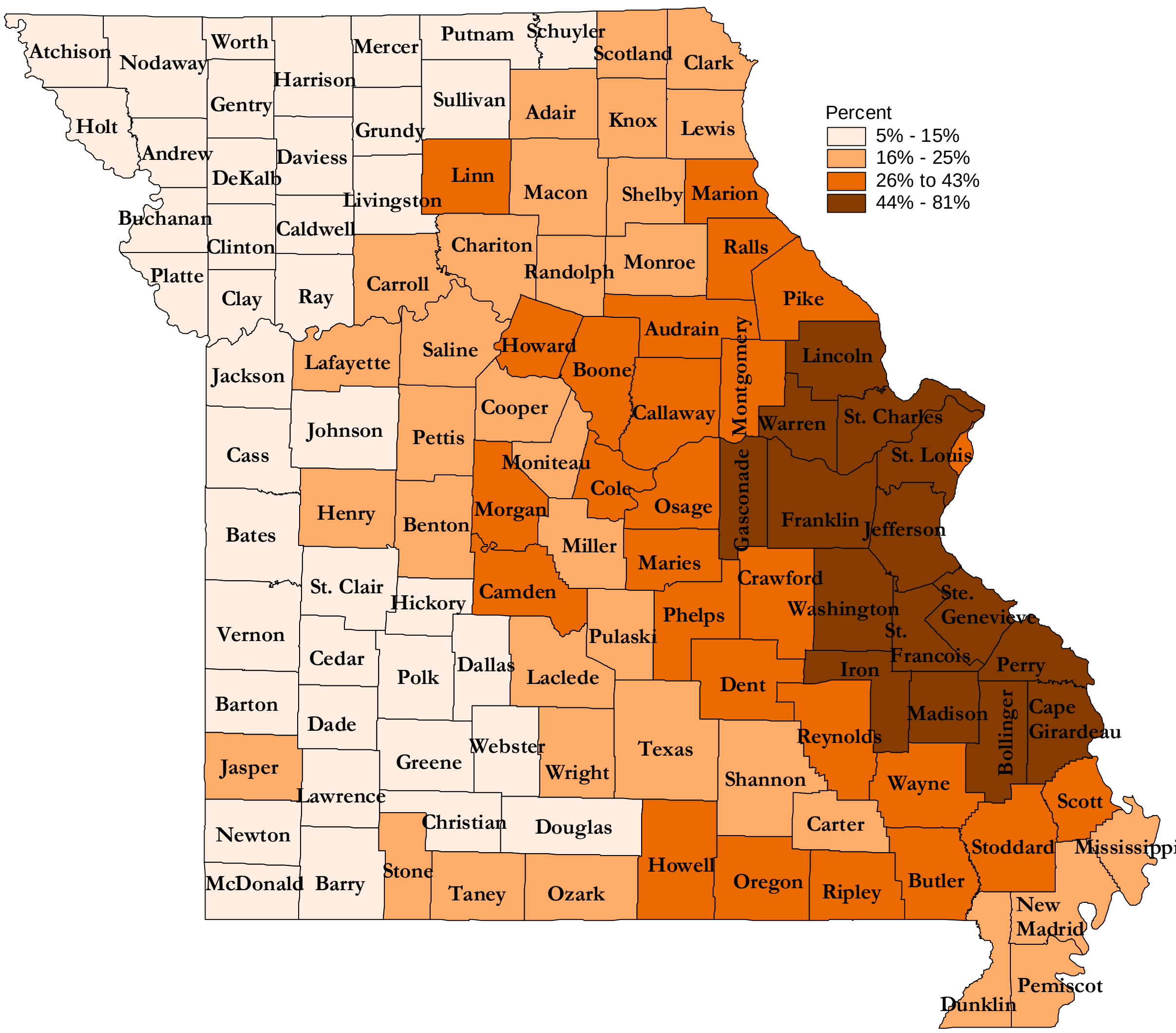
## Percent of Residences with Earthquake Insurance, 2014



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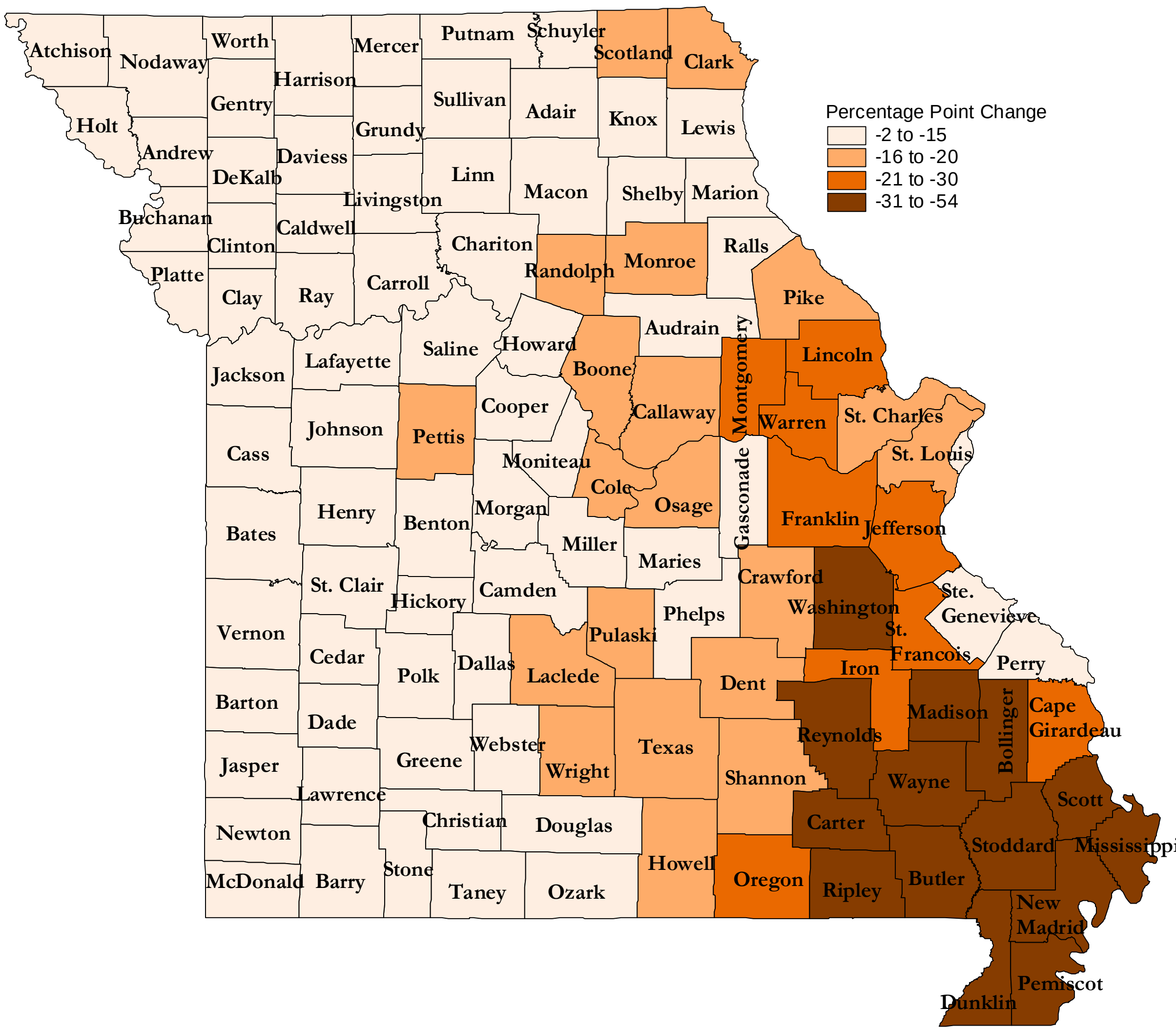
## Residences with Earthquake Insurance, Percentage Point Change, 2000-2014



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**Declining Quality of Coverage**

Based on survey responses from carriers representing over 80 percent of the homeowners market, most insurers still sell earthquake coverage in at least in some areas of the state. Weighting responses by market share, approximately 88 percent of the market still offers the coverage on both renewal and new business. However, coverage is far less available within the high-risk New Madrid area. Among respondents, nearly one-third of the market does not write earthquake coverage at all in New Madrid. An additional 44 percent of the market places significant additional underwriting restrictions on residences in the area. Among such restrictions are a refusal to insure specific types of dwellings and requiring substantially higher deductibles than elsewhere in the state. Only about a fourth of the market issues coverage in New Madrid on the same terms as elsewhere in the state.

| Coverage issued in NM Zone? | Responses Weighted by Market Share |
|---|---|
| No, not writing eq. anywhere in MO | 10.1% |
| No, write elsewhere in MO | 19.1% |
| Yes, but with additional underwriting restrictions | 44.2% |
| Yes, no additional underwriting restrictions | 26.6% |

*Source: DIFP survey of top homeowners insurers*

Even individuals with earthquake coverage are increasingly required to "self-insure" to a significant extent. Earthquake insurance typically requires deductibles specified as a percentage of the insured value of the dwelling. For example, a $200,000 home with a 10% deductible would require a homeowner to pay the first $20,000 of a claim before insurance would extend coverage. In addition, "stacked" deductibles are common, so that separate deductibles are applied to the dwelling and contents. With dual deductibles, then hypothetical insured described above would retain up to $40,000 of risk.

Based on the DIFP survey, in no area of the state does any insurer provide coverage with a deductible of less than 10 percent. In the six-county New Madrid area, nearly 58 percent of insurers (weighted by market share) require a 10 percent deductible, and nearly a third require deductibles of 20 percent. Among all insurers writing earthquake coverage outside of the New Madrid area, 11 percent require a deductible of 25 percent.

More information about the survey respondents, and the areas of Missouri in which they offer earthquake coverage, can be found in Appendix C.

| Minimum Required Deductible in Each Insurers Highest Risk Zone | |
|---|---|
| **Deductible Amount** | **Weighted Responses** |
| **Among carriers still writing in New Madrid** | |
| 5% | 0.0% |
| 10% | 57.7% |
| 15% | 9.5% |
| 20% | 32.8% |
| 25% | 0.0% |
| **Among insurers still writing anywhere in the state** | |
| 5% | 0.0% |
| 10% | 45.5% |
| 15% | 13.7% |
| 20% | 29.7% |
| 25% | 11.1% |

*Source: DIFP survey of insurers.*

## Conclusion

Missouri's earthquake insurance market has significantly contracted over the past 10 to 15 years. Relatively few insurers issue earthquake coverage in the New Madrid region without significant underwriting restrictions. For example, many refuse to cover specific kinds of residences, such as masonry homes. At the same time, the price of residential earthquake insurance has increased significantly; in the highest risk area of the state average premiums paid have increased by over 500 percent since 2000. Even when homeowners can obtain coverage, they still must retain a large portion of the risk. No insurer surveyed offered a policy with a deductible of less than 10 percent of the value of the insured dwelling, while over 40 percent required a deductible of 20 percent or higher. As a result, many individuals have dropped earthquake coverage, and the market has contracted most dramatically in the New Madrid area. In 2000, over 60 percent of dwellings in the six-county New Madrid area had earthquake coverage. By 2014, only 20 percent had such coverage. The DIFP estimates that Missouri residential property valued at over $80 billion is exposed to significant earthquake risk but is not insured.

A comparison with Joplin is instructive. Struck by a devastating EF5 tornado on May 22, 2011, the insurance industry responded rapidly and within three months over $1 billion was made available to insureds. By June of the following year, more than $1.5 billion had been paid by insurers, who would eventually cover more than $2 billion in tornado-related losses.[15] Almost all structures were covered for this type of loss, resulting in a rapid infusion of funds that made recovery possible. Such a recovery mechanism is almost entirely lacking in the area of the state most vulnerable to a New Madrid earthquake.

[15] Based on a special data call of all P&C insurers active in Missouri.

## Appendix A

| County FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | % Change, 2000-2014 | % Change, 2013-2014 |
|---|---|---|---|---|---|---|---|---|
| 001 | Adair | $31 | $52 | $58 | $60 | $58 | 84.9% | -3.3% |
| 003 | Andrew | $30 | $51 | $52 | $57 | $56 | 86.6% | -1.8% |
| 005 | Atchison | $35 | $52 | $65 | $69 | $71 | 100.4% | 2.9% |
| 007 | Audrain | $30 | $50 | $59 | $70 | $67 | 125.8% | -4.3% |
| 009 | Barry | $30 | $50 | $64 | $69 | $78 | 156.3% | 13.0% |
| 011 | Barton | $27 | $42 | $47 | $55 | $63 | 134.0% | 14.5% |
| 013 | Bates | $33 | $62 | $83 | $80 | $80 | 138.4% | 0.0% |
| 015 | Benton | $26 | $38 | $46 | $50 | $56 | 117.3% | 12.0% |
| 017 | Bollinger | $48 | $82 | $105 | $118 | $112 | 134.6% | -5.1% |
| 019 | Boone | $44 | $77 | $89 | $93 | $90 | 103.8% | -3.2% |
| 021 | Buchanan | $34 | $52 | $63 | $68 | $67 | 100.1% | -1.5% |
| 023 | Butler | $64 | $100 | $175 | $229 | $237 | 268.1% | 3.5% |
| 025 | Caldwell | $29 | $59 | $65 | $73 | $68 | 136.6% | -6.8% |
| 027 | Callaway | $32 | $55 | $66 | $70 | $70 | 116.9% | 0.0% |
| 029 | Camden | $36 | $55 | $76 | $81 | $86 | 140.5% | 6.2% |
| 031 | Cape Girardeau | $68 | $107 | $178 | $224 | $229 | 237.0% | 2.2% |
| 033 | Carroll | $30 | $37 | $48 | $54 | $58 | 94.9% | 7.4% |
| 035 | Carter | $34 | $61 | $101 | $113 | $97 | 189.5% | -14.2% |
| 037 | Cass | $35 | $57 | $68 | $77 | $80 | 127.7% | 3.9% |
| 039 | Cedar | $31 | $48 | $59 | $61 | $67 | 118.7% | 9.8% |
| 041 | Chariton | $29 | $56 | $66 | $56 | $53 | 80.6% | -5.4% |
| 043 | Christian | $37 | $60 | $74 | $78 | $82 | 122.0% | 5.1% |
| 045 | Clark | $29 | $41 | $50 | $54 | $56 | 93.7% | 3.7% |
| 047 | Clay | $36 | $55 | $62 | $69 | $70 | 96.8% | 1.4% |
| 049 | Clinton | $34 | $55 | $57 | $62 | $60 | 78.7% | -3.2% |
| 051 | Cole | $43 | $62 | $77 | $83 | $90 | 109.3% | 8.4% |
| 053 | Cooper | $33 | $49 | $61 | $68 | $77 | 134.4% | 13.2% |
| 055 | Crawford | $30 | $54 | $63 | $69 | $65 | 117.8% | -5.8% |
| 057 | Dade | $27 | $43 | $55 | $62 | $71 | 166.5% | 14.5% |
| 059 | Dallas | $28 | $44 | $53 | $59 | $71 | 153.5% | 20.3% |
| 061 | Daviess | $31 | $61 | $67 | $72 | $72 | 131.4% | 0.0% |
| 063 | DeKalb | $37 | $55 | $57 | $70 | $65 | 74.8% | -7.1% |
| 065 | Dent | $31 | $53 | $66 | $66 | $65 | 112.9% | -1.5% |
| 067 | Douglas | $27 | $39 | $42 | $50 | $57 | 107.1% | 14.0% |
| 069 | Dunklin | $57 | $112 | $234 | $311 | $394 | 595.9% | 26.7% |
| 071 | Franklin | $37 | $64 | $96 | $105 | $108 | 190.0% | 2.9% |
| 073 | Gasconade | $29 | $47 | $65 | $76 | $78 | 172.3% | 2.6% |
| 075 | Gentry | $32 | $59 | $75 | $81 | $70 | 117.7% | -13.6% |
| 077 | Greene | $39 | $60 | $73 | $79 | $83 | 114.7% | 5.1% |

Average Annual Premium for Earthquake Insurance (Counties in the New Madrid area are highlighted)

| Average Annual Premium for Earthquake Insurance (Counties in the New Madrid area are highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| County FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | % Change, 2000-2014 | % Change, 2013-2014 |
| 079 | Grundy | $27 | $40 | $56 | $65 | $71 | 160.7% | 9.2% |
| 081 | Harrison | $24 | $33 | $44 | $56 | $63 | 161.3% | 12.5% |
| 083 | Henry | $30 | $51 | $62 | $65 | $66 | 121.1% | 1.5% |
| 085 | Hickory | $24 | $34 | $43 | $49 | $55 | 128.0% | 12.2% |
| 087 | Holt | $35 | $55 | $73 | $68 | $75 | 116.3% | 10.3% |
| 089 | Howard | $29 | $54 | $64 | $70 | $67 | 135.7% | -4.3% |
| 091 | Howell | $31 | $62 | $76 | $80 | $70 | 129.3% | -12.5% |
| 093 | Iron | $32 | $50 | $71 | $77 | $74 | 133.1% | -3.9% |
| 095 | Jackson | $41 | $62 | $73 | $82 | $85 | 107.6% | 3.7% |
| 097 | Jasper | $31 | $47 | $60 | $68 | $73 | 131.8% | 7.4% |
| 099 | Jefferson | $38 | $59 | $88 | $94 | $102 | 170.6% | 8.5% |
| 101 | Johnson | $33 | $59 | $64 | $74 | $75 | 125.5% | 1.4% |
| 103 | Knox | $27 | $50 | $54 | $55 | $53 | 100.1% | -3.6% |
| 105 | Laclede | $30 | $46 | $60 | $65 | $71 | 134.5% | 9.2% |
| 107 | Lafayette | $29 | $50 | $57 | $65 | $67 | 129.5% | 3.1% |
| 109 | Lawrence | $27 | $44 | $63 | $69 | $72 | 167.3% | 4.3% |
| 111 | Lewis | $25 | $48 | $60 | $63 | $55 | 116.5% | -12.7% |
| 113 | Lincoln | $34 | $59 | $74 | $79 | $77 | 126.2% | -2.5% |
| 115 | Linn | $27 | $37 | $40 | $44 | $46 | 73.1% | 4.5% |
| 117 | Livingston | $28 | $41 | $47 | $49 | $55 | 94.3% | 12.2% |
| 119 | McDonald | $23 | $39 | $50 | $56 | $56 | 140.6% | 0.0% |
| 121 | Macon | $27 | $50 | $52 | $54 | $53 | 94.4% | -1.9% |
| 123 | Madison | $34 | $55 | $82 | $94 | $102 | 203.7% | 8.5% |
| 125 | Maries | $29 | $52 | $62 | $66 | $60 | 104.1% | -9.1% |
| 127 | Marion | $29 | $50 | $60 | $64 | $62 | 111.9% | -3.1% |
| 129 | Mercer | $28 | $39 | $50 | $59 | $55 | 99.0% | -6.8% |
| 131 | Miller | $26 | $46 | $57 | $60 | $64 | 148.0% | 6.7% |
| 133 | Mississippi | $52 | $97 | $235 | $269 | $317 | 515.7% | 17.8% |
| 135 | Moniteau | $27 | $50 | $59 | $62 | $66 | 142.3% | 6.5% |
| 137 | Monroe | $26 | $49 | $57 | $61 | $55 | 111.9% | -9.8% |
| 139 | Montgomery | $31 | $54 | $68 | $73 | $70 | 126.3% | -4.1% |
| 141 | Morgan | $26 | $42 | $51 | $55 | $61 | 138.5% | 10.9% |
| 143 | New Madrid | $54 | $85 | $281 | $350 | $364 | 570.6% | 4.0% |
| 145 | Newton | $27 | $42 | $55 | $61 | $65 | 138.3% | 6.6% |
| 147 | Nodaway | $33 | $58 | $62 | $65 | $62 | 85.8% | -4.6% |
| 149 | Oregon | $33 | $56 | $69 | $78 | $82 | 146.3% | 5.1% |
| 151 | Osage | $32 | $85 | $107 | $110 | $93 | 188.2% | -15.5% |
| 153 | Ozark | $28 | $42 | $45 | $51 | $56 | 99.7% | 9.8% |
| 155 | Pemiscot | $48 | $97 | $248 | $297 | $383 | 695.9% | 29.0% |
| 157 | Perry | $42 | $63 | $95 | $128 | $132 | 211.8% | 3.1% |
| 159 | Pettis | $27 | $42 | $51 | $57 | $65 | 136.7% | 14.0% |

| Average Annual Premium for Earthquake Insurance (Counties in the New Madrid area are highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| County FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | % Change, 2000-2014 | % Change, 2013-2014 |
| 161 | Phelps | $32 | $54 | $68 | $74 | $72 | 123.4% | -2.7% |
| 163 | Pike | $36 | $61 | $75 | $84 | $74 | 106.1% | -11.9% |
| 165 | Platte | $46 | $70 | $81 | $92 | $95 | 103.8% | 3.3% |
| 167 | Polk | $31 | $47 | $60 | $66 | $71 | 125.1% | 7.6% |
| 169 | Pulaski | $29 | $58 | $74 | $88 | $87 | 197.2% | -1.1% |
| 171 | Putnam | $30 | $56 | $67 | $78 | $79 | 164.5% | 1.3% |
| 173 | Ralls | $27 | $45 | $57 | $59 | $56 | 107.8% | -5.1% |
| 175 | Randolph | $25 | $41 | $52 | $57 | $56 | 128.6% | -1.8% |
| 177 | Ray | $32 | $52 | $64 | $67 | $64 | 100.3% | -4.5% |
| 179 | Reynolds | $31 | $63 | $86 | $78 | $79 | 158.5% | 1.3% |
| 181 | Ripley | $38 | $59 | $82 | $104 | $114 | 200.4% | 9.6% |
| 183 | Saint Charles | $42 | $66 | $100 | $109 | $117 | 174.8% | 7.3% |
| 185 | Saint Clair | $28 | $45 | $55 | $61 | $73 | 159.9% | 19.7% |
| 186 | Ste. Genevieve | $42 | $62 | $87 | $115 | $119 | 184.8% | 3.5% |
| 187 | Saint Francois | $35 | $61 | $79 | $91 | $90 | 158.1% | -1.1% |
| 189 | Saint Louis | $64 | $101 | $157 | $177 | $177 | 176.1% | 0.0% |
| 195 | Saline | $28 | $39 | $52 | $56 | $60 | 114.7% | 7.1% |
| 197 | Schuyler | $27 | $45 | $58 | $64 | $59 | 122.0% | -7.8% |
| 199 | Scotland | $27 | $44 | $56 | $67 | $62 | 126.9% | -7.5% |
| 201 | Scott | $65 | $106 | $274 | $327 | $357 | 448.3% | 9.2% |
| 203 | Shannon | $28 | $53 | $73 | $82 | $92 | 228.7% | 12.2% |
| 205 | Shelby | $27 | $49 | $56 | $59 | $52 | 90.2% | -11.9% |
| 207 | Stoddard | $54 | $101 | $169 | $221 | $247 | 353.6% | 11.8% |
| 209 | Stone | $37 | $54 | $72 | $77 | $82 | 120.9% | 6.5% |
| 211 | Sullivan | $22 | $36 | $41 | $43 | $50 | 124.3% | 16.3% |
| 213 | Taney | $34 | $49 | $61 | $66 | $71 | 107.7% | 7.6% |
| 215 | Texas | $30 | $57 | $68 | $79 | $74 | 145.7% | -6.3% |
| 217 | Vernon | $28 | $44 | $54 | $61 | $66 | 131.7% | 8.2% |
| 219 | Warren | $36 | $56 | $80 | $84 | $88 | 145.5% | 4.8% |
| 221 | Washington | $30 | $44 | $54 | $63 | $66 | 119.9% | 4.8% |
| 223 | Wayne | $34 | $53 | $84 | $101 | $108 | 220.0% | 6.9% |
| 225 | Webster | $33 | $54 | $77 | $78 | $86 | 162.8% | 10.3% |
| 227 | Worth | $29 | $32 | $52 | $49 | $57 | 94.4% | 16.3% |
| 229 | Wright | $32 | $44 | $52 | $60 | $63 | 100.5% | 5.0% |
| 510 | Saint Louis City | $68 | $103 | $167 | $185 | $184 | 168.5% | -0.5% |
| **999** | **Missouri** | **$50** | **$79** | **$119** | **$131** | **$134** | **169.5%** | **2.0%** |

## Appendix B

| Percent of Residences With Earthquake Coverage (New Madrid counties are highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **County FIPS Code** | **County** | **2000** | **2005** | **2010** | **2013** | **2014** | **Percentage Point Difference, 2000-2014** | **Percentage Point Difference, 2013-2014** |
| 001 | Adair | 29.1% | 22.9% | 20.1% | 18.6% | 17.8% | -11.3% | -0.8% |
| 003 | Andrew | 18.5% | 14.9% | 12.5% | 12.0% | 11.2% | -7.2% | -0.8% |
| 005 | Atchison | 10.2% | 8.4% | 8.0% | 6.9% | 6.9% | -3.3% | 0.1% |
| 007 | Audrain | 36.2% | 31.9% | 30.8% | 29.3% | 28.1% | -8.0% | -1.2% |
| 009 | Barry | 15.4% | 11.7% | 8.9% | 9.2% | 8.8% | -6.7% | -0.4% |
| 011 | Barton | 12.6% | 9.8% | 7.8% | 7.9% | 7.1% | -5.5% | -0.8% |
| 013 | Bates | 13.0% | 8.6% | 5.9% | 6.0% | 5.6% | -7.4% | -0.4% |
| 015 | Benton | 22.4% | 16.9% | 14.7% | 15.0% | 13.9% | -8.5% | -1.1% |
| 017 | Bollinger | 62.4% | 57.1% | 38.9% | 37.0% | 33.5% | -28.9% | -3.5% |
| 019 | Boone | 37.6% | 29.8% | 27.0% | 26.5% | 25.7% | -11.9% | -0.8% |
| 021 | Buchanan | 16.5% | 12.9% | 11.2% | 10.4% | 9.9% | -6.7% | -0.6% |
| 023 | Butler | 57.3% | 51.8% | 33.8% | 27.1% | 22.4% | -34.9% | -4.7% |
| 025 | Caldwell | 11.4% | 7.8% | 6.6% | 6.7% | 6.7% | -4.7% | 0.0% |
| 027 | Callaway | 37.5% | 31.9% | 27.0% | 26.6% | 25.6% | -11.9% | -1.0% |
| 029 | Camden | 42.1% | 40.0% | 37.5% | 37.2% | 35.3% | -6.7% | -1.8% |
| 031 | Cape Girardeau | 81.2% | 79.5% | 71.9% | 67.5% | 60.8% | -20.4% | -6.7% |
| 033 | Carroll | 23.0% | 16.6% | 10.6% | 11.2% | 10.9% | -12.1% | -0.3% |
| 035 | Carter | 47.7% | 42.4% | 20.7% | 18.4% | 16.7% | -31.0% | -1.7% |
| 037 | Cass | 19.4% | 13.9% | 11.6% | 11.7% | 11.3% | -8.2% | -0.5% |
| 039 | Cedar | 14.3% | 11.7% | 9.1% | 9.6% | 8.6% | -5.7% | -1.0% |
| 041 | Chariton | 24.0% | 18.3% | 15.9% | 17.0% | 15.8% | -8.2% | -1.3% |
| 043 | Christian | 16.1% | 11.6% | 11.8% | 12.8% | 11.4% | -4.7% | -1.4% |
| 045 | Clark | 22.3% | 17.1% | 12.6% | 11.4% | 10.7% | -11.6% | -0.7% |
| 047 | Clay | 20.5% | 15.2% | 13.0% | 13.0% | 12.5% | -8.1% | -0.5% |
| 049 | Clinton | 15.3% | 10.7% | 8.8% | 8.9% | 8.5% | -6.8% | -0.3% |
| 051 | Cole | 43.5% | 37.9% | 32.5% | 31.5% | 29.7% | -13.7% | -1.7% |
| 053 | Cooper | 26.9% | 20.5% | 15.7% | 16.4% | 15.9% | -11.0% | -0.5% |
| 055 | Crawford | 45.4% | 42.9% | 36.2% | 34.4% | 33.0% | -12.4% | -1.4% |
| 057 | Dade | 12.5% | 9.1% | 7.5% | 7.9% | 7.4% | -5.1% | -0.5% |
| 059 | Dallas | 15.8% | 9.7% | 6.6% | 6.6% | 6.1% | -9.7% | -0.5% |
| 061 | Daviess | 9.9% | 6.2% | 5.2% | 5.8% | 5.8% | -4.1% | -0.1% |
| 063 | DeKalb | 8.9% | 6.5% | 4.3% | 4.6% | 4.6% | -4.3% | 0.1% |
| 065 | Dent | 32.3% | 24.8% | 20.4% | 19.1% | 18.4% | -13.8% | -0.6% |
| 067 | Douglas | 12.6% | 10.5% | 10.4% | 10.0% | 8.9% | -3.7% | -1.1% |
| 069 | Dunklin | 55.7% | 47.3% | 30.4% | 22.3% | 15.4% | -40.3% | -6.9% |
| 071 | Franklin | 64.5% | 61.4% | 52.6% | 51.7% | 49.5% | -15.1% | -2.2% |
| 073 | Gasconade | 48.9% | 48.1% | 42.9% | 40.7% | 38.8% | -10.1% | -1.9% |
| 075 | Gentry | 12.9% | 8.8% | 7.2% | 7.0% | 6.8% | -6.1% | -0.2% |
| 077 | Greene | 18.7% | 14.1% | 13.0% | 13.5% | 12.5% | -6.2% | -1.0% |

| Percent of Residences With Earthquake Coverage (New Madrid counties are highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| County FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | Percentage Point Difference, 2000-2014 | Percentage Point Difference, 2013-2014 |
| 079 | Grundy | 12.8% | 9.9% | 7.3% | 7.2% | 6.8% | -6.0% | -0.4% |
| 081 | Harrison | 8.7% | 6.1% | 4.4% | 4.3% | 4.4% | -4.2% | 0.1% |
| 083 | Henry | 20.1% | 16.6% | 14.6% | 14.9% | 13.8% | -6.3% | -1.1% |
| 085 | Hickory | 19.4% | 14.7% | 10.9% | 11.0% | 10.2% | -9.1% | -0.8% |
| 087 | Holt | 9.4% | 5.4% | 4.8% | 4.4% | 4.6% | -4.8% | 0.3% |
| 089 | Howard | 32.5% | 26.9% | 23.6% | 23.4% | 23.2% | -9.3% | -0.1% |
| 091 | Howell | 33.5% | 27.9% | 24.2% | 24.2% | 23.4% | -10.1% | -0.7% |
| 093 | Iron | 56.8% | 49.4% | 36.9% | 36.1% | 35.7% | -21.2% | -0.5% |
| 095 | Jackson | 17.1% | 12.9% | 11.3% | 11.7% | 11.4% | -5.7% | -0.2% |
| 097 | Jasper | 18.2% | 15.6% | 13.8% | 16.5% | 14.9% | -3.3% | -1.6% |
| 099 | Jefferson | 72.8% | 70.0% | 60.0% | 59.0% | 57.2% | -15.6% | -1.9% |
| 101 | Johnson | 20.1% | 14.5% | 12.2% | 13.2% | 12.7% | -7.4% | -0.5% |
| 103 | Knox | 16.4% | 13.3% | 11.8% | 11.7% | 10.8% | -5.5% | -0.8% |
| 105 | Laclede | 28.4% | 23.4% | 20.6% | 19.6% | 18.0% | -10.4% | -1.6% |
| 107 | Lafayette | 23.2% | 16.1% | 13.3% | 13.9% | 13.6% | -9.6% | -0.3% |
| 109 | Lawrence | 15.0% | 10.2% | 7.8% | 9.2% | 8.5% | -6.4% | -0.6% |
| 111 | Lewis | 22.9% | 18.5% | 16.1% | 15.9% | 14.1% | -8.8% | -1.8% |
| 113 | Lincoln | 53.8% | 49.8% | 44.4% | 44.1% | 42.1% | -11.7% | -2.1% |
| 115 | Linn | 30.6% | 27.0% | 23.7% | 22.1% | 20.8% | -9.7% | -1.3% |
| 117 | Livingston | 15.7% | 11.1% | 11.6% | 10.8% | 10.5% | -5.2% | -0.3% |
| 119 | McDonald | 13.5% | 7.5% | 5.8% | 6.5% | 5.5% | -7.9% | -0.9% |
| 121 | Macon | 24.7% | 17.9% | 17.3% | 16.6% | 15.8% | -8.8% | -0.8% |
| 123 | Madison | 65.7% | 59.9% | 39.5% | 38.8% | 37.2% | -28.5% | -1.6% |
| 125 | Maries | 31.0% | 29.7% | 22.4% | 23.9% | 24.3% | -6.7% | 0.4% |
| 127 | Marion | 41.5% | 36.2% | 33.9% | 32.1% | 29.7% | -11.8% | -2.4% |
| 129 | Mercer | 10.2% | 7.2% | 5.7% | 5.6% | 5.3% | -4.8% | -0.2% |
| 131 | Miller | 24.3% | 20.5% | 17.4% | 18.3% | 16.9% | -7.4% | -1.4% |
| 133 | Mississippi | 60.1% | 54.1% | 30.0% | 22.1% | 14.8% | -45.3% | -7.4% |
| 135 | Moniteau | 24.2% | 20.3% | 19.1% | 18.3% | 17.6% | -6.6% | -0.8% |
| 137 | Monroe | 31.6% | 25.0% | 21.3% | 20.2% | 18.5% | -13.1% | -1.7% |
| 139 | Montgomery | 47.2% | 42.4% | 36.6% | 34.2% | 33.2% | -14.0% | -1.0% |
| 141 | Morgan | 35.6% | 33.7% | 30.4% | 29.2% | 26.8% | -8.8% | -2.5% |
| 143 | New Madrid | 51.2% | 54.8% | 27.7% | 20.2% | 16.6% | -34.5% | -3.5% |
| 145 | Newton | 14.0% | 9.6% | 8.5% | 10.3% | 9.2% | -4.8% | -1.1% |
| 147 | Nodaway | 7.1% | 5.2% | 4.7% | 5.2% | 4.7% | -2.5% | -0.5% |
| 149 | Oregon | 42.7% | 36.8% | 24.1% | 23.9% | 24.1% | -18.6% | 0.1% |
| 151 | Osage | 33.3% | 28.4% | 23.8% | 22.6% | 21.8% | -11.5% | -0.8% |
| 153 | Ozark | 18.5% | 15.8% | 14.1% | 14.1% | 13.6% | -4.9% | -0.5% |
| 155 | Pemiscot | 49.4% | 45.7% | 21.1% | 15.6% | 14.1% | -35.3% | -1.5% |
| 157 | Perry | 77.4% | 79.2% | 71.9% | 69.2% | 68.5% | -9.0% | -0.7% |
| 159 | Pettis | 30.9% | 25.3% | 19.2% | 17.7% | 16.7% | -14.2% | -1.1% |

| Percent of Residences With Earthquake Coverage (New Madrid counties are highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **County FIPS Code** | **County** | **2000** | **2005** | **2010** | **2013** | **2014** | **Percentage Point Difference, 2000-2014** | **Percentage Point Difference, 2013-2014** |
| 161 | Phelps | 34.7% | 28.9% | 25.6% | 25.8% | 24.7% | -10.0% | -1.1% |
| 163 | Pike | 41.3% | 35.8% | 30.3% | 27.9% | 27.0% | -14.2% | -0.8% |
| 165 | Platte | 18.8% | 14.3% | 12.3% | 12.7% | 12.2% | -6.6% | -0.5% |
| 167 | Polk | 17.8% | 11.9% | 10.5% | 11.3% | 10.0% | -7.8% | -1.3% |
| 169 | Pulaski | 25.9% | 18.9% | 13.4% | 14.2% | 13.4% | -12.5% | -0.9% |
| 171 | Putnam | 16.5% | 9.9% | 6.9% | 7.2% | 7.2% | -9.3% | 0.0% |
| 173 | Ralls | 31.2% | 27.1% | 25.7% | 26.0% | 25.7% | -5.5% | -0.3% |
| 175 | Randolph | 30.9% | 24.9% | 20.5% | 18.9% | 17.8% | -13.1% | -1.1% |
| 177 | Ray | 19.0% | 14.1% | 11.4% | 11.7% | 10.9% | -8.2% | -0.8% |
| 179 | Reynolds | 42.4% | 32.6% | 21.4% | 21.1% | 18.8% | -23.6% | -2.2% |
| 181 | Ripley | 44.3% | 41.7% | 24.4% | 23.0% | 19.5% | -24.9% | -3.5% |
| 183 | Saint Charles | 79.2% | 75.4% | 67.0% | 66.4% | 64.1% | -15.1% | -2.2% |
| 185 | Saint Clair | 14.9% | 9.8% | 6.0% | 5.8% | 6.1% | -8.8% | 0.3% |
| 186 | Ste. Genevieve | 76.1% | 75.9% | 68.7% | 66.3% | 64.6% | -11.5% | -1.7% |
| 187 | Saint Francois | 65.4% | 64.5% | 56.7% | 54.4% | 51.2% | -14.2% | -3.2% |
| 189 | Saint Louis | 74.4% | 70.7% | 62.9% | 61.0% | 58.9% | -15.5% | -2.1% |
| 195 | Saline | 25.7% | 21.6% | 19.3% | 19.2% | 19.0% | -6.6% | -0.2% |
| 197 | Schuyler | 13.9% | 12.5% | 9.5% | 7.0% | 6.2% | -7.6% | -0.8% |
| 199 | Scotland | 20.9% | 13.8% | 12.1% | 10.8% | 10.1% | -10.8% | -0.7% |
| 201 | Scott | 70.0% | 67.9% | 41.5% | 33.5% | 26.3% | -43.7% | -7.2% |
| 203 | Shannon | 31.3% | 22.3% | 19.0% | 17.8% | 17.6% | -13.6% | -0.2% |
| 205 | Shelby | 21.9% | 16.0% | 14.4% | 14.9% | 14.9% | -6.9% | 0.1% |
| 207 | Stoddard | 63.9% | 61.4% | 42.2% | 30.6% | 22.6% | -41.3% | -8.0% |
| 209 | Stone | 18.1% | 15.2% | 14.6% | 15.5% | 15.1% | -3.0% | -0.5% |
| 211 | Sullivan | 14.9% | 9.3% | 7.1% | 6.5% | 5.9% | -9.0% | -0.5% |
| 213 | Taney | 20.2% | 18.1% | 17.0% | 17.5% | 17.1% | -3.1% | -0.4% |
| 215 | Texas | 24.6% | 18.9% | 14.2% | 13.9% | 12.6% | -12.0% | -1.3% |
| 217 | Vernon | 17.0% | 12.2% | 9.8% | 9.5% | 9.1% | -7.9% | -0.4% |
| 219 | Warren | 60.7% | 59.3% | 49.5% | 49.8% | 49.5% | -11.2% | -0.3% |
| 221 | Washington | 53.9% | 48.2% | 37.2% | 38.4% | 37.1% | -16.8% | -1.3% |
| 223 | Wayne | 51.9% | 43.1% | 25.1% | 21.9% | 19.9% | -32.0% | -2.0% |
| 225 | Webster | 17.8% | 13.1% | 11.5% | 12.3% | 11.2% | -6.6% | -1.1% |
| 227 | Worth | 7.8% | 5.3% | 4.8% | 6.2% | 5.2% | -2.6% | -1.0% |
| 229 | Wright | 23.9% | 18.0% | 13.9% | 13.1% | 12.2% | -11.7% | -0.9% |
| 510 | Saint Louis City | 46.1% | 45.9% | 36.2% | 34.8% | 32.2% | -13.9% | -2.6% |
| **999** | **Missouri Total** | **43.6%** | **39.8%** | **34.2%** | **33.2%** | **31.3%** | **-12.3%** | **-1.8%** |

## Appendix C – Companies Offering Earthquake Insurance by Region

The companies below were offering new earthquake insurance policies in the regions checked (✓) as of April 2015. Each company has different restrictions on types of homes they cover and the coverage they offer. Contact the company or an agent who represents that company to find out if you can obtain coverage for your home.

**Homeowners Insurers (sorted by descending market share)**

| **Company** | **Southeast Missouri** | **St. Louis** | **Kansas City** | **Springfield** | **Columbia** |
|---|---|---|---|---|---|
| State Farm Fire and Casualty Co. | ✓ | ✓ | ✓ | ✓ | ✓ |
| American Family Mutual Insurance Co. | ✓ | ✓ | ✓ | ✓ | ✓ |
| Shelter Mutual Insurance Co. | ✓ | ✓ | ✓ | ✓ | ✓ |
| Safeco Insurance Co. of America | | ✓ | ✓ | ✓ | ✓ |
| Farmers Insurance Exchange | ✓ | ✓ | ✓ | ✓ | ✓ |
| Auto Club Family Insurance Co. | | ✓ | ✓ | ✓ | ✓ |
| Farm Bureau Town and Country Insurance Co. of Missouri | | | | | |
| Nationwide Affinity Insurance Co. of America | ✓ | ✓ | ✓ | ✓ | ✓ |
| The Travelers Home and Marine Insurance Co. | | ✓ | ✓ | ✓ | ✓ |
| United Services Automobile Association (USAA) | ✓ | ✓ | ✓ | ✓ | ✓ |
| Liberty Insurance Corp. | | ✓ | ✓ | ✓ | ✓ |
| Allstate Property & Casualty Insurance Co. | | | | | |
| Mid Century Insurance Co. | | | | | |
| Fire Insurance Exchange (Farmers) | | | | | |
| Liberty Mutual Fire Insurance Co. | | | | | |
| USAA Casualty Insurance Co. | ✓ | ✓ | ✓ | ✓ | ✓ |
| Country Mutual Insurance Co. | ✓ | ✓ | ✓ | ✓ | ✓ |
| Allstate Indemnity Co. | | | | | |
| Allstate Insurance Co. | | | | | |
| Auto Owners Insurance Co. | | Did not respond to survey. | | | |
| The Standard Fire Insurance Co. (Travelers) | | ✓ | ✓ | ✓ | ✓ |
| Palomar Specialty Insurance Company | ✓ | ✓ | ✓ | ✓ | ✓ |

## Insurance Consumer Hotline

Contact DIFP's Insurance Consumer Hotline
if you have questions about your insurance policy
or to file a complaint against an
insurance company or agent:

**difp.mo.gov**

**800-726-7390**

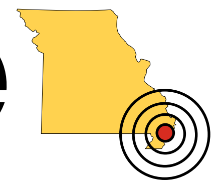
DIFP
Department of Insurance,
Financial Institutions &
Professional Registration

Harry S Truman Building
Room 530
301 W. High St.
PO Box 690
Jefferson City, MO 65102

Public

2016 MISSOURI INSURANCE REPORT

# THE STATE OF Earthquake Coverage



STATISTICS SECTION

## The Earthquake Insurance Market in MO

## 2015 Supplement

DIFP
Department of Insurance, Financial Institutions & Professional Registration

**Jeremiah W. (Jay) Nixon**
Governor

**John M. Huff**
Director

Contents

**Summary**

This brief note updates a more thorough report on the residential earthquake insurance market in Missouri released last year. The earlier report can be found on the department's website at the following link:

http://insurance.mo.gov/news/2015/Missouri_Earthquake_Report_shows_insurance_coverage_at_critical_tipping_point

That report documented a dramatic contraction in the market for earthquake insurance, with fewer than one in five homes in Missouri's highest risk areas having the coverage. While there have been no dramatic year-over-year changes between 2014 and 2015, all market indicators moved in the wrong direction: prices move upward, coverage rates continued to decline, and residential earthquake insurance became less available and affordable.

- In the six-county New Madrid area, the percent of private residences with earthquake coverage declined by more than two percentage points over the past year, from 19.9 to 17.8 percent. In four of the six counties, less than 15 percent of homes had insurance against earthquake damage. By contrast, over 60 percent of private residences in the New Madrid area had earthquake coverage in 2000.

- Coverage was greater in other high-risk areas of the state, including the St. Louis area. In St. Louis County, 58 percent of residences had earthquake insurance. In neighboring St. Louis City, however, fewer than one-third had such coverage.

- The value of uninsured dwellings in high risk areas of the state exceeded $105 billion. This includes over $90 billion associated with homes that had no earthquake coverage, plus approximately $15 billion that would fall under an insured's deductible in the event of a loss.

- The price of coverage rose slightly again last year in all areas of the state. In new Madrid, the cost of earthquake coverage has increased by over 500 percent since 2000. In two of the six New Madrid counties, prices increased by over 600 percent, and in one county, by over 700 percent.

- The market continued to contract over the past year, as two more companies exited the residential earthquake market. Since 2000, 67 home insurers have stopped writing earthquake insurance, while only 35 new carriers entered the market. The number of insurers with any earthquake coverage in force in MO fell from 122 to 92 since 2000. In the New Madrid region, the number fell from 81 to 61.

- Carriers representing one-third of the homeowners insurance market do not issue any new earthquake coverage in the New Madrid area. While an additional 46 percent of the market will issue new coverage in New Madrid, those carriers have significant underwriting restrictions that make many homes ineligible for coverage. Only 20 percent of the market issues new coverage in New Madrid on the same basis as coverage offered elsewhere in the state.

- Among the more common underwriting restrictions are

  a. Refusal to cover masonry or masonry-veneer homes

  b. Refusal to cover homes with various architectural features, such as multi-level homes

  c. Refusal to cover homes due to proximity to various hazards, such as homes located near dams or reservoirs.

  d. Refusal to insure homes based on landscape features, such as homes built on hillsides.

  e. Refusal to insure homes based on year of construction

  f. Refusal to insure homes with pre-existing damage or other evidence of natural aging, such as settlement of the home or cracks or other issues with the foundation

  Even when insurers do issue coverage in New Madrid and other high risk areas, they often require significantly higher deductibles, limit the amount of available coverage or place other additional restrictions on coverage.

- In 108 of Missouri's 115 counties, less than half of residences had earthquake coverage. In 79 counties, less than 20 percent of homes were covered.

**Missouri's Earthquake Risk**

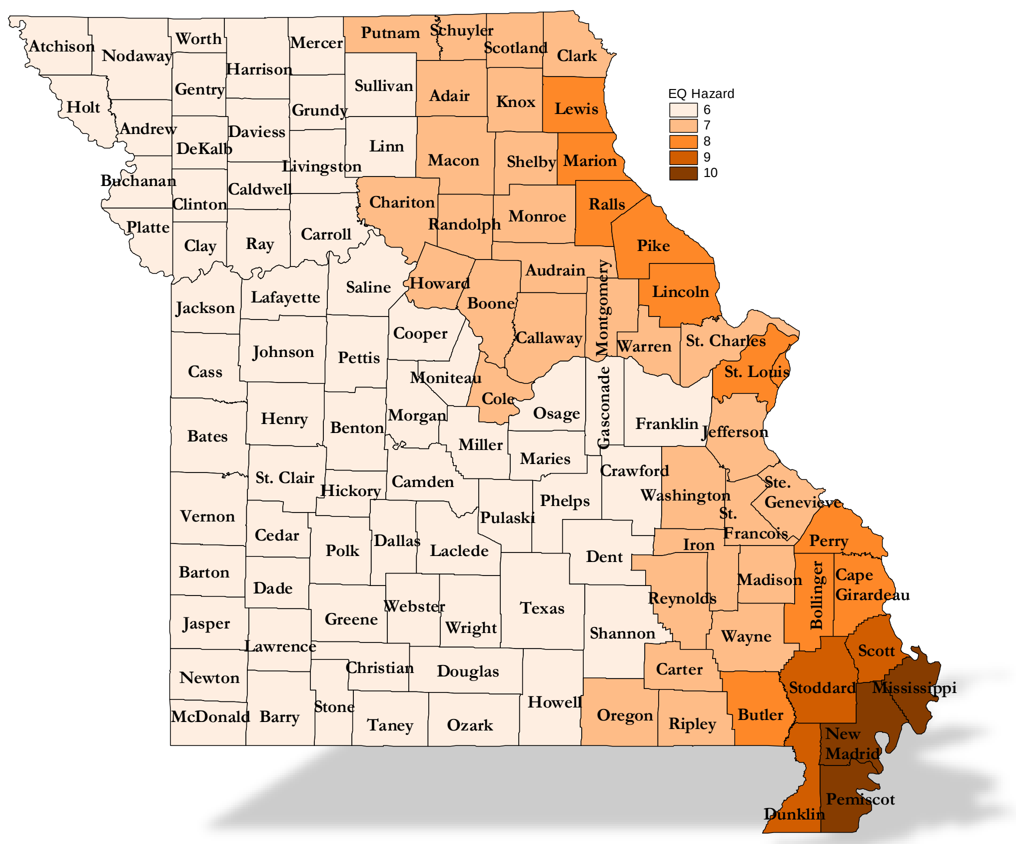
The primary earthquake threat in Missouri stems from the New Madrid fault located in the far southeast portion of the state. Throughout this report, data are presented for four Missouri risk areas:

1. The six-county New Madrid area consisting of the counties of Dunklin, Mississippi, New Madrid, Pemiscot, Scott, and Stoddard.

2. Other high risk areas, denoted by earthquake hazard level 8 on the 12 point Mercalli Scale.

3. Medium risk areas that rate 7 on the scale.

4. The relatively lower risk area comprised of the western portion of the state.



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**Schedule SAW-D-9**

**Continued Rising Costs**

The cost of earthquake coverage ticked up slightly between 2014 & 2015. In the New Madrid region, average premiums have increased by over 510% since 2000. Some New Madrid counties saw increases in excess of 600%-700%. Other high risk counties saw premium increase by almost 180%. These counties essentially include most of the Southeast quadrant of Missouri outside of New Madrid, and include the St. Louis area.

| Table 1A: Average Annual Premium for EQ Coverage, By Region | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Region** | **2000** | **2005** | **2010** | **2013** | **2014** | **2015** | **% Chg. 2000-2015** |
| New Madrid | $57 | $102 | $236 | $293 | $335 | $348 | 510.5% |
| Other High Risk | $63 | $99 | $155 | $175 | $175 | $176 | 179.4% |
| Medium Risk | $39 | $62 | $90 | $98 | $94 | $107 | 174.4% |
| Low Risk | $35 | $56 | $71 | $78 | $78 | $83 | 137.1% |
| **Difference, Zone1 - Zone 4** | **63.9%** | **81.5%** | **231.7%** | **276.7%** | **329.5%** | **319.3%** | |

| Table 1B: Average Annual Premium for EQ Coverage New Madrid Counties | | | | | | | |
|---|---|---|---|---|---|---|---|
| **County** | **2000** | **2005** | **2010** | **2013** | **2014** | **2015** | **2000-2015** |
| Dunklin | $57 | $112 | $234 | $311 | $394 | $412 | 622.8% |
| Mississippi | $52 | $97 | $235 | $269 | $317 | $329 | 532.7% |
| New Madrid | $54 | $85 | $281 | $350 | $364 | $370 | 585.2% |
| Pemiscot | $48 | $97 | $248 | $297 | $383 | $406 | 745.8% |
| Scott | $65 | $106 | $274 | $327 | $357 | $376 | 478.5% |
| Stoddard | $54 | $101 | $169 | $221 | $247 | $253 | 368.5% |

As a result of the substantially higher rate of premium increases in the New Madrid area, the gap in costs widened between high and low risk areas. In 2000, the price of coverage was only 64 percent higher in New Madrid compared to the lowest risk areas. In 2014 and 2015, costs were over 300 percent higher.



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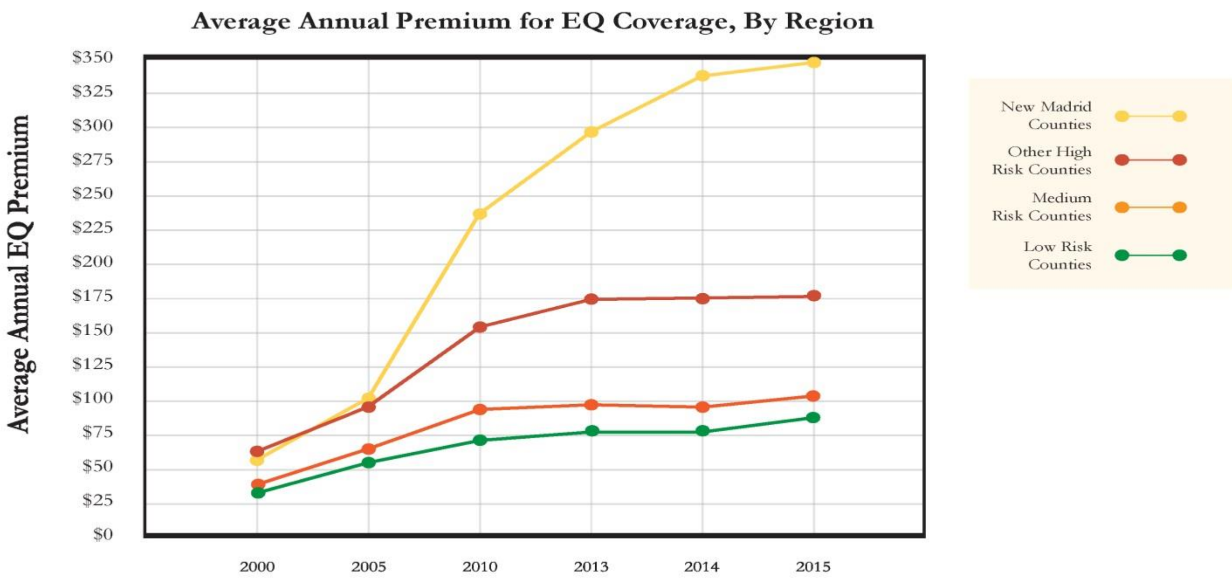
**Schedule SAW-D-9**




**Coverage Rates**

Coverage rates slipped another notch between 2014 and 2015. In 2014, less than one in five homes in the New Madrid area had earthquake coverage. Over the past year, coverage rates declined by another two percentage points from 19.9 percent to 17.8 percent. In four of the six New Madrid counties, fewer than 15 percent of residences were covered. This contrasts with a coverage rate of over 60 percent in 2000.

**Percent of Residences with Earthquake Coverage, by Region**
**(Includes Homeowners, Mobile Homes and Farmowners Coverage)**

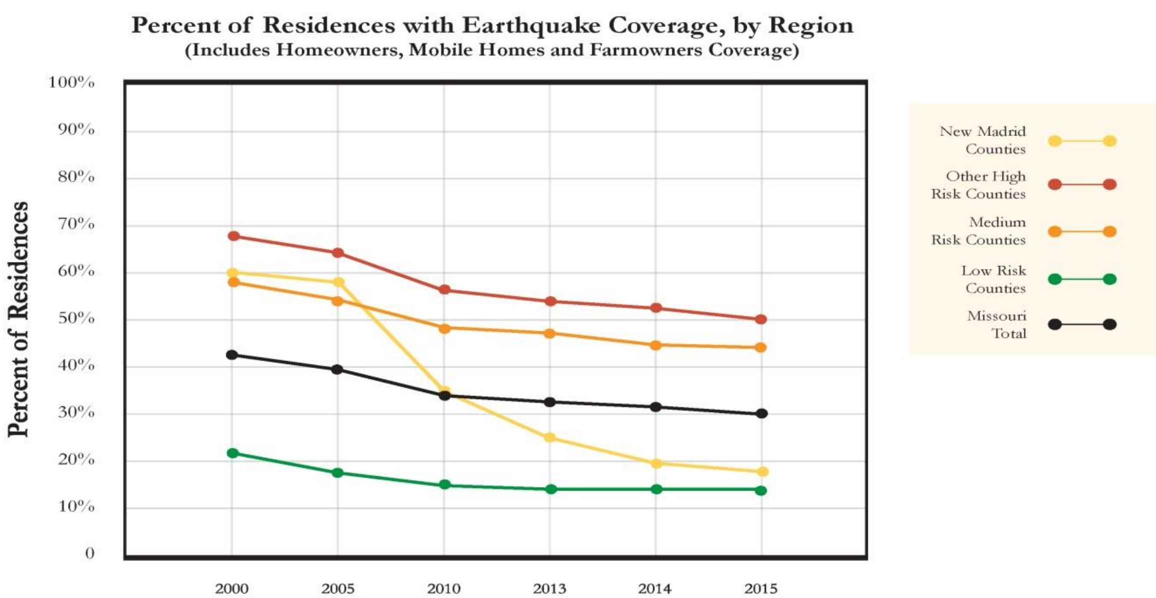
| Missouri Region | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | Percentage Point Difference, 2000-2015 |
|---|---|---|---|---|---|---|---|
| New Madrid | 60.2 | 57.1% | 34.3% | 25.9% | 19.9% | 17.8% | -42.4% |
| Other High Risk | 67.6 | 64.7% | 56.6% | 54.6% | 52.1% | 50.8% | -16.8% |
| Medium Risk | 58.9 | 55.6% | 48.5% | 47.6% | 45.8% | 45.1% | -13.8% |
| Low Risk | 22.1 | 17.8% | 15.5% | 15.7% | 14.9% | 14.2% | -7.9% |
| **Missouri Total** | **43.6** | **39.8%** | **34.2%** | **33.2%** | **31.3%** | **30.4%** | **-13.2%** |



**Public**
**Schedule SAW-D-9**

| Percent of Residences with Earthquake Coverage<br>New Madrid Counties | | | | | | | |
|---|---|---|---|---|---|---|---|
| **County** | **2000** | **2005** | **2010** | **2013** | **2014** | **2015** | **2000-2015** |
| Dunklin | 55.7% | 47.3% | 30.4% | 22.3% | 15.4% | 14.0% | -41.7% |
| Mississippi | 60.1% | 54.1% | 30.0% | 22.1% | 14.8% | 13.5% | -46.6% |
| New Madrid | 51.2% | 54.8% | 27.7% | 20.2% | 16.6% | 14.9% | -36.3% |
| Pemiscot | 49.4% | 45.7% | 21.1% | 15.6% | 14.1% | 12.8% | -36.6% |
| Scott | 70.0% | 67.9% | 41.5% | 33.5% | 26.3% | 22.7% | -47.3% |
| Stoddard | 63.9% | 61.4% | 42.2% | 30.6% | 22.6% | 20.7% | -43.2% |

Coverage was greater in other high-risk areas of the state, including the St. Louis area. In St. Louis County, 58 percent of residences had earthquake insurance in 2015. In neighboring St. Louis City, however, fewer than one-third had such coverage. Refer to the appendices for coverage rates for each county.



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Statewide, 79 of Missouri's 115 counties had coverage rates of less than 20 percent. In only 7 counties did coverage rates surpass 50 percent.

| Counties by EQ Coverage Rates | | |
|---|---|---|
| **% of Dwellings W EQ Coverage** | **Number of Counties** | **Number of Homes** |
| Less than 10% | 33 | 130,966 |
| 10% to 19.9% | 46 | 689,921 |
| 20% to 29.9% | 17 | 173,891 |
| 30% to 39.9% | 9 | 114,941 |
| 40% to 49.9% | 3 | 57,283 |
| 50% to 59.9% | 4 | 410,977 |
| 60% to 69.9% | 3 | 123,544 |
| **Total** | **115** | **1,701,524** |

In moderate to high-risk areas, including all counties with a rating of seven or higher on the Mercalli Scale (see map, page 3), well over half a million private residences (excluding rental properties) lacked earthquake coverage in 2015. The estimated value of these uninsured residences totaled $90 billion, excluding the value of the contents. Even individuals that have earthquake coverage are at risk of significant loss. Assuming an average deductible equal to 15 percent of the value of the insured dwelling, property worth $15 billion is self-insured in moderate to high risk areas. Together, these amounts (homes which are completely uninsured for earthquake + risk retained under the typical deductible) total to more than $105 billion.

| Estimated Uninsured Residential Property Value in Missouri 2015 | | | | |
|---|---|---|---|---|
| **Earthquake Zone (Mercalli Scale)** | **Uninsured Dwellings** | **Uninsured Property Values** | **Value Uninsured Under A 15% Deductible** | **Total Uninsured Risk** |
| 7 | 305,431 | $47,353,468,750 | $6,648,506,375 | $54,001,975,125 |
| 8 | 229,635 | $38,081,625,833 | $8,102,170,188 | $46,183,796,021 |
| 9 | 29,246 | $3,584,477,917 | $171,211,000 | $3,755,688,917 |
| 10 | 12,405 | $1,320,863,333 | $43,567,813 | $1,364,431,146 |
| **Total** | 576,717 | 90,340,435,833 | 14,965,455,376 | $105,305,891,209 |

**Declining Availability of Coverage**

Based on survey responses from carriers representing over 90 percent of the homeowners market, most insurers still sell earthquake coverage in at least in some areas of the state. Weighting responses by market share,[1] approximately 86 percent of the market still offers the coverage on both renewal and new business. However, coverage is far less available within the high-risk New Madrid area. Among respondents, nearly one-third of the market does not write new earthquake coverage in New Madrid. An additional 44 percent of the market places significant additional underwriting restrictions on residences in the area. Only about a fifth of the market issues coverage in New Madrid on the same terms as elsewhere in the state.

| **Availability of EQ Coverage in New Madrid** | **No of Companies** | **Residential Market Share, New Madrid** |
|---|---|---|
| No new or renewal in New Madrid* | 19 | 30.1% |
| Renewal only in New Madrid | 5 | 4.8% |
| New & Renewal, Addl UW Restrictions in New Madrid | 5 | 44.6% |
| New & Renewal, no addl UW Restrictions in New Madrid | 17 | 20.6% |
| **Total** | 46 | 100.0% |

*Includes insurers that do not issue new or renewal business anywhere in the state.

Underwriting restrictions can be significant, making many types of homes ineligible for coverage. Among the more common underwriting restrictions, based on survey responses, are:

a. Refusal to cover masonry or masonry-veneer homes

b. Refusal to cover homes with various architectural features, such as multi-level homes

c. Refusal to cover homes due to proximity to various hazards, such as homes located near dams or reservoirs.

d. Refusal to insure homes based on landscape features, such as homes built on hillsides.

e. Refusal to insure homes based on year of construction

f. Refusal to insure homes with pre-existing damage or other evidence of natural aging, such as settlement of the home or cracks or other issues with the foundation

Even when coverage is available to residents of the New Madrid area, it often comes with significantly higher deductibles, stacked deductibles that apply separately to building and contents, limits on the amount of available coverage or other additional restrictions on coverage.

[1] The market shares of survey respondents are scaled so that they total to 100.

Among insurers that issue new **<u>or</u>** renewal business in New Madrid, over 50% (weighted by premium) require a minimum deductible equal 15% of the value of the dwelling, or higher. All respondents set deductibles levels at some percentage of dwelling value, except one insurer that required a flat dollar amount. More than one-third of respondents (37%) required a deductible of 20% to 25%.

**Minimum required deductible in New Madrid**
**Insurers that issue new <u>or</u> renewal business in New Madrid**
**Survey responses weighted by market share**

| Deductible | Mkt Share of Respondents |
|---|---|
| 5% | 0.9% |
| 10% | 48.9% |
| 15% | 13.3% |
| 20% | 28.3% |
| 25% | 8.7% |
| Flat $ Amt | 0.1% |
| **Total** | **100%** |



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**Insurers Offering Earthquake Insurance**

Over just the last year, 3 more companies left the EQ market, while one company entered the market. Over the entire period 2000-2015, 67 companies exited the market, while 35 new companies entered the market. The companies that left had insured 128,501 dwellings in 2000, while new entrants insured only 53,305 by 2015.

| | # of Companies | | Insured Residences | |
|---|---|---|---|---|
| **Period** | **Left EQ Market** | **New Mkt Entrants** | **By Exiting Companies, At Start of Period** | **By New Entrants, At End of Period** |
| 2000-2014 | 64 | 34 | 113,923 | 53,923 |
| 2000-2015 | 67 | 35 | 128,501 | 53,305 |

The number of companies that reported written premium in the six-county New Madrid area declined from 81 to 61 between 2000 and 2015. For Missouri as a whole, the number declined from 122 to 92 during the same period.

**Companies With EQ Coverage in Force in 2015 by Region**

| | # of Companies | |
|---|---|---|
| **Region** | **2000** | **2015** |
| New Madrid Counties | 81 | 61 |
| Other High Risk Counties | 122 | 94 |
| Medium Risk Counties | 121 | 93 |
| Low Risk Counties | 122 | 92 |
| **Missouri Total** | **125** | **94** |

Appendix A

| Average Annual Premium for Earthquake Insurance (Counties in the New Madrid area are highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | 2000-2015 |
| 1 | Adair | $31 | $52 | $58 | $60 | $58 | $62 | 100.0% |
| 3 | Andrew | $30 | $51 | $52 | $57 | $56 | $58 | 93.3% |
| 5 | Atchison | $35 | $52 | $65 | $69 | $71 | $80 | 128.6% |
| 7 | Audrain | $30 | $50 | $59 | $70 | $67 | $70 | 133.3% |
| 9 | Barry | $30 | $50 | $64 | $69 | $78 | $80 | 166.7% |
| 11 | Barton | $27 | $42 | $47 | $55 | $63 | $65 | 140.7% |
| 13 | Bates | $33 | $62 | $83 | $80 | $80 | $82 | 148.5% |
| 15 | Benton | $26 | $38 | $46 | $50 | $56 | $58 | 123.1% |
| 17 | Bollinger | $48 | $82 | $105 | $118 | $112 | $122 | 154.2% |
| 19 | Boone | $44 | $77 | $89 | $93 | $90 | $93 | 111.4% |
| 21 | Buchanan | $34 | $52 | $63 | $68 | $67 | $70 | 105.9% |
| 23 | Butler | $64 | $100 | $175 | $229 | $237 | $250 | 290.6% |
| 25 | Caldwell | $29 | $59 | $65 | $73 | $68 | $65 | 124.1% |
| 27 | Callaway | $32 | $55 | $66 | $70 | $70 | $73 | 128.1% |
| 29 | Camden | $36 | $55 | $76 | $81 | $86 | $88 | 144.4% |
| 31 | Cape Girardeau | $68 | $107 | $178 | $224 | $229 | $238 | 250.0% |
| 33 | Carroll | $30 | $37 | $48 | $54 | $58 | $59 | 96.7% |
| 35 | Carter | $34 | $61 | $101 | $113 | $97 | $102 | 200.0% |
| 37 | Cass | $35 | $57 | $68 | $77 | $80 | $80 | 128.6% |
| 39 | Cedar | $31 | $48 | $59 | $61 | $67 | $71 | 129.0% |
| 41 | Chariton | $29 | $56 | $66 | $56 | $53 | $55 | 89.7% |
| 43 | Christian | $37 | $60 | $74 | $78 | $82 | $86 | 132.4% |
| 45 | Clark | $29 | $41 | $50 | $54 | $56 | $57 | 96.6% |
| 47 | Clay | $36 | $55 | $62 | $69 | $70 | $73 | 102.8% |
| 49 | Clinton | $34 | $55 | $57 | $62 | $60 | $63 | 85.3% |
| 51 | Cole | $43 | $62 | $77 | $83 | $90 | $93 | 116.3% |
| 53 | Cooper | $33 | $49 | $61 | $68 | $77 | $82 | 148.5% |
| 55 | Crawford | $30 | $54 | $63 | $69 | $65 | $68 | 126.7% |
| 57 | Dade | $27 | $43 | $55 | $62 | $71 | $68 | 151.9% |
| 59 | Dallas | $28 | $44 | $53 | $59 | $71 | $73 | 160.7% |
| 61 | Daviess | $31 | $61 | $67 | $72 | $72 | $74 | 138.7% |
| 63 | DeKalb | $37 | $55 | $57 | $70 | $65 | $68 | 83.8% |
| 65 | Dent | $31 | $53 | $66 | $66 | $65 | $66 | 112.9% |
| 67 | Douglas | $27 | $39 | $42 | $50 | $57 | $58 | 114.8% |
| 69 | Dunklin | $57 | $112 | $234 | $311 | $394 | $412 | 622.8% |
| 71 | Franklin | $37 | $64 | $96 | $105 | $108 | $111 | 200.0% |
| 73 | Gasconade | $29 | $47 | $65 | $76 | $78 | $80 | 175.9% |

| Average Annual Premium for Earthquake Insurance (Counties in the New Madrid area are highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | 2000-2015 |
| 75 | Gentry | $32 | $59 | $75 | $81 | $70 | $72 | 125.0% |
| 77 | Greene | $39 | $60 | $73 | $79 | $83 | $88 | 125.6% |
| 79 | Grundy | $27 | $40 | $56 | $65 | $71 | $75 | 177.8% |
| 81 | Harrison | $24 | $33 | $44 | $56 | $63 | $67 | 179.2% |
| 83 | Henry | $30 | $51 | $62 | $65 | $66 | $65 | 116.7% |
| 85 | Hickory | $24 | $34 | $43 | $49 | $55 | $58 | 141.7% |
| 87 | Holt | $35 | $55 | $73 | $68 | $75 | $79 | 125.7% |
| 89 | Howard | $29 | $54 | $64 | $70 | $67 | $65 | 124.1% |
| 91 | Howell | $31 | $62 | $76 | $80 | $70 | $72 | 132.3% |
| 93 | Iron | $32 | $50 | $71 | $77 | $74 | $77 | 140.6% |
| 95 | Jackson | $41 | $62 | $73 | $82 | $85 | $86 | 109.8% |
| 97 | Jasper | $31 | $47 | $60 | $68 | $73 | $76 | 145.2% |
| 99 | Jefferson | $38 | $59 | $88 | $94 | $102 | $106 | 178.9% |
| 101 | Johnson | $33 | $59 | $64 | $74 | $75 | $77 | 133.3% |
| 103 | Knox | $27 | $50 | $54 | $55 | $53 | $60 | 122.2% |
| 105 | Laclede | $30 | $46 | $60 | $65 | $71 | $73 | 143.3% |
| 107 | Lafayette | $29 | $50 | $57 | $65 | $67 | $70 | 141.4% |
| 109 | Lawrence | $27 | $44 | $63 | $69 | $72 | $75 | 177.8% |
| 111 | Lewis | $25 | $48 | $60 | $63 | $55 | $58 | 132.0% |
| 113 | Lincoln | $34 | $59 | $74 | $79 | $77 | $80 | 135.3% |
| 115 | Linn | $27 | $37 | $40 | $44 | $46 | $47 | 74.1% |
| 117 | Livingston | $28 | $41 | $47 | $49 | $55 | $57 | 103.6% |
| 119 | McDonald | $23 | $39 | $50 | $56 | $56 | $60 | 160.9% |
| 121 | Macon | $27 | $50 | $52 | $54 | $53 | $56 | 107.4% |
| 123 | Madison | $34 | $55 | $82 | $94 | $102 | $106 | 211.8% |
| 125 | Maries | $29 | $52 | $62 | $66 | $60 | $63 | 117.2% |
| 127 | Marion | $29 | $50 | $60 | $64 | $62 | $64 | 120.7% |
| 129 | Mercer | $28 | $39 | $50 | $59 | $55 | $54 | 92.9% |
| 131 | Miller | $26 | $46 | $57 | $60 | $64 | $66 | 153.8% |
| 133 | Mississippi | $52 | $97 | $235 | $269 | $317 | $329 | 532.7% |
| 135 | Moniteau | $27 | $50 | $59 | $62 | $66 | $67 | 148.1% |
| 137 | Monroe | $26 | $49 | $57 | $61 | $55 | $58 | 123.1% |
| 139 | Montgomery | $31 | $54 | $68 | $73 | $70 | $76 | 145.2% |
| 141 | Morgan | $26 | $42 | $51 | $55 | $61 | $64 | 146.2% |
| 143 | New Madrid | $54 | $85 | $281 | $350 | $364 | $370 | 585.2% |
| 145 | Newton | $27 | $42 | $55 | $61 | $65 | $67 | 148.1% |
| 147 | Nodaway | $33 | $58 | $62 | $65 | $62 | $65 | 97.0% |
| 149 | Oregon | $33 | $56 | $69 | $78 | $82 | $86 | 160.6% |
| 151 | Osage | $32 | $85 | $107 | $110 | $93 | $101 | 215.6% |
| 153 | Ozark | $28 | $42 | $45 | $51 | $56 | $54 | 92.9% |

| Average Annual Premium for Earthquake Insurance (Counties in the New Madrid area are highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **FIPS Code** | **County** | **2000** | **2005** | **2010** | **2013** | **2014** | **2015** | **2000-2015** |
| 155 | Pemiscot | $48 | $97 | $248 | $297 | $383 | $406 | 745.8% |
| 157 | Perry | $42 | $63 | $95 | $128 | $132 | $134 | 219.0% |
| 159 | Pettis | $27 | $42 | $51 | $57 | $65 | $68 | 151.9% |
| 161 | Phelps | $32 | $54 | $68 | $74 | $72 | $77 | 140.6% |
| 163 | Pike | $36 | $61 | $75 | $84 | $74 | $76 | 111.1% |
| 165 | Platte | $46 | $70 | $81 | $92 | $95 | $98 | 113.0% |
| 167 | Polk | $31 | $47 | $60 | $66 | $71 | $73 | 135.5% |
| 169 | Pulaski | $29 | $58 | $74 | $88 | $87 | $86 | 196.6% |
| 171 | Putnam | $30 | $56 | $67 | $78 | $79 | $92 | 206.7% |
| 173 | Ralls | $27 | $45 | $57 | $59 | $56 | $57 | 111.1% |
| 175 | Randolph | $25 | $41 | $52 | $57 | $56 | $60 | 140.0% |
| 177 | Ray | $32 | $52 | $64 | $67 | $64 | $68 | 112.5% |
| 179 | Reynolds | $31 | $63 | $86 | $78 | $79 | $79 | 154.8% |
| 181 | Ripley | $38 | $59 | $82 | $104 | $114 | $122 | 221.1% |
| 183 | Saint Charles | $42 | $66 | $100 | $109 | $117 | $121 | 188.1% |
| 185 | Saint Clair | $28 | $45 | $55 | $61 | $73 | $74 | 164.3% |
| 186 | Ste. Genevieve | $42 | $62 | $87 | $115 | $119 | $122 | 190.5% |
| 187 | Saint Francois | $35 | $61 | $79 | $91 | $90 | $93 | 165.7% |
| 189 | Saint Louis | $64 | $101 | $157 | $177 | $177 | $177 | 176.6% |
| 195 | Saline | $28 | $39 | $52 | $56 | $60 | $62 | 121.4% |
| 197 | Schuyler | $27 | $45 | $58 | $64 | $59 | $60 | 122.2% |
| 199 | Scotland | $27 | $44 | $56 | $67 | $62 | $69 | 155.6% |
| 201 | Scott | $65 | $106 | $274 | $327 | $357 | $376 | 478.5% |
| 203 | Shannon | $28 | $53 | $73 | $82 | $92 | $93 | 232.1% |
| 205 | Shelby | $27 | $49 | $56 | $59 | $52 | $57 | 111.1% |
| 207 | Stoddard | $54 | $101 | $169 | $221 | $247 | $253 | 368.5% |
| 209 | Stone | $37 | $54 | $72 | $77 | $82 | $84 | 127.0% |
| 211 | Sullivan | $22 | $36 | $41 | $43 | $50 | $55 | 150.0% |
| 213 | Taney | $34 | $49 | $61 | $66 | $71 | $72 | 111.8% |
| 215 | Texas | $30 | $57 | $68 | $79 | $74 | $76 | 153.3% |
| 217 | Vernon | $28 | $44 | $54 | $61 | $66 | $66 | 135.7% |
| 219 | Warren | $36 | $56 | $80 | $84 | $88 | $91 | 152.8% |
| 221 | Washington | $30 | $44 | $54 | $63 | $66 | $69 | 130.0% |
| 223 | Wayne | $34 | $53 | $84 | $101 | $108 | $113 | 232.4% |
| 225 | Webster | $33 | $54 | $77 | $78 | $86 | $88 | 166.7% |
| 227 | Worth | $29 | $32 | $52 | $49 | $57 | $61 | 110.3% |
| 229 | Wright | $32 | $44 | $52 | $60 | $63 | $65 | 103.1% |
| 510 | Saint Louis City | $68 | $103 | $167 | $185 | $184 | $180 | 164.7% |
| **999** | **Missouri** | **$50** | **$79** | **$119** | **$131** | **$134** | **$135** | **170.0%** |



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**Appendix B**

| Percent of Residences With EQ Coverage, by County (Counties in the New Madrid Region Are Highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **County FIPS Code** | **County** | **2000** | **2005** | **2010** | **2013** | **2014** | **2015** | **2000-2015** |
| 1 | Adair | 29.1% | 22.9% | 20.1% | 18.6% | 17.8% | 17.0% | -12.1% |
| 3 | Andrew | 18.5% | 14.9% | 12.5% | 12.0% | 11.2% | 10.7% | -7.8% |
| 5 | Atchison | 10.2% | 8.4% | 8.0% | 6.9% | 6.9% | 6.7% | -3.5% |
| 7 | Audrain | 36.2% | 31.9% | 30.8% | 29.3% | 28.1% | 26.5% | -9.7% |
| 9 | Barry | 15.4% | 11.7% | 8.9% | 9.2% | 8.8% | 8.5% | -6.9% |
| 11 | Barton | 12.6% | 9.8% | 7.8% | 7.9% | 7.1% | 7.0% | -5.6% |
| 13 | Bates | 13.0% | 8.6% | 5.9% | 6.0% | 5.6% | 5.4% | -7.6% |
| 15 | Benton | 22.4% | 16.9% | 14.7% | 15.0% | 13.9% | 13.0% | -9.4% |
| 17 | Bollinger | 62.4% | 57.1% | 38.9% | 37.0% | 33.5% | 32.9% | -29.5% |
| 19 | Boone | 37.6% | 29.8% | 27.0% | 26.5% | 25.7% | 25.0% | -12.6% |
| 21 | Buchanan | 16.5% | 12.9% | 11.2% | 10.4% | 9.9% | 9.6% | -6.9% |
| 23 | Butler | 57.3% | 51.8% | 33.8% | 27.1% | 22.4% | 20.6% | -36.7% |
| 25 | Caldwell | 11.4% | 7.8% | 6.6% | 6.7% | 6.7% | 6.5% | -4.9% |
| 27 | Callaway | 37.5% | 31.9% | 27.0% | 26.6% | 25.6% | 25.4% | -12.1% |
| 29 | Camden | 42.1% | 40.0% | 37.5% | 37.2% | 35.3% | 34.7% | -7.4% |
| 31 | Cape Girardeau | 81.2% | 79.5% | 71.9% | 67.5% | 60.8% | 59.3% | -21.9% |
| 33 | Carroll | 23.0% | 16.6% | 10.6% | 11.2% | 10.9% | 9.8% | -13.2% |
| 35 | Carter | 47.7% | 42.4% | 20.7% | 18.4% | 16.7% | 16.0% | -31.7% |
| 37 | Cass | 19.4% | 13.9% | 11.6% | 11.7% | 11.3% | 10.9% | -8.5% |
| 39 | Cedar | 14.3% | 11.7% | 9.1% | 9.6% | 8.6% | 8.0% | -6.3% |
| 41 | Chariton | 24.0% | 18.3% | 15.9% | 17.0% | 15.8% | 15.6% | -8.4% |
| 43 | Christian | 16.1% | 11.6% | 11.8% | 12.8% | 11.4% | 10.6% | -5.5% |
| 45 | Clark | 22.3% | 17.1% | 12.6% | 11.4% | 10.7% | 9.7% | -12.6% |
| 47 | Clay | 20.5% | 15.2% | 13.0% | 13.0% | 12.5% | 12.2% | -8.3% |
| 49 | Clinton | 15.3% | 10.7% | 8.8% | 8.9% | 8.5% | 7.8% | -7.5% |
| 51 | Cole | 43.5% | 37.9% | 32.5% | 31.5% | 29.7% | 29.2% | -14.3% |
| 53 | Cooper | 26.9% | 20.5% | 15.7% | 16.4% | 15.9% | 15.9% | -11.0% |
| 55 | Crawford | 45.4% | 42.9% | 36.2% | 34.4% | 33.0% | 31.9% | -13.5% |
| 57 | Dade | 12.5% | 9.1% | 7.5% | 7.9% | 7.4% | 6.8% | -5.7% |
| 59 | Dallas | 15.8% | 9.7% | 6.6% | 6.6% | 6.1% | 5.9% | -9.9% |
| 61 | Daviess | 9.9% | 6.2% | 5.2% | 5.8% | 5.8% | 5.5% | -4.4% |
| 63 | DeKalb | 8.9% | 6.5% | 4.3% | 4.6% | 4.6% | 4.2% | -4.7% |
| 65 | Dent | 32.3% | 24.8% | 20.4% | 19.1% | 18.4% | 18.0% | -14.3% |
| 67 | Douglas | 12.6% | 10.5% | 10.4% | 10.0% | 8.9% | 8.9% | -3.7% |
| 69 | Dunklin | 55.7% | 47.3% | 30.4% | 22.3% | 15.4% | 14.0% | -41.7% |
| 71 | Franklin | 64.5% | 61.4% | 52.6% | 51.7% | 49.5% | 49.1% | -15.4% |
| 73 | Gasconade | 48.9% | 48.1% | 42.9% | 40.7% | 38.8% | 38.0% | -10.9% |

| Percent of Residences With EQ Coverage, by County<br>(Counties in the New Madrid Region Are Highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **County FIPS Code** | **County** | **2000** | **2005** | **2010** | **2013** | **2014** | **2015** | **2000-2015** |
| 75 | Gentry | 12.9% | 8.8% | 7.2% | 7.0% | 6.8% | 6.6% | -6.3% |
| 77 | Greene | 18.7% | 14.1% | 13.0% | 13.5% | 12.5% | 11.7% | -7.0% |
| 79 | Grundy | 12.8% | 9.9% | 7.3% | 7.2% | 6.8% | 6.7% | -6.1% |
| 81 | Harrison | 8.7% | 6.1% | 4.4% | 4.3% | 4.4% | 4.5% | -4.2% |
| 83 | Henry | 20.1% | 16.6% | 14.6% | 14.9% | 13.8% | 13.6% | -6.5% |
| 85 | Hickory | 19.4% | 14.7% | 10.9% | 11.0% | 10.2% | 9.8% | -9.6% |
| 87 | Holt | 9.4% | 5.4% | 4.8% | 4.4% | 4.6% | 4.3% | -5.1% |
| 89 | Howard | 32.5% | 26.9% | 23.6% | 23.4% | 23.2% | 22.8% | -9.7% |
| 91 | Howell | 33.5% | 27.9% | 24.2% | 24.2% | 23.4% | 23.1% | -10.4% |
| 93 | Iron | 56.8% | 49.4% | 36.9% | 36.1% | 35.7% | 35.9% | -20.9% |
| 95 | Jackson | 17.1% | 12.9% | 11.3% | 11.7% | 11.4% | 11.1% | -6.0% |
| 97 | Jasper | 18.2% | 15.6% | 13.8% | 16.5% | 14.9% | 14.0% | -4.2% |
| 99 | Jefferson | 72.8% | 70.0% | 60.0% | 59.0% | 57.2% | 56.6% | -16.2% |
| 101 | Johnson | 20.1% | 14.5% | 12.2% | 13.2% | 12.7% | 12.1% | -8.0% |
| 103 | Knox | 16.4% | 13.3% | 11.8% | 11.7% | 10.8% | 10.3% | -6.1% |
| 105 | Laclede | 28.4% | 23.4% | 20.6% | 19.6% | 18.0% | 17.5% | -10.9% |
| 107 | Lafayette | 23.2% | 16.1% | 13.3% | 13.9% | 13.6% | 13.1% | -10.1% |
| 109 | Lawrence | 15.0% | 10.2% | 7.8% | 9.2% | 8.5% | 8.0% | -7.0% |
| 111 | Lewis | 22.9% | 18.5% | 16.1% | 15.9% | 14.1% | 13.4% | -9.5% |
| 113 | Lincoln | 53.8% | 49.8% | 44.4% | 44.1% | 42.1% | 41.7% | -12.1% |
| 115 | Linn | 30.6% | 27.0% | 23.7% | 22.1% | 20.8% | 19.6% | -11.0% |
| 117 | Livingston | 15.7% | 11.1% | 11.6% | 10.8% | 10.5% | 9.8% | -5.9% |
| 119 | McDonald | 13.5% | 7.5% | 5.8% | 6.5% | 5.5% | 5.6% | -7.9% |
| 121 | Macon | 24.7% | 17.9% | 17.3% | 16.6% | 15.8% | 14.6% | -10.1% |
| 123 | Madison | 65.7% | 59.9% | 39.5% | 38.8% | 37.2% | 37.9% | -27.8% |
| 125 | Maries | 31.0% | 29.7% | 22.4% | 23.9% | 24.3% | 23.9% | -7.1% |
| 127 | Marion | 41.5% | 36.2% | 33.9% | 32.1% | 29.7% | 28.7% | -12.8% |
| 129 | Mercer | 10.2% | 7.2% | 5.7% | 5.6% | 5.3% | 5.3% | -4.9% |
| 131 | Miller | 24.3% | 20.5% | 17.4% | 18.3% | 16.9% | 16.4% | -7.9% |
| 133 | Mississippi | 60.1% | 54.1% | 30.0% | 22.1% | 14.8% | 13.5% | -46.6% |
| 135 | Moniteau | 24.2% | 20.3% | 19.1% | 18.3% | 17.6% | 16.4% | -7.8% |
| 137 | Monroe | 31.6% | 25.0% | 21.3% | 20.2% | 18.5% | 18.0% | -13.6% |
| 139 | Montgomery | 47.2% | 42.4% | 36.6% | 34.2% | 33.2% | 31.7% | -15.5% |
| 141 | Morgan | 35.6% | 33.7% | 30.4% | 29.2% | 26.8% | 26.0% | -9.6% |
| 143 | New Madrid | 51.2% | 54.8% | 27.7% | 20.2% | 16.6% | 14.9% | -36.3% |
| 145 | Newton | 14.0% | 9.6% | 8.5% | 10.3% | 9.2% | 9.0% | -5.0% |
| 147 | Nodaway | 7.1% | 5.2% | 4.7% | 5.2% | 4.7% | 4.4% | -2.7% |
| 149 | Oregon | 42.7% | 36.8% | 24.1% | 23.9% | 24.1% | 23.4% | -19.3% |
| 151 | Osage | 33.3% | 28.4% | 23.8% | 22.6% | 21.8% | 20.6% | -12.7% |
| 153 | Ozark | 18.5% | 15.8% | 14.1% | 14.1% | 13.6% | 13.1% | -5.4% |

| Percent of Residences With EQ Coverage, by County (Counties in the New Madrid Region Are Highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| County FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | 2000-2015 |
| 155 | Pemiscot | 49.4% | 45.7% | 21.1% | 15.6% | 14.1% | 12.8% | -36.6% |
| 157 | Perry | 77.4% | 79.2% | 71.9% | 69.2% | 68.5% | 66.9% | -10.5% |
| 159 | Pettis | 30.9% | 25.3% | 19.2% | 17.7% | 16.7% | 15.7% | -15.2% |
| 161 | Phelps | 34.7% | 28.9% | 25.6% | 25.8% | 24.7% | 24.2% | -10.5% |
| 163 | Pike | 41.3% | 35.8% | 30.3% | 27.9% | 27.0% | 25.3% | -16.0% |
| 165 | Platte | 18.8% | 14.3% | 12.3% | 12.7% | 12.2% | 12.0% | -6.8% |
| 167 | Polk | 17.8% | 11.9% | 10.5% | 11.3% | 10.0% | 9.8% | -8.0% |
| 169 | Pulaski | 25.9% | 18.9% | 13.4% | 14.2% | 13.4% | 13.1% | -12.8% |
| 171 | Putnam | 16.5% | 9.9% | 6.9% | 7.2% | 7.2% | 7.3% | -9.2% |
| 173 | Ralls | 31.2% | 27.1% | 25.7% | 26.0% | 25.7% | 24.4% | -6.8% |
| 175 | Randolph | 30.9% | 24.9% | 20.5% | 18.9% | 17.8% | 16.9% | -14.0% |
| 177 | Ray | 19.0% | 14.1% | 11.4% | 11.7% | 10.9% | 10.7% | -8.3% |
| 179 | Reynolds | 42.4% | 32.6% | 21.4% | 21.1% | 18.8% | 18.7% | -23.7% |
| 181 | Ripley | 44.3% | 41.7% | 24.4% | 23.0% | 19.5% | 17.9% | -26.4% |
| 183 | Saint Charles | 79.2% | 75.4% | 67.0% | 66.4% | 64.1% | 63.3% | -15.9% |
| 185 | Saint Clair | 14.9% | 9.8% | 6.0% | 5.8% | 6.1% | 6.0% | -8.9% |
| 186 | Ste. Genevieve | 76.1% | 75.9% | 68.7% | 66.3% | 64.6% | 64.0% | -12.1% |
| 187 | Saint Francois | 65.4% | 64.5% | 56.7% | 54.4% | 51.2% | 50.8% | -14.6% |
| 189 | Saint Louis | 74.4% | 70.7% | 62.9% | 61.0% | 58.9% | 57.8% | -16.6% |
| 195 | Saline | 25.7% | 21.6% | 19.3% | 19.2% | 19.0% | 18.1% | -7.6% |
| 197 | Schuyler | 13.9% | 12.5% | 9.5% | 7.0% | 6.2% | 6.3% | -7.6% |
| 199 | Scotland | 20.9% | 13.8% | 12.1% | 10.8% | 10.1% | 9.5% | -11.4% |
| 201 | Scott | 70.0% | 67.9% | 41.5% | 33.5% | 26.3% | 22.7% | -47.3% |
| 203 | Shannon | 31.3% | 22.3% | 19.0% | 17.8% | 17.6% | 17.1% | -14.2% |
| 205 | Shelby | 21.9% | 16.0% | 14.4% | 14.9% | 14.9% | 14.3% | -7.6% |
| 207 | Stoddard | 63.9% | 61.4% | 42.2% | 30.6% | 22.6% | 20.7% | -43.2% |
| 209 | Stone | 18.1% | 15.2% | 14.6% | 15.5% | 15.1% | 14.5% | -3.6% |
| 211 | Sullivan | 14.9% | 9.3% | 7.1% | 6.5% | 5.9% | 5.7% | -9.2% |
| 213 | Taney | 20.2% | 18.1% | 17.0% | 17.5% | 17.1% | 16.5% | -3.7% |
| 215 | Texas | 24.6% | 18.9% | 14.2% | 13.9% | 12.6% | 11.8% | -12.8% |
| 217 | Vernon | 17.0% | 12.2% | 9.8% | 9.5% | 9.1% | 8.8% | -8.2% |
| 219 | Warren | 60.7% | 59.3% | 49.5% | 49.8% | 49.5% | 48.7% | -12.0% |
| 221 | Washington | 53.9% | 48.2% | 37.2% | 38.4% | 37.1% | 36.0% | -17.9% |
| 223 | Wayne | 51.9% | 43.1% | 25.1% | 21.9% | 19.9% | 18.9% | -33.0% |
| 225 | Webster | 17.8% | 13.1% | 11.5% | 12.3% | 11.2% | 10.9% | -6.9% |
| 227 | Worth | 7.8% | 5.3% | 4.8% | 6.2% | 5.2% | 4.4% | -3.4% |
| 229 | Wright | 23.9% | 18.0% | 13.9% | 13.1% | 12.2% | 11.7% | -12.2% |
| 510 | Saint Louis City | 46.1% | 45.9% | 36.2% | 34.8% | 32.2% | 30.5% | -15.6% |
| **999** | **Missouri Total** | **43.6%** | **39.8%** | **34.2%** | **33.2%** | **31.3%** | **30.4%** | **-13.2%** |



**Public**

**Schedule SAW-D-9**

## INSURERS WHO DO NOT PROVIDE EARTHQUAKE INSURANCE

| | Southeast MO | St. Louis | Kansas City | Springfield | Columbia |
|---|---|---|---|---|---|
| Allstate Indemnity Comp. | X | X | X | X | X |
| Allstate Ins. Comp. | X | X | X | X | X |
| Allstate Property & Casualty Ins. Comp. | X | X | X | X | X |
| Cameron Mutual Ins. Comp. | X | X | X | X | X |
| Cameron National Ins. Comp. | X | X | X | X | X |
| Farm Bureau Town & Country IC | X | X | X | X | X |
| Garrison Property & Casualty Ins. Comp | X | X | X | X | X |
| Mid Century Ins. Comp. | X | X | X | X | X |
| United Home Ins. Comp. | X | X | X | X | X |

## INSURERS WHO DO PROVIDE EARTHQUAKE INSURANCE

| | Southeast MO | St. Louis | Kansas City | Springfield | Columbia |
|---|---|---|---|---|---|
| ACUITY, A Mutual Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Allied Property & Casualty Ins. Comp. | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ |
| AMCO Ins. Comp. | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ |
| American Family Mutual Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| American Modern Home Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| American Modern Select Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Amica Mutual Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Auto Club Family Ins. Comp. | X | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Auto-Owners Ins. Comp. | X | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Country Mutual Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Electric Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Farmers Ins. Exchange | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Fire Ins. Exchange | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Great Northern Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Hartford Ins. Comp. of Midwest | X | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ |
| Hartford Underwriters Ins. Comp. | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ |
| Homesite Ins. Comp. of the Midwest | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| IDS Property Casualty Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Liberty Ins. Corp. | X | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ |
| Liberty Mutual Fire Ins. Comp. | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ |
| Lititz Mutual Ins. Comp. | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ |
| LM Ins. Corp. | X | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ |
| Metropolitan Property & Casualty Ins. Comp. | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Nationwide Affinity Ins. Comp. of America | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Nationwide Ins. Comp. of America | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Palomar Specialty Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| Property & Casualty Ins. Comp. of Hartford | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ |
| Safeco Ins. Comp. of America | X | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ |
| Shelter Mutual Ins. Comp. | 🟢🟠⚪⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| State Auto Property & Casualty | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| State Farm Fire & Casualty Comp. | 🟢🟠⚪⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| The Cincinnati Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| The Standard Fire Ins. Comp. | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ | ⚪⚪⚪⚫ |
| The Travelers Home & Marine Ins. Comp. | X | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ |
| Trumbull Ins. Comp. | X | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ | 🟢🟠⚪⚪ |
| United Services Automobile Association | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| USAA Casualty Ins. Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |
| USAA General Indemnity Comp. | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ | 🟢🟠🟡⚪ |

Legend: New earthquake policies available for the following construction types:

- 🟢 Frame dwellings
- 🟠 Masonry veneer
- 🟡 Solid masonry
- ⚫ Renewal business only
- X No coverage available

Note: Even though a company issues new coverage for a specific construction type, that company may still have significant underwriting restrictions applicable to a given risk. For example, a company might refuse to issue coverage for multi-story masonry homes, older homes, homes with unusual architectural features, homes built on a hillside or cliff, etc. Please check with the company or agent for details about your particular situation.

**Public**

**Schedule SAW-D-9**

## Insurance Consumer Hotline

Contact DIFP's Insurance Consumer Hotline
if you have questions about your insurance policy
or to file a complaint against an
insurance company or agent:

**difp.mo.gov**

**800-726-7390**

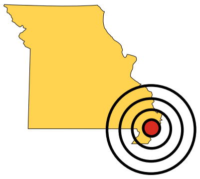

DIFP
Department of Insurance,
Financial Institutions &
Professional Registration

Harry S Truman Building
Room 530
301 W. High St.
PO Box 690
Jefferson City, MO 65102

June 2016

2016 MISSOURI INSURANCE REPORT

# THE STATE OF Earthquake Coverage



STATISTICS SECTION

## The Earthquake Insurance Market in MO

## 2015 Supplement

DIFP
Department of Insurance,
Financial Institutions &
Professional Registration

**Jeremiah W. (Jay) Nixon**
Governor

**John M. Huff**
Director

| Contents | |
|---|---|
|  |

**Summary**

This brief note updates a more thorough report on the residential earthquake insurance market in Missouri released last year. The earlier report can be found on the department's website at the following link:

http://insurance.mo.gov/news/2015/Missouri_Earthquake_Report_shows_insurance_coverage_at_critical_tipping_point

That report documented a dramatic contraction in the market for earthquake insurance, with fewer than one in five homes in Missouri's highest risk areas having the coverage. While there have been no dramatic year-over-year changes between 2014 and 2015, all market indicators moved in the wrong direction: prices move upward, coverage rates continued to decline, and residential earthquake insurance became less available and affordable.

- In the six-county New Madrid area, the percent of private residences with earthquake coverage declined by more than two percentage points over the past year, from 19.9 to 17.8 percent. In four of the six counties, less than 15 percent of homes had insurance against earthquake damage. By contrast, over 60 percent of private residences in the New Madrid area had earthquake coverage in 2000.

- Coverage was greater in other high-risk areas of the state, including the St. Louis area. In St. Louis County, 58 percent of residences had earthquake insurance. In neighboring St. Louis City, however, fewer than one-third had such coverage.

- The value of uninsured dwellings in high risk areas of the state exceeded $105 billion. This includes over $90 billion associated with homes that had no earthquake coverage, plus approximately $15 billion that would fall under an insured's deductible in the event of a loss.

- The price of coverage rose slightly again last year in all areas of the state. In new Madrid, the cost of earthquake coverage has increased by over 500 percent since 2000. In two of the six New Madrid counties, prices increased by over 600 percent, and in one county, by over 700 percent.

- The market continued to contract over the past year, as two more companies exited the residential earthquake market. Since 2000, 67 home insurers have stopped writing earthquake insurance, while only 35 new carriers entered the market. The number of insurers with any earthquake coverage in force in MO fell from 122 to 92 since 2000. In the New Madrid region, the number fell from 81 to 61.

- Carriers representing one-third of the homeowners insurance market do not issue any new earthquake coverage in the New Madrid area. While an additional 46 percent of the market will issue new coverage in New Madrid, those carriers have significant underwriting restrictions that make many homes ineligible for coverage. Only 20 percent of the market issues new coverage in New Madrid on the same basis as coverage offered elsewhere in the state.

- Among the more common underwriting restrictions are

  a. Refusal to cover masonry or masonry-veneer homes

  b. Refusal to cover homes with various architectural features, such as multi-level homes

  c. Refusal to cover homes due to proximity to various hazards, such as homes located near dams or reservoirs.

  d. Refusal to insure homes based on landscape features, such as homes built on hillsides.

  e. Refusal to insure homes based on year of construction

  f. Refusal to insure homes with pre-existing damage or other evidence of natural aging, such as settlement of the home or cracks or other issues with the foundation

  Even when insurers do issue coverage in New Madrid and other high risk areas, they often require significantly higher deductibles, limit the amount of available coverage or place other additional restrictions on coverage.

- In 108 of Missouri's 115 counties, less than half of residences had earthquake coverage. In 79 counties, less than 20 percent of homes were covered.

**Missouri's Earthquake Risk**

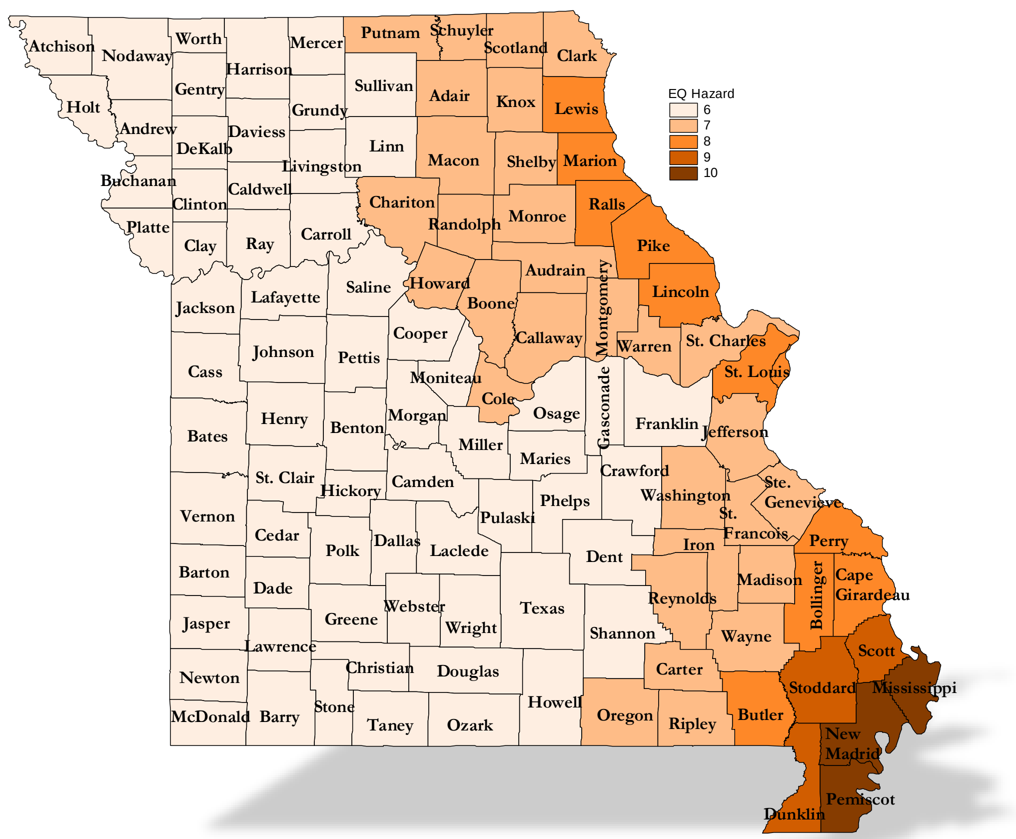
The primary earthquake threat in Missouri stems from the New Madrid fault located in the far southeast portion of the state. Throughout this report, data are presented for four Missouri risk areas:

1. The six-county New Madrid area consisting of the counties of Dunklin, Mississippi, New Madrid, Pemiscot, Scott, and Stoddard.

2. Other high risk areas, denoted by earthquake hazard level 8 on the 12 point Mercalli Scale.

3. Medium risk areas that rate 7 on the scale.

4. The relatively lower risk area comprised of the western portion of the state.






**Public**

**Schedule SAW-D-9**

**Continued Rising Costs**

The cost of earthquake coverage ticked up slightly between 2014 & 2015. In the New Madrid region, average premiums have increased by over 510% since 2000. Some New Madrid counties saw increases in excess of 600%-700%. Other high risk counties saw premium increase by almost 180%. These counties essentially include most of the Southeast quadrant of Missouri outside of New Madrid, and include the St. Louis area.

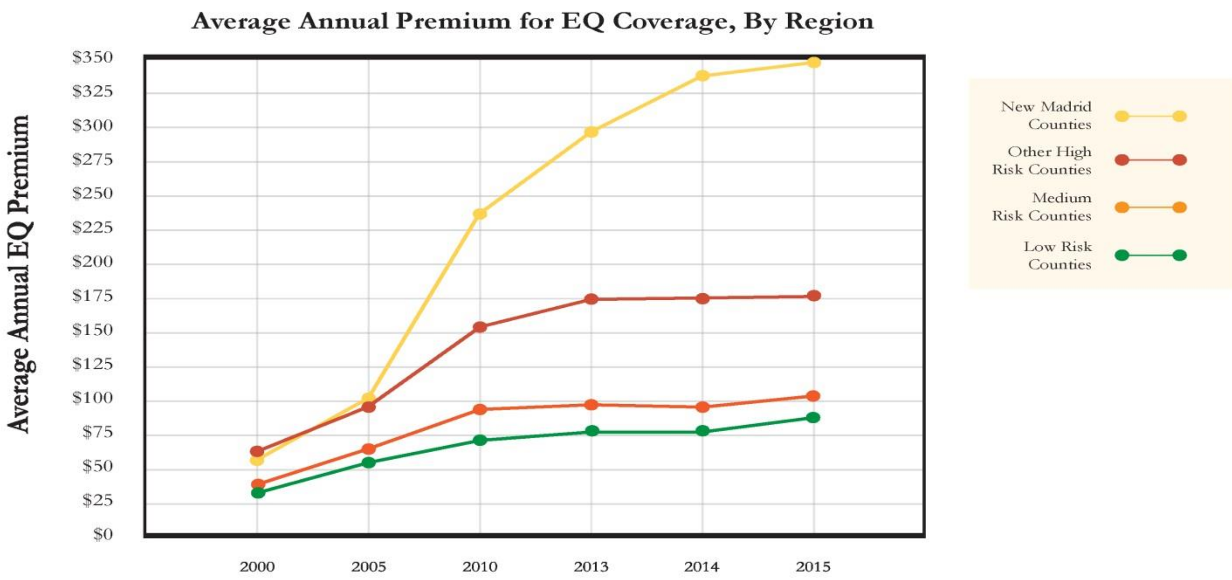
**Table 1A: Average Annual Premium for EQ Coverage, By Region**

| Region | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | % Chg. 2000-2015 |
|---|---|---|---|---|---|---|---|
| New Madrid | $57 | $102 | $236 | $293 | $335 | $348 | 510.5% |
| Other High Risk | $63 | $99 | $155 | $175 | $175 | $176 | 179.4% |
| Medium Risk | $39 | $62 | $90 | $98 | $94 | $107 | 174.4% |
| Low Risk | $35 | $56 | $71 | $78 | $78 | $83 | 137.1% |
| **Difference, Zone1 - Zone 4** | **63.9%** | **81.5%** | **231.7%** | **276.7%** | **329.5%** | **319.3%** | |

**Table 1B: Average Annual Premium for EQ Coverage New Madrid Counties**

| County | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | 2000-2015 |
|---|---|---|---|---|---|---|---|
| Dunklin | $57 | $112 | $234 | $311 | $394 | $412 | 622.8% |
| Mississippi | $52 | $97 | $235 | $269 | $317 | $329 | 532.7% |
| New Madrid | $54 | $85 | $281 | $350 | $364 | $370 | 585.2% |
| Pemiscot | $48 | $97 | $248 | $297 | $383 | $406 | 745.8% |
| Scott | $65 | $106 | $274 | $327 | $357 | $376 | 478.5% |
| Stoddard | $54 | $101 | $169 | $221 | $247 | $253 | 368.5% |

As a result of the substantially higher rate of premium increases in the New Madrid area, the gap in costs widened between high and low risk areas. In 2000, the price of coverage was only 64 percent higher in New Madrid compared to the lowest risk areas. In 2014 and 2015, costs were over 300 percent higher.




**Coverage Rates**

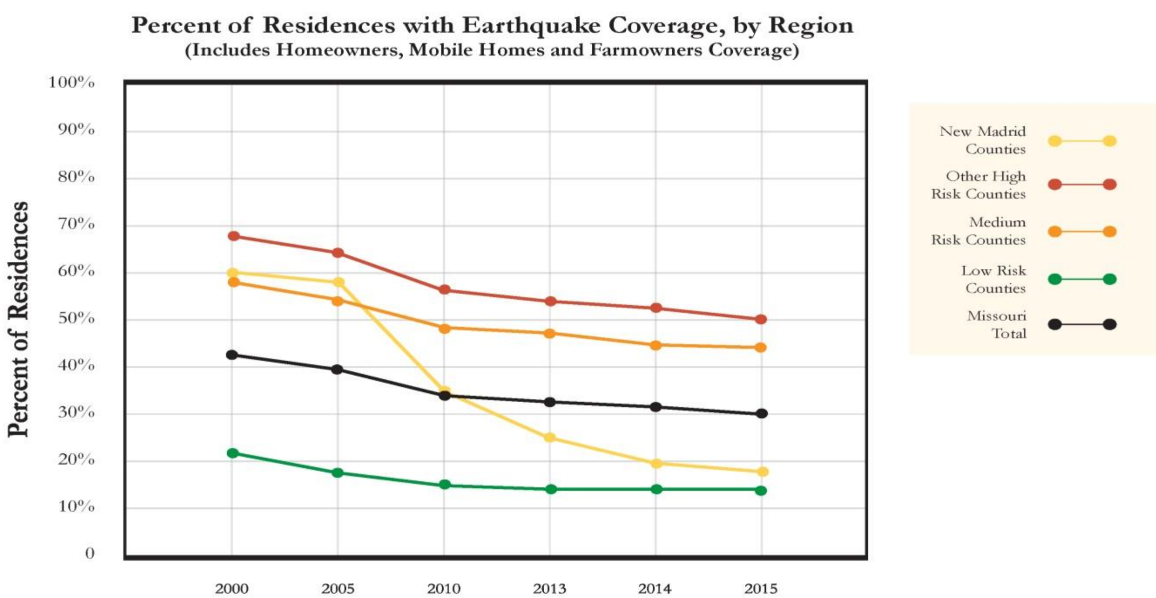
Coverage rates slipped another notch between 2014 and 2015. In 2014, less than one in five homes in the New Madrid area had earthquake coverage. Over the past year, coverage rates declined by another two percentage points from 19.9 percent to 17.8 percent. In four of the six New Madrid counties, fewer than 15 percent of residences were covered. This contrasts with a coverage rate of over 60 percent in 2000.

**Percent of Residences with Earthquake Coverage, by Region**
**(Includes Homeowners, Mobile Homes and Farmowners Coverage)**

| Missouri Region | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | Percentage Point Difference, 2000-2015 |
|---|---|---|---|---|---|---|---|
| New Madrid | 60.2 | 57.1% | 34.3% | 25.9% | 19.9% | 17.8% | -42.4% |
| Other High Risk | 67.6 | 64.7% | 56.6% | 54.6% | 52.1% | 50.8% | -16.8% |
| Medium Risk | 58.9 | 55.6% | 48.5% | 47.6% | 45.8% | 45.1% | -13.8% |
| Low Risk | 22.1 | 17.8% | 15.5% | 15.7% | 14.9% | 14.2% | -7.9% |
| **Missouri Total** | **43.6** | **39.8%** | **34.2%** | **33.2%** | **31.3%** | **30.4%** | **-13.2%** |

| Percent of Residences with Earthquake Coverage<br>New Madrid Counties | | | | | | | |
|---|---|---|---|---|---|---|---|
| **County** | **2000** | **2005** | **2010** | **2013** | **2014** | **2015** | **2000-2015** |
| Dunklin | 55.7% | 47.3% | 30.4% | 22.3% | 15.4% | 14.0% | -41.7% |
| Mississippi | 60.1% | 54.1% | 30.0% | 22.1% | 14.8% | 13.5% | -46.6% |
| New Madrid | 51.2% | 54.8% | 27.7% | 20.2% | 16.6% | 14.9% | -36.3% |
| Pemiscot | 49.4% | 45.7% | 21.1% | 15.6% | 14.1% | 12.8% | -36.6% |
| Scott | 70.0% | 67.9% | 41.5% | 33.5% | 26.3% | 22.7% | -47.3% |
| Stoddard | 63.9% | 61.4% | 42.2% | 30.6% | 22.6% | 20.7% | -43.2% |

Coverage was greater in other high-risk areas of the state, including the St. Louis area. In St. Louis County, 58 percent of residences had earthquake insurance in 2015. In neighboring St. Louis City, however, fewer than one-third had such coverage. Refer to the appendices for coverage rates for each county.



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Statewide, 79 of Missouri's 115 counties had coverage rates of less than 20 percent. In only 7 counties did coverage rates surpass 50 percent.

| Counties by EQ Coverage Rates | | |
|---|---|---|
| **% of Dwellings W EQ Coverage** | **Number of Counties** | **Number of Homes** |
| Less than 10% | 33 | 130,966 |
| 10% to 19.9% | 46 | 689,921 |
| 20% to 29.9% | 17 | 173,891 |
| 30% to 39.9% | 9 | 114,941 |
| 40% to 49.9% | 3 | 57,283 |
| 50% to 59.9% | 4 | 410,977 |
| 60% to 69.9% | 3 | 123,544 |
| **Total** | **115** | **1,701,524** |

In moderate to high-risk areas, including all counties with a rating of seven or higher on the Mercalli Scale (see map, page 3), well over half a million private residences (excluding rental properties) lacked earthquake coverage in 2015. The estimated value of these uninsured residences totaled $90 billion, excluding the value of the contents. Even individuals that have earthquake coverage are at risk of significant loss. Assuming an average deductible equal to 15 percent of the value of the insured dwelling, property worth $15 billion is self-insured in moderate to high risk areas. Together, these amounts (homes which are completely uninsured for earthquake + risk retained under the typical deductible) total to more than $105 billion.

| Estimated Uninsured Residential Property Value in Missouri 2015 | | | | |
|---|---|---|---|---|
| **Earthquake Zone (Mercalli Scale)** | **Uninsured Dwellings** | **Uninsured Property Values** | **Value Uninsured Under A 15% Deductible** | **Total Uninsured Risk** |
| 7 | 305,431 | $47,353,468,750 | $6,648,506,375 | $54,001,975,125 |
| 8 | 229,635 | $38,081,625,833 | $8,102,170,188 | $46,183,796,021 |
| 9 | 29,246 | $3,584,477,917 | $171,211,000 | $3,755,688,917 |
| 10 | 12,405 | $1,320,863,333 | $43,567,813 | $1,364,431,146 |
| **Total** | 576,717 | 90,340,435,833 | 14,965,455,376 | $105,305,891,209 |

**Declining Availability of Coverage**

Based on survey responses from carriers representing over 90 percent of the homeowners market, most insurers still sell earthquake coverage in at least in some areas of the state. Weighting responses by market share,[1] approximately 86 percent of the market still offers the coverage on both renewal and new business. However, coverage is far less available within the high-risk New Madrid area. Among respondents, nearly one-third of the market does not write new earthquake coverage in New Madrid. An additional 44 percent of the market places significant additional underwriting restrictions on residences in the area. Only about a fifth of the market issues coverage in New Madrid on the same terms as elsewhere in the state.

| Availability of EQ Coverage in New Madrid | No of Companies | Residential Market Share, New Madrid |
|---|---|---|
| No new or renewal in New Madrid* | 19 | 30.1% |
| Renewal only in New Madrid | 5 | 4.8% |
| New & Renewal, Addl UW Restrictions in New Madrid | 5 | 44.6% |
| New & Renewal, no addl UW Restrictions in New Madrid | 17 | 20.6% |
| **Total** | 46 | 100.0% |

*Includes insurers that do not issue new or renewal business anywhere in the state.

Underwriting restrictions can be significant, making many types of homes ineligible for coverage. Among the more common underwriting restrictions, based on survey responses, are:

a. Refusal to cover masonry or masonry-veneer homes

b. Refusal to cover homes with various architectural features, such as multi-level homes

c. Refusal to cover homes due to proximity to various hazards, such as homes located near dams or reservoirs.

d. Refusal to insure homes based on landscape features, such as homes built on hillsides.

e. Refusal to insure homes based on year of construction

f. Refusal to insure homes with pre-existing damage or other evidence of natural aging, such as settlement of the home or cracks or other issues with the foundation

Even when coverage is available to residents of the New Madrid area, it often comes with significantly higher deductibles, stacked deductibles that apply separately to building and contents, limits on the amount of available coverage or other additional restrictions on coverage.

[1] The market shares of survey respondents are scaled so that they total to 100.

Among insurers that issue new **<u>or</u>** renewal business in New Madrid, over 50% (weighted by premium) require a minimum deductible equal 15% of the value of the dwelling, or higher. All respondents set deductibles levels at some percentage of dwelling value, except one insurer that required a flat dollar amount. More than one-third of respondents (37%) required a deductible of 20% to 25%.

**Minimum required deductible in New Madrid**
**Insurers that issue new <u>or</u> renewal business in New Madrid**
**Survey responses weighted by market share**

| Deductible | Mkt Share of Respondents |
|---|---|
| 5% | 0.9% |
| 10% | 48.9% |
| 15% | 13.3% |
| 20% | 28.3% |
| 25% | 8.7% |
| Flat $ Amt | 0.1% |
| **Total** | **100%** |

**Insurers Offering Earthquake Insurance**

Over just the last year, 3 more companies left the EQ market, while one company entered the market. Over the entire period 2000-2015, 67 companies exited the market, while 35 new companies entered the market. The companies that left had insured 128,501 dwellings in 2000, while new entrants insured only 53,305 by 2015.

| | # of Companies | | Insured Residences | |
|---|---|---|---|---|
| Period | Left EQ Market | New Mkt Entrants | By Exiting Companies, At Start of Period | By New Entrants, At End of Period |
| 2000-2014 | 64 | 34 | 113,923 | 53,923 |
| 2000-2015 | 67 | 35 | 128,501 | 53,305 |

The number of companies that reported written premium in the six-county New Madrid area declined from 81 to 61 between 2000 and 2015. For Missouri as a whole, the number declined from 122 to 92 during the same period.

| Companies With EQ Coverage in Force in 2015 by Region | | |
|---|---|---|
| | # of Companies | |
| **Region** | **2000** | **2015** |
| New Madrid Counties | 81 | 61 |
| Other High Risk Counties | 122 | 94 |
| Medium Risk Counties | 121 | 93 |
| Low Risk Counties | 122 | 92 |
| **Missouri Total** | **125** | **94** |

Appendix A

| Average Annual Premium for Earthquake Insurance (Counties in the New Madrid area are highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | 2000-2015 |
| 1 | Adair | $31 | $52 | $58 | $60 | $58 | $62 | 100.0% |
| 3 | Andrew | $30 | $51 | $52 | $57 | $56 | $58 | 93.3% |
| 5 | Atchison | $35 | $52 | $65 | $69 | $71 | $80 | 128.6% |
| 7 | Audrain | $30 | $50 | $59 | $70 | $67 | $70 | 133.3% |
| 9 | Barry | $30 | $50 | $64 | $69 | $78 | $80 | 166.7% |
| 11 | Barton | $27 | $42 | $47 | $55 | $63 | $65 | 140.7% |
| 13 | Bates | $33 | $62 | $83 | $80 | $80 | $82 | 148.5% |
| 15 | Benton | $26 | $38 | $46 | $50 | $56 | $58 | 123.1% |
| 17 | Bollinger | $48 | $82 | $105 | $118 | $112 | $122 | 154.2% |
| 19 | Boone | $44 | $77 | $89 | $93 | $90 | $93 | 111.4% |
| 21 | Buchanan | $34 | $52 | $63 | $68 | $67 | $70 | 105.9% |
| 23 | Butler | $64 | $100 | $175 | $229 | $237 | $250 | 290.6% |
| 25 | Caldwell | $29 | $59 | $65 | $73 | $68 | $65 | 124.1% |
| 27 | Callaway | $32 | $55 | $66 | $70 | $70 | $73 | 128.1% |
| 29 | Camden | $36 | $55 | $76 | $81 | $86 | $88 | 144.4% |
| 31 | Cape Girardeau | $68 | $107 | $178 | $224 | $229 | $238 | 250.0% |
| 33 | Carroll | $30 | $37 | $48 | $54 | $58 | $59 | 96.7% |
| 35 | Carter | $34 | $61 | $101 | $113 | $97 | $102 | 200.0% |
| 37 | Cass | $35 | $57 | $68 | $77 | $80 | $80 | 128.6% |
| 39 | Cedar | $31 | $48 | $59 | $61 | $67 | $71 | 129.0% |
| 41 | Chariton | $29 | $56 | $66 | $56 | $53 | $55 | 89.7% |
| 43 | Christian | $37 | $60 | $74 | $78 | $82 | $86 | 132.4% |
| 45 | Clark | $29 | $41 | $50 | $54 | $56 | $57 | 96.6% |
| 47 | Clay | $36 | $55 | $62 | $69 | $70 | $73 | 102.8% |
| 49 | Clinton | $34 | $55 | $57 | $62 | $60 | $63 | 85.3% |
| 51 | Cole | $43 | $62 | $77 | $83 | $90 | $93 | 116.3% |
| 53 | Cooper | $33 | $49 | $61 | $68 | $77 | $82 | 148.5% |
| 55 | Crawford | $30 | $54 | $63 | $69 | $65 | $68 | 126.7% |
| 57 | Dade | $27 | $43 | $55 | $62 | $71 | $68 | 151.9% |
| 59 | Dallas | $28 | $44 | $53 | $59 | $71 | $73 | 160.7% |
| 61 | Daviess | $31 | $61 | $67 | $72 | $72 | $74 | 138.7% |
| 63 | DeKalb | $37 | $55 | $57 | $70 | $65 | $68 | 83.8% |
| 65 | Dent | $31 | $53 | $66 | $66 | $65 | $66 | 112.9% |
| 67 | Douglas | $27 | $39 | $42 | $50 | $57 | $58 | 114.8% |
| 69 | Dunklin | $57 | $112 | $234 | $311 | $394 | $412 | 622.8% |
| 71 | Franklin | $37 | $64 | $96 | $105 | $108 | $111 | 200.0% |
| 73 | Gasconade | $29 | $47 | $65 | $76 | $78 | $80 | 175.9% |

| Average Annual Premium for Earthquake Insurance (Counties in the New Madrid area are highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | 2000-2015 |
| 75 | Gentry | $32 | $59 | $75 | $81 | $70 | $72 | 125.0% |
| 77 | Greene | $39 | $60 | $73 | $79 | $83 | $88 | 125.6% |
| 79 | Grundy | $27 | $40 | $56 | $65 | $71 | $75 | 177.8% |
| 81 | Harrison | $24 | $33 | $44 | $56 | $63 | $67 | 179.2% |
| 83 | Henry | $30 | $51 | $62 | $65 | $66 | $65 | 116.7% |
| 85 | Hickory | $24 | $34 | $43 | $49 | $55 | $58 | 141.7% |
| 87 | Holt | $35 | $55 | $73 | $68 | $75 | $79 | 125.7% |
| 89 | Howard | $29 | $54 | $64 | $70 | $67 | $65 | 124.1% |
| 91 | Howell | $31 | $62 | $76 | $80 | $70 | $72 | 132.3% |
| 93 | Iron | $32 | $50 | $71 | $77 | $74 | $77 | 140.6% |
| 95 | Jackson | $41 | $62 | $73 | $82 | $85 | $86 | 109.8% |
| 97 | Jasper | $31 | $47 | $60 | $68 | $73 | $76 | 145.2% |
| 99 | Jefferson | $38 | $59 | $88 | $94 | $102 | $106 | 178.9% |
| 101 | Johnson | $33 | $59 | $64 | $74 | $75 | $77 | 133.3% |
| 103 | Knox | $27 | $50 | $54 | $55 | $53 | $60 | 122.2% |
| 105 | Laclede | $30 | $46 | $60 | $65 | $71 | $73 | 143.3% |
| 107 | Lafayette | $29 | $50 | $57 | $65 | $67 | $70 | 141.4% |
| 109 | Lawrence | $27 | $44 | $63 | $69 | $72 | $75 | 177.8% |
| 111 | Lewis | $25 | $48 | $60 | $63 | $55 | $58 | 132.0% |
| 113 | Lincoln | $34 | $59 | $74 | $79 | $77 | $80 | 135.3% |
| 115 | Linn | $27 | $37 | $40 | $44 | $46 | $47 | 74.1% |
| 117 | Livingston | $28 | $41 | $47 | $49 | $55 | $57 | 103.6% |
| 119 | McDonald | $23 | $39 | $50 | $56 | $56 | $60 | 160.9% |
| 121 | Macon | $27 | $50 | $52 | $54 | $53 | $56 | 107.4% |
| 123 | Madison | $34 | $55 | $82 | $94 | $102 | $106 | 211.8% |
| 125 | Maries | $29 | $52 | $62 | $66 | $60 | $63 | 117.2% |
| 127 | Marion | $29 | $50 | $60 | $64 | $62 | $64 | 120.7% |
| 129 | Mercer | $28 | $39 | $50 | $59 | $55 | $54 | 92.9% |
| 131 | Miller | $26 | $46 | $57 | $60 | $64 | $66 | 153.8% |
| 133 | Mississippi | $52 | $97 | $235 | $269 | $317 | $329 | 532.7% |
| 135 | Moniteau | $27 | $50 | $59 | $62 | $66 | $67 | 148.1% |
| 137 | Monroe | $26 | $49 | $57 | $61 | $55 | $58 | 123.1% |
| 139 | Montgomery | $31 | $54 | $68 | $73 | $70 | $76 | 145.2% |
| 141 | Morgan | $26 | $42 | $51 | $55 | $61 | $64 | 146.2% |
| 143 | New Madrid | $54 | $85 | $281 | $350 | $364 | $370 | 585.2% |
| 145 | Newton | $27 | $42 | $55 | $61 | $65 | $67 | 148.1% |
| 147 | Nodaway | $33 | $58 | $62 | $65 | $62 | $65 | 97.0% |
| 149 | Oregon | $33 | $56 | $69 | $78 | $82 | $86 | 160.6% |
| 151 | Osage | $32 | $85 | $107 | $110 | $93 | $101 | 215.6% |
| 153 | Ozark | $28 | $42 | $45 | $51 | $56 | $54 | 92.9% |

| Average Annual Premium for Earthquake Insurance (Counties in the New Madrid area are highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **FIPS Code** | **County** | **2000** | **2005** | **2010** | **2013** | **2014** | **2015** | **2000-2015** |
| 155 | Pemiscot | $48 | $97 | $248 | $297 | $383 | $406 | 745.8% |
| 157 | Perry | $42 | $63 | $95 | $128 | $132 | $134 | 219.0% |
| 159 | Pettis | $27 | $42 | $51 | $57 | $65 | $68 | 151.9% |
| 161 | Phelps | $32 | $54 | $68 | $74 | $72 | $77 | 140.6% |
| 163 | Pike | $36 | $61 | $75 | $84 | $74 | $76 | 111.1% |
| 165 | Platte | $46 | $70 | $81 | $92 | $95 | $98 | 113.0% |
| 167 | Polk | $31 | $47 | $60 | $66 | $71 | $73 | 135.5% |
| 169 | Pulaski | $29 | $58 | $74 | $88 | $87 | $86 | 196.6% |
| 171 | Putnam | $30 | $56 | $67 | $78 | $79 | $92 | 206.7% |
| 173 | Ralls | $27 | $45 | $57 | $59 | $56 | $57 | 111.1% |
| 175 | Randolph | $25 | $41 | $52 | $57 | $56 | $60 | 140.0% |
| 177 | Ray | $32 | $52 | $64 | $67 | $64 | $68 | 112.5% |
| 179 | Reynolds | $31 | $63 | $86 | $78 | $79 | $79 | 154.8% |
| 181 | Ripley | $38 | $59 | $82 | $104 | $114 | $122 | 221.1% |
| 183 | Saint Charles | $42 | $66 | $100 | $109 | $117 | $121 | 188.1% |
| 185 | Saint Clair | $28 | $45 | $55 | $61 | $73 | $74 | 164.3% |
| 186 | Ste. Genevieve | $42 | $62 | $87 | $115 | $119 | $122 | 190.5% |
| 187 | Saint Francois | $35 | $61 | $79 | $91 | $90 | $93 | 165.7% |
| 189 | Saint Louis | $64 | $101 | $157 | $177 | $177 | $177 | 176.6% |
| 195 | Saline | $28 | $39 | $52 | $56 | $60 | $62 | 121.4% |
| 197 | Schuyler | $27 | $45 | $58 | $64 | $59 | $60 | 122.2% |
| 199 | Scotland | $27 | $44 | $56 | $67 | $62 | $69 | 155.6% |
| 201 | Scott | $65 | $106 | $274 | $327 | $357 | $376 | 478.5% |
| 203 | Shannon | $28 | $53 | $73 | $82 | $92 | $93 | 232.1% |
| 205 | Shelby | $27 | $49 | $56 | $59 | $52 | $57 | 111.1% |
| 207 | Stoddard | $54 | $101 | $169 | $221 | $247 | $253 | 368.5% |
| 209 | Stone | $37 | $54 | $72 | $77 | $82 | $84 | 127.0% |
| 211 | Sullivan | $22 | $36 | $41 | $43 | $50 | $55 | 150.0% |
| 213 | Taney | $34 | $49 | $61 | $66 | $71 | $72 | 111.8% |
| 215 | Texas | $30 | $57 | $68 | $79 | $74 | $76 | 153.3% |
| 217 | Vernon | $28 | $44 | $54 | $61 | $66 | $66 | 135.7% |
| 219 | Warren | $36 | $56 | $80 | $84 | $88 | $91 | 152.8% |
| 221 | Washington | $30 | $44 | $54 | $63 | $66 | $69 | 130.0% |
| 223 | Wayne | $34 | $53 | $84 | $101 | $108 | $113 | 232.4% |
| 225 | Webster | $33 | $54 | $77 | $78 | $86 | $88 | 166.7% |
| 227 | Worth | $29 | $32 | $52 | $49 | $57 | $61 | 110.3% |
| 229 | Wright | $32 | $44 | $52 | $60 | $63 | $65 | 103.1% |
| 510 | Saint Louis City | $68 | $103 | $167 | $185 | $184 | $180 | 164.7% |
| **999** | **Missouri** | **$50** | **$79** | **$119** | **$131** | **$134** | **$135** | **170.0%** |



**Public**

**Schedule SAW-D-9**

Appendix B

| Percent of Residences With EQ Coverage, by County (Counties in the New Madrid Region Are Highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| County FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | 2000-2015 |
| 1 | Adair | 29.1% | 22.9% | 20.1% | 18.6% | 17.8% | 17.0% | -12.1% |
| 3 | Andrew | 18.5% | 14.9% | 12.5% | 12.0% | 11.2% | 10.7% | -7.8% |
| 5 | Atchison | 10.2% | 8.4% | 8.0% | 6.9% | 6.9% | 6.7% | -3.5% |
| 7 | Audrain | 36.2% | 31.9% | 30.8% | 29.3% | 28.1% | 26.5% | -9.7% |
| 9 | Barry | 15.4% | 11.7% | 8.9% | 9.2% | 8.8% | 8.5% | -6.9% |
| 11 | Barton | 12.6% | 9.8% | 7.8% | 7.9% | 7.1% | 7.0% | -5.6% |
| 13 | Bates | 13.0% | 8.6% | 5.9% | 6.0% | 5.6% | 5.4% | -7.6% |
| 15 | Benton | 22.4% | 16.9% | 14.7% | 15.0% | 13.9% | 13.0% | -9.4% |
| 17 | Bollinger | 62.4% | 57.1% | 38.9% | 37.0% | 33.5% | 32.9% | -29.5% |
| 19 | Boone | 37.6% | 29.8% | 27.0% | 26.5% | 25.7% | 25.0% | -12.6% |
| 21 | Buchanan | 16.5% | 12.9% | 11.2% | 10.4% | 9.9% | 9.6% | -6.9% |
| 23 | Butler | 57.3% | 51.8% | 33.8% | 27.1% | 22.4% | 20.6% | -36.7% |
| 25 | Caldwell | 11.4% | 7.8% | 6.6% | 6.7% | 6.7% | 6.5% | -4.9% |
| 27 | Callaway | 37.5% | 31.9% | 27.0% | 26.6% | 25.6% | 25.4% | -12.1% |
| 29 | Camden | 42.1% | 40.0% | 37.5% | 37.2% | 35.3% | 34.7% | -7.4% |
| 31 | Cape Girardeau | 81.2% | 79.5% | 71.9% | 67.5% | 60.8% | 59.3% | -21.9% |
| 33 | Carroll | 23.0% | 16.6% | 10.6% | 11.2% | 10.9% | 9.8% | -13.2% |
| 35 | Carter | 47.7% | 42.4% | 20.7% | 18.4% | 16.7% | 16.0% | -31.7% |
| 37 | Cass | 19.4% | 13.9% | 11.6% | 11.7% | 11.3% | 10.9% | -8.5% |
| 39 | Cedar | 14.3% | 11.7% | 9.1% | 9.6% | 8.6% | 8.0% | -6.3% |
| 41 | Chariton | 24.0% | 18.3% | 15.9% | 17.0% | 15.8% | 15.6% | -8.4% |
| 43 | Christian | 16.1% | 11.6% | 11.8% | 12.8% | 11.4% | 10.6% | -5.5% |
| 45 | Clark | 22.3% | 17.1% | 12.6% | 11.4% | 10.7% | 9.7% | -12.6% |
| 47 | Clay | 20.5% | 15.2% | 13.0% | 13.0% | 12.5% | 12.2% | -8.3% |
| 49 | Clinton | 15.3% | 10.7% | 8.8% | 8.9% | 8.5% | 7.8% | -7.5% |
| 51 | Cole | 43.5% | 37.9% | 32.5% | 31.5% | 29.7% | 29.2% | -14.3% |
| 53 | Cooper | 26.9% | 20.5% | 15.7% | 16.4% | 15.9% | 15.9% | -11.0% |
| 55 | Crawford | 45.4% | 42.9% | 36.2% | 34.4% | 33.0% | 31.9% | -13.5% |
| 57 | Dade | 12.5% | 9.1% | 7.5% | 7.9% | 7.4% | 6.8% | -5.7% |
| 59 | Dallas | 15.8% | 9.7% | 6.6% | 6.6% | 6.1% | 5.9% | -9.9% |
| 61 | Daviess | 9.9% | 6.2% | 5.2% | 5.8% | 5.8% | 5.5% | -4.4% |
| 63 | DeKalb | 8.9% | 6.5% | 4.3% | 4.6% | 4.6% | 4.2% | -4.7% |
| 65 | Dent | 32.3% | 24.8% | 20.4% | 19.1% | 18.4% | 18.0% | -14.3% |
| 67 | Douglas | 12.6% | 10.5% | 10.4% | 10.0% | 8.9% | 8.9% | -3.7% |
| 69 | Dunklin | 55.7% | 47.3% | 30.4% | 22.3% | 15.4% | 14.0% | -41.7% |
| 71 | Franklin | 64.5% | 61.4% | 52.6% | 51.7% | 49.5% | 49.1% | -15.4% |
| 73 | Gasconade | 48.9% | 48.1% | 42.9% | 40.7% | 38.8% | 38.0% | -10.9% |

| Percent of Residences With EQ Coverage, by County<br>(Counties in the New Madrid Region Are Highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| County FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | 2000-2015 |
| 75 | Gentry | 12.9% | 8.8% | 7.2% | 7.0% | 6.8% | 6.6% | -6.3% |
| 77 | Greene | 18.7% | 14.1% | 13.0% | 13.5% | 12.5% | 11.7% | -7.0% |
| 79 | Grundy | 12.8% | 9.9% | 7.3% | 7.2% | 6.8% | 6.7% | -6.1% |
| 81 | Harrison | 8.7% | 6.1% | 4.4% | 4.3% | 4.4% | 4.5% | -4.2% |
| 83 | Henry | 20.1% | 16.6% | 14.6% | 14.9% | 13.8% | 13.6% | -6.5% |
| 85 | Hickory | 19.4% | 14.7% | 10.9% | 11.0% | 10.2% | 9.8% | -9.6% |
| 87 | Holt | 9.4% | 5.4% | 4.8% | 4.4% | 4.6% | 4.3% | -5.1% |
| 89 | Howard | 32.5% | 26.9% | 23.6% | 23.4% | 23.2% | 22.8% | -9.7% |
| 91 | Howell | 33.5% | 27.9% | 24.2% | 24.2% | 23.4% | 23.1% | -10.4% |
| 93 | Iron | 56.8% | 49.4% | 36.9% | 36.1% | 35.7% | 35.9% | -20.9% |
| 95 | Jackson | 17.1% | 12.9% | 11.3% | 11.7% | 11.4% | 11.1% | -6.0% |
| 97 | Jasper | 18.2% | 15.6% | 13.8% | 16.5% | 14.9% | 14.0% | -4.2% |
| 99 | Jefferson | 72.8% | 70.0% | 60.0% | 59.0% | 57.2% | 56.6% | -16.2% |
| 101 | Johnson | 20.1% | 14.5% | 12.2% | 13.2% | 12.7% | 12.1% | -8.0% |
| 103 | Knox | 16.4% | 13.3% | 11.8% | 11.7% | 10.8% | 10.3% | -6.1% |
| 105 | Laclede | 28.4% | 23.4% | 20.6% | 19.6% | 18.0% | 17.5% | -10.9% |
| 107 | Lafayette | 23.2% | 16.1% | 13.3% | 13.9% | 13.6% | 13.1% | -10.1% |
| 109 | Lawrence | 15.0% | 10.2% | 7.8% | 9.2% | 8.5% | 8.0% | -7.0% |
| 111 | Lewis | 22.9% | 18.5% | 16.1% | 15.9% | 14.1% | 13.4% | -9.5% |
| 113 | Lincoln | 53.8% | 49.8% | 44.4% | 44.1% | 42.1% | 41.7% | -12.1% |
| 115 | Linn | 30.6% | 27.0% | 23.7% | 22.1% | 20.8% | 19.6% | -11.0% |
| 117 | Livingston | 15.7% | 11.1% | 11.6% | 10.8% | 10.5% | 9.8% | -5.9% |
| 119 | McDonald | 13.5% | 7.5% | 5.8% | 6.5% | 5.5% | 5.6% | -7.9% |
| 121 | Macon | 24.7% | 17.9% | 17.3% | 16.6% | 15.8% | 14.6% | -10.1% |
| 123 | Madison | 65.7% | 59.9% | 39.5% | 38.8% | 37.2% | 37.9% | -27.8% |
| 125 | Maries | 31.0% | 29.7% | 22.4% | 23.9% | 24.3% | 23.9% | -7.1% |
| 127 | Marion | 41.5% | 36.2% | 33.9% | 32.1% | 29.7% | 28.7% | -12.8% |
| 129 | Mercer | 10.2% | 7.2% | 5.7% | 5.6% | 5.3% | 5.3% | -4.9% |
| 131 | Miller | 24.3% | 20.5% | 17.4% | 18.3% | 16.9% | 16.4% | -7.9% |
| 133 | Mississippi | 60.1% | 54.1% | 30.0% | 22.1% | 14.8% | 13.5% | -46.6% |
| 135 | Moniteau | 24.2% | 20.3% | 19.1% | 18.3% | 17.6% | 16.4% | -7.8% |
| 137 | Monroe | 31.6% | 25.0% | 21.3% | 20.2% | 18.5% | 18.0% | -13.6% |
| 139 | Montgomery | 47.2% | 42.4% | 36.6% | 34.2% | 33.2% | 31.7% | -15.5% |
| 141 | Morgan | 35.6% | 33.7% | 30.4% | 29.2% | 26.8% | 26.0% | -9.6% |
| 143 | New Madrid | 51.2% | 54.8% | 27.7% | 20.2% | 16.6% | 14.9% | -36.3% |
| 145 | Newton | 14.0% | 9.6% | 8.5% | 10.3% | 9.2% | 9.0% | -5.0% |
| 147 | Nodaway | 7.1% | 5.2% | 4.7% | 5.2% | 4.7% | 4.4% | -2.7% |
| 149 | Oregon | 42.7% | 36.8% | 24.1% | 23.9% | 24.1% | 23.4% | -19.3% |
| 151 | Osage | 33.3% | 28.4% | 23.8% | 22.6% | 21.8% | 20.6% | -12.7% |
| 153 | Ozark | 18.5% | 15.8% | 14.1% | 14.1% | 13.6% | 13.1% | -5.4% |



**Public**

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| Percent of Residences With EQ Coverage, by County (Counties in the New Madrid Region Are Highlighted) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| County FIPS Code | County | 2000 | 2005 | 2010 | 2013 | 2014 | 2015 | 2000-2015 |
| 155 | Pemiscot | 49.4% | 45.7% | 21.1% | 15.6% | 14.1% | 12.8% | -36.6% |
| 157 | Perry | 77.4% | 79.2% | 71.9% | 69.2% | 68.5% | 66.9% | -10.5% |
| 159 | Pettis | 30.9% | 25.3% | 19.2% | 17.7% | 16.7% | 15.7% | -15.2% |
| 161 | Phelps | 34.7% | 28.9% | 25.6% | 25.8% | 24.7% | 24.2% | -10.5% |
| 163 | Pike | 41.3% | 35.8% | 30.3% | 27.9% | 27.0% | 25.3% | -16.0% |
| 165 | Platte | 18.8% | 14.3% | 12.3% | 12.7% | 12.2% | 12.0% | -6.8% |
| 167 | Polk | 17.8% | 11.9% | 10.5% | 11.3% | 10.0% | 9.8% | -8.0% |
| 169 | Pulaski | 25.9% | 18.9% | 13.4% | 14.2% | 13.4% | 13.1% | -12.8% |
| 171 | Putnam | 16.5% | 9.9% | 6.9% | 7.2% | 7.2% | 7.3% | -9.2% |
| 173 | Ralls | 31.2% | 27.1% | 25.7% | 26.0% | 25.7% | 24.4% | -6.8% |
| 175 | Randolph | 30.9% | 24.9% | 20.5% | 18.9% | 17.8% | 16.9% | -14.0% |
| 177 | Ray | 19.0% | 14.1% | 11.4% | 11.7% | 10.9% | 10.7% | -8.3% |
| 179 | Reynolds | 42.4% | 32.6% | 21.4% | 21.1% | 18.8% | 18.7% | -23.7% |
| 181 | Ripley | 44.3% | 41.7% | 24.4% | 23.0% | 19.5% | 17.9% | -26.4% |
| 183 | Saint Charles | 79.2% | 75.4% | 67.0% | 66.4% | 64.1% | 63.3% | -15.9% |
| 185 | Saint Clair | 14.9% | 9.8% | 6.0% | 5.8% | 6.1% | 6.0% | -8.9% |
| 186 | Ste. Genevieve | 76.1% | 75.9% | 68.7% | 66.3% | 64.6% | 64.0% | -12.1% |
| 187 | Saint Francois | 65.4% | 64.5% | 56.7% | 54.4% | 51.2% | 50.8% | -14.6% |
| 189 | Saint Louis | 74.4% | 70.7% | 62.9% | 61.0% | 58.9% | 57.8% | -16.6% |
| 195 | Saline | 25.7% | 21.6% | 19.3% | 19.2% | 19.0% | 18.1% | -7.6% |
| 197 | Schuyler | 13.9% | 12.5% | 9.5% | 7.0% | 6.2% | 6.3% | -7.6% |
| 199 | Scotland | 20.9% | 13.8% | 12.1% | 10.8% | 10.1% | 9.5% | -11.4% |
| 201 | Scott | 70.0% | 67.9% | 41.5% | 33.5% | 26.3% | 22.7% | -47.3% |
| 203 | Shannon | 31.3% | 22.3% | 19.0% | 17.8% | 17.6% | 17.1% | -14.2% |
| 205 | Shelby | 21.9% | 16.0% | 14.4% | 14.9% | 14.9% | 14.3% | -7.6% |
| 207 | Stoddard | 63.9% | 61.4% | 42.2% | 30.6% | 22.6% | 20.7% | -43.2% |
| 209 | Stone | 18.1% | 15.2% | 14.6% | 15.5% | 15.1% | 14.5% | -3.6% |
| 211 | Sullivan | 14.9% | 9.3% | 7.1% | 6.5% | 5.9% | 5.7% | -9.2% |
| 213 | Taney | 20.2% | 18.1% | 17.0% | 17.5% | 17.1% | 16.5% | -3.7% |
| 215 | Texas | 24.6% | 18.9% | 14.2% | 13.9% | 12.6% | 11.8% | -12.8% |
| 217 | Vernon | 17.0% | 12.2% | 9.8% | 9.5% | 9.1% | 8.8% | -8.2% |
| 219 | Warren | 60.7% | 59.3% | 49.5% | 49.8% | 49.5% | 48.7% | -12.0% |
| 221 | Washington | 53.9% | 48.2% | 37.2% | 38.4% | 37.1% | 36.0% | -17.9% |
| 223 | Wayne | 51.9% | 43.1% | 25.1% | 21.9% | 19.9% | 18.9% | -33.0% |
| 225 | Webster | 17.8% | 13.1% | 11.5% | 12.3% | 11.2% | 10.9% | -6.9% |
| 227 | Worth | 7.8% | 5.3% | 4.8% | 6.2% | 5.2% | 4.4% | -3.4% |
| 229 | Wright | 23.9% | 18.0% | 13.9% | 13.1% | 12.2% | 11.7% | -12.2% |
| 510 | Saint Louis City | 46.1% | 45.9% | 36.2% | 34.8% | 32.2% | 30.5% | -15.6% |
| **999** | **Missouri Total** | **43.6%** | **39.8%** | **34.2%** | **33.2%** | **31.3%** | **30.4%** | **-13.2%** |

## INSURERS WHO DO NOT PROVIDE EARTHQUAKE INSURANCE

| | Southeast MO | St. Louis | Kansas City | Springfield | Columbia |
|---|---|---|---|---|---|
| Allstate Indemnity Comp. | X | X | X | X | X |
| Allstate Ins. Comp. | X | X | X | X | X |
| Allstate Property & Casualty Ins. Comp. | X | X | X | X | X |
| Cameron Mutual Ins. Comp. | X | X | X | X | X |
| Cameron National Ins. Comp. | X | X | X | X | X |
| Farm Bureau Town & Country IC | X | X | X | X | X |
| Garrison Property & Casualty Ins. Comp | X | X | X | X | X |
| Mid Century Ins. Comp. | X | X | X | X | X |
| United Home Ins. Comp. | X | X | X | X | X |

## INSURERS WHO DO PROVIDE EARTHQUAKE INSURANCE

| | Southeast MO | St. Louis | Kansas City | Springfield | Columbia |
|---|---|---|---|---|---|
| ACUITY, A Mutual Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Allied Property & Casualty Ins. Comp. | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● |
| AMCO Ins. Comp. | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● |
| American Family Mutual Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| American Modern Home Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| American Modern Select Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Amica Mutual Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Auto Club Family Ins. Comp. | X | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Auto-Owners Ins. Comp. | X | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Country Mutual Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Electric Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Farmers Ins. Exchange | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Fire Ins. Exchange | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Great Northern Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Hartford Ins. Comp. of Midwest | X | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ |
| Hartford Underwriters Ins. Comp. | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● |
| Homesite Ins. Comp. of the Midwest | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| IDS Property Casualty Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Liberty Ins. Corp. | X | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ |
| Liberty Mutual Fire Ins. Comp. | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● |
| Lititz Mutual Ins. Comp. | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● |
| LM Ins. Corp. | X | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ |
| Metropolitan Property & Casualty Ins. Comp. | ● ● ○ ○ | ● ● ○ ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Nationwide Affinity Ins. Comp. of America | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Nationwide Ins. Comp. of America | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Palomar Specialty Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| Property & Casualty Ins. Comp. of Hartford | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● |
| Safeco Ins. Comp. of America | X | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ |
| Shelter Mutual Ins. Comp. | ● ● ○ ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| State Auto Property & Casualty | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| State Farm Fire & Casualty Comp. | ● ● ○ ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| The Cincinnati Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| The Standard Fire Ins. Comp. | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● | ○ ○ ○ ● |
| The Travelers Home & Marine Ins. Comp. | X | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ |
| Trumbull Ins. Comp. | X | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ | ● ● ○ ○ |
| United Services Automobile Association | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| USAA Casualty Ins. Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |
| USAA General Indemnity Comp. | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ | ● ● ● ○ |

Legend: New earthquake policies available for the following construction types: ● Frame dwellings ● Masonry veneer ● Solid masonry ● Renewal business only
X No coverage available

Note: Even though a company issues new coverage for a specific construction type, that company may still have significant underwriting restrictions applicable to a given risk. For example, a company might refuse to issue coverage for multi-story masonry homes, older homes, homes with unusual architectural features, homes built on a hillside or cliff, etc. Please check with the company or agent for details about your particular situation.

Public

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## Insurance Consumer Hotline

Contact DIFP's Insurance Consumer Hotline
if you have questions about your insurance policy
or to file a complaint against an
insurance company or agent:

**difp.mo.gov**

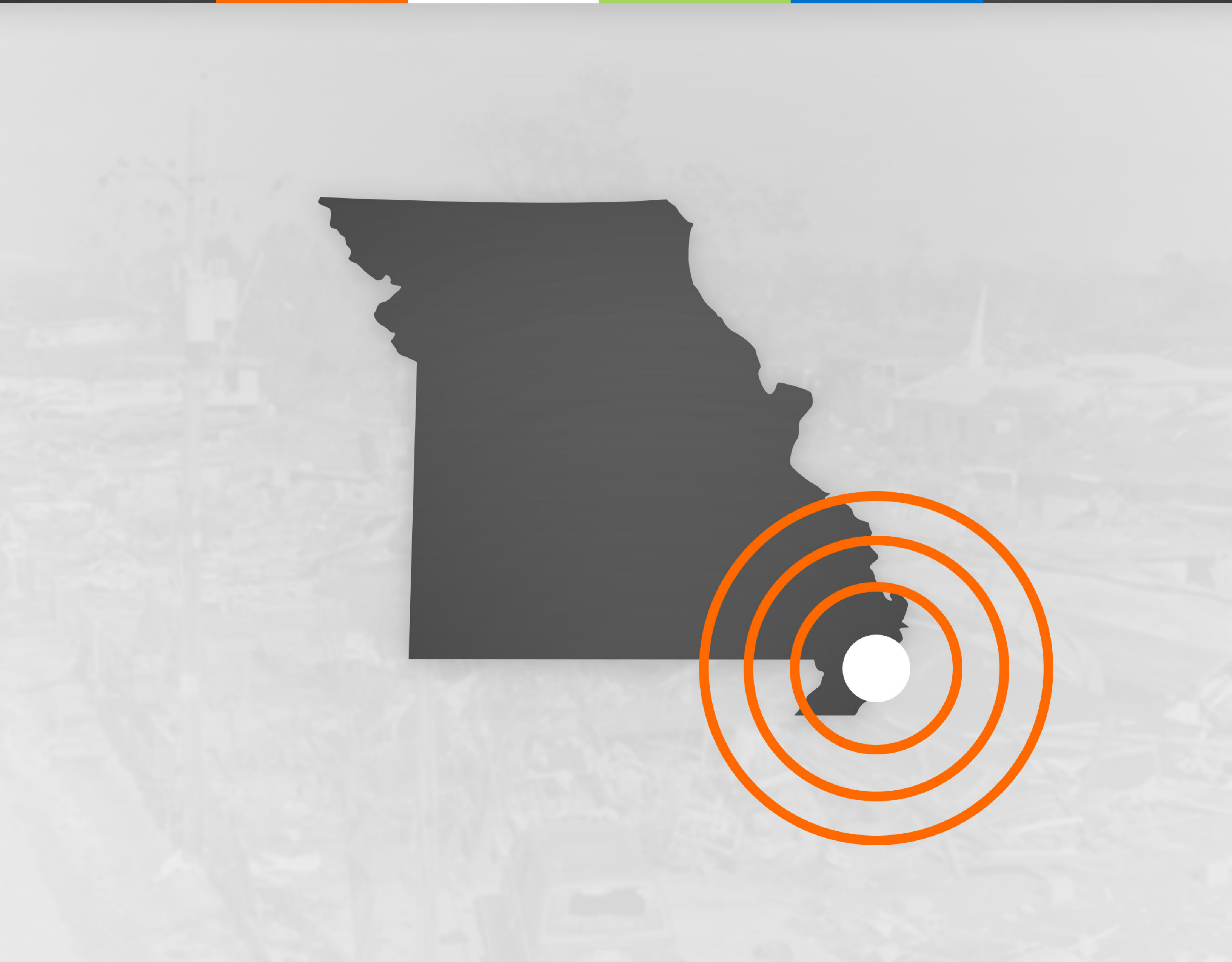
**800-726-7390**

DIFP
Department of Insurance,
Financial Institutions &
Professional Registration

Harry S Truman Building
Room 530
301 W. High St.
PO Box 690
Jefferson City, MO 65102

June 2016

# MISSOURI RESIDENTIAL
# EARTHQUAKE COVERAGE
# 2019



STATISTICS SECTION • JULY 2019

Public
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## Introduction

Missouri is the third largest market for earthquake insurance among the states, exceeded only by California and Washington.[1] The primary earthquake risk in the state is associated with the New Madrid fault, and is greatest in the Southeast quadrant of the state extending from the bootheel northwards to St. Louis and beyond. However, it is precisely in this high-risk area that the market for earthquake insurance has significantly contracted over the past 20 years – many insurers have left the market entirely, while others refuse to issue new policies in the New Madrid area. Among insurers still willing to sell coverage, stricter underwriting standards make some types of dwellings ineligible for coverage. Those who can obtain coverage find that they are required to "self-insure" to a much greater extent than in the past. Deductibles up to 20 percent of the dwelling value are not uncommon, and "stacked" deductibles are often applied separately to the dwelling and contents. While coverage has contracted, the price of coverage has increased significantly, in some instances by more than 500 percent in some counties over the last 15 years. In short, coverage has become significantly less available and less affordable in the areas that require it most.

This report presents data on some of the market trends over the past 15 years. Missouri is one of the few states that collect residential insurance data by ZIP code, including data for earthquake coverage. These data afford a fairly precise measure of market penetration and price by geographic region. In addition, these data were supplemented by a survey of Missouri's largest writers regarding market practices related to earthquake coverage.

## Summary of Findings

Earthquake coverage has become less available and less affordable over the last 15 to 20 years. Where the coverage is available, prices have significantly increased and consumers are required to self-insure to a greater extent than ever before.

- On average, earthquake premiums in the six counties that comprise the New Madrid area have increased by nearly 700 percent between 2000 and 2018, and in one county by nearly 1,000 percent.

- While rates have increased throughout the state, the rates in the highest risk areas of the data have increased much more rapidly, widening the costs between high and low risk areas. In 2000, average annual premium in the New Madrid area was only 64 percent higher than the lowest risk counties of Missouri. By 2018, premiums were nearly 334 percent higher.

- In 2000, over 60 percent of residences in the New Madrid area had earthquake insurance. By 2018, the rate of coverage had declined to just under 14 percent, a decrease of 46 percentage points.

- In other high risk areas outside of the New Madrid zone, take-up rates also substantially decreased, from 67.6 percent to 46.3 percent over the same period.

[1] Including territories, Puerto Rico also has a somewhat higher premium volume for earthquake insurance. However, Puerto Rico is a special case, in that earthquake insurance is required for most residences.

- Nearly half a million residences that are not covered for earthquake losses are located in a Missouri county rated 7 or higher on the Mercalli scale (a measurement of vulnerability to a New Madrid earthquake, see below). The total property value of these unprotected residences, excluding the value of contents that may also be at risk, is estimated to approach $100 billion.

- Based on the Missouri market share for homeowners insurance,
  - Carriers with 12.5 percent of the home insurance market either write no earthquake coverage anywhere in the state, or only renew existing earthquake policies but won't issue new coverage
  - Significantly more, or 31 percent, write somewhere in Missouri, but will not provide new coverage in the New Madrid area (though some of these still offer renewal coverage)
  - 41 percent issue some new coverage in the New Madrid area, but will not insure some types of construction, such as masonry homes.
  - Only 26.6 percent of the market issues coverage in New Madrid on the same basis as elsewhere in the state, but even these companies may have significant additional underwriting restrictions based on the age and location of the home and other construction characteristics

- Those able to obtain earthquake insurance must still "self-insure" to a significant degree. In the six-county New Madrid area, only one insurer (among those surveyed) offers a deductible of less than 10 percent of the insured value of the residence. Over 27 percent of the market requires a deductible of 15 percent or higher. Often, deductibles are "stacked," such that they apply separately to the building and contents.

- Of those who have earthquake coverage and are located in areas with a risk of 7 or higher on the Mercalli 10-point scale, the amount of risk they still retain due to deductibles exceeds $14.5 billion. When this amount is added to homes that have no earthquake coverage, the value of self-insured residential property in moderate to high-risk zones exceeds $110 billion.

In the following report, these trends are displayed by Missouri region and by county.

**Missouri's Earthquake Risk**

Over the winter of 1811-1812, the New Madrid area of Missouri experienced a series of powerful earthquakes. By most estimates, these quakes were among the strongest ever experienced on the continental US, at least since settlement by Europeans. According to the US Geological Survey (USGS), the area of strong ground motion exceeded the 1964 Alaska earthquake by a factor of two to three, and was approximately ten times as large as the 1909 San Francisco earthquake. Because of the lack of instrumentation at the time, estimates must be based on written accounts of those who witnessed the quake or its aftermath. The majority of researchers believe the three primary quakes ranged in magnitude from 7.0 to 7.5, with several aftershocks ranging from 6.0 to 6.5 (see USGS,http://earthquake.usgs.gov/earthquakes/states/events/1811-1812.php ).

Eyewitness accounts of the event(s) vividly describe the extraordinary violence unleashed by the New Madrid fault. One eyewitness close to the epicenter of the December 11, 2011 earthquake details "…a scene truly horrible:"

*On the 16th of December, 1811, about two o'clock, A.M., we were visited by a violent shock of an earthquake, accompanied by a very awful noise resembling loud but distant thunder, but more hoarse and vibrating, which was followed in a few minutes by the complete saturation of the atmosphere, with sulphurious vapor, causing total darkness. The screams of the affrighted inhabitants running to and fro, not knowing where to go, or what to do - the cries of the fowls and beasts of every species - the cracking of trees falling, and the roaring of the Mississippi - the current of which was retrograde for a few minutes, owing as is supposed, to an irruption in its bed -- formed a scene truly horrible.*[2]

Strong tremors and some property damage were reported as far away as Cleveland (where a local newspaper reported "serious alarm" at "shocks far more violent than any before experienced"), Alexandria, Pittsburgh, Washington D.C., New York and other eastern cities.

Were an earthquake of similar magnitude to occur today along the New Madrid fault, losses would be staggering. The risk modeling firm AIR Worldwide has estimated that a New Madrid recurrence would produce *insured* losses of $120 billion (2011 dollars). Such losses would only be rivaled by a repeat of the 1906 San Francisco earthquake, with estimated losses of $93 billion.

**Estimated Insured Losses Were Event to Happen Today**

| Date | **Event Location** | **Magnitude** | **Insured Losses (2011 Dollars)** |
|---|---|---|---|
| **February 7, 1812** | New Madrid, Mo | 7.7 | $120 billion |
| **April 17, 1906** | San Francisco, CA | 7.9 | $93 billion |
| **August 31, 1886** | Charleston, SC | 7.3 | $44 billion |
| **June 1, 1838** | San Francisco, CA | 7.4 | $30 billion |
| **January 17, 1994** | Northridge, CA | 6.7 | $23 billion |
| **October 21, 1868** | Hayward, CA | 7.0 | $23 billion |
| **January 9, 1857** | Fort Tejon, CA | 7.9 | $8 billion |
| **October 17, 1989** | Loma Prieta, CA | 6.3 | $7 billion |
| **March 10, 1933** | Long Beach, CA | 6.4 | $5 billion |
| **July 1, 1911** | Calaveras, CA | 6.4 | $4 billion |

Source: AIR Worldwide. Estimated losses include property and contents loss, additional living expense, business interruption for residential, mobile home, commercial and automobile losses. Estimates include demand surge and fire following earthquake, and are based on earthquake insurance take-up rates in each area. See http://www.air-worldwide.com/Publications/AIR-Currents/2012/Top-10-Historical-Hurricanes-and-Earthquakes-in-the-U-S---What-Would-They-Cost-Today/

[2] Letter from Eliza Bryan, March 22, 1816. Reprinted by USGS, available at http://hsv.com/genlintr/newmadrd/accnt1.htm

The USGS has estimated that the probability of a magnitude 7.5 or greater earthquake in the New Madrid zone over the next 50 years is between 7%-10%. The probability of an earthquake exceeding magnitude 6 over the same time period is 25% - 40%.[3] A joint assessment by the Mid-American Earthquake Center of the University of Illinois and the Federal Emergency Management Agency predicted that a major New Madrid event could entail total economic losses of $300 billion, surpassing the highest total economic loss of any natural disaster in US history. The report is worth quoting at length:

"Nearly 715,000 buildings are damaged in the eight-state study region. About 42,000 search and rescue personnel working in 1,500 teams are required to respond to the earthquakes. Damage to critical infrastructure (essential facilities, transportation and utility lifelines) is substantial in the 140 impacted counties near the rupture zone, including 3,500 damaged bridges and nearly 425,000 breaks and leaks to both local and interstate pipelines. Approximately 2.6 million households are without power after the earthquake. Nearly 86,000 injuries and fatalities result from damage to infrastructure. Nearly 130 hospitals are damaged and most are located in the impacted counties near the rupture zone. There is extensive damage and substantial travel delays in both Memphis Tennessee, and St. Louis, Missouri, thus hampering search and rescue as well as evacuation. Moreover roughly 15 major bridges are unusable. Three days after the earthquake, 7.2 million people are still displaced and 2 million people seek temporary shelter. Direct economic losses for the eight states total nearly $300 billion, while indirect losses may be at least twice this amount."[4]

The Missouri counties most vulnerable to earthquake risk are the six southeastern-most counties in the bootheel: Dunklin, Mississippi, New Madrid, Pemiscot, Scott and Stoddard. Other high risk areas include counties adjacent to the New Madrid Region, extending north to St. Louis. The entire western portion of the state has a relatively lower risk for earthquake damage, a fact important for Missouri earthquake insurance market.

The Mercalli Scale, a measure of shaking intensity ranging from 1 to 12, is depicted in the map on the following page. If a large New Madrid event were to occur today, large portions of the state would be subjected to shaking ranging from 7 to 10 on this scale. The remainder of the state would be subject to shaking intensity rated at a level of 6. The levels are defined by the intensity of ground movement, as follows:

6 – *Strong*. Felt by nearly everyone. Loose objects and some windows may be broken, and unstable objects overturned.

7 – *Very Strong*. Damage is negligible in buildings of good design and construction; slight to moderate in well-built ordinary structures. Poorly built or badly designed structures will experience considerable damage.

8 – *Severe*. Damage is slight in specially designed structures, but considerable in ordinary substantial buildings which may partially collapse. Damage is great in poorly built structures. Fallen chimneys, factory stacks, columns, and walls will not be uncommon. Heavy furniture may be overturned.

9 – *Violent*. Damage is considerable even in specially designed structures. Well-designed frame structures will be thrown out of alignment. Damage will be great in substantial buildings, with partial collapse. Buildings will be shifted off foundations. Some underground pipes will be broken. Reservoirs suffer severe damage.

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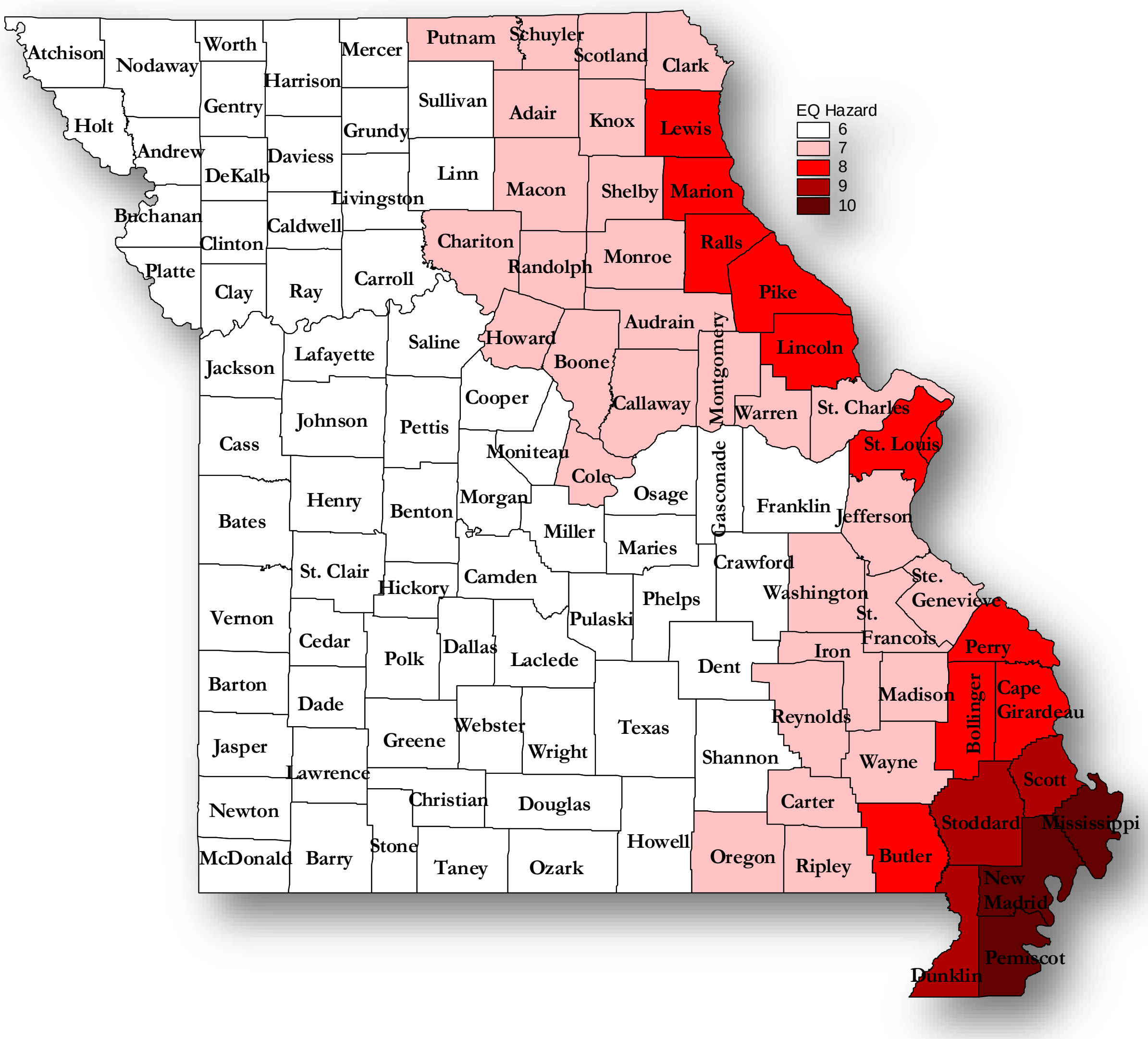
[3] US Geological Survey Fact Sheet FS-131-02. October, 2002.

[4] Elnashai, Amr, Lisa Cleveland, Theresa Jefferson and John Harrald. 2009. Impact of New Madrid Seismic Zone Earthquakes on the Central USA, Vol I & II. MAE Center Report No. 09-03

10 – *Extreme*. Some well-built wooden structures will be totally destroyed. Most masonry and frame structures along with foundations will be destroyed. Bridges and dams may be severely damaged or destroyed. Large landslides will occur, and water thrown from the banks of rivers and lakes.

## Mercalli Scale

## (Projected Intensity Associated with Possible New Madrid Earthquake)




*Source: Adapted from the Missouri State Emergency Management Agency.*

**Background: Managing Risk with Insurance Markets**

Earthquake insurance markets possess features that depart significantly from what might be called "ideal" insurance markets, and such peculiarities are largely attributable to the nature of the underlying risk. In competitive markets, the price of a product reflects the cost of production plus administrative expenses and a normal rate of return (and, of course, elasticity of demand). Unlike traditional and particularly tangible products, the cost of insurance isn't known with certainty at the time the price is established and the product sold. To price in a meaningful way, insurers require a high degree of confidence that predictions regarding likely losses are accurate. The greater the uncertainty regarding the true risk and ultimate payout in claims, the less well a market will function in the traditional sense. Of course, this same uncertainty regarding the true nature of the risk is shared by consumers, potentially creating additional problems on the demand side of the market.

Traditionally, the most predictable and therefore insurable events are those characterized by high frequency and low severity losses. Statistical models rely on the "law of large numbers," such that the more one is able to observe an event over time, the greater the certainty that meaningful probabilities of loss can be ascertained.[5] In addition, risks are manageable because losses of this kind are *statistically independent events*. The probability that Driver B in Kansas City will be involved in an automobile accident on a given day isn't affected by the fact that Driver A in St. Louis experienced a crash. While automobile and homeowners insurance can be subject to catastrophic large-scale losses due to a single event, such losses are manageable and are generally a small proportion of overall losses when extended over a sufficient time period. Most automobile losses, for example, are due to day-to-day crashes whose costs are highly predictable over time, and where loss probabilities aren't subject to significant swings from year-to-year. In general, prior year losses are a very good predictor of current year losses.

Clearly, earthquake insurance markets depart from the idealized features discussed above in several important ways. First, the likelihood of a significant event cannot be determined with a high degree of confidence and precision, certainly not in a way that is analogous to predicting automobile losses. Secondly, rather than "high frequency / low severity" losses, earthquakes present exactly the opposite risk in which losses are very infrequent (in Missouri) but have the potential to be catastrophic. Nor are losses *independent events* – a loss on one policy will quite possibly entail losses of virtually every policy within the area of risk. Lastly, known earthquake risk in Missouri is largely localized to the southeastern quadrant of the state, so there is little incentive for individuals residing outside of the high risk zone to purchase coverage (and in fact few homeowners in low risk areas have earthquake coverage). It is therefore difficult to spread risk geographically using traditional market mechanisms.

Many of these types of events have at various times in history become uninsurable by private markets. Some risks have been assumed by public bodies in whole or in part when private markets failed to produce adequate or affordable coverage. Examples include flood insurance, crop insurance and the terrorism risk backstop, where at various times such risks were considered too unpredictable and possible losses too catastrophic for the private market to insure them via normal market operation. Similarly, after the 1994

[5] The "law of large numbers" explains why predictions about the ratio of heads to tales in a coin flip are much more accurate for 1,000 flips than 10 flips; or why larger sample sizes are more precise (have smaller margins of errors).

Northridge Earthquake, the public California Earthquake Authority was established to stabilize the market, and it currently issues more than three-fourths of all residential earthquake policies in the state.[6]

**Alternative Risk Management Mechanisms –Reinsurance**

As noted above, primary insurance markets cannot easily accommodate risks when hazards are geographically localized. As discussed further below, few individuals residing outside the area of highest risk are likely to purchase coverage, and they are likely to be much more sensitive to price. An insurer willing to provide earthquake coverage will inevitably experience a degree of "adverse selection," and find that insureds are concentrated where the risk is greatest and minimal where the risk is least.

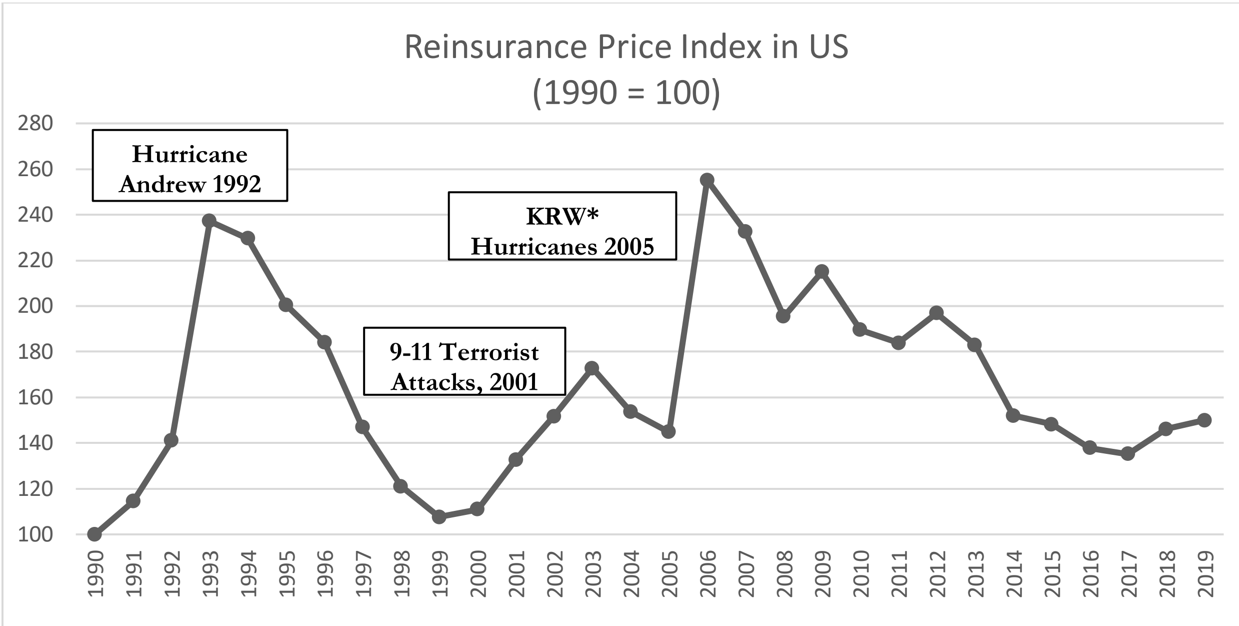
However, there are alternative market mechanisms available. One such mechanism is *reinsurance* - essentially insurance for insurance companies. Large reinsurers operate on a global scale, and primary insurers can transfer significant portions of the risk associated with a book of business to these entities in exchange for a premium. As might be expected, earthquake coverage is highly reinsured. In 2018, a little over 70 percent of direct earthquake premium was ceded to reinsurance.[7] Other mechanisms include catastrophe bonds, or securities issued by insurers to pass risk on to investors. Total outstanding catastrophe bonds amounted to more than $20 billion in 2015 and cover risks such as hurricanes and earthquakes.[8]

Reinsurance markets work well to manage catastrophic risks such as earthquakes. However, high dependence on reinsurance means that prices and availability of primary coverage is sensitive to the price of reinsurance. This sensitivity means that events unrelated to Missouri's earthquake risk can impact the price of insurance coverage in Missouri. For example, reinsurance became more expensive and less available after Katrina. However, the cost of reinsurance remains well below the peak of 2007, and does not appear to account for current market retractions in Missouri.

[6] California Earthquake Authority. 2017 Report to the Legislature. August, 2018. This report can be found on the CEA's website at www.earthquakeauthority.com

[7] Calculated from insurers' financial annual statements, Exhibit of Premium Written.

[8] ARTEMIS. Q1 2015 Catastrophe Bond and ILS Market Report.




*****Katrina, Rita & Wilma**.**
******The deepening financial crisis also had a significant impact on the price of reinsurance
**Source:** Adapted from Guy Carpenter, ROL Index for US

**Missouri's Contracting Earthquake Insurance Market**

As the previous discussion makes clear, it doesn't appear that a lack of access to reinsurance accounts for the deterioration of the Missouri earthquake market, particularly in recent years. Rather, it appears that insurers have either determined that the New Madrid fault presents a risk greater than previously believed or, as is the case of at least one major insurer, less tolerance to insure all catastrophe risks. Allstate announced in 2006 that it was pulling out of the earthquake market in all states, describing it as a general business decision to reduce exposure to all forms of catastrophe risks.[9] At the time, Allstate had provided earthquake insurance to over 37,000 Missouri residences.

Other companies quickly followed Allstate's lead. Between 2000 and 2018, 72 insurers exited the Missouri earthquake market. Between them, these insurers had provided coverage to over 124,000 residences in 2000. While 39 insurers entered the market over the same time period, those carriers only insured 68,909 policies in 2018. Over the same period, companies that remained in the market stopped writing in high risk areas or tightened underwriting criteria, scaled back the amount and type of coverage offered, and dramatically increased prices. The net result of these market practices has been a significant decline in the number of earthquake policies issued. Since 2000, the number of homeowners policies with earthquake coverage declined by more than a quarter, from 670,968 in 2000 to 492,591 in 2018.

[9] Jolayne Hoytz. Allstate Ends Quake Coverage. **The Seattle Times,** 6/2/2006.

The remainder of this report examines these trends in detail. The figures in the following tables are derived from two primary data sources. Information pertaining to premium and policy counts[10] by geographic region is derived from residential insurance data collected by ZIP Code, pursuant to 20 CSR 600-3.100 (see http://www.sos.mo.gov/adrules/csr/current/20csr/20c600-3.pdf). Additional information was obtained by a survey of homeowners writers in the state. In 2018, insurers with a combined homeowners insurance market share of 96 percent completed a questionnaire regarding market practices with respect to providing earthquake coverage.

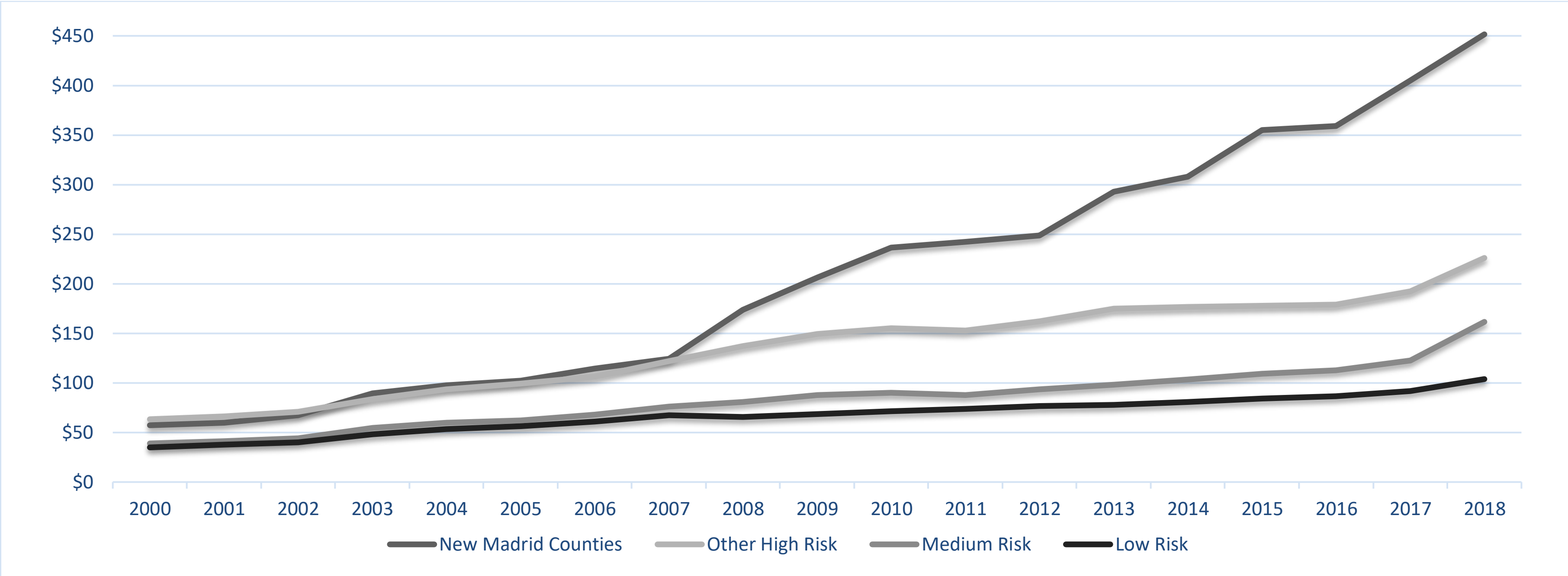
**The Rising Cost of Coverage in a Declining Market**

In 2000, residential earthquake coverage was readily available and inexpensive, even in the highest risk areas of the state. In that year, residents in the New Madrid region of Missouri[11] paid on average $57 per year for such coverage, an amount not significantly higher than the $35 annual premium paid by residents of the lowest risk area. Over the next 15 years, rates increased substantially, primarily within higher risk areas. By 2015, the average premium in the New Madrid area had increased by 523% to $357. While premiums also increased elsewhere in the state, the rate of increase was substantially less than experienced in New Madrid. In the lowest risk areas, premiums increased by 173% over the same time period.

[10] Or, more strictly speaking, "exposures" rather than policy counts. The term "exposure" is equivalent to coverage for one residence for one year. Two six month policies issued in a year would count as a single exposure. To avoid overuse of specialized terminology, the terms "policies" or "covered residences" are used in this report.

[11] For purposes of this report, the region is composed of the six southeastern-most counties in Missouri: Dunklin, Mississippi, New Madrid, Pemiscot, Scott and Stoddard.

| Average Annual Cost of EQ Coverage | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Region** | **2000** | **2007** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** | **2014** | **2015** | **2016** | **2017** | **2018** |
| New Madrid Counties | $57 | $124 | $174 | $206 | $236 | $242 | $249 | $293 | $308 | $355 | $359 | $405 | $452 |
| Other High Risk Counties | $63 | $122 | $137 | $149 | $155 | $153 | $162 | $175 | $177 | $178 | $179 | $192 | $226 |
| Medium Risk Counties | $39 | $76 | $80 | $88 | $90 | $88 | $94 | $98 | $104 | $109 | $113 | $122 | $161 |
| Low Risk Counties | $35 | $67 | $66 | $69 | $71 | $74 | $76 | $78 | $81 | $84 | $87 | $92 | $104 |
| **MO Total** | **$50** | **$97** | **$106** | **$115** | **$119** | **$117** | **$124** | **$131** | **$134** | **$137** | **$146** | **$149** | **$179** |
| **% Difference-Highest v Lowest Risk Counties** | 62.9% | 85.1% | 163.6% | 198.6% | 232.4% | 227.0% | 227.6% | 275.6% | 280.2% | 322.6% | 312.6% | 340.2% | 334.6% |



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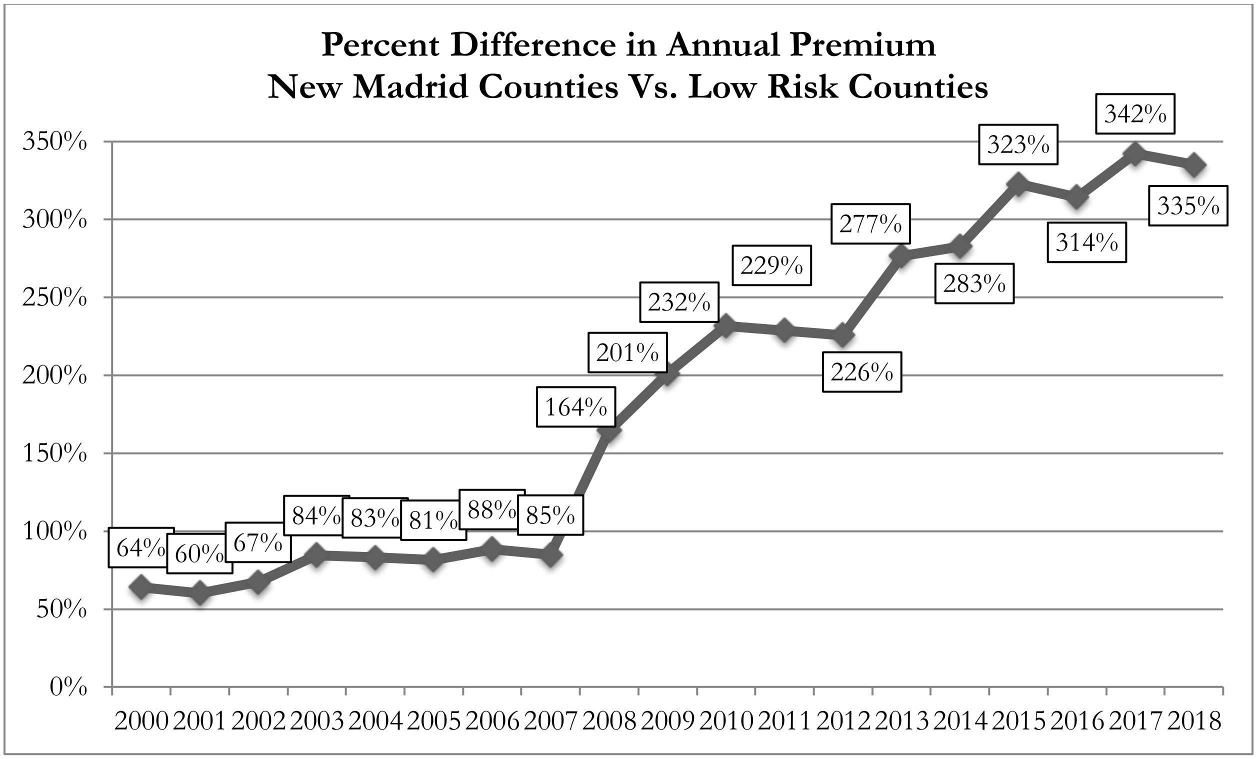
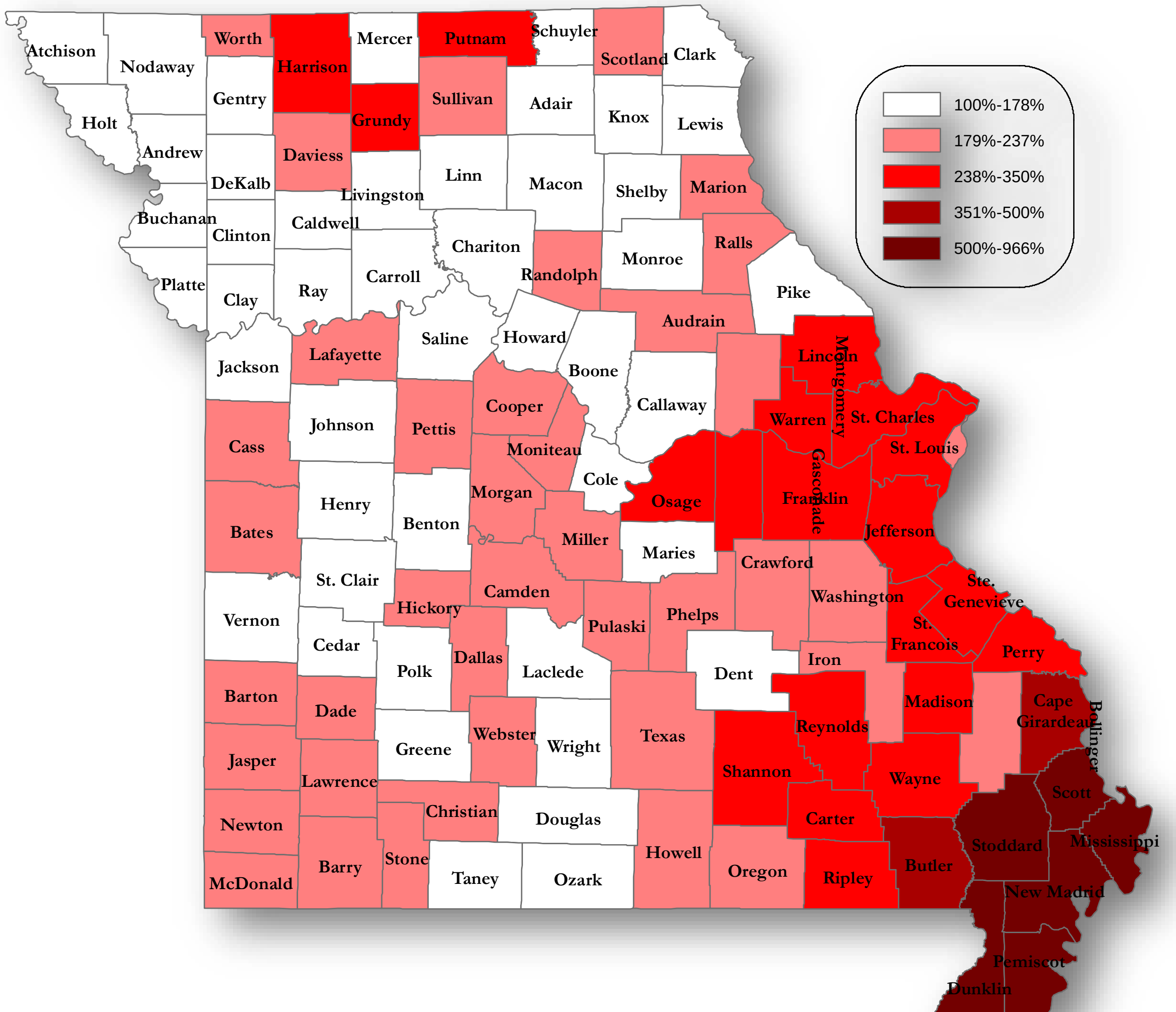
As a result of these trends, the gap in costs widened between high- and low-risk areas. In 2000, premiums in New Madrid were only 64% higher than the lowest-risk areas. The gap increased dramatically in 2008, and by 2015 had grown to 274%.




The map below depicts the change in annual premium by county. The reader will note that the rate of increase was significantly higher in counties most at risk. A table of these same data can be found in Appendix A.

## % Change in Average Premium for Earthquake Coverage, 2000-2018



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**Declining Take-up Rates**

In 2000, nearly 44 percent of all Missouri residences had earthquake coverage. In the New Madrid area, over 60 percent of homes were covered, and in other high risk areas, including St. Louis, the take-up rate was almost 70 percent. In New Madrid, the take-up rate had declined to less than 50 percent in 2008, and by 2018 had declined much further to below 14 percent. Thus, six of every seven homes in the six-county New Madrid area lacked earthquake coverage last year. The decline was less precipitous in the second highest risk area, though by 2016 less than half of residences had coverage. In the lowest risk area, comprised of the western portion of the state, coverage rates declined by nearly 9 percentage points, to 13.3 percent (see illustrations on the following page). As depicted in the following table, only in 6 counties were more than half of residences covered.

| % of Residences With Earthquake Coverage | # of Counties | Number of Owner-Occupied Homes & Mobile Homes* |
|---|---|---|
| Less than 10% | 41 | 215,112 |
| 10%-19.9% | 44 | 707,197 |
| 20%-29.9% | 15 | 203,664 |
| 30%-39.9% | 6 | 56,175 |
| 40%-49.9% | 3 | 62,848 |
| 50%-59.9% | 5 | 407,778 |
| 60%-69.9% | 1 | 119,825 |
| **Total** | **115** | **1,772,603** |

**Based on insured dwellings. A small percentage of homes that have no insurance coverage are excluded.*

In the highest risk areas, including all counties rated seven or higher on the Mercalli Scale (see map, page 3), nearly 500,000 private residences (excluding rental properties) lacked earthquake coverage in 2018. The estimated value of these uninsured residences totaled nearly $100 billion, excluding the value of the contents.

| **Value of Dwellings Not Insured for Earthquake Damage (uninsured homes plus value retained under deductible on insured homes)** | | | | |
|---|---|---|---|---|
| **Earthquake Risk (Mercalli Scale)** | **Uninsured Dwellings** | **Uninsured Property Value** | **Amounts Under Deductible on Insured Residences** | **Total** |
| 7 | 262,798 | $50,665,730,833 | $5,936,484,313 | $56,602,215,146 |
| 8 | 192,014 | $40,620,827,083 | $8,376,305,188 | $48,997,132,271 |
| 9 | 29,405 | $3,833,162,500 | $152,944,125 | $3,986,106,625 |
| 10 | 11,798 | $1,367,817,500 | $36,403,688 | $1,404,221,188 |
| **7 or higher** | **496,015** | **96,487,537,916** | **14,502,137,314** | **$110,989,675,230** |

*Source: Estimates produced by DIFP.*



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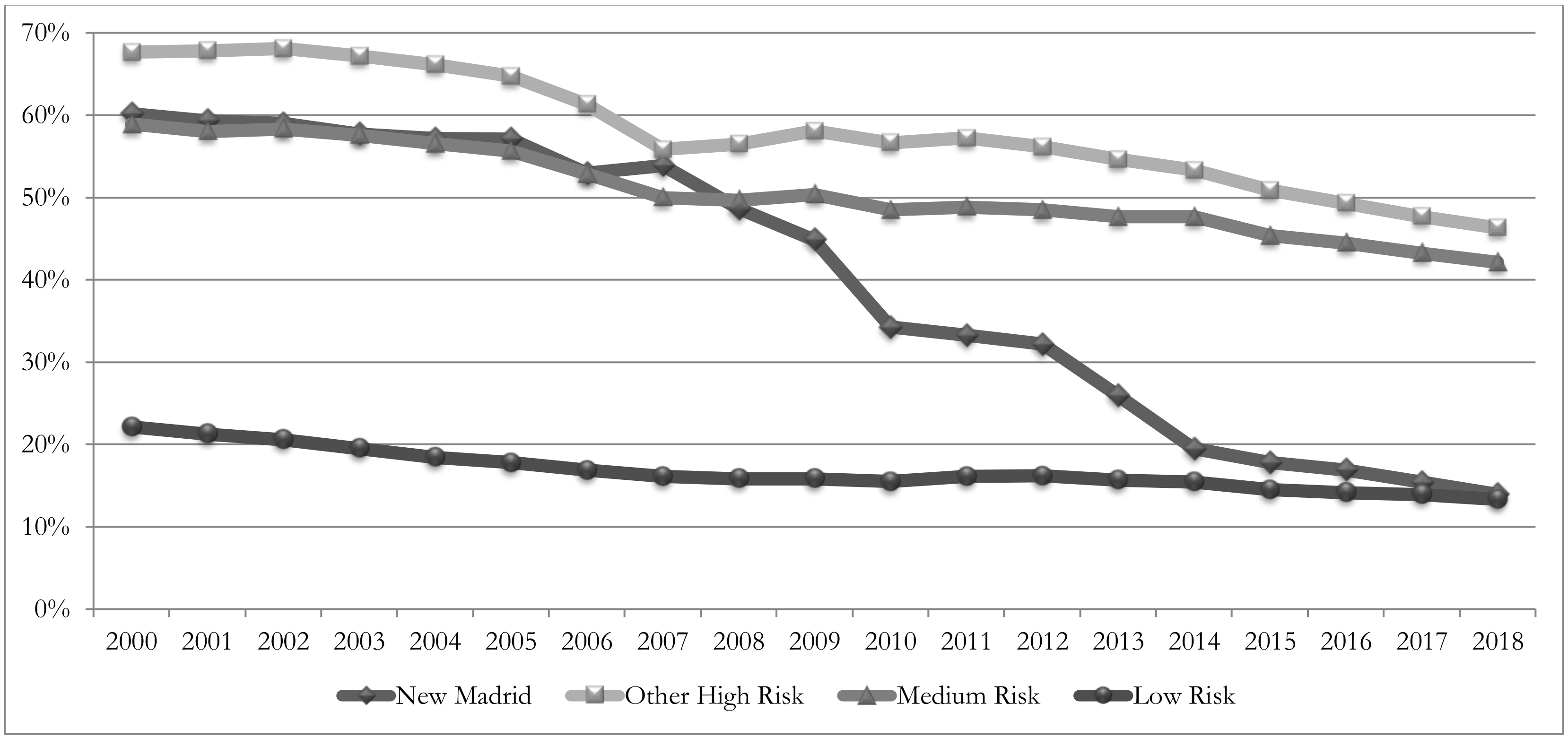
| Percent of Residences with Earthquake Coverage | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Region | 2000 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | Pct Point Diff. |
| **New Madrid** | 60.2% | 53.9% | 48.6% | 44.9% | 34.3% | 33.3% | 32.2% | 25.9% | 19.7% | 17.8% | 16.9% | 17.1% | 13.9% | 46.3% |
| **Other High Risk** | 67.6% | 55.8% | 56.5% | 58.1% | 56.6% | 57.2% | 56.1% | 54.6% | 53.5% | 50.9% | 49.3% | 48.6% | 46.3% | 21.3% |
| **Medium Risk** | 58.9% | 50.0% | 49.7% | 50.4% | 48.5% | 48.8% | 48.5% | 47.6% | 47.7% | 45.3% | 44.5% | 45.8% | 42.1% | 16.8% |
| **Low Risk** | 22.1% | 16.1% | 15.9% | 15.8% | 15.5% | 16.1% | 16.2% | 15.7% | 15.5% | 14.5% | 14.1% | 14.7% | 13.3% | 8.8% |
| **MO Total** | **43.6%** | **35.2%** | **35.0%** | **35.4%** | **34.2%** | **34.6%** | **34.4%** | **33.2%** | **32.9%** | **30.6%** | **28.5%** | **30.2%** | **27.8%** | **15.8%** |



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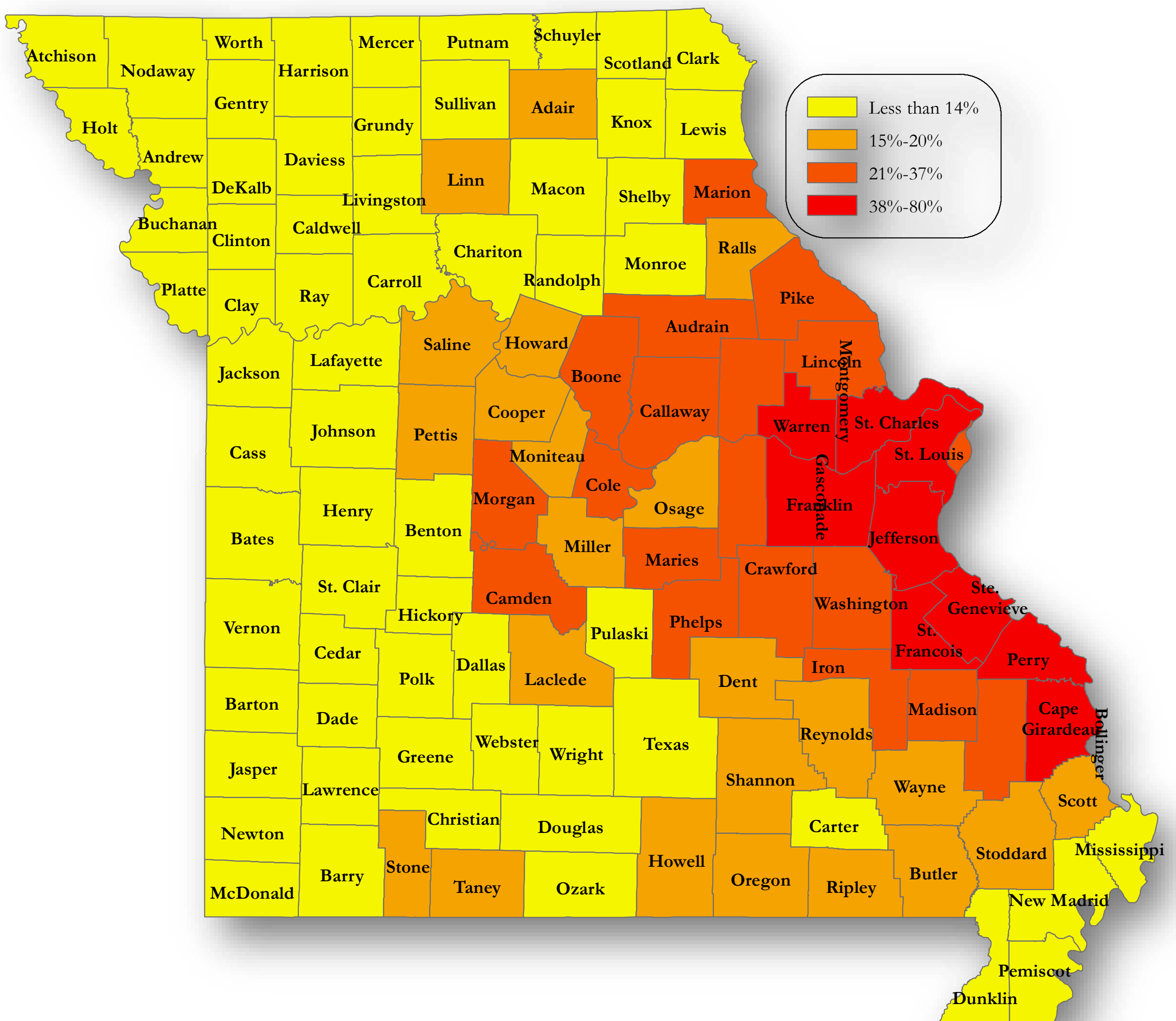
## Percent of Residences with Earthquake Insurance, 2018



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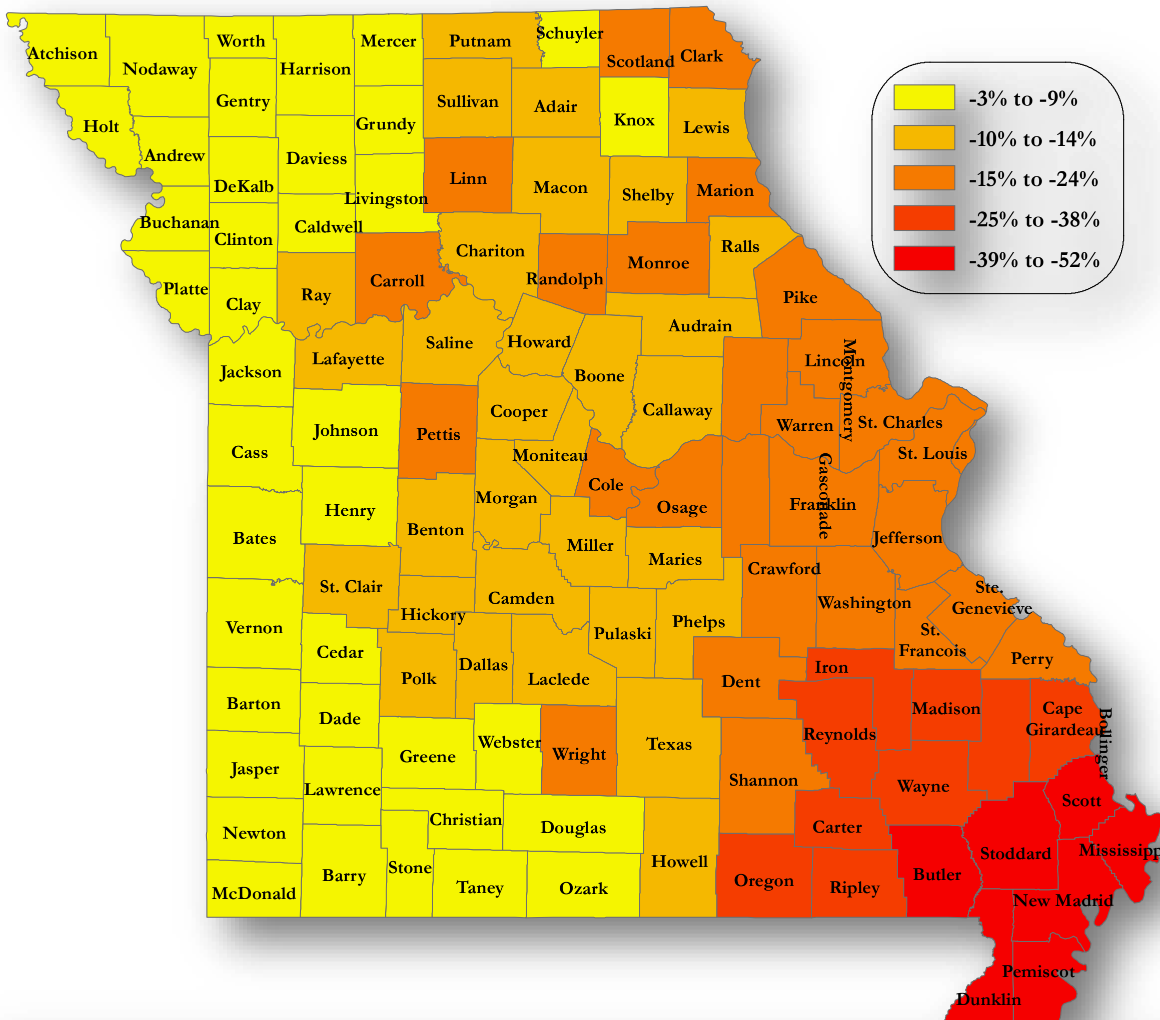
## Residences With Earthquake Insurance, Percentage Point Change, 2000-2018



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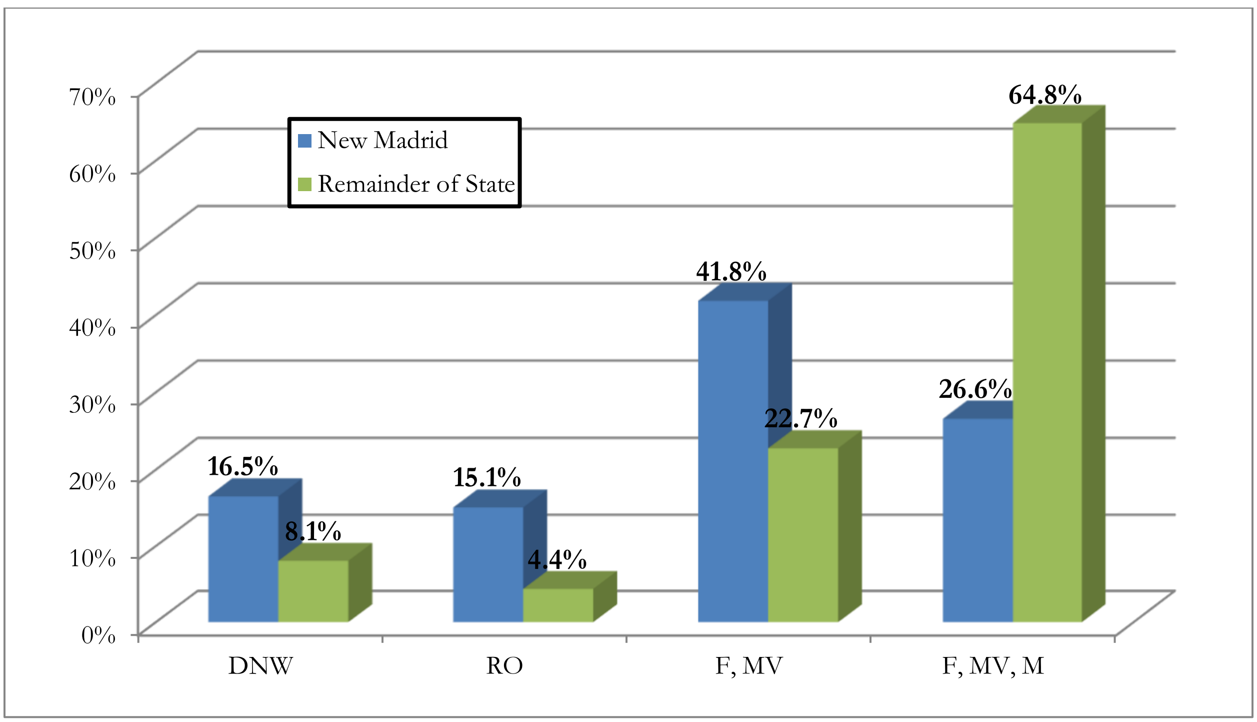
**Declining Quality of Coverage**

Based on survey responses from carriers representing over 97 percent of the homeowners market, most insurers still sell earthquake coverage in at least in some areas of the state. Weighting responses by market share, approximately 88 percent of the market still offers the coverage on both renewal and new business. However, coverage is far less available within the high-risk New Madrid area. Among respondents, nearly one-third of the market does not write new earthquake coverage at all in New Madrid (though a portion of these will renew existing earthquake business). An additional 41 percent of the market places significant additional underwriting restrictions on residences in the area, the chief restriction being that masonry homes are ineligible for coverage. In addition, residents of New Madrid may be subject to significantly higher deductibles. Only about a fourth of the market issues coverage in New Madrid on the same terms as elsewhere in the state.

## Earthquake Insurance Availability, by Percent of Homeowners Market New Madrid Area vs. Remainder of the State




*Source: DIFP survey of homeowners insurers*
*DNW: Does Not Write Earthquake Insurance*
*RO: Renewals Only*
*F, MV: Will provide coverage for Frame and Masonry Veneer residences, but not structures constructed with solid masonry*
*F, MV, M: Provides coverage for all construction types.*

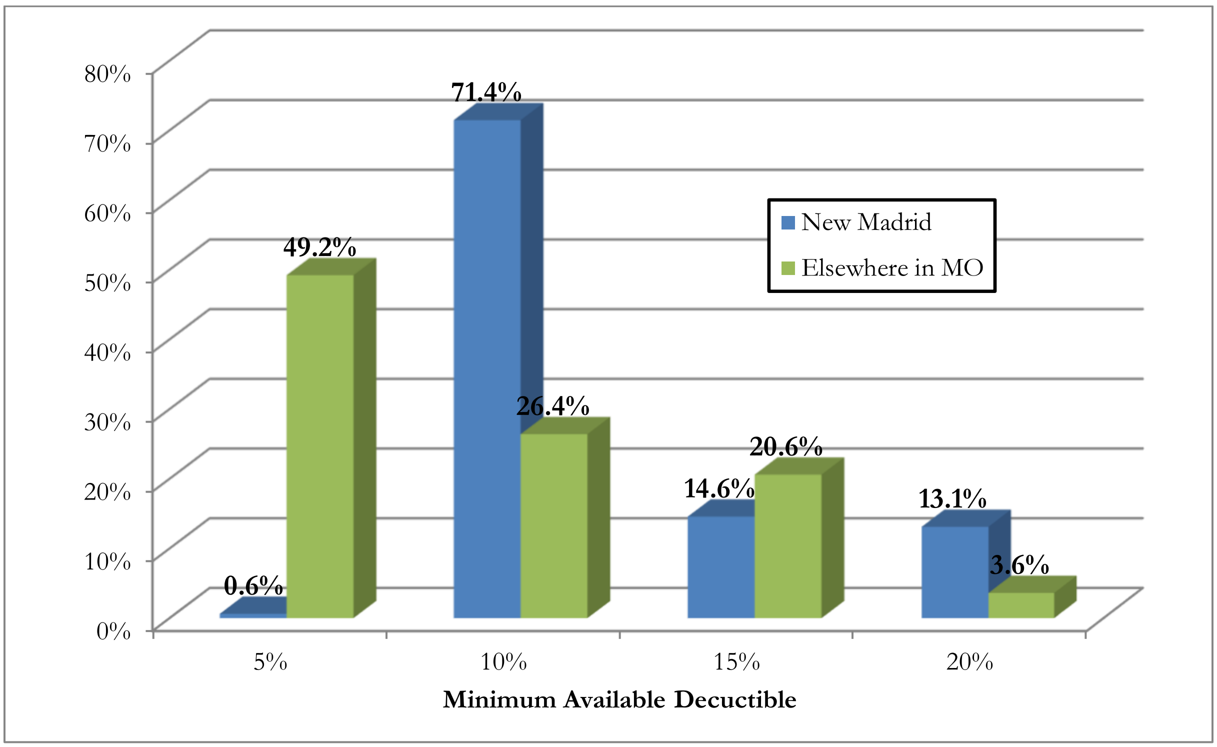


**Public**
**Schedule SAW-D-9**

Even individuals with earthquake coverage are increasingly required to "self-insure" to a significant extent. Earthquake insurance typically requires deductibles specified as a percentage of the insured value of the dwelling. For example, a $200,000 home with a 10% deductible would require a homeowner to pay the first $20,000 of a claim before insurance would extend coverage. In addition, "stacked" deductibles are common, so that separate deductibles are applied to the dwelling and contents, so that hypothetical insured described above would be retain up to $40,000 of risk.

Based on the DIFP survey, about half the market offers a 5% deductible policy *outside of the New Madrid area,* though virtually no insurers offer such policies to New Madrid residents. In the six-county New Madrid area, 71 percent of insurers (weighted by market share) require a 10 percent deductible, and over a quarter require a deductible of 15% or higher.

## % of Market by Minimum Available Deductible




*Source: DIFP survey of homeowners insurers*

**Conclusion**

Missouri's earthquake insurance market has significantly contracted over the past 10 to 15 years. Relatively few insurers issue earthquake coverage in the New Madrid region without significant underwriting restrictions. For example, many refuse to cover specific kinds of residences, such as masonry homes. At the same time, the price of residential earthquake insurance has increased significantly; in the highest risk area of the state average premiums paid have increased by over 700 percent since 2000. Even when homeowners can obtain coverage, they still must retain a large portion of the risk. Virtually no insurer surveyed offered a policy with a deductible of less than 10 percent of the value of the insured dwelling, while over 40 percent required a deductible of 20 percent or higher. As a result, many individuals have dropped earthquake coverage, and the market has contracted most dramatically in the New Madrid area. In 2000, over 60 percent of dwellings in the six-county New Madrid area had earthquake coverage. By 2018, less than 14 percent had such coverage. The DIFP estimates that Missouri residential property valued at nearly $110 billion is exposed to significant earthquake risk but is not insured.

A comparison with Joplin is instructive. Struck by a devastating EF5 tornado on May 22, 2011, the insurance industry responded rapidly and within three months over $1 billion was made available to insureds. By June of the following year, more than $1.5 billion had been paid by insurers, who would eventually cover more than $2 billion in tornado-related losses.[12] Almost all structures were covered for this type of loss, resulting in a rapid infusion of funds that made recovery possible. Such a recovery mechanism is almost entirely lacking in the area of the state most vulnerable to a New Madrid earthquake.

[12] Based on a special data call of all P&C insurers active in Missouri.

## Appendix A:
## Average Annual Earthquake Premiumby County
(New Madrid counties are highlighted)

| County | 2000 | 2005 | 2010 | 2015 | 2018 | % Change, 2000-2018 |
|---|---|---|---|---|---|---|
| **Adair** | $31 | $52 | $58 | $62 | $75 | 140.0% |
| **Andrew** | $30 | $51 | $52 | $58 | $78 | 158.1% |
| **Atchison** | $35 | $52 | $65 | $78 | $86 | 144.5% |
| **Audrain** | $30 | $50 | $59 | $70 | $89 | 200.5% |
| **Barry** | $30 | $50 | $64 | $80 | $95 | 213.6% |
| **Barton** | $27 | $42 | $47 | $64 | $87 | 222.2% |
| **Bates** | $33 | $62 | $83 | $81 | $101 | 200.2% |
| **Benton** | $26 | $38 | $46 | $57 | $67 | 159.6% |
| **Bollinger** | $48 | $82 | $105 | $126 | $160 | 234.4% |
| **Boone** | $44 | $77 | $89 | $93 | $110 | 149.9% |
| **Buchanan** | $34 | $52 | $63 | $70 | $84 | 150.2% |
| **Butler** | $64 | $100 | $175 | $254 | $324 | 403.9% |
| **Caldwell** | $29 | $59 | $65 | $65 | $72 | 151.1% |
| **Callaway** | $32 | $55 | $66 | $73 | $89 | 174.8% |
| **Camden** | $36 | $55 | $76 | $90 | $114 | 219.8% |
| **Cape Girardeau** | $68 | $107 | $178 | $245 | $334 | 392.7% |
| **Carroll** | $30 | $37 | $48 | $60 | $71 | 137.1% |
| **Carter** | $34 | $61 | $101 | $105 | $137 | 307.4% |
| **Cass** | $35 | $57 | $68 | $80 | $104 | 197.4% |
| **Cedar** | $31 | $48 | $59 | $71 | $79 | 155.5% |
| **Chariton** | $29 | $56 | $66 | $55 | $73 | 149.2% |
| **Christian** | $37 | $60 | $74 | $87 | $104 | 181.1% |
| **Clark** | $29 | $41 | $50 | $56 | $62 | 113.1% |
| **Clay** | $36 | $55 | $62 | $74 | $94 | 165.7% |
| **Clinton** | $34 | $55 | $57 | $64 | $84 | 150.4% |
| **Cole** | $43 | $62 | $77 | $93 | $113 | 163.7% |
| **Cooper** | $33 | $49 | $61 | $82 | $95 | 190.9% |
| **Crawford** | $30 | $54 | $63 | $69 | $87 | 191.6% |
| **Dade** | $27 | $43 | $55 | $69 | $87 | 228.5% |
| **Dallas** | $28 | $44 | $53 | $75 | $84 | 200.4% |
| **Daviess** | $31 | $61 | $67 | $75 | $87 | 180.1% |
| **DeKalb** | $37 | $55 | $57 | $70 | $80 | 115.4% |
| **Dent** | $31 | $53 | $66 | $67 | $78 | 156.0% |
| **Douglas** | $27 | $39 | $42 | $59 | $64 | 131.3% |
| **Dunklin** | $57 | $112 | $234 | $420 | $514 | 808.2% |
| **Franklin** | $37 | $64 | $96 | $111 | $153 | 313.6% |
| **Gasconade** | $29 | $47 | $65 | $82 | $105 | 267.0% |
| **Gentry** | $32 | $59 | $75 | $72 | $82 | 154.8% |



**Public**
**Schedule SAW-D-9**

| | | | | | | |
|---|---|---|---|---|---|---|
| **Greene** | $39 | $60 | $73 | $88 | $106 | 172.6% |
| **Grundy** | $27 | $40 | $56 | $75 | $96 | 252.8% |
| **Harrison** | $24 | $33 | $44 | $67 | $84 | 250.9% |
| **Henry** | $30 | $51 | $62 | $65 | $77 | 160.6% |
| **Hickory** | $24 | $34 | $43 | $58 | $81 | 235.5% |
| **Holt** | $35 | $55 | $73 | $76 | $86 | 150.6% |
| **Howard** | $29 | $54 | $64 | $64 | $78 | 171.7% |
| **Howell** | $31 | $62 | $76 | $73 | $88 | 189.7% |
| **Iron** | $32 | $50 | $71 | $80 | $100 | 215.2% |
| **Jackson** | $41 | $62 | $73 | $87 | $103 | 150.7% |
| **Jasper** | $31 | $47 | $60 | $77 | $95 | 202.4% |
| **Jefferson** | $38 | $59 | $88 | $107 | $166 | 340.1% |
| **Johnson** | $33 | $59 | $64 | $76 | $84 | 150.6% |
| **Knox** | $27 | $50 | $54 | $60 | $66 | 147.3% |
| **Laclede** | $30 | $46 | $60 | $74 | $78 | 157.6% |
| **Lafayette** | $29 | $50 | $57 | $70 | $85 | 187.8% |
| **Lawrence** | $27 | $44 | $63 | $76 | $89 | 227.4% |
| **Lewis** | $25 | $48 | $60 | $58 | $68 | 167.1% |
| **Lincoln** | $34 | $59 | $74 | $80 | $137 | 301.1% |
| **Linn** | $27 | $37 | $40 | $47 | $59 | 119.2% |
| **Livingston** | $28 | $41 | $47 | $57 | $71 | 151.5% |
| **McDonald** | $23 | $39 | $50 | $61 | $74 | 219.6% |
| **Macon** | $27 | $50 | $52 | $56 | $73 | 171.1% |
| **Madison** | $34 | $55 | $82 | $108 | $126 | 273.0% |
| **Maries** | $29 | $52 | $62 | $64 | $74 | 152.6% |
| **Marion** | $29 | $50 | $60 | $64 | $81 | 179.9% |
| **Mercer** | $28 | $39 | $50 | $54 | $63 | 125.9% |
| **Miller** | $26 | $46 | $57 | $67 | $85 | 227.0% |
| **Mississippi** | $52 | $97 | $235 | $338 | $403 | 683.1% |
| **Moniteau** | $27 | $50 | $59 | $67 | $86 | 212.4% |
| **Monroe** | $26 | $49 | $57 | $58 | $72 | 177.2% |
| **Montgomery** | $31 | $54 | $68 | $76 | $101 | 228.2% |
| **Morgan** | $26 | $42 | $51 | $65 | $82 | 219.9% |
| **New Madrid** | $54 | $85 | $281 | $378 | $502 | 823.8% |
| **Newton** | $27 | $42 | $55 | $68 | $82 | 199.2% |
| **Nodaway** | $33 | $58 | $62 | $65 | $76 | 128.3% |
| **Oregon** | $33 | $56 | $69 | $89 | $99 | 194.9% |
| **Osage** | $32 | $85 | $107 | $102 | $130 | 301.2% |
| **Ozark** | $28 | $42 | $45 | $55 | $69 | 147.1% |
| **Pemiscot** | $48 | $97 | $248 | $420 | $513 | 965.7% |
| **Perry** | $42 | $63 | $95 | $142 | $178 | 320.7% |
| **Pettis** | $27 | $42 | $51 | $65 | $78 | 185.0% |
| **Phelps** | $32 | $54 | $68 | $77 | $94 | 191.4% |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Pike** | $36 | $61 | $75 | $76 | $92 | 158.6% |
| **Platte** | $46 | $70 | $81 | $99 | $114 | 145.8% |
| **Polk** | $31 | $47 | $60 | $74 | $86 | 175.7% |
| **Pulaski** | $29 | $58 | $74 | $86 | $96 | 227.3% |
| **Putnam** | $30 | $56 | $67 | $92 | $118 | 294.8% |
| **Ralls** | $27 | $45 | $57 | $59 | $86 | 220.9% |
| **Randolph** | $25 | $41 | $52 | $60 | $73 | 196.2% |
| **Ray** | $32 | $52 | $64 | $68 | $82 | 157.0% |
| **Reynolds** | $31 | $63 | $86 | $81 | $107 | 249.7% |
| **Ripley** | $38 | $59 | $82 | $126 | $146 | 286.3% |
| **Saint Charles** | $42 | $66 | $100 | $122 | $191 | 349.6% |
| **Saint Clair** | $28 | $45 | $55 | $73 | $78 | 178.1% |
| **Sainte Genevieve** | $42 | $62 | $87 | $130 | $163 | 288.5% |
| **Saint Francois** | $35 | $61 | $79 | $94 | $123 | 255.1% |
| **Saint Louis** | $64 | $101 | $157 | $179 | $227 | 253.0% |
| **Saline** | $28 | $39 | $52 | $62 | $75 | 168.2% |
| **Schuyler** | $27 | $45 | $58 | $61 | $60 | 124.9% |
| **Scotland** | $27 | $44 | $56 | $69 | $78 | 186.0% |
| **Scott** | $65 | $106 | $274 | $380 | $493 | 656.3% |
| **Shannon** | $28 | $53 | $73 | $97 | $103 | 267.8% |
| **Shelby** | $27 | $49 | $56 | $57 | $66 | 141.1% |
| **Stoddard** | $54 | $101 | $169 | $258 | $337 | 519.4% |
| **Stone** | $37 | $54 | $72 | $85 | $106 | 184.8% |
| **Sullivan** | $22 | $36 | $41 | $55 | $66 | 198.0% |
| **Taney** | $34 | $49 | $61 | $72 | $84 | 146.7% |
| **Texas** | $30 | $57 | $68 | $77 | $86 | 182.8% |
| **Vernon** | $28 | $44 | $54 | $65 | $74 | 160.9% |
| **Warren** | $36 | $56 | $80 | $92 | $141 | 294.4% |
| **Washington** | $30 | $44 | $54 | $71 | $87 | 189.8% |
| **Wayne** | $34 | $53 | $84 | $117 | $145 | 330.7% |
| **Webster** | $33 | $54 | $77 | $89 | $111 | 237.8% |
| **Worth** | $29 | $32 | $52 | $60 | $95 | 224.7% |
| **Wright** | $32 | $44 | $52 | $66 | $79 | 148.5% |
| **Saint Louis City** | $68 | $103 | $167 | $181 | $211 | 209.2% |
| **Total** | **$50** | **$79** | **$119** | **$137** | **$179** | **260.6%** |

| Appendix B<br>Percent of Residences With Earthquake Coverage<br>(New Madrid Counties are Highlighted) | | | | | | |
|---|---|---|---|---|---|---|
| **County** | **2000** | **2005** | **2010** | **2015** | **2018** | **Percentage Point Difference, 2000-2018** |
| **Adair** | 29.1% | 22.9% | 20.1% | 17.0% | 14.7% | -14.4% |
| **Andrew** | 18.5% | 14.9% | 12.5% | 10.8% | 9.9% | -8.6% |
| **Atchison** | 10.2% | 8.4% | 8.0% | 6.9% | 6.7% | -3.5% |
| **Audrain** | 36.2% | 31.9% | 30.8% | 26.6% | 24.2% | -11.9% |
| **Barry** | 15.4% | 11.7% | 8.9% | 8.6% | 8.8% | -6.7% |
| **Barton** | 12.6% | 9.8% | 7.8% | 7.1% | 5.7% | -6.8% |
| **Bates** | 13.0% | 8.6% | 5.9% | 5.5% | 4.7% | -8.3% |
| **Benton** | 22.4% | 16.9% | 14.7% | 13.2% | 12.1% | -10.4% |
| **Bollinger** | 62.4% | 57.1% | 38.9% | 33.1% | 30.9% | -31.4% |
| **Boone** | 37.6% | 29.8% | 27.0% | 25.4% | 24.3% | -13.2% |
| **Buchanan** | 16.5% | 12.9% | 11.2% | 9.6% | 8.9% | -7.7% |
| **Butler** | 57.3% | 51.8% | 33.8% | 20.4% | 17.0% | -40.3% |
| **Caldwell** | 11.4% | 7.8% | 6.6% | 6.5% | 5.6% | -5.8% |
| **Callaway** | 37.5% | 31.9% | 27.0% | 25.5% | 24.0% | -13.5% |
| **Camden** | 42.1% | 40.0% | 37.5% | 35.8% | 32.8% | -9.2% |
| **Cape Girardeau** | 81.2% | 79.5% | 71.9% | 59.3% | 55.1% | -26.1% |
| **Carroll** | 23.0% | 16.6% | 10.6% | 9.9% | 8.3% | -14.7% |
| **Carter** | 47.7% | 42.4% | 20.7% | 16.2% | 13.6% | -34.1% |
| **Cass** | 19.4% | 13.9% | 11.6% | 11.1% | 10.7% | -8.7% |
| **Cedar** | 14.3% | 11.7% | 9.1% | 8.1% | 6.5% | -7.8% |
| **Chariton** | 24.0% | 18.3% | 15.9% | 16.0% | 12.2% | -11.8% |
| **Christian** | 16.1% | 11.6% | 11.8% | 10.7% | 9.6% | -6.5% |
| **Clark** | 22.3% | 17.1% | 12.6% | 9.6% | 7.5% | -14.8% |
| **Clay** | 20.5% | 15.2% | 13.0% | 12.3% | 11.9% | -8.7% |
| **Clinton** | 15.3% | 10.7% | 8.8% | 7.8% | 8.0% | -7.3% |
| **Cole** | 43.5% | 37.9% | 32.5% | 29.5% | 26.5% | -17.0% |
| **Cooper** | 26.9% | 20.5% | 15.7% | 16.1% | 15.0% | -11.9% |
| **Crawford** | 45.4% | 42.9% | 36.2% | 32.1% | 28.2% | -17.2% |
| **Dade** | 12.5% | 9.1% | 7.5% | 6.8% | 5.9% | -6.5% |
| **Dallas** | 15.8% | 9.7% | 6.6% | 6.0% | 5.1% | -10.8% |
| **Daviess** | 9.9% | 6.2% | 5.2% | 5.4% | 5.0% | -4.9% |
| **DeKalb** | 8.9% | 6.5% | 4.3% | 4.3% | 4.1% | -4.8% |
| **Dent** | 32.3% | 24.8% | 20.4% | 18.0% | 14.5% | -17.7% |
| **Douglas** | 12.6% | 10.5% | 10.4% | 8.8% | 7.7% | -4.9% |
| **Dunklin** | 55.7% | 47.3% | 30.4% | 14.0% | 11.2% | -44.5% |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Franklin** | 64.5% | 61.4% | 52.6% | 49.5% | 45.7% | -18.8% |
| **Gasconade** | 48.9% | 48.1% | 42.9% | 38.0% | 29.8% | -19.1% |
| **Gentry** | 12.9% | 8.8% | 7.2% | 6.7% | 5.2% | -7.7% |
| **Greene** | 18.7% | 14.1% | 13.0% | 11.9% | 11.0% | -7.8% |
| **Grundy** | 12.8% | 9.9% | 7.3% | 6.7% | 5.5% | -7.3% |
| **Harrison** | 8.7% | 6.1% | 4.4% | 4.5% | 4.4% | -4.3% |
| **Henry** | 20.1% | 16.6% | 14.6% | 13.7% | 11.9% | -8.2% |
| **Hickory** | 19.4% | 14.7% | 10.9% | 9.7% | 8.1% | -11.2% |
| **Holt** | 9.4% | 5.4% | 4.8% | 4.4% | 3.7% | -5.7% |
| **Howard** | 32.5% | 26.9% | 23.6% | 22.9% | 20.1% | -12.4% |
| **Howell** | 33.5% | 27.9% | 24.2% | 23.3% | 19.5% | -14.0% |
| **Iron** | 56.8% | 49.4% | 36.9% | 35.8% | 30.3% | -26.5% |
| **Jackson** | 17.1% | 12.9% | 11.3% | 11.1% | 10.5% | -6.6% |
| **Jasper** | 18.2% | 15.6% | 13.8% | 14.1% | 12.6% | -5.6% |
| **Jefferson** | 72.8% | 70.0% | 60.0% | 56.5% | 53.2% | -19.6% |
| **Johnson** | 20.1% | 14.5% | 12.2% | 12.3% | 11.7% | -8.4% |
| **Knox** | 16.4% | 13.3% | 11.8% | 10.2% | 8.3% | -8.1% |
| **Laclede** | 28.4% | 23.4% | 20.6% | 17.4% | 15.2% | -13.2% |
| **Lafayette** | 23.2% | 16.1% | 13.3% | 13.2% | 11.8% | -11.4% |
| **Lawrence** | 15.0% | 10.2% | 7.8% | 8.1% | 6.8% | -8.2% |
| **Lewis** | 22.9% | 18.5% | 16.1% | 13.6% | 10.7% | -12.3% |
| **Lincoln** | 53.8% | 49.8% | 44.4% | 42.0% | 38.0% | -15.8% |
| **Linn** | 30.6% | 27.0% | 23.7% | 19.8% | 15.7% | -14.9% |
| **Livingston** | 15.7% | 11.1% | 11.6% | 10.0% | 8.9% | -6.8% |
| **Mcdonald** | 13.5% | 7.5% | 5.8% | 5.7% | 5.2% | -8.3% |
| **Macon** | 24.7% | 17.9% | 17.3% | 14.6% | 12.0% | -12.7% |
| **Madison** | 65.7% | 59.9% | 39.5% | 37.9% | 36.9% | -28.8% |
| **Maries** | 31.0% | 29.7% | 22.4% | 24.1% | 21.5% | -9.4% |
| **Marion** | 41.5% | 36.2% | 33.9% | 28.8% | 26.3% | -15.2% |
| **Mercer** | 10.2% | 7.2% | 5.7% | 5.3% | 4.3% | -5.9% |
| **Miller** | 24.3% | 20.5% | 17.4% | 16.7% | 14.5% | -9.8% |
| **Mississippi** | 60.1% | 54.1% | 30.0% | 13.3% | 8.7% | -51.4% |
| **Moniteau** | 24.2% | 20.3% | 19.1% | 16.4% | 15.0% | -9.2% |
| **Monroe** | 31.6% | 25.0% | 21.3% | 18.1% | 13.4% | -18.2% |
| **Montgomery** | 47.2% | 42.4% | 36.6% | 31.7% | 29.6% | -17.7% |
| **Morgan** | 35.6% | 33.7% | 30.4% | 26.8% | 24.0% | -11.5% |
| **New Madrid** | 51.2% | 54.8% | 27.7% | 14.9% | 12.3% | -38.9% |
| **Newton** | 14.0% | 9.6% | 8.5% | 9.0% | 8.2% | -5.8% |
| **Nodaway** | 7.1% | 5.2% | 4.7% | 4.4% | 4.0% | -3.1% |
| **Oregon** | 42.7% | 36.8% | 24.1% | 23.5% | 18.4% | -24.3% |
| **Osage** | 33.3% | 28.4% | 23.8% | 20.6% | 18.3% | -15.0% |
| **Ozark** | 18.5% | 15.8% | 14.1% | 12.9% | 12.4% | -6.1% |
| **Pemiscot** | 49.4% | 45.7% | 21.1% | 12.3% | 11.0% | -38.4% |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Perry** | 77.4% | 79.2% | 71.9% | 66.8% | 58.5% | -18.9% |
| **Pettis** | 30.9% | 25.3% | 19.2% | 16.0% | 15.4% | -15.5% |
| **Phelps** | 34.7% | 28.9% | 25.6% | 24.4% | 22.2% | -12.4% |
| **Pike** | 41.3% | 35.8% | 30.3% | 25.4% | 22.0% | -19.2% |
| **Platte** | 18.8% | 14.3% | 12.3% | 12.1% | 12.3% | -6.5% |
| **Polk** | 17.8% | 11.9% | 10.5% | 10.0% | 8.3% | -9.4% |
| **Pulaski** | 25.9% | 18.9% | 13.4% | 13.1% | 12.4% | -13.5% |
| **Putnam** | 16.5% | 9.9% | 6.9% | 7.3% | 6.4% | -10.1% |
| **Ralls** | 31.2% | 27.1% | 25.7% | 24.5% | 20.6% | -10.6% |
| **Randolph** | 30.9% | 24.9% | 20.5% | 17.0% | 13.9% | -17.0% |
| **Ray** | 19.0% | 14.1% | 11.4% | 10.7% | 8.9% | -10.1% |
| **Reynolds** | 42.4% | 32.6% | 21.4% | 18.7% | 17.6% | -24.9% |
| **Ripley** | 44.3% | 41.7% | 24.4% | 18.0% | 16.0% | -28.4% |
| **Saint Charles** | 79.2% | 75.4% | 67.0% | 63.7% | 60.1% | -19.1% |
| **Saint Clair** | 14.9% | 9.8% | 6.0% | 5.9% | 5.4% | -9.4% |
| **Sainte Genevieve** | 76.1% | 75.9% | 68.7% | 64.0% | 54.0% | -22.1% |
| **Saint Francois** | 65.4% | 64.5% | 56.7% | 50.7% | 45.2% | -20.2% |
| **Saint Louis** | 74.4% | 70.7% | 62.9% | 57.8% | 53.1% | -21.3% |
| **Saline** | 25.7% | 21.6% | 19.3% | 18.2% | 15.8% | -9.9% |
| **Schuyler** | 13.9% | 12.5% | 9.5% | 6.4% | 5.2% | -8.6% |
| **Scotland** | 20.9% | 13.8% | 12.1% | 9.4% | 5.8% | -15.0% |
| **Scott** | 70.0% | 67.9% | 41.5% | 22.7% | 18.0% | -52.1% |
| **Shannon** | 31.3% | 22.3% | 19.0% | 17.0% | 14.7% | -16.5% |
| **Shelby** | 21.9% | 16.0% | 14.4% | 14.3% | 10.5% | -11.3% |
| **Stoddard** | 63.9% | 61.4% | 42.2% | 20.7% | 15.3% | -48.7% |
| **Stone** | 18.1% | 15.2% | 14.6% | 14.8% | 14.5% | -3.6% |
| **Sullivan** | 14.9% | 9.3% | 7.1% | 5.7% | 4.7% | -10.2% |
| **Taney** | 20.2% | 18.1% | 17.0% | 16.8% | 16.2% | -4.0% |
| **Texas** | 24.6% | 18.9% | 14.2% | 11.8% | 10.9% | -13.7% |
| **Vernon** | 17.0% | 12.2% | 9.8% | 8.9% | 8.9% | -8.1% |
| **Warren** | 60.7% | 59.3% | 49.5% | 49.0% | 45.1% | -15.6% |
| **Washington** | 53.9% | 48.2% | 37.2% | 36.1% | 30.9% | -23.0% |
| **Wayne** | 51.9% | 43.1% | 25.1% | 18.8% | 16.8% | -35.1% |
| **Webster** | 17.8% | 13.1% | 11.5% | 10.8% | 9.4% | -8.4% |
| **Worth** | 7.8% | 5.3% | 4.8% | 4.5% | 4.8% | -3.0% |
| **Wright** | 23.9% | 18.0% | 13.9% | 11.8% | 9.1% | -14.8% |
| **Saint Louis City** | 46.1% | 45.9% | 36.2% | 30.5% | 26.1% | -20.1% |
| **Total** | **43.6%** | **39.8%** | **34.2%** | **30.6%** | **27.8%** | **-15.8%** |

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Pages 189 through 240 of Schedule SAW-D-9 are designated confidential per 20 CSR 4240-2.135(2)(A)(4) and 20 CSR 4240-2.135(2)(A)(6). All included documents relate to market specific information regarding services provided to customers and strategies employed in contract negotiations.

**BEFORE THE PUBLIC SERVICE COMMISSION**
**OF THE STATE OF MISSOURI**

| | | |
|---|---|---|
| The Staff of the Missouri Public Service Commission,<br>Complainant,<br>v.<br><br>Laclede Gas Company,<br>Respondent. | )<br>)<br>)<br>)<br>)<br>)<br>) | Case No. GC-2011-0098 |
| In the Matter of Laclede Gas Company's Purchased Gas Adjustment (PGA) Factors to be Audited in its 2004-2005 Actual Cost Adjustment | )<br>)<br>) | Case No. GR-2005-0203 |
| In the Matter of Laclede Gas Company's Purchased Gas Adjustment for 2005-2006 | )<br>) | Case No. GR-2006-0288 |
| In the Matter of Laclede Gas Company's Purchased Gas Adjustment for 2006-2007 | )<br>) | Case No. GR-2008-0140 |
| In the Matter of Laclede Gas Company's Purchased Gas Adjustment for 2007-2008 | )<br>) | Case No. GR-2008-0387 |
| In the Matter of Laclede Gas Company's Purchased Gas Adjustment for 2008-2009 | )<br>) | Case No. GR-2010-0138 |
| In the Matter of Laclede Gas Company's 2009-2010 Actual Cost Adjustment Filing | )<br>) | Case No. GR-2011-0055 |
| In the Matter of Laclede Gas Company's 2010-2011 Actual Cost Adjustment Filing | )<br>) | Case No. GR-2012-0133 |

**UNANIMOUS PARTIAL STIPULATION AND AGREEMENT**
**AND WAIVER REQUEST**
**AND REQUEST FOR APPROVAL OF COST ALLOCATION MANUAL**

Beginning in December 2006 and continuing through December 2012, the Staff raised various issues and concerns in its Actual Cost Adjustment ("ACA") recommendations in Case Nos. GR-2005-0203, GR-2006-0288, GR-2008-0140,GR-2008-0387, GR-2010-0138, GR-2011-0055, and GR-2012-0133 regarding some or all of the following: (a) transactions between Laclede Gas Company ("Laclede" or "Company") and its marketing affiliate Laclede Energy Resources ("LER"), (b) Laclede's pursuit of overcharges from MoGas Pipeline ("MoGas"), (c) Laclede's treatment of estimates of Lange underground storage non-recoverable gas, and (d) other matters which had no specific corresponding monetary adjustment recommendation.

On October 6, 2010, the Staff also filed a complaint Case No. GC-2011-0098 against Laclede (the "Complaint Case") in which it asserted that the Company had violated the Commission's affiliate transaction rules ("Rules") 4 CSR 240-40.015 and 4 CSR 240-40.016 because: (a) the Company had allegedly failed to obtain Commission approval for its Cost Allocation Manual ("CAM"); (b) the CAM's treatment of gas supply affiliate transactions was allegedly inconsistent with the asymmetrical pricing standards set forth in the Rules; and (c) Laclede had allegedly failed to file the CAM on an annual basis. On December 10, 2010, Laclede filed a counterclaim in this case alleging that Staff had violated the Commission's good faith pleading rules by taking a position, contrary to the Commission's Affiliate Rules, that marketing affiliates should be prohibited from earning a profit on gas supply transactions with affiliated utilities.

Laclede, the Staff, and the Office of the Public Counsel ("OPC") (hereinafter collectively referred to as "the Parties") have met on several occasions in an effort to resolve certain issues in these proceedings. As a result of their discussions, the Parties recommend that the Commission approve the following stipulations and agreements resolving all issues in the Complaint Case and all issues relating to transactions between Laclede and its affiliates in Case Nos. GR-2005-0203, GR-2006-0288, GR-2008-0140, GR-2008-0387, GR-2010-0138, GR-2011-0055, and GR-2012-0133.

This Unanimous Partial Stipulation and Agreement does not include any issues, matters, cases or claims whatsoever, other than as specifically set forth herein, and specifically does not include Laclede's pursuit of overcharges from MoGasorLaclede's treatment of estimates of Lange underground storage non-recoverable gas, or any matters on appeal as a result of the cases addressed by this Unanimous Partial Stipulation and Agreement, or any other Commission case not addressed by thisUnanimous Partial Stipulation and Agreement. Furthermore, this Unanimous Partial Stipulation and Agreement does not include, nor is it intended to affect in any manner, Case No. 11AC-CC00320 which is currently pending in Cole County, Missouri, or any appeals thereof or any actions arising therefrom relating to the pursuit or enforcement of the Commission's remedies; nor shall this Unanimous Partial Stipulation and Agreement be interpreted to preclude or render moot any argument or remedy which might otherwise be made or awarded in Case No. 11AC-CC00320 in the absence of this Unanimous Partial Stipulation and Agreement.

1. To address Staff's and OPC's position that utilities should operate pursuant to a Commission-approved CAM, the Parties agree and recommend that the Commission approve Laclede's revised CAM contained in Appendix 1 to this Unanimous Partial Stipulation and Agreement[1]. Such recommendation is being made by Laclede solely for purposes of resolving the Complaint Case and should not be construed as any kind of modification of Laclede's position that its CAM previously satisfied

[1]Upon the closing of the transaction currently being addressed in Case No. GM-2013-0254and Commission approval of this Unanimous Partial Stipulation and Agreement, the CAM contained in Appendix 1 and the Gas Supply and Transportation Standards of Conduct set forth in Appendix 2 to this Unanimous Partial Stipulation and Agreement shall apply to both the Laclede and MGE Divisions of Laclede Gas Company.



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whatever legal requirements were necessary to make it a valid instrument for governing how Laclede's affiliate transactions should be conducted.

2. To address Staff's and OPC's position that utilities should file their CAMs on an annual basis, provisions have been added to pages 1 and 2 of the CAM which would require Laclede to file all current and future versions of the CAM in EFIS, together with email alerts to Staff and OPC whenever there is a change in the CAM. Laclede would also continue to file in EFIS its annual CAM report detailing its affiliate transactions for the preceding fiscal year in accordance with the timeline previously approved by the Commission in Case No. GE-2011-0171.

3. To address Staff's and OPC's concerns regarding how the purchase and sale of gas and transportation capacity between Laclede and its affiliates should be conducted and priced, the Parties recommend that the Gas Supply and Transportation Standards of Conduct[2] set forth in Appendix 2 be approved by the Commission, subject to Laclede's request for a variance and/or waiver from certain Affiliate Transaction Rule requirements pertaining to "fully distributed cost" in paragraph numbered 7 of this Unanimous Partial Stipulation and Agreement. Laclede indicates that it has already implemented some of the provisions of the Standards of Conduct set forth in Appendix 2, and Laclede hereby agrees that it shall implement all provisions of the Standards of Conduct contained in Appendix 2 to this Unanimous Partial Stipulation and Agreement within no later than 10 days after the effective date of the Commission's Order approving this Unanimous Partial Stipulation and Agreement, and Laclede requests that the Commission approve this Unanimous Partial Stipulation and Agreement no later than September 20, 2013 so that the specimen tariff sheet set forth in Appendix 3 may become

[2]See footnote 1 above.

effective for service rendered on and after October 1, 2013. Among other things, these recommended Standards of Conduct:

(a) Require that all multi-month (longer than one-month) purchases of gas by Laclede from any supplier, including an affiliate, be done only through a competitive bid and award process;

(b) Require that all short-term (one-month or less) purchases of gas by Laclede from any supplier, including an affiliate, be done through a competitive bid and award process, except for emergency short-term purchases;

(c) Detail the bidding practices, supplier diversity, credit, reliability considerations and other information that must be contemporaneously documented, maintained and provided by Laclede to make such a determination for multi-month or short-term gas purchases;

(d) Detail the contemporaneous documentation requirements and information exchange process for sales of gas supply;

(e) Detail how Laclede releases and purchases of transportation and storage capacity are to be conducted;

(f) Detail how purchases of unsolicited gas supply are to be considered and documented.

4. Regarding affiliate transactions between Laclede and LER that occurred in Case Nos. GR-2005-0203, GR-2006-0288, GR-2008-0140, GR-2008-0387, GR-2010-0138,GR-2011-0055, and GR-2012-0133, the Parties agree that such issues shall be considered resolved in each of these cases with no adjustment to Laclede's ACA balances, provided that:

(a) Laclede shall file the tariff modification set forth in Appendix 3 under which the percentage of Off-System Sales/Capacity Release net margins retained by Laclede during its next three fiscal years beginning October 1, 2013 shall be reduced from 15% to 0% for the first two million dollars in such net margins. Laclede shall not seek to change its percentage retention for the first two million dollars in net margin achieved under its Off-System Sales/Capacity Release tariff during its next three fiscal years beginning October 1, 2013. During such period, changes that would increase Laclede's percentage retention for the net margins achieved in other tiers of the Off-System Sales/Capacity Release shall also not be made unless the Parties agree, and the Commission determines, that such changes are likely to produce net benefits for customers receiving regulated service. This provision does not preclude OPC or the Staff from proposing additional reductions to the net margin percentages retained by Laclede for Off-System Sales/Capacity Release, except that OPC and Staff shall not seek such reductions to address any purchased gas disallowance for the ACA cases being resolved by this Unanimous Partial Stipulation and Agreement; and

(b) Laclede shall comply with the Commission's Rules and with the terms of the CAM set forth in Appendix 1 and the Gas Supply and Transportation Standards of Conduct set forth in Appendix 2 to this Unanimous Partial Stipulation and Agreement for all future transactions with LER and its other affiliates. Such commitment is being made by Laclede solely for purposes of resolving the Laclede affiliate issues in these proceedings and should not be construed as any kind of modification of Laclede's position that the pricing provisions of its prior CAMs satisfied all applicable legal requirements.

5. As a result of the stipulations and agreements contained in this Unanimous Partial Stipulation and Agreement, if approved by the Commission, the Complaint Case shall be dismissed with prejudice. The Parties recommend that other than the issues associated with the Laclede pursuit of overcharges from MoGas and Laclede's treatment of estimates of Lange underground storage non-recoverable gas[3] in Case Nos. GR-2005-0203, GR-2006-0288, GR-2008-0140, GR-2008-0387, GR-2010-0138, GR-2011-0055, and/or GR-2012-0133, this Unanimous Partial Stipulation and Agreement shall resolve all financial issues in these cases[4]. If the Commission approves this Unanimous Partial Stipulation and Agreement, and the Stipulation and Agreement and the Amendment to Stipulation and Agreement filed in Case No. GR-2013-0171, other than issues associated with Laclede's pursuit of overcharges from MoGas there are no other issues in Case Nos. GR-2005-0203, GR-2006-0288, GR-2008-0140, GR-2008-0387, GR-2010-0138, GR-2011-0055, and GR-2012-0133that require either a procedural schedule or resolution by the Commission.

6. As part of this Unanimous Partial Stipulation and Agreement, Laclede agrees that it shall conduct and submit to Staff and OPC no later than November 1, 2013, a current multi-year study (to include a minimum of 3-years of data) showing whether demand charges for swing gas and the pricing option of Lower of FOM Index or Daily Index have resulted in a gain or loss to customers, as previously recommended by Staff in

[3]The issue of Laclede's treatment of Lange underground storage non-recoverable gas has been separately addressed by the Stipulation and Agreement in Case No. GR-2013-0171.
[4]It is expressly understood that the resolution of the financial issues in these cases is not intended to affect in any way the Commission's ability to seek whatever statutory remedies are available to the Commission in the currently pending Cole County Circuit Court action Case No. 11AC-CC00320 or Laclede's right to take whatever position it believes is appropriate in that matter.

Case No. GR-2012-0133[5].Laclede also agrees that it will supplement this study with two additional years of recent data and provide such supplement to Staff and OPC by February 1, 2014.Also, as a result of the stipulations and agreements contained in this Unanimous Partial Stipulation and Agreement, if approved by the Commission, Laclede shall withdraw with prejudice its counterclaim in the Complaint Case.

7. Gas Costs

(a) For costs and revenues generally subject to PGA/ACA recovery, except for Asset Management Arrangements/Agreements (AMAs), the Parties believe that Laclede's compliance with the practices, processes and procedures set forth in the Gas Supply and Transportation Standards of Conduct contained in Appendix 2 should result in prices that are consistent with the Affiliate Transaction Rules that state: the regulated gas corporation shall conduct its business in such a way as not to provide any preferential service, information or treatment to an affiliated entity over another party at any time. The Parties expressly reserve the right, however, to: (i) propose further prospective changes to the Standards of Conduct, CAM, or the requested waivers in the event there is a Commission or judicial determination that interprets the Affiliate Transactions Rules in a different manner; (ii) propose at any time prospective changes to the Standards of Conduct, CAM, or the requested waivers to reflect changing market conditions, the potential implementation of new regulatory or operational models for managing gas supply assets, or other developments that cannot be fully anticipated at this time; and (iii) challenge whether application of the Standards of Conduct, CAM, or the requested waivers under a particular set of circumstances produces results consistent with the

[5]See Section II.B.6. of Staff's Recommendation and numbered paragraph 3 of Staff's Reply to Laclede Response filed in Case No. GR-2012-0133; Staff's Reply recommended a minimum of 5-years of data.



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requirements of the Affiliate Transactions Rules. Subject to the foregoing, Laclede requests Commission approval for a variance and/or waiver from the Affiliate Transaction Rule documentation and demonstration requirements pertaining to "fully distributed cost" in: 4 CSR 240-40.015 (3)(B), (3)(C)1., (3)(C)2., and (3)(C)3. and 4 CSR 240-40.016 (4)(B), (4)(C)1., (4)(C)2., and (4)(C)3.which state as follows:

> 4 CSR 240-40.015
>
> (3) Evidentiary Standards for Affiliated Transactions.
> (B) In transactions that involve either the purchase or receipt of information, assets, goods or services by a regulated gas corporation from an affiliated entity, the regulated gas corporation shall document both the fair market price of such information, assets, goods and services and the fully distributed cost to the regulated gas corporation to produce the information, assets, goods or services for itself.
> (C) In transactions that involve the provision of information, assets, goods or services to affiliated entities, the regulated gas corporation must demonstrate that it—
> 1. Considered all costs incurred to complete the transaction;
> 2. Calculated the costs at times relevant to the transaction;
> 3. Allocated all joint and common costs appropriately; * * * *
>
> 4 CSR 240-40.016
>
> (4) Evidentiary Standards for Affiliate Transactions.
> (B)In transactions that involve either the purchase or receipt of information, assets, goods or services by a regulated gas corporation from anaffiliatedentity,theregulatedgascorporationshalldocumentboththefairmarket price of such information, assets, goods and services and the



Public
Schedule SAW-D-9

fully distributed cost to the regulated gas corporation to produce the information, assets, goods or services for itself.

(C) In transactions that involve the provision of information, assets, goods or services to affiliated entities, the regulated gas corporation must demonstrate that it—

1. Considered all costs incurred to complete the transaction;
2. Calculated the costs at times relevant to the transaction;
3. Allocated all joint and common costs appropriately; * * * *

The Parties believe that waiving these rules for the limited purpose identified above is reasonable because the information, prices, processes and supporting documentation resulting from compliance with the CAM and Standards of Conduct should ensure that the transaction is priced consistently with the pricing standard of the rules. Laclede does not seek to waive any portions of the rules identified above that pertain to the fair market price documentation and demonstration requirements of the rules.

(b) The CAM, Standards of Conduct, and waivers do not pertain to AMAs.[6] Accordingly, if Laclede Gas chooses to use one or more AMAs for its Laclede or MGE Divisions[7], Laclede Gas shall document fair market price and fully distributed cost as set forth in 4 CSR 240-40.015 and 40.016, unless and until changes to the CAM

[6]"Asset Management Arrangement/Agreement (AMA)" for gas supply and delivery arrangements means an agreement whereby one party, the LDC in this case, contracts with an Asset Manager to manage gas supply and delivery arrangements utilizing all or a portion of one or more of the LDC commodity, transportation and/or storage capacity contracts.

[7]Upon the closing of the transaction currently being addressed in Case No. GM-2013-0254 and Commission approval of this Unanimous Partial Stipulation and Agreement, the CAM contained in Appendix 1 and the Gas Supply and Transportation Standards of Conduct set forth in Appendix 2 to this Unanimous Partial Stipulation and Agreement shall apply to both the Laclede and MGE Divisions of Laclede Gas Company.

and referenced Standards of Conduct addressing AMAs are approved by the Commission.

(c) Laclede requests, for costs and revenues generally subject to PGA/ACA recovery except AMAs, to establish a fair market price by following the provisions in the Standards of Conduct, attached as Appendix 2. Laclede believes there is good cause for granting this variance and/or waiver because the Standards of Conduct are designed in a manner that should establish prices for such transactions that are consistent with the Affiliate Transactions Rules. This variance and/or waiver shall only apply to those portions of the Affiliate Transactions Rules requirements set forth in 7(a)above and only as they pertain to "fully distributed cost" for costs and revenue generally subject to PGA/ACA recovery by Laclede. Subject to the reservation of rights set forth above, no Party objects to the Commission granting such relief.

8. Except as otherwise explicitly provided herein, none of the signatories to this Unanimous Partial Stipulation and Agreement shall be deemed to have approved or acquiesced in any ratemaking or procedural principle, including, without limitation, any method of cost determination or cost allocation, depreciation or revenue related method or any service or payment standard. Except as otherwise explicitly provided herein, none of the signatories to this Unanimous Partial Stipulation and Agreement shall be prejudiced or bound in any manner by the terms of this Unanimous Partial Stipulation and Agreement in this or any other Commission proceeding. Nothing in this Unanimous Partial Stipulation and Agreement shall preclude the Staff in future proceedings from providing recommendations as requested by the Commission or limit Staff's or OPC's access to any information whatsoever in any other proceedings. Nothing in this

Unanimous Partial Stipulation and Agreement shall preclude the Staff or OPC from seeking additional information from Laclede and its affiliates regarding any aspect of its compliance with the rules and the CAM at any time or preclude Laclede or its affiliates from objecting to the provision of such additional information, consistent with the Stipulation and Agreement in GM-2001-342.

9. This Unanimous Partial Stipulation and Agreement has resulted from extensive negotiations among the signatories and the terms hereof are interdependent. In the event the Commission approves this Unanimous Partial Stipulation and Agreement with modifications or conditions that a Party to this proceeding objects to, then this Unanimous Partial Stipulation and Agreement shall be void and no signatory shall be bound by any of the agreements or provisions hereof.

10. In the event the Commission accepts the specific terms of this Unanimous Partial Stipulation and Agreement, the Parties waive, with respect to the issues resolved herein: their respective rights pursuant to Section 536.080.1 (RSMo. 2000) to present testimony, to cross-examine witnesses, and to present oral argument and written briefs; their respective rights to the reading of the transcript by the Commission pursuant to Section 536.080.2 (RSMo. 2000); and their respective rights to judicial review of the Commission's Report and Order in these cases pursuant to Section 386.510 (RSMo. 2000).

11. The Parties agree that all of the prefiled testimony and Staff Recommendations submitted in the cases, as well as affidavits prepared and filed by any of the Parties in lieu of Memoranda in Support, that relates to any issue resolved by this

Unanimous Partial Stipulation and Agreement shall be received into evidence without the necessity of the respective witnesses taking the stand.

12. The Staff shall also have the right to provide, at any agenda meeting at which this Unanimous Partial Stipulation and Agreement is noticed to be considered by the Commission, whatever oral explanation the Commission requests, provided that Staff shall, to the extent reasonably practicable, provide the other Parties with advance notice of when the Staff shall respond to the Commission's request for such explanation once such explanation is requested from Staff. Staff's oral explanation shall be subject to public disclosure, except to the extent it refers to matters that are privileged or protected from disclosure pursuant to the Commission's rules on confidential information.

WHEREFORE, for the foregoing reasons, the undersigned Parties respectfully request that the Commission issue its Order: granting Laclede's request for a variance and/or waiver as set forth in paragraph number 7 above; approving all of the specific terms and conditions of this Unanimous Partial Stipulation and Agreement and Appendices 1 and 2 attached hereto; requiring Laclede to file the tariff modification set forth in Appendix 3 attached hereto; requiring Laclede to conduct and submit to Staff and OPC the study and supplement described in paragraph 6 above; requiring Laclede to make any other filings set forth herein or in the attached Appendices; and dismissing the Complaint Case and Laclede's counterclaim in the Complaint Case with prejudice.

Respectfully submitted,

**/s/ Jeffrey A. Keevil**
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## Certificate of Service

I hereby certify that copies of the foregoing have been mailed, hand-delivered, transmitted by facsimile or electronic mailed to all counsel of record this 16th day of July, 2013.

/s/ **Marcia Spangler**

## I. INTRODUCTION

The Missouri Public Service Commission ("Commission") enacted the Affiliate Transactions Rules found at 4 CSR 240-40.015 and 40.016 (the "Rules"). The Rules describe a cost allocation manual ("CAM") as including the criteria, guidelines and procedures the utility will follow to be in compliance with the Rules. The Rules also state that the CAM should set forth cost allocation, market valuation and internal cost methods related to transactions with affiliates.

The purpose of this CAM is to aid Laclede Gas Company ("Laclede") in complying with the requirements of the Rules and in doing so, to provide the Commission with transparency into processes and procedures that govern how costs are determined, allocated and assigned between Laclede and its affiliates, and define how fair market price (FMP) and fully distributed cost (FDC) are to be calculated. This CAM only addresses a portion of the requirements of the Rules and in Laclede's opinion compliance with this CAM constitutes evidence of compliance with those portions of the Rules.

Laclede will seek, through a waiver request, specific Commission approval of any provision of this CAM that varies from the specific requirements of any Commission rules or Commission approved Stipulation and Agreement, including those reached in Case Nos. GM-2001-342 and GR-2010-0171.

The CAM, including all Appendices, and associated CAM Reports will be submitted to the Commission's EFIS filing system in accordance with the timelines outlined in the Rules and any waivers or variances to the Rules approved for Laclede by the Commission. Once the CAM is officially approved by the Commission, any changes to the CAM will be submitted to Staff and OPC. Any changes to the Commission-approved CAM or the Services and Facilities Agreementwill be filed with the Commission for approval. All contracts and agreements between Laclede and one or more of its affiliates (including Laclede Group, Inc.) will be maintained and made available to Staff and OPC during their effectiveness and for at least six years afterwards, on mutually agreeable terms.

## II. ANNUAL REPORTING REQUIREMENTS, RECORD RETENTION AND ACCESS TO RECORDS

Laclede and its affiliates shall adhere to reporting requirements of the Rules and maintain records of all procedures, allocation methods, and transactional data relating to sales and purchases of goods and services between Laclede and its affiliates.

Laclede Gas Company shall maintain the following information in a mutually agreed-to electronic format regarding affiliate transactions on a fiscal year basis and consistent with the waiver approved in Case No. GE-2011-0171, shall provide such information, in addition to the information required by 4 CSR 240-40.015 Section 4 to the Chief Staff Counsel, Manager of the Auditing Department and the OPC on or before December 15th of each year by submitting an annual report to the non-case related portion of EFIS devoted to affiliate transaction submissions. Specifically, Laclede shall submit:

1. A full and complete list of allaffiliated entitiesas defined by the Commission's Affiliate Transactions Rules including the following:

- An organization chart depicting the total family of companies within the Laclede Group, Inc. structure.

- An organizational chart for Laclede Gas Company and any affiliate doing business with Laclede Gas.
- A listing and comprehensive and detailed description of each non-regulated activityengaged in by Laclede Gas andits affiliates.
- The total dollar amount of revenues and expenses for each non-regulated activity for the last fiscal year.
- A listing of all Laclede Gas Company cost centers and functions that directly or indirectly assign or allocate cost to any non-regulated activity engaged in by Laclede Gas Company or any affiliated entity.

2. For each good and service provided to Laclede Gas Company by affiliated entities or provided to affiliated entities by Laclede Gas Company, Laclede shall provide on a fiscal year basis:

- A description of all Laclede Gas Company functions that provide support to non-regulated affiliated business units, including Laclede Group, Inc. and the positions and number of employees providing each function; a requirement that may be satisfied by submission of the employee affiliate time allocation data base that Laclede currently provides to Staff;
- A list and description of each good and service;
- The dollar amount of each transaction involving such goods and services, including the FERC USoA account charged;
- A full and complete list of each contract entered into by Laclede Gas Company with affiliated entities;
- A full and complete list of each affiliate transaction undertaken by Laclede Gas Company with affiliated entities without a written contract together with a brief explanation of why there was no contract;and,
- The procedures to be used to measure and assign costs to non-regulated units for each function provided by Laclede Gas Company.

3. The annual dollar amount of each service and good charged to each affiliate by Laclede Gas Company and the annual dollar amount of each service and good purchased from each affiliate;

4. The basis used (e.g., fair market price, FDC, etc.) to record each affiliate transaction and, unless otherwise addressed herein, a detailed discussion of the basis for determining

the charges from Laclede Gas Company to affiliated companies, and charges to Laclede Gas Company from affiliated companies, including:

- For all FDC calculations, a description of the cost allocation process employed for each service and good and justification for the allocation method used unless otherwise addressed in this CAM.
- For all FDC calculations, how direct, indirect and common activities are assigned for each service and good unless otherwise addressed in this CAM.
- How the fair market price or value for each service and good is determined unless otherwise addressed in this CAM.
- A description of the criteria employed to determine whether volume discounts or other pricing considerations were provided by Laclede Gas Company to affiliates.

5. In addition, Laclede Gas Company shall maintain on a fiscal year basisbooks of accounts and supporting records in sufficient detail to permit verification of compliance with the Commission's Affiliate Transactions Rules and shall provide access to all information and personnel necessary to audit individual transactions between it and its affiliates to ensure it complies with the pricing and costing standards set forth in this CAM.

6. Laclede's gas marketing affiliate(s) shall provide an annual presentation to Staff and OPC to discuss future business plans and strategies.

7. Recitation of the annual reporting requirements listed above is not intended to preclude the Staff or OPC from seeking additional information from Laclede Gas Company and its affiliates regarding any aspect of its compliance with the rules and the CAM at anytime or to preclude Laclede or its affiliates from objecting to the provision of such additional information, consistent with the Stipulation and Agreement in GM-2001-342.

III. SERVICES AND FACILITIES AGREEMENT

The Laclede Group and each affiliate taking or receiving services, sharing facilities or having other affiliate transactions with Laclede Gas will sign and become a party to a Services and Facilities Agreement ("SFA"). The SFA establishes procedures, terms and conditions for providing shared services and facilities and other activities. To the extent that the SFA specifies terms and conditions for providing shared services and facilities and other activities relating to Laclede Gas Company's regulated services, the SFA shall comply with the Commission's Affiliate Transactions Rules and applicable Commission orders. A copy of the SFA is attached hereto as Attachment1.

IV. ACCOUNTING PROCEDURES

Laclede Gas Company and its affiliates shall maintain adequate books and records with respect to the transactions described in this CAM and in the SFA in order to record the costs, payments and receipts to be assigned to Laclede Gas Company and affiliates. Laclede Gas Company shall be responsible for ensuring that all costs, payments and receipts associated with transactions covered by this CAM are properly and consistently assigned in accordance with the terms and provisions of the CAM and SFA.

Laclede Gas Company, each affiliate and The Laclede Group, Inc. will maintain records supporting its affiliated transactions for at least six years or as required by other Commission rules or law, whichever is greater.

Laclede Gas Company shall conduct audits concerning its compliance withany rules, Commission Orders, Commission-approved Stipulations and Agreements, Laclede's CAM and its SFA relating toLaclede affiliated transactionsno less often than every three calendar years and shall file with its annual CAM submission its internal audit plan for affiliate transactions.

V. <u>EVIDENTARY STANDARDS FOR AFFILIATED TRANSACTIONS</u>

In each and every transaction that involves either the purchase or receipt of information, assets, goods or services by Laclede Gas Company from an affiliated entity, Laclede shall create written documentation that supports both the fair market price of such information, assets, goods and services and the fully distributed cost toproduce or acquire the information, assets, goods or services for itself.

A. In all transactions, unless a Commission approved waiver applies, that involve the provision of information, assets, goods or services to affiliated entities, Laclede Gas Company must demonstrate that:

- It considered and included all operating, capital and other costs incurred to complete the transaction in its FDC analysis;
- It calculated the costs at times relevant to the transaction in its FDC analysis;
- It allocated all joint and common costs (including Laclede's cost of capital) appropriately in its FDC analysis;
- It adequately determined, documented, calculated and explained the fair market price of the information, assets, goods or services, including a description of the methods and procedures used to determine the current prices of these or related services in the competitive market; and,
- The dollar amount of the FMP and FDC will be readily discernible upon a review or audit of the transaction.

B. *Gas Supply and Transportation Standards of Conduct.*Consistent with the Unanimous Partial Stipulation and Agreement filed on July 16, 2013, in Case No. GC-2011-0098, Laclede shall rely on itsGas Supply and Transportation Standards of Conduct as set forth in Appendix 2 for its gas supply and transportation procurement and sales transactions processes (Gas Transactions), including off-system sales and capacity release.

C. *Gas Supply and Transportation Standards of Conduct Documentation*

Laclede shall include its Gas Supply and Transportation Standards of Conduct as part of its CAM. For any updatesto the Gas Supply and Transportation Standards of Conduct Laclede shall request Commission approval and copies of any change shall be provided to Staff and OPC by submitting both a copy of the modified version, with changes accepted, and a draft version that shows the additions and deletions (track-changes).

VI. <u>SERVICES, FACILITIES AND ACTIVITIES</u>

The SFA will be reviewed by Laclede Gas Company on an annual basis to ensure that the policies and procedures in the SFA are designed and administered in a manner that, except as necessary or needed to provide corporate support services as described below, ensures that no preferential service (as defined by 4 CSR 240-40.015(1)(H)) is provided to any affiliate of Laclede Gas Company through its transactions under the SFA. Each affiliated party to the SFA will determine the appropriate level of services, facilities or other activities it requires and will make such requests as it deems appropriate.

*A. Corporate Support Facilities.* Upon the terms and subject to the conditions of the CAM and SFA, a Party may request the use of:

(a) facilities, including office space, warehouse and storage space, fixtures and office furniture and equipment;

(b) computer equipment (both stand-alone and mainframe) and networks, peripheral devices, storage media, and software;

(c) communications equipment, including audio and video equipment, radio equipment, telecommunications equipment and networks; and,

(d) vehicles, including automobiles, trucks, andvans

No Party, including Laclede Gas Company,shall have anobligation to provide any of the foregoing to the extent that such item or items are not available (either because such Party does not possess the item or the item is otherwise being used). A Party has sole discretion in scheduling the use of facilities, equipment or capabilities so as to avoid interference with that Party's operations. Laclede Gas Company shall not schedule the use of facilities, equipment or capabilities if it interferes with Laclede Gas Company's operations.

B.*Corporate Support Services.* The Parties may enter into agreements for services upon the terms and subject to the conditions of the CAM and the SFA. No Party, including Laclede, shall be obligated to offer any of the following corporate support services to any affiliated or unaffiliated party:

(a) Joint corporate oversight and governance, administrative and management services, including accounting (i.e., bookkeeping, billing, accounts receivable administration and accounts payable administration, and financial reporting); audit; executive; finance; insurance; information systems services; investment advisory services; legal; library; record keeping; secretarial and other general office support; real estate management; security holder services; tax; treasury; and other administrative and management services;

(b) Personnel services, including recruiting; training and evaluation services; payroll processing; employee benefits administration and processing; labor negotiations and management; and related services;

(c) Research and development, including drafting and technical specification development and evaluation; engineering; environmental; research; testing; and training.

No Party, including Laclede Gas Company, shall have anobligation to provide any of the foregoing to the extent that it is not capable of providing such service (either because such Party does not have personnel capable of providing the requested service or the service is otherwise being used). A Party has sole discretion in scheduling of services so as to avoid interference with the Party's operations. Laclede Gas Company shall schedule the provision of any services so as to avoid interference with regulated operations.

*C. Cash Management.* The Parties may enter into one or more arrangements providing for the central collection, management, investment and disbursement of cash by a Party. Any such cash management arrangement shall be fully consistent with the pricing standards of the Rules and shall not provide a preferential service (information,treatment or actions by the regulated gascorporation which places the affiliated entityat an unfair advantage over its competitors).If suchcash managementarrangement is established, then pursuant to the SFA:

> (a) the Parties participating in such arrangement shall establish appropriate inter-company accounts to track the amount of cash transferred and/or received by each Party to such arrangement and the pro rata portion of the earnings received or interest paid by each such party from the investment or borrowing of cash; and
>
> (b) the Party responsible under the arrangement for the management and investment of such cash shall establish a separate account or accounts for such purpose, which account(s) and the records associated therewith shall clearly indicate that other Parties have an interest in said account(s) and the proceeds thereof and shall not be subject to set-off by the bank or other institution holding the same except to the limited extent of expenses arising from the management, handling and investment of the account(s).

*D.Agreements, Etc.* A Party may evidence their agreement with respect to the availability, provision or use of the facilities, services and activities described in this CAM by entering into an agreement, lease, license or other written memorandum or evidence consistent with the terms of the SFA.

VII. <u>ASSET TRANSFERS</u>

Laclede Gas Company shall not sell, lease, assign or transfer to any affiliate or third party any of its utility assets that are used and useful in the performance of Laclede's public utility obligations without obtaining priorCommission approval.

VIII. <u>CHARGES; PAYMENT</u>

*A. Charges.* Charges for the use of facilities, equipment, capabilities or services shall be determined in accordance with the section below regarding cost principles. By requesting the use of facilities, equipment, capabilities and/or services, a Party shall be deemed to have agreed to pay, and shall pay, to the Provider or Providers the charge determined therefor in accordance with Commission rules, the CAM and the SFA.

*B. Payment.* Payment for the facilities, services and other activities shall be accounted for on a monthly basis and shall accrue interest if not made by the last day of the month following the month in which the service was rendered. Late payments shall bear interest at a simple rate per annum equal to the prime bank lending rate as published in The Wall Street Journal (on the first day of the month) minus one percentage point. Such interest shall be based on the period of time that the payment is late.

IX. <u>TRANSFER PRICING/COSTING METHODOLOGY</u>

*A. Use of Facilities or Goods or Services -- General.* (i) Facilities, goods or servicesprovided to Laclede Gas Company by an affiliated provider shall be charged to Laclede Gas Company at the lesser of the FMP for such facilities, goods or services orthe FDC to Laclede Gas Company to provide the facilities, goods or services to itself, subject to all applicable Commission approved waivers.

(ii) Facilities, goods or services, including shared services provided by Laclede Gas Company to an affiliate, shall be charged by Laclede Gas Company at the greater of the fair market price of such facility, good or service or at the fully distributed cost incurred by Laclede Gas Company in providing such facility, good or service to itself.

*B. Fair Market Price.* The fair market price of an asset or service as used in subsection A (i) and (ii), means:

1. The price of an arms-length exchange for the same good or service for cash in the marketplace at or near to the date of the transaction. If there is evidence that the marketplace transaction was not conducted at arms-length (the amount at which assets, goods or services would change hands between an unaffiliated willing buyer and seller, neither being under any compulsion to buy or sell and both having reasonable knowledge of the relevant facts) or if there is evidence that the market price has changed materially between the date of the marketplace exchange and the date of the affiliate transaction, then the marketplace transaction cannot be used as the basis of determining the fair market price in a transaction with an affiliate, unless appropriate adjustments are made to reflect such market changes.

2. In the absence of a cash transaction on which to base fair market price, or in situations where the cash transaction cannot be used as described in number one above, Laclede will determine and document the fair market price established by the transactions of other unaffiliated entities that have bought or sold the same or similar items in recent cash transactions under comparable terms and conditions.

a. Laclede's Human Resources Department or Procurement personnel will make reasonable efforts through market surveys to ensure that the fully distributed cost allocated to affiliates for services provided by Laclede falls within the range of prices charged for such services by outside companies or firms that engage in similar work. If the results of such surveys demonstrate that the costs charged by Laclede for such services consistently fall below such range, then an adjustment shall be made at the time of Laclede's annual CAM filing to bring the amount allocated within the range. The results of the market surveys will be made available to the Staff and OPC as requested. The market survey performed by Laclede will be updated in each rate case, but not less than every 18 months.

3. In the absence of cash transactions made by Laclede in the marketplace (number one above) and a lack of data about transactions by other entities (number two above), Laclede can use benchmarking practices (4 CSR 240-40.015 (3)(D) and 4 CSR 240-40.016 (4)(D)), if approved by the Commission in a later filing.

4. For costs and revenues generally subject to PGA/ACA recovery, refer to the requirements in Appendix 2, Gas Supply and Transportation Standards of Conduct.

*C. Fully Distributed Costs.* The fully distributed cost of an asset or service as used in subsections A (i) and A (ii), means: (1) Laclede Gas Company's cost of labor(including all labor overheads such as pensions and OPEBs), the rent or capital costs associated with the facilities used by such employees, the depreciation expense on equipment used by such employees, and debt and equity costs associated with any utility investments consumed in the process of providing the asset or service that would be directly attributed and charged to the asset or service; and (2) a reasonable allocated share of Laclede Gas Company's indirect joint and common labor and administrative and general costs. The actual application of fully distributed cost allocations occurs through what is commonly called the "three-step" allocation method. This method begins with the premise that to the maximum extent practical, all costs which can be specifically attributed to a business segment are directly charged to that business segment. Secondly, indirect costs which cannot be directly charged are allocated to business segments on the basis of a causal relationship. In the third step, any remaining costs which cannot be reasonably associated with a specific, identifiable, causal relationship shall be allocated using a general allocator as described below.

*(i) Direct Costs.* Costs incurred for materials or services that are specifically attributable to goods or services provided to an affiliate shall be charged directly to the books and records of the affiliate, using standard voucher account distribution procedures. Such charges will be visible in the accounting records through cash vouchers, invoices, or other source documents.

*(ii) Direct Labor Costs.* Amounts for direct labor (and direct labor overheads) used in providing a service to an affiliate shall be charged to the accounts of affiliates based on direct labor and overhead rates as applied to time-keeping records. For most employees, direct labor shall be charged under a positive time reporting methodology under which an employee shall report each pay period the amount of time incurred in performing the service. Based on the time reported each pay period, the regular, predetermined account distribution for the employee shall be adjusted to reflect the distribution of direct labor charges to the service.

Some departments or organizations are expected to provide a recurring, predictable level of services to a Party or Parties. For these departments or organizations, annual reviews shall be performed and documented to determine a normal distribution of time to such services. The distribution percentages derived from such reviews shall then be used to allocate time with respect to each pay period. For these departments or organizations, direct labor shall be charged to the service under an exception time reporting methodology. That is, significant deviations of actual activity from these predetermined percentages shall be reported and shall result in adjustments to the predetermined distribution of direct labor charges to the affiliate functions. Officers of Laclede Gas Company shall also utilize either a positive time or an exception time reporting methodology.

Overtime costs shall be reflected in the direct labor rates charged to a service. Direct labor shall be charged based either on the base and overtime pay amounts actually incurred by Laclede Gas Company or, as adjusted on a departmental or organizational basis, to reflect estimated overtime incurred based on an overtime review performed periodically.

All charges for direct labor charges shall reflect a cost for nonproductive time. The cost for nonproductive time shall be based either on actual nonproductive time incurred by Laclede Gas Company, or as adjusted on a departmental or organizational basis, to reflect estimated nonproductive time derived from a periodic review. The cost for nonproductive time reflects time incurred for vacations, holidays, and other paid absences.

Many payroll-related costs are charged through separate journal entries via clearing account distributions that directly follow the payroll charged to the accounts of the affiliate and as described below.

*(iii) Indirect and Allocated Costs.* When costs benefit more than one entity or when costs cannot be specifically associated with a particular activity, the fully distributed cost of each expense item (including administrative and general costs, and the cost of facilities, equipment, machinery, furniture and fixtures used to provide the service) shall be allocated as set forth below: For some expense items that cannot reasonably be directly assigned and cannot also be reasonably allocated using any cost-causation allocation factor it is common to combine three financial components to determine an allocation factor referred to as a general allocator (also known as a Massachusetts Formula or Three-Factor Formula). This three-component allocation factor is derived by calculating the percent of each affiliate's share of the total of each financial component. The three components which are included in the allocation factor are to be selected as the most reasonable factors on which the specific costs should be allocated.

Laclede currently uses a general allocator based on1) fixed assets and investments, 2) revenues, and 3) direct payroll. These factors should be continuously monitored for fairness, relevance, reasonableness and appropriateness and, if the business or operational considerations supporting the propriety of the general allocator computation change materially, and continued use of the allocation method results in an inequitable allocation of costs, Laclede shall immediately change one or more of the component factors to ensure that the costs are being allocated on the most equitable and appropriate basis. Laclede shall document the reason for the change and the reasons for the selection of new factors.

In addition, each party shall be free in a subsequent rate case to propose changes to the calculation of the components used in Laclede's fully distributed cost determination, the financial metrics to be included in the general allocator and in the allocation factors described below.

The following expense items are allocated as indicated below:

Administrative & General Expenses – Total miscellaneous administrative and general expenses charged to the utility that cannot reasonably be directly assigned shall be allocated to affiliated entities based on the percentage of each affiliates' direct payroll charges as compared with total payroll charges. These expenses include phone charges, office and computer supplies, printing, subscriptions, travel, and other general expense items. Administrative and general expenses identifiable and specific to a particular affiliate will be charged directly to that affiliate.

Annual Report & SEC Reporting Costs – These costs shall be allocated to each affiliated entity based on the three-component allocation method as applied to the previous fiscal year unless a review of the SEC Reports and Annual Report indicate that the three-factor formula does not result in a reasonable allocation of these costs.

Board of Director Fees – Unless a review of the Board of Director minutes indicate that the three-factor formula does not result in a reasonable allocation of these costs, these costs shall be allocated to each affiliate based on the three component allocator.

Depreciation – An allocation of depreciation expense related to the cost of utility-owned facilities, equipment, machinery, furniture or fixtures utilized by an affiliate or in providing a service to an affiliate shall be charged to each affiliate based on the portion of time each asset or class of asset is dedicated to non-utility work. Furniture and fixtures will be allocated on a cost per employee basis as applied to direct man-hours reported for each affiliate.

Employee-Related Costs – Expenses related to payroll taxes, medical, dental, and vision insurance costs, pension and other post-retirement benefit costs, incentive compensation plan costs, and employee savings plan costs will be allocated based on direct payroll hours charged to each affiliate.

Information Systems – The costs of projects dedicated to affiliates will be charged directly to each affiliate. All costs, including capital costs related to the operation of mainframe systemswill be allocated based on a percentage of operating and production time dedicated to routine affiliate activities as compared to the total for each system. Such allocations shall be based on a study performed annually. Costs related to network applications, including capital costs,will be allocated based on the number of personal computers assigned on a departmental basis. The departmental allocation of costs will be appropriately allocated to affiliates based on the proportion of direct labor reported by each department for an affiliate.

Insurance – The cost of insurance directly related to the property or activities of any affiliate will be charged directly to each affiliate. The cost of insurance policies(including capital costs on the prepaid insurance costs included in the regulated rate base) applicable to more than one entity will be allocated based on the proportion of each affiliate's share as compared with the total company as follows:

Property Insurance – fixed assets at book value (net plant)

Liability Insurance – actual claims cost

Workmen's Compensation – actual claims cost will be charged directly and the administrative fees will be allocated based on number of employees submitting claims.

Officers & Directors Liability Insurance – three-component allocator as described above

Such allocations shall be based on the above parameters at September 30 of the previous fiscal year.

Outside audit fees – Outside audit fees shall be allocated based on the three factor allocation formula.

Rent – Rent expense for costs associated with operating leases for space dedicated to affiliated operations will be priced on a cost per square foot basis and charged directly to each affiliate. In addition, an allocation of indirect costs for rent will be made based on an annual cost per man-hour of rent expense as applied to direct payroll hours charged to each affiliate. Rent expense related to capital leases will include a capital cost component.

Vehicle costs – The operating and capital costs related to applicable vehicle groups will be allocated based on direct payroll hours charged to each affiliate and/or through the allocation of administrative and general expense described above.

The allocation factors described above are to be used for recordkeeping and financial reporting purposes and do not necessarily represent how such costs will be allocated or assigned for ratemaking purposes in subsequent rate cases.

When it becomes known that one of the above allocation methods no longer appears reasonable or equitable, Laclede will adjust or modify the allocation methodology to ensure that the costs are allocated on the most reasonable and equitable basis possible and will document the reasons for the changes.

*D. Transfer Pricing/Costing Methodology for Energy-Related Goods and Services.* Transactions between Laclede Gas and its affiliates for energy-related goods and services will be priced and conductedin accordance with the Gas Supply and Transportation Standards of Conduct, Appendix 2 to the CAM.

## X. CUSTOMER REQUESTS ABOUT GOODS AND SERVICES

Where requirements relating to customer requests for information concerning the goods and services provided by an affiliated entity are applicable, Laclede Gas Company will provide customers with an oral or written disclaimer indicating that regulated services are not tied to the use of the affiliated entity and that other service providers may be available.

## XI. DISPUTE RESOLUTION

If there is a dispute between Laclede Gas Company and any affiliate regarding a billing, representatives of all involved parties will meet to resolve the issues. Managers and other executives of the affected parties may also be consulted. In the event that a resolution cannot be reached, the issue will be referred to senior management for final resolution. Documentation of disputes and resolutions will be maintained by Laclede Gas Company including recommendations for changes to policies, procedures, and processes to assure adequate protections for Laclede Gas Company on a moving forward basis.

XII. EXCEPTIONS TO APPLICATION OF METHODOLOGIES

Laclede Gas Company may employ a different allocation or pricing methodology than those described herein in the event it determines to its best knowledge and belief that application of the methodologies or costing principles described herein would not be in the best interests of its customers receiving regulated utility service, provided that Laclede Gas Company shall maintain information sufficient to show how costs would have been allocated to such services pursuant to the methodologies set forth in this CAM, and provided further that such alternative methodology will be subject to review and adjustment in any subsequent Commission case proceeding. In the event Laclede Gas Company enters into a non-complying affiliate transaction, it shall document such transaction and file a notice of that transaction to the Commission and Public Counsel within 10 days of doing so as required by 4 CSR 240-40.015 (10)(A)2and 4 CSR 240-40.016 (11)(A)2 for variances from the Affiliate Transaction Rule.

XIII. STAFF AND OFFICE OF THE PUBLIC COUNSEL CHALLENGES

Nothing in Laclede Gas Company's CAM prevents the Staff, OPC or any other party from challenging whether the prices charged for specific transactions are consistent with the pricing methodology set forth in this CAM and in Commission rules, or from suggesting changes in such methodology or in the allocation methodology used to assign costs between Laclede Gas Company and its affiliates during a case before the Commission.

XIV. ACCESS TO UTILITY RECORDS

Laclede Gas Company shall ensure that it prohibits access by affiliates, subsidiaries, and third parties to customer specific information (such as customer lists, customer usage, etc.) possessed by the utility unless specifically authorized by the customers in writing. Laclede shall maintain all documentation of such authorizations.

Submitted,

The Laclede Group, Inc.
Laclede Gas Company
Laclede Investment LLC
Laclede Development Company
Laclede Pipeline Company
Laclede Energy Resources, Inc.
Laclede Venture Corp.
Laclede Gas Family Services, Inc.

SERVICES AND FACILITIES AGREEMENT

THIS SERVICES AND FACILITIES AGREEMENT (this "Agreement") is made and entered among Laclede Gas Company, The Laclede Group, Inc., Laclede Investment LLC, Laclede Development Company, Laclede Pipeline Company, Laclede Energy Resources, Inc., Laclede Venture Corp., Laclede Gas Family Services, Inc., and each of the entities identified on Exhibit A hereto, as such Exhibit A may be amended from time to time in accordance with the provisions of this Agreement.

WITNESSETH:

WHEREAS, the parties are related by virtue of common ownership, directly or indirectly, of their equity securities by The Laclede Group, Inc.; and

WHEREAS, the parties believe that the central management of certain services and the provisions to each other of certain services and facilities are or may be efficient and cost effective, and the parties desire to make provision for these and other transactions as between Laclede Gas Company and another Laclede Group Entity or Entities;

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants contained herein, the parties hereby agree as follows:

ARTICLE I

Definitions and Interpretation

Section 1.1. *Definitions.* As used in this Agreement, the following terms shall have the respective meanings set forth below unless the context otherwise requires:

"*Commission*" means the Missouri Public Service Commission.

*"Cost Allocation Manual" or "CAM"* means the then effective version of the Laclede Gas Company Cost Allocation Manual.

"*Laclede Group Entity*" means The Laclede Group, Inc. and any of the entities identified on Exhibit A.

"*Party*" means each, and "*Parties*" means all, of the entities who are from time to time a party to this Agreement.

"*Provider*" means a Party who has been requested to, and who is able and willing to, furnish facilities, provide services or have other transactions with a Requestor under the terms of this Agreement.

"*Requestor*" means a Party who desires to use facilities, receive services or have other transactions with a Party and has requested another Party to furnish such facilities, provide such services or transactions.

Section 1.2. *Purpose and Intent; Interpretation.* (a) The purposes and intent of this Agreement are to set forth procedures and policies to govern (i) transactions between a Laclede Group Entity and Laclede Gas Company, whether such transactions occur directly or indirectly as the end result of a series of related transactions and (ii) the allocation of certain joint service costs. It is not intended to govern transactions between Laclede Group Entities that do not involve Laclede Gas Company, although such entities may elect to apply the provisions of this Agreement to transactions among themselves. This Agreement shall be interpreted in accordance with such purposes and intent.

(b) The headings of Articles and Sections contained in this Agreement are for reference purposes only and shall not affect in any way the meaning or interpretation of this Agreement.

ARTICLE II

Use of Facilities and Services

Section 2.1. *Facilities.* Upon the terms and subject to the conditions of this Agreement, a Requestor may request a Provider or Providers to make available or provide facilities and equipment as described in the CAM. A Provider shall have no obligation to provide any facilities to the extent that such item or items are not available (either because such Provider does not possess the item or the item is otherwise being used); and it is understood that a Provider has sole discretion in scheduling the use by a Requestor of facilities, equipment or capabilities so as to avoid interference with such Provider's operations.

Section 2.2. *Services.* Upon the terms and subject to the conditions of this Agreement, a Requestor may request a Provider or Providers to provide services as described in the CAM. A Provider shall have no obligation to provide any service to the extent that it is not capable of providing such service (either because such Provider does not have personnel capable of providing the requested service or the service is otherwise being used); and it is understood that a Provider has sole discretion in scheduling the use by a Requestor of services so as to avoid interference with such Provider's operations.

Section 2.3. *Joint Purchasing.* A Party may also request that another Party or Parties enter into arrangements to effect the joint purchase of goods or services from third parties. Laclede Gas will only participate in such arrangements if its fully distributed cost for such goods or services is not thereby increased.

Section 2.4. *Cash Management.* The Parties may enter into one or more arrangements providing for the central collection, management, investment and disbursement of cash by a Party. If such an arrangement is established, then such procedures as are set forth in the CAM will apply.

Section 2.5. *Agreements, Etc.* A Party may evidence their agreement with respect to the availability, provision or use of the facilities, services and activities by entering into an agreement, lease, license or other written memorandum or evidence consistent with the terms of this Agreement.

ARTICLE III

Charges; Payment

Section 3.1. *Charges.* Charges for the use of facilities, equipment, capabilities or services provided to or by Laclede Gas Company shall be determined as set forth in the CAM.

Section 3.2. *Accounting.* Each Party shall maintain adequate books and records with respect to the transactions subject to this Agreement and shall be responsible for maintaining internal controls where applicable to ensure the costs associated with such transactions are properly and consistently determined and billed in accordance with the terms and provisions of this Agreement and the CAM.

Section 3.3. *Payment.* Payment for the facilities, services and other activities shall be on a monthly basis and shall be made in accordance with the procedures set forth in the CAM.

ARTICLE IV

Cost Apportionment Methodology

The cost allocation and pricing principles and methods specified in the then effective CAM shall be used to price and allocate costs relating to services provided to or by Laclede Gas Company under this Agreement.

ARTICLE V

Limitations of Liability

Section 5.1. *No Warranties for Facilities or Services.* Each Party acknowledges and agrees that any facilities, equipment or capabilities made available, and any services provided, by a Provider to a Requestor hereunder, are so made available or provided WITHOUT ANY WARRANTY (WHETHER EXPRESS, IMPLIED OR STATUTORY AND NOTWITHSTANDING ANY ORAL OR WRITTEN STATEMENT BY A PARTY'S EMPLOYEES, REPRESENTATIVES OR AGENTS TO THE CONTRARY) WHATSOEVER. ALL SUCH WARRANTIES (INCLUDING, WITHOUT LIMITATION, THE WARRANTIES OF MERCHANTABILITY AND

FITNESS FOR A PARTICULAR PURPOSE) ARE HEREBY DISCLAIMED AND EXCLUDED.

Section 5.2. *No Partnership.* The Parties acknowledge and agree that this Agreement does not create a partnership between, or a joint venture of, a Party and any other Party. Each Party is an independent contractor and nothing contained in this Agreement shall be construed to constitute any Party as the agent of any other Party except as expressly set forth in Sections 2.3 and 2.4.

Section 5.3. *No Third Party Beneficiaries.* This Agreement is intended for the exclusive benefit of the Parties hereto and is not intended, and shall not be deemed or construed, to create any rights in, or responsibilities or obligations to, third parties.

ARTICLE VI

Term

Section 6.1. *Term.* This Agreement will be effective on the date provided herein and shall continue, unless terminated as provided in Section 6.2 or renewed as hereinafter provided, until the tenth anniversary of such date (the "Initial Term"). Unless written notice that this Agreement shall terminate on the last day of the Initial Term or any then current renewal term is provided by a Party at least 30 days prior to the expiration of the Initial Term or such renewal term, this Agreement shall continue for successive renewal terms of five years as to such Party and any other Parties not providing any such termination notice.

Section 6.2. *Termination.* Any Party may terminate this Agreement as to it by providing at least 30 days prior written notice to the other Parties of the effective date of such termination. Any such termination shall not affect the terminating Party's accrued rights and obligations under this Agreement arising prior to the effective date of termination or its obligations under Section 8.4.

ARTICLE VII

Confidential Information

Each Party shall treat in confidence all information, which it shall have obtained regarding the other Parties and their respective businesses during the course of the performance of this Agreement. Such information shall not be communicated to any person other than the Parties to this Agreement, except to the extent disclosure of such information is required by a governmental authority. If a Party is required to disclose confidential information to a governmental authority, such Party shall take reasonable steps to make such disclosure confidential under the rules of such governmental authority. Information provided hereunder shall remain the sole property of the Party providing such information. The obligation of a Party to treat such information in confidence shall not apply to any information which (i) is or becomes available to such

Party from a source other than the Party providing such information, or (ii) is or becomes available to the public other than as a result of disclosure by such Party or its agents.

## ARTICLE VIII

### Miscellaneous

Section 8.1. *Entire Agreement; Amendments.* Upon its effectiveness as provided in Section 6.1, this Agreement shall constitute the sole and entire agreement among the Parties with respect to the specific subject matter hereof and shall, with respect to such subject matter, supersede all previous agreements, proposals, oral or written, negotiations, representations, commitments and all other communications between some or all of the Parties. Except as provided in Section 8.2 with respect to new Parties and except that Laclede Group may amend Exhibit A to this Agreement to delete any terminated Party, this Agreement shall not be amended, modified or supplemented except by a written instrument signed by an authorized representative of each of the Parties hereto.

Section 8.2. *New Parties.* Any other entity which is or may become an affiliate of The Laclede Group or any of the other Parties to this Agreement may become a party to this Agreement by executing an agreement adopting all of the terms and conditions of this Agreement. Such agreement must be signed by The Laclede Group in order to become effective, but need not be signed by any other Party to this Agreement. Upon such execution by The Laclede Group, such entity shall be deemed to be a Party and shall be included within the definition of "Party" for all purposes hereof, and Exhibit A shall be amended to add such entity.

Section 8.3. *Assignment.* This Agreement may not be assigned by any party without the prior written consent of The Laclede Group.

Section 8.4. *Access to Records.* During the term of this Agreement and for any period thereafter required by law, Laclede Gas Company shall maintain and provide, in accordance with the terms of the Stipulation and Agreement approved in GM-2001-342, reasonable access to any and all books, documents, papers and records of Laclede Gas Company which pertain to services and facilities provided to or received by Laclede Gas Company.

Section 8.5. *Partial Invalidity.* Wherever possible, each provision hereof shall be interpreted in such manner as to be effective and valid under applicable law, but in case any one or more of the provisions contained herein shall, for any reason, be held to be invalid, illegal or unenforceable in any respect, such provision shall be ineffective to the extent, but only to the extent, of such invalidity, illegality or unenforceability without invalidating the remainder of such invalid, illegal or unenforceable provision or provisions or any other provisions hereof, unless such a construction would be unreasonable.

Section 8.6. *Waiver.* Failure by any Party to insist upon strict performance of any term or condition herein shall not be deemed a waiver of any rights or remedies that such Party may have against any other Party nor in any way to affect the validity of this Agreement or any part hereof or the right of such Party thereafter to enforce each and every such provision. No waiver of any breach of this Agreement shall be held to constitute a waiver of any other or subsequent breach.

Section 8.7. *Governing Law.* This Agreement shall be governed by, construed and interpreted pursuant to, the laws of the State of Missouri.

IN WITNESS WHEREOF, the Parties have each caused this Agreement to be executed by a duly authorized representative on August 8, 2003.

Laclede Gas Company

Laclede Venture Company

The Laclede Group, Inc.

Laclede Gas Family Services, Inc.

Laclede Investment LLC

Laclede Pipeline Company

Laclede Development Company

SM&P Utility Resources, Inc.

Laclede Energy Resources, Inc.



Public

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**EXHIBIT A**

Laclede Gas Company
The Laclede Group, Inc.
Laclede Investment LLC
Laclede Development Company
Laclede Pipeline Company
Laclede Energy Resources, Inc.
Laclede Venture Corp.
Laclede Gas Family Services, Inc.
SM&P Utility Resources, Inc. (Added effective January 28, 2002)

# Gas Supply and Transportation Standards of Conduct

To assist in ensuring that energy-related transactions between Laclede Gas Company ("Laclede" or "Company") and its affiliates are conducted in a manner fully consistent with the interests of the Company's utility customers, including their interest in having such transactions priced and accounted for in a reasonable and appropriate manner, Laclede agrees to formalize and comply with the following standards of conduct and associated document requirements relating to such transactions:

## A. Purchases of gas supplies for multi-month periods (purchases for longer than 1-month)

**1.** Laclede will acquire multi-month gas supplies in accordance with a competitive bidding process in which requests for proposals (RFP's) are submitted by Laclede to a list of eligible suppliers at the various supply locations connected to the pipelines on which Laclede holds firm transportation or through another competitive bidding process. For any exceptions to the competitive bid and award process, Laclede will have a documented process for the supply approval and award process, including (a) justification requirements, (b) authorization process, (c) contemporaneous documentation requirements (for internal Company information and external communications with suppliers), and (d) effective monitoring and controls.

**2.** Such RFP process shall be open to all gas suppliers who wish to bid.The intent is **to gain the broadest practical participation by eligible suppliers in submitting competitive supply bids for the supply location(s) where Laclede purchases gas**. Once such a process is reasonably developed and appropriately implemented and effectively monitored and controlled, the results of that process are intended to establish the fair market price for the purchase. Laclede shall provide with its annual CAM report submission an explanation of any credit, performance or other criteria that Laclede takes into consideration in determining which suppliers are sent RFPs as part of the RFP process.

**3.** In the event a gas supply contract for firm gas supply is awarded to an affiliate as a result of the RFP or other competitive bidding process, the affiliate shall be held to the same performance requirements as non-affiliated suppliers.

**4.** In the event a gas supply contract is awarded, Laclede shall maintain the following contemporaneous documentation: (a) any diversity, credit, or reliability-related volume limitations placed on the maximum volumes Laclede will purchase from an individual supplier or from any one supplier on a specific pipeline (broken down by baseload, combo, and swing); (b) an explanation of the diversity, credit and/or reliability-related reasons for imposing such limitations; (c) a description of the process used to transmit the supply request to all eligible suppliers, evaluate bids, and negotiate final prices and terms; (d) a list of all suppliers that were sent each RFP;(e) a complete summary of all bids received and all prices accepted, together with copies of all underlying documents, contracts and communications; (f) a summary and explanation of suppliers disqualified for credit, performance or other criteria, and (g) a copy of the policy or procedure employed by Laclede for awarding contracts in instances where an affiliate and an unaffiliated supplier have offered identical pricing terms. For phone calls or texts, Laclede shall maintain contemporaneous logs documenting the discussions and decisions.

**5.** In the event a gas supply contract is awarded to an affiliate at a location in which no other contracts were awarded, the Company shall maintain contemporaneous documentation showing that the affiliate's bid price was equal to or lower than the bids received from non-affiliated suppliers, and that any upward or downward adjustment in the final contract price was justified by changes in the market.

**6.** In the event a gas supply contract is awarded to an affiliate at a location at which Laclede also awarded gas supply contracts to non-affiliated suppliers, the Company shall maintain contemporaneous documentation showing that the price established under the contract awarded the affiliate was within or lower than the range of prices established under contracts awarded to entities other than the affiliate.

**7.** If the affiliate's bid price or contract price does not meet the criteria in paragraphs 5 or 6, Laclede may not award the gas supply contract to the affiliate, unless the Company can demonstrate and contemporaneously document that a more favorable bid was rejected for legitimate reasons relating to the rejected bidder or bidders' creditworthiness, performance history (or lack thereof), or other consideration bearing on the fitness and reliability of the bidder to provide the requested service.

**8.** In the interests of optimizing the competitive benefits of the RFP process, the RFP will permit suppliers to propose alternative ways of satisfying the basic quantity, reliability, delivery and pricing terms of the RFP in addition to those specifically contemplated by the RFP, provided that the RFP shall explicitly advise suppliers that proposing such alternatives is permissible. The RFP may also utilize ranges for such quantity, reliability, delivery and pricing terms. In the event any such alternative produces a supply arrangement that is at least as favorable in its basic terms as other initial bids received by the Company during the RFP process then there shall be no need to rebid the proposed supply arrangement. In the event the Company itself makes a material change in the basic quantity, reliability, delivery or pricing terms of the RFP, or changes the range applicable to such terms, after initial bids have been received then the proposed supply arrangement shall be rebid.

**B. Short term purchases of gas supply (one month or less)**

**1.** The Company shall maintain contemporaneous documentation sufficient to establish that its short-term purchases of gas supply are acquired in accordance with a competitive bidding process, taking into account the terms and conditions, location and time at which the purchase was made.

**2.** The Company shall, within the next six months, develop a documented information exchange process where eligible suppliers will be notified of gas supplies that the Company may wish to purchase on a given day(s), and/or suppliers notify Laclede of supply and prices each is willing to offer. Such process may rely on instant messaging, emails, telephone calls, postings on a Company-developed website, awards made on an electronic trading platform (not just price discovery),or some other mechanism to notify bidders and/or Laclede. The intent is **to gain the broadest practical participation by eligible suppliers in submitting competitive supply bids for the supply location(s) where Laclede purchases gas**. Once such a process is reasonably developed and appropriately implemented and effectively monitored and controlled, the results of that process are intended to establish the fair market price for the purchase.

**3**. Emergency short term purchases of gas supply may also be made without following the competitive bidding procedure if necessitated by supply reliability considerations, provided that such purchases and the emergency circumstances are documented. Emergency conditions will include, but not be limited to, natural disasters, extreme weather events, well freeze-offs, curtailment of pipeline transportation or storage services, failure of supply, damage to or breakdown of Company facilities, changes in deliveries to the Company's take points that are beyond the Company's control, and other similar or unforeseen events affecting the availability of gas supplies. In the event short term purchases of gas supply are made on an emergency basis, nothing shall be construed as precluding Staff or OPC from raising an issue regarding the reasonableness of the emergency circumstances claimed by the Company and their effect on the propriety of the transaction.

**4.** For each and every gas supply inquiry and/or award, Laclede shall maintain the following contemporaneous documentation: (a) any diversity, credit, or reliability-related volume limitations placed on the maximum volumes Laclede will purchase from an individual supplier or from any one supplier on a specific pipeline; (b) an explanation of the diversity, credit, and/or reliability-related reasons for imposing such limitations; (c) a description of the process used to transmit and/or receive supply notifications to eligible suppliers, evaluate bids/responses, and negotiate final prices and terms; (d) copies of all written communications and descriptions of all unwritten communications that solicit bids from suppliers; (e) a list of all suppliers that were notified of Laclede's gas supply needs;(f) copies of all bids/responses/ inquiries received and all prices accepted, together with copies of all underlying documents, contracts and communications; (g) a list of all suppliers disqualified for credit, performance or other criteria along with an explanation of the basis for each disqualification; and (h) a copy of the policy or procedure employed by Laclede for awarding contracts in instances where an affiliate and an unaffiliated supplier have offered identical pricing terms. For phone calls or texts, Laclede shall maintain contemporaneous logs documenting the inquiries, discussions and decisions.

**C. Sales of gas supply also referred to as Off-System-Sales (OSS)**

**1.** The Company shall maintain contemporaneous documentation sufficient to establish that its sales of gas were made at the fair market price for comparable sales, taking into account the terms and conditions, location and time at which the sale was made. The fair market price shall be determined pursuant to the process described below and any amount received for gas must be sufficient to cover: (i) the highest Cost of Gas Supply (CGS) on the pipeline on which the sale is made, as determined by the CGS schedule referenced in Laclede Gas Company's OSS tariff and as adjusted for any documented exceptions as permitted by such tariff; plus (ii) make some positive contribution to Laclede Gas Company's fixed gas supply costs.

**2.** The Company shall, within the next six months, develop a documented information exchange process where eligible bidders/buyers will be notified of gas supplies that the Company may have for sale on a given day(s). Such process may rely on instant messaging, emails, telephone calls, postings on a Company-developed website, awards made on an electronic trading platform (not just price discovery)or some other mechanism to notify bidders/potential gas buyers. The intent is **to gain the greatest reduction in gas costs for Laclede's customers consistent with maintaining a reliable supply of gas**. Once such a process is reasonably developed and appropriately implemented and effectively monitored and controlled, the results of that process are intended to establish the fair market price for the sale. For phone calls or texts, Laclede shall maintain contemporaneous logs documenting the inquiries, discussions and decisions.

**3.** **Unsolicited OSS Requests—** Laclede shall only accommodate unsolicited OSS requests where the Company can operationally provide such supplies without incurring any known penalty or detriment. Laclede shall maintain contemporaneous logs of all instances identifying where it has accommodated and/or refused such requests, including: the identity of the requesting counter-party; the date the request was made; the pricing and quantity of the gas supply requested; the awarded pricing, quantity, receipt/deliver point(s); and any other terms.

**D. Releases of transportation or storage capacity by Laclede**



**Public**

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**1.** All Laclede releases of pipeline transportation or storage capacity to an affiliate, including prearranged releases, must be effectuated by posting the release as biddable on the applicable pipeline's Electronic Bulletin Board ("EBB"). The Company shall maintain contemporaneous documentation sufficient to show that such release was made to an affiliate at the highest bid price (the posted release price is considered a bid price), on the pipeline's EBB for that release and that the amount received by the Company was at least sufficient to make a contribution to the Company's fixed pipeline reservation costs.

**2.** For pre-arranged releases to an affiliate of greater than a month and less than a year, the pre-arranged transaction shall be posted for two consecutive daily posting periods.

**E.** **Purchases of transportation and storage capacity from the capacity release market by Laclede –** All Laclede purchases of pipeline transportation or storage capacity from an affiliate must be effectuated by releasing and bidding for the capacity on the applicable pipeline's EBB. Laclede shall maintain contemporaneous documentation sufficient to show that the purchase price paid for such capacity was equal to or lower than the price of other comparable transportation alternatives available to the Company to meet the same resource needs. Laclede shall maintain contemporaneous documentation sufficient to show that the affiliate was given no preferential treatment over non-affiliates. Resource needs will be fully documented by the Company and subject to review.

**F.** **Purchase of unsolicited gas supply** — Laclede shall only consider accommodating unsolicited requests for short-term purchase of gas supply where the Company can operationally take such supplies without incurring any known penalty or detriment. Laclede shall maintain a contemporaneous log of all instances identifying where it has accommodated and/or refused such requests, including: the identity of the requesting supplier; the date the request was made; the pricing and quantity of the gas supply offered; the awarded pricing, quantity, receipt/delivery point(s); and any other terms.

**G.** **Negotiations with suppliers –** Laclede shall conduct all negotiations with its gas commodity and pipeline suppliers independently and shall at no time seek to tie the terms of any arrangement to any action on the part of the other party that would favor a Laclede affiliate. Nothing herein shall prevent either Laclede or an affiliate from jointly attending customer meetings, events or other functions where multiple customers or suppliers are also present.

**H.** **Off-System Sales (OSS) and Capacity Release Protocols**

In recognition that markets for OSS and capacity releases can vary depending on weather and availability of supply and capacity options, and in recognition that Laclede holds firm capacity in areas not used to serve its native load and the reservation costs of that firm capacity is charged to Laclede's customers, Laclede will routinely evaluate its processes for soliciting potential buyers to maximize net revenues for OSS and capacity releases.

Laclede will take necessary actions to assure reasonable participation by buyers of its OSS and capacity releases. Laclede will take necessary actions to assure documentation is developed and maintained to show compliance with its processes and procedures.

**I**. **Document Retention** – All documentation and records that must be maintained in accordance with the provisions of these Standards of Conduct shall be maintained for a minimum of six years.

**J.** **Future Revisions –** It is expressly understood that Laclede, the Staff, and the Office of the Public Counsel reserve the right to propose at any time prospective changes to these Standards of Conduct to reflect changing market conditions, the potential implementation of new regulatory or operational models for managing gas supply assets, or other developments that cannot be fully anticipated at this time. Any such change must be approved by the Commission before being implemented. See also Sections I. and V.C. of CAM.

**K.** **Asset Management Arrangements/Agreements –** The CAM and referenced Standards of Conduct do not pertain to Asset Management Arrangements/Agreements (AMAs).Accordingly, if Laclede Gas chooses to use one or more AMAs, Laclede Gas shall document fair market price and fully distributed cost as set forth in 4 CSR 240-40.015 and 40.016, unless and until changes to the CAM and these Standards of Conduct addressing AMAs are approved by the Commission.

Laclede Gas Company — For — Refer to Sheet No. 1
Name of Issuing Corporation or Municipality — Community, Town or City

SCHEDULE OF RATES

H. Sharing of Off-System Sales and Capacity Release Revenues

Effective October 1, 2007, the Company and its Firm Sales and Firm Transportation customers shall share the Off-System Sales margins and Capacity Release Revenues realized by the Company as follows:

| Annual Off-System Sales Margins and Capacity Release Revenues | Firm Sales and Firm Transportation Customers Share | Company Share |
|---|---|---|
| First $2,000,000 | 85%* | 15%* |
| Next $2,000,000 | 80% | 20% |
| Next $2,000,000 | 75% | 25% |
| Over $6,000,000 | 70% | 30% |

* From October 1, 2013 through September 30, 2016 the Customers Share and Company Share for this layer of margins and revenues shall be revised to 100% and 0%, respectively.

The customers' share of Off-System Sales margins and Capacity Release Revenues shall be credited to a separate Deferred Purchased Gas Cost account and any amounts greater than or less than the amounts used as a credit in the computation of the CPGA and LVTSS capacity reservation charges shall be adjusted in the Company's next succeeding ACA computation. Customers' share of Off-System Sales margins shall be allocated to firm sales and firm transportation customers based on the contribution that each customer class made to the recovery of the Company's gas supply demand charges and capacity reservation charges and in accordance with the CPGA components described in A.2.a. above and the volumes sold and/or transported to the applicable customer classifications during the twelve month period ending with the September revenue month. Customers' share of Capacity Release Revenues shall also be allocated to firm sales and firm transportation customers based on the contribution that each customer class made to the recovery of the Company's capacity reservation charges and in accordance with the CPGA components described in A.2.b. above and the volumes sold and/or transported to the applicable customer classifications during the twelve month period ending with the September revenue month.

DATE OF ISSUE ____ Month Day Year — DATE EFFECTIVE October 1, 2013 Month Day Year

ISSUED BY M.C. Pendergast, Vice President, External Affairs, 720 Olive St., St. Louis, MO 63101
Name of Officer — Title — Address

Page 290 of Schedule SAW-D-9 is designated confidential per 20 CSR 4240-2.135(2)(A)(4) and 20 CSR 4240-2.135(2)(A)(6). This included document relates to market specific information regarding services provided to customers and strategies employed in contract negotiations.