Estimating undisclosed flood risk in real estate transactions in Illinois

Financial Implications for single-family home buyers

Commissioned by Natural Resources Defense Council (NRDC)

Larry Baeder, Data Scientist Sean Gao, Data Scientist Greg Dietzen, FCAS, MAAA, Consulting Actuary

Purpose of Report

The Natural Resources Defense Council (NRDC) is a not-for-profit organization that engaged Milliman, Inc. (Milliman), an independent actuarial consulting firm, to study the potential amount of undisclosed flood risk in 25 states by estimating the total number of homes damaged by prior flooding.

Background

Like most states, those in the study area generally do not have laws that effectively require that flood damage be disclosed in real estate transactions. Homes that have experienced flooding in the past are more likely to experience flood damage in the future, meaning buyers of previously damaged homes can unknowingly purchase homes that are at an increased risk of flooding relative to the average home. Milliman estimates that 4% of homeowners in the United States have any flood insurance coverage, potentially leaving unsuspecting buyers of previously damaged homes to be substantially more at risk of paying out of pocket for unexpected flood damages. Additionally, these home buyers could be less likely to purchase flood insurance without the awareness that a home had previously flooded or take actions to lower their risk of flood damage in the future such as raising the home or relocating important systems. Those home buyers who do purchase insurance may be subject to higher premiums to insure their homes than they had anticipated.

The following information is only specific information about the impact of flooding on the state. For a comparison of all the states in the study area as well as full details of the data sources and methodology used in the study, read the full report.

C Milliman

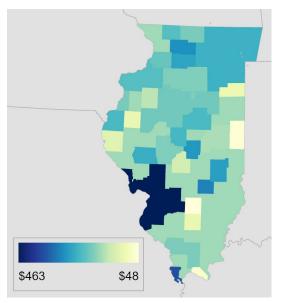


FIGURE 1: AVERAGE STANDARD AAL FOR DAMAGED HOME BY MSA

TABLE 1: RANKING OF KEY METRICS IN 25 STATE STUDY AREA

NFIP paid claims count	4 th
NFIP average claim amount	22 nd
Percent of homes with prior flood damage	10 th
Home sales with prior flood damage	2 nd
Average Standard AAL of home with prior flood damage	23 rd
Total cost of flooding for sold homes with prior flood damage	10 th

State Summary

Illinois has the fourth highest number of NFIP claims with 8,577 claims for single-family homes and the fourth lowest average paid claim amount at \$18,211. In Illinois, our analysis estimates that 35,273 homes have been previously flooded between 2010-2024 (1.1% of all single-family homes) and 2,309 of those were subject to sale in 2023. The total expected annual cost of flooding for these sold homes (average AAL * the home sales by MSA) is \$609,874.

FIGURE 2: SUMMARY STATISTICS ON NUMBER OF SINGLE-FAMILY HOMES

Total Single-Family Homes	3,267,408
Single-Family Homes with NFIP Claim (since 2010)	8,577
Estimated Single-Family Homes with Flood Damages	35,273
Estimated 2023 Home Sales with Flood Damages	2,309
Total Cost of Flooding	\$609,874

The map in Figure 1 shows the average Standard AAL for damaged homes by MSA across the state of Illinois. The average Standard AAL for a previously damaged home varies from \$48 to \$463 depending on the MSA in Illinois. This indicates that the severity of flooding in Illinois is not high, but there are 35,273 homes with previous flood damage which is the third highest number in the study area.

In the analysis, nine MSA's have a percent of homes with prior flood damage above 1%: Burlington, Cape Girardeau, Chicago-Naperville-Elgin, Fort Madison-Keokuk, Freeport, Galesburg, Paducah, Peoria, and St. Louis. These MSA's represent 82% of the damaged homes in Illinois while representing 72% of the single-family homes.

Illinois has the 3rd lowest difference in AAL, \$211, between a home that has been previously flooded and the state average for the Standard scenario. This dollar difference grows by 44% under the High scenario to \$302. Overall, the effect of climate change may adversely impact homeowners whose homes have already been flooded more than the average homeowner in the state.

FIGURE 3: AVERAGE ANNUAL LOSS BY SCENARIO

	(Climate Scenario		
	Standard	Medium	High	
AAL All Homes	\$55	\$63	\$68	
AAL Damaged Homes	266	335	370	

The total cost of flood damage over the life of a 15-year or 30-year period is expected to be a significant amount for a home with previous flood damage. If a home is occupied for 15 years in Illinois, we would expect an average flood cost of \$3,989 over the 15-year period (\$3,989 = 15 * \$266). This difference in flood costs highlights the importance of flood disclosure laws so that home buyers have a clear picture of the potential financial burden from flooding.

FIGURE 4: AVERAGE ANNUAL LOSS BY SCENARIO

	Climate Scenario		
Average Flood Cost	Standard	Medium	High
15 Year	\$3,989	\$5,027	\$5,551
30 Year	7,978	10,054	11,102

Limitations of this analysis can be found included within the full report.

Solutions for a world at risk[™]

Milliman leverages deep expertise, actuarial rigor, and advanced technology to develop solutions for a world at risk. We help clients in the public and private sectors navigate urgent, complex challenges—from extreme weather and market volatility to financial insecurity and rising health costs—so they can meet their business, financial, and social objectives. Our solutions encompass insurance, financial services, healthcare, life sciences, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe.

milliman.com

C Milliman

CONTACT

Larry Baeder larry.baeder@milliman.com

Greg Dietzen greg.dietzen@milliman.com

© 2024 Milliman, Inc. All Rights Reserved. The materials in this document represent the opinion of the authors and are not representative of the views of Milliman, Inc. Milliman does not certify the information, nor does it guarantee the accuracy and completeness of such information. Use of such information is voluntary and should not be relied upon unless an independent review of its accuracy and completeness has been performed. Materials may not be reproduced without the express consent of Milliman.