FIRST STREET FOUNDATION



October 2021

The 3rd National Risk Assessment

Infrastructure on the Brink

Contents

Overview

Abstract 3
Introduction 4
Measuring flood risk vulnerability 5
Methodology 7
Results 9
Implications 17

Contiguous United States

Alabama 19
Arizona 22
Arkansas 25
California 28
Colorado 31
Connecticut 34
Delaware 37
District of Columbia ... 40
Florida 41
Georgia 44
Idaho 47
Illinois 50
Indiana 53
Iowa 56
Kansas 59
Kentucky 62
Louisiana 65
Maine 68
Maryland 71
Massachusetts 74
Michigan 77
Minnesota 80
Mississippi 83
Missouri 86
Montana 89
Nebraska 92
Nevada 95
New Hampshire 98
New Jersey 101
New Mexico 104
New York 107
North Carolina 110
North Dakota 113
Ohio 116
Oklahoma 119
Oregon 122
Pennsylvania 125
Rhode Island 128
South Carolina 131
South Dakota 134
Tennessee 137
Texas 140
Utah 143
Vermont 146
Virginia 149
Washington 152
West Virginia 155
Wisconsin 158
Wyoming 161

Abstract

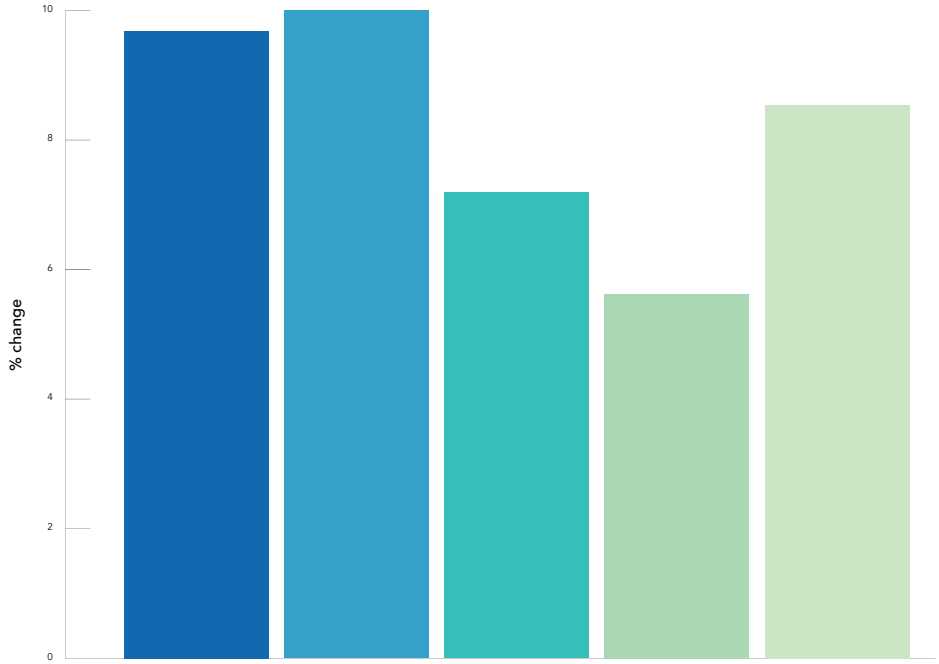
Changing environmental conditions are driving worsening flood events, with consequences for counties, cities, towns, and local communities. Individuals whose homes were spared the impact of a particular flood event are increasingly likely to find their local roads, businesses, critical infrastructure, utilities, or emergency services affected by flooding, indirectly threatening their quality of life, safety, and wellbeing. A truly comprehensive understanding of individual flood risk from a changing climate must therefore consider the resiliency of local communities to flood, and determine the extent to which physical and soft infrastructure are at risk.

Providing a holistic understanding of flood risk at both the individual property level and broader community level allows homeowners, community leaders, and local governments a wide angle lens through which to assess flooding and its physical, economic, and social impacts. It further serves to expand the conceptual framework within which communities analyze and understand flood risk, from risk to individual homes and properties, to entire neighborhoods, cities, zip codes and counties. Arming leaders and individuals with this information provides the insights necessary to take mitigating actions.

This report will provide the first ever nation-wide understanding of community vulnerability to flooding, taking into account the impact of a changing climate over the next 30 years. It will add the critical new dimension of proximity to flooding to personal evaluations of flood risk, providing an expanded understanding of risk based on the impact of flooding to the broader environment surrounding a home. This report accesses risk to: (1) residential properties; (2) roads; (3) commercial properties; (4) critical infrastructure (airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls, and wastewater treatment facilities); and (5) social infrastructure (government buildings, historic buildings, houses of worship, museums, and schools). Risk in this report is quantified as the unique level of flooding for each infrastructure type relative to operational thresholds, as established by the federal government and other authoritative bodies.

At a high level, this report finds that risk to residential properties is expected to increase by 10% over the next 30 years with 12.4 million properties at risk today (14%) and 13.6 million at risk of flooding in 2051 (16%). Additionally, 2.0 million miles of road (25%) are at risk today and that is expected to increase to 2.2 million miles of road (26%) over the next 30 years (a 3% increase over the next 30 years). Commercial properties are expected to see a 7% increase in risk of flooding from 2021 to 2051, with 918,540 at risk today (20%) and 984,591 at risk of flooding in 30 years (21%). Currently, 35,776 critical infrastructure facilities are at risk today (25%), increasing to 37,786 facilities by 2051 (26% and a 6% increase in risk). Compounding that risk, 71,717 pieces of social infrastructure facilities are at risk today (17%), increasing to 77,843 by 2051 (19% and an increase of 9% over that time period).

% change in risk from 2021-2051



Category	Number at risk 2021	Number at risk 2051	Change in category
Residential	12.4M	13.6M	1.2M more residential properties at risk
Roads	2M	2.2M	200K more miles of roads at risk
Commercial	900K	990K	66K more commercial properties at risk
Infrastructure	35K	38K	2K more pieces of critical infrastructure at risk
Social	771K	78K	6K more social infrastructure properties at risk

Introduction

Reliable infrastructure is essential to the economic prosperity, sustainability, and security of communities across the United States (Brooklings, 2015; CISA, 2019) . Infrastructure in this respect encompasses a wide range of public and private facilities including roads, utilities, emergency services, public services, social/cultural institutions, and various property level land use types. According to the American Society of Civil Engineers (ASCE), U.S. infrastructure is in mediocre condition, showing signs of deterioration and increasing vulnerability (ASCE 2021). Indeed, ASCE estimates that more than 21,000 bridges are susceptible to "overtopping or having their foundations undermined during extreme storm events" (ASCE 2021). As a changing climate alters the frequency and severity of extreme weather events, deteriorating infrastructure and the communities they serve will be especially vulnerable. Therefore, it is essential that critical infrastructure systems are maintained to the highest standards and that disaster preparedness, response, and recovery are top priorities for risk managers and policymakers. While the risk score introduced in this report does not account for infrastructure susceptibility to failure, it does include a measure of operational threshold risk and severity to help local communities understand their risk and the most critical needs for protecting that infrastructure.

In the United States, many infrastructure discussions over the past 20 years have been centered around possible physical attacks, energy crises, and terrorism, but climate change has a higher probability of significant impact on the Nation's infrastructure (NCA4, 2018). With an increasing number of flooding events making U.S. headlines, there is a greater awareness of the economic and human cost that flood-damaged infrastructure can produce. For instance, Hurricane Sandy flooded hospitals, crippled electrical substations, overwhelmed waste water treatment centers, and shut down power and water to tens of millions of people (U.S. Senate Committee on Commerce, Science, and Transportation, 2012). More recently, the impact of Hurricane Ida stretched across the country crippling the electrical grid in southern Louisiana, flooding the transportation infrastructure in the NYC metro area, and killing nearly 100 people. It is clear, now more than ever, that the ways and places in which we live are likely to continue to be impacted by our changing environment. One of the most important implications in this development is the vulnerability of our national infrastructure. That being said, no high-precision infrastructure analysis has been undertaken across the entire country. In studies that do aim to assess national level resilience and vulnerability, infrastructure vulnerability is often included as an important factor (OECD, 2014). Only with a complete assessment of flood risk to infrastructure -- especially critical infrastructure essential to human health and economic activity -- and targeted investment and improvements can the U.S. hope to avoid significant economic loss.

According to the International Panel on Climate Change (IPCC) framework, flood risk can be expressed as a function of flood hazard (H), exposure (E), and vulnerability (V) (IPCC6, 2021). Flood hazard (H) can be further divided into location, probability, frequency, and seasonality of flooding events as a result of climate change. Currently, considerable work has been done to analyze the exposure (E) of property and infrastructure to flood hazard. National level flood risk assessments focused on infrastructure are relatively rare. In 2007, the Federal Emergency Management Agency (FEMA) -- the federal agency tasked with managing the nation's disaster risk -- announced a design Guide for Improving Critical Facility Safety from Flooding and High Wind (FEMA, 2007). On the vulnerability (V) dimension, there are several studies computing the Social Vulnerability Index (So-VI) for the whole U.S. at the tract or county level (USC-Hazards and Vulnerability Research Institute, 2014). Globally, some studies estimate the flood risk of infrastructure focused on specific cities and regions, but such assessments are not as common in the U.S.

The objective of this study is to assess aggregate flood risk to U.S. infrastructure, focusing on holistic impacts to communities such as through residential properties, roads, commercial properties, critical infrastructure, and social facilities. This was made possible by taking advantage of newly available parcel-level flood risk information from the First Street Foundation Flood Model (FSF, 2020a; FSF, 2020b; FSF, 2021), including the integration of a first-of-its-kind national database of over 20,000 unique flood adaptation measures. The First Street data provides parcel-level flood risk information for the four major flood types (tidal, pluvial, fluvial, and surge) at six explicitly modeled return periods while accounting for the mitigating effects of levees, dams, open spaces, and other flood adaptation measures. With high resolution data at the property level, this study is able to estimate the flood risk to each infrastructure element from its joined parcel or building footprint.

In the development and analysis of the Community Risk level, it was found that there are significant differences at the county and city level in the amount of risk that exists today and into the future. Most importantly, there are a group of counties and cities that have persistent patterns of vulnerability across multiple dimensions of physical risk from flooding. These areas tend to be in regions with well-established flood risk, such as coastal flood plains along the Gulf and Southeastern coasts of the U.S., but also in less well-known flood zones, such as in the Appalachian Mountain regions of West Virginia and Kentucky. To that point, 17 of the top 20 counties in the U.S. which are most at risk (85%) are in the states of Louisiana, Florida, West Virginia, and Kentucky. Additionally, the top cities at risk of flooding persistently show up in the states of Louisiana, Florida, Texas, and South Carolina. The analysis further uncovered a high degree of vulnerability in some of the major population centers in the U.S., including New Orleans, Miami, Tampa, Charleston, Chicago, and Los Angeles.

Measuring flood risk vulnerability

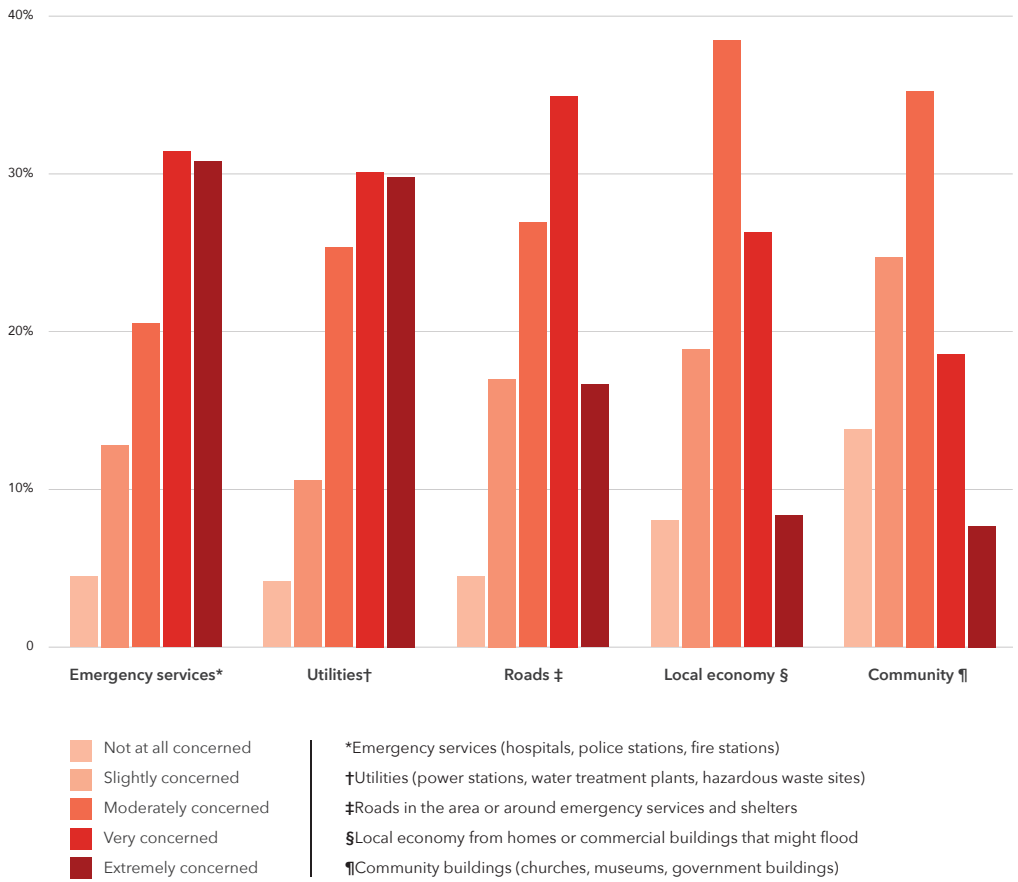
To inform the development of the Community Risk level, a survey was conducted using a purposive sample (n = 250). The results of the survey indicated that the most important consideration for respondents around the dangers of flood risk is the safety of their family, home, and property. Beyond that, a series of dimensions were identified as being important to the survey respondents in regards to their local community and the risk of flooding in that community.

The first dimension that arose from the survey responses was the importance of emergency services and utility impact, with over 60% of respondents indicating that they were "Very Concerned" or "Extremely Concerned" with the risk of flooding to these community services. Similarly, road flooding scored very high with over 50% of the survey respondents reporting that they were "Very Concerned" or "Extremely Concerned". The concern over critical infrastructure and road flooding further ties into a more qualitative sentiment that emerged from the survey in which respondents indicated a concern for their safety and access to public services that provided a sense of security. Vulnerability to local hospitals, police stations, fire stations, power stations, water treatment facilities, and roads seemed to resonate very well as operational representations of the critical infrastructure that these respondents aligned with in terms of safety and the ability to be responsive in an emergency.

Other dimensions that arose from the survey included concern for the local economy/commercial property flood risk (over 2/3's of respondents reported at least moderate concern) and social infrastructure made up of community buildings (over ½ of respondents reported at least moderate concern). Unlike the direct impact on safety that was identified in the previous paragraph, concerns over risk to the commercial and social infrastructure in the community align with (1) quality of life issues and (2) the inability of the community to support the local labor force (including job losses from closures) or the places in which the local community has developed a sense of belonging (including local schools, churches, museums, etc.). In these cases the primary concern is not about safety rather than the vulnerability of infrastructure that is part of the community members' day-to-day lives.

Insights from the survey outlined above assisted the development and improvement of First Street Foundation's ability to quantify flood risk vulnerability at a community level in a way that resonates with both individuals and local government officials. Most importantly, these results allowed for the selection of dimensions from which to base the Community Risk level. Nevertheless, there are still significant methodological challenges associated with the development of the scales used to create a single, national-scale, community risk assessment indicator. In an attempt to address these challenges, the Community Risk level presented in this report includes the following advancements:

Top 5 Non-Residential Flood Risk Concern; Flood Factor Survey Results



Measuring flood risk vulnerability

High Resolution Input Data

The development of a national scale vulnerability assessment indicator created with high resolution data. This high resolution data comes in the form of both the flood hazard data, which is sourced from the First Street Foundation Flood Model (FSF-FM; Bates, et. al 2021); and property specific spatial parcel data sourced from county-level property assessment records, which were collected and standardized by a 3rd party data provider. This high resolution data adds additional precision to the model that other hazard layers do not allow for at a national scale. Additionally, the availability of the parcel-level data provides the ability to explicitly assign the risk of flooding to properties on a property-by-property basis that are categorized as residential property, roads, commercial property, critical infrastructure, and social infrastructure.

Multi-Source Flood Hazard Information

The integration of multiple sources of flooding in the creation of a high resolution, nationally consistent, flood hazard estimate. In the absence of a fully-integrated flood hazard tool, previous risk score development efforts have had to rely on single-source national hazard layers (surge, riverine, rainfall, or tidal), or some combination of these sources, leading to lower levels of model fidelity. The FSF-FM hazard estimate used in this analysis is a fully integrated flood hazard assessment indicator which includes flooding from fluvial, pluvial, and coastal sources, enabling a more accurate understanding of physical vulnerability to flood risk across the country.

Multi-Return Period Hazard Information

The integration of a probabilistic approach to physical risk associated with the magnitude of expected flooding and the probability of the occurrence of that flooding. This approach allows for a consistent view of flood hazard risk that varies by location based on the unique flood profile of the local area, as opposed to alternative approaches which focus on a single probabilistic layer (for example, 1 in 100 year return period) or do not have the consistency to measure probability of risk at national scale.

Operational Threshold Integration

The integration of empirically derived thresholds identified by the federal government (like FEMA and NOAA) and authoritative bodies (like the American Society of Civil Engineers) to determine the levels of flooding at which various infrastructure types become inoperable. To date, where national level physical risk is assessed in the development of community risk indices, it only accounts for the inclusion of infrastructure inside of flood zone extents, which themselves are usually problematic (see point 3). The inclusion of operational thresholds, along with the use of high-precision probabilistic flood layers, allows for a more detailed and meaningful assessment of risk in a way that most impacts the local populations through the measurement of inoperability. By relying on government and authoritative definitions of inoperability thresholds, risk can further be standardized for community to community comparisons.

Future Facing Risk

The integration of the FSF-FM further allows for the analysis of risk today and 30 years into the future. By employing the same flood modeling methodology in the development of current and future flood risk layers, this analysis is able to isolate the effect of a changing environment and its impact on a community holding all development, population shifts, and adaptation efforts constant. In essence, this integration allows for the identification of areas, and infrastructure, that is most prone to flooding today and into the future. By presenting risk in this way, local communities are able to make better informed decisions about where to allocate resources and planning initiatives for their unique climate and topography.

Through the integration of these advancements, the underlying flood risk assessment indicator is developed using the methods outlined in the following section.

Methodology

In order to conduct an analysis of risk at the community level, the first step in the process is the operationalization of risk as it relates to this analysis. For this study's purposes, risk is identified as the exposure to flooding, using the First Street Foundation Flood Model (FSF-FM), to 5 dimensions of interest, including:

- Residential Properties
- Roads
- Commercial Properties
- Critical Infrastructure
- Social Infrastructure

The data used to identify critical infrastructure, social infrastructure, and roads were obtained from a combination of publicly available data sources (Table 1). To ensure that attributes are consistent and meaningful across locations, both residential and commercial property data are obtained through a third party provider (Lightbox). These 5 dimensions make up the "Points of Interest" (POI). For more information on the underlying FSF-FM and the climate adjustments used to estimate future flooding conditions, see Bates et.al. (2021).

Data Processing

In order to obtain measurements for each POI, all dimensional features must first be assigned to a spatial location. Much of the data was already spatial in the form of points on a map, road networks, or parcel boundaries. For the remaining non-spatial data, address matching was performed to tie each of the points of infrastructure to a spatial parcel in the national level parcel data set. Data that contained a spatial component were spatially joined to parcels in the national parcel file. One limitation here is that areas with no parcel data will have no infrastructure feature data. After the spatial join and address matching are completed, measurements of risk are taken using different techniques based on the POI type and operational threshold.

Step 1: Expected Depth Calculation

In the data development of the Community Risk level is to quantify the flooding risks to POIs for 2-year, 5-year, 20-year, 100-year, 250-year, and 500-year flood events in 2021 and 2051 (data processing takes place in five steps that are detailed in Figure 1 page 7), the expected depth is collected for each POI, or the centerline of disaggregated spatial segments in the case of roads. The expected annualized depth in each year is the sum of the probabilities that relate to each flood magnitude multiplied by the flood depth using the equation presented here:

$$Expected\ Depth = \sum Avg(D_i, D_{i+1}) * (P_{i+1} - P_i)$$

In the above equation, D and P show the depth and probability, respectively, and i is the numerator for different return period scenarios.

Step 2: Integration Operational Depth

The Community Risk level determines the loss of operational functionality for each POI through a process whereby type-specific research has validated operational thresholds in the identification of critical flooding levels (Table 2, with sources noted below). In this step, the primary concern is with the identification of a meaningful impact depth based on the level of flooding the POI type is generally built to withstand based on federal and local building standards. To identify the impact depth, half of the operational threshold is subtracted from the individual expected depth (produced in Step 1), analyzing the difference in depth over half of the functional threshold. Keeping the impact depth below the operational threshold indicates some infrastructures would still bear some risk to functionality before stopping operation, as some functionality may be preserved even when inundated. This is important as past research shows that flooding to the surrounding areas also begins to limit access and operation of infrastructure before the structure itself is completely non-operational (see McAlpine and Porter 2018 for an example).

Category	Dataset location
Roads	
Roads	Source
Infrastructure	
Airport: Point	Source
Fire Station: Point	Source
Hospital: Point	Source
Police Station: Point	Source
Ports: Point	Source
Power Station: Point	Source
Hazardous Waste: Polygon	Source
Water Outfall	Source
Wastewater Treatment Plants: Point	Source
Social	
Government Building: Point	Source
Historic Building: Point	Source
Worship: Point	Source
Museum: Point	Source
School: Point	Source

Table 1. Data sources used to analyze the impact of infrastructures and roads

Methodology

Step 3: Standardization of Functional Depths

The Community Risk level requires a data transformation given the highly right-skewed nature of the flood depths associated with the fact that many POIs have zero or very little flooding. In order to transform skewed data to approximately conform to normal distribution for further analysis, a log transformation on the continuous outcome of the difference in expected depth over half of the operational threshold is developed. Then min-max scaling is used, a straightforward normalization technique common in social indicators research (Tarabusi and Guarini, 2012) to normalize the logged transformed variable into a 0 to 1 standardized scale in which the 0 represents those with no risk of flooding, while a 1 represents those with the most risk of flooding. Upper and lower bounds were applied as the minimum and maximum to remove outliers. The lower bound was 0.01 and the upper bound was 100, or -2 and 2 after the log transformation. These represent practical values for a minimum and maximum. This transformation is completed for both the current and future expected flood depths (2021 and 2051, respectively). Individual facilities are assigned a distinct risk score based on the average of their normalized current and future expected flood depths, assigned based on five bins of equal width from 0 to 1, with a sixth classification for those with no flooding.

Infrastructure type	Infrastructure category	Operational threshold (ft)
Residential parcels	Residential	0
Roads	Roads	0.5
Commercial Parcels	Commercial	0
Airport	Infrastructure	1
Fire Station	Infrastructure	2
Hospital	Infrastructure	3.5
Police Station	Infrastructure	1
Port	Infrastructure	1
Power Station	Infrastructure	2
Superfund Site	Infrastructure	1
Water Outfalls	Infrastructure	0
Wastewater Treatment Plant	Infrastructure	0
Government Building	Social	0
Historic Building	Social	0
House of Worship	Social	0
Museum	Social	0
School	Social	1

Table 2. Operational thresholds used

HAZUS thresholds are used for fire stations, hospitals, police stations, and power stations.
ASCE thresholds are used for superfund sites and schools.
FAA threshold is used for airports.
FEMA thresholds are used for wastewater treatment plants.
UNCTAD threshold is used for ports.
Weather.gov threshold is used for roads.

Step 4: Dimensional Risk level Calculation

The Community Risk level is the aggregation of standardized scales created in the previous step to geographic levels of interest (localities). In all, the indicators contained in the POI scales were aggregated to a total of 4 community level scores (including the neighborhood, zip code, city/place, and county levels). The process of aggregation to each geographic level was further split by the 5 dimensional categories (residential properties, roads, commercial properties, critical infrastructure, and social infrastructure) and by year (2021 and 2051). The dimensional community overall risk score was ultimately computed by computing the sum of the percentiles of normalized expected depths from 0 to 100 at intervals of 5 for each dimension, across all POIs in that dimension and in that location.

Step 5: Overall Community Risk Score Calculation

The Community Risk level entails the combination of the 5 dimensional scores created in Step 4 in a single overall indicator of standardized local risk, which is referred to as Overall Community Flood Risk. These overall scores were created for all four community aggregation levels and provide an overall view of risk for each community level. Finally, the category scores that were created as a product of the percentile summation, at each geo level and for 2021 and 2051, were classified using natural breaks into six categories for visualization purposes. For presentation, the final composite score at each geo level is computed using the same method as each of the five dimensional categories, but using the average of the sum of all of the percentiles for each category and then categorized into the following more qualitatively meaningful levels associated with relative flood risk as 0) minimal, 1) minor, 2) moderate, 3) major, 4) severe and 5) extreme.

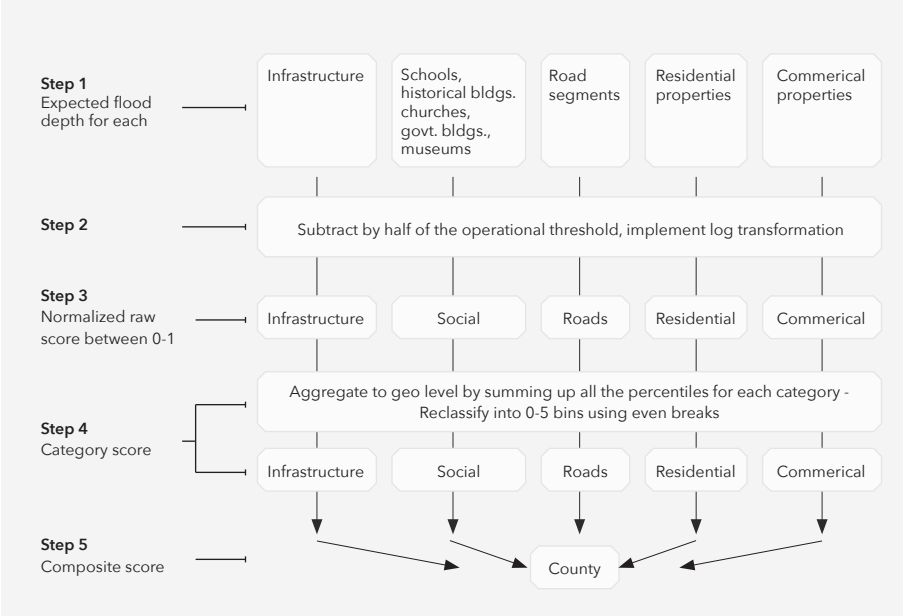


Figure 1. Data processing workflow

Results

County Level Analysis

The distribution of the physical risk impacts, relative to the dimensions used in the development of the Community Risk level, vary widely across the U.S. (See Figure 2.). However, predominant patterns of high risk exist persistently in the coastal areas of the Southeastern U.S. and along the Appalachian Mountain region of the country. Specifically, the highest concentration of community risk exists in the states of Louisiana, Florida, Kentucky, and West Virginia. To that point, 17 of the top 20 most at risk counties in the U.S. (85%) are in these 4 states. Louisiana alone accounts for 6 of the top 20 most at risk counties (30%) and is home to the most at risk county in the country, Cameron Parish. (2) Monroe County, FL, (3) Terrebonne Parish, LA, (4) Hyde County, NC, and (5) McDowell County, WV round out the top 5 counties in regards to having the most risk to physical infrastructure.

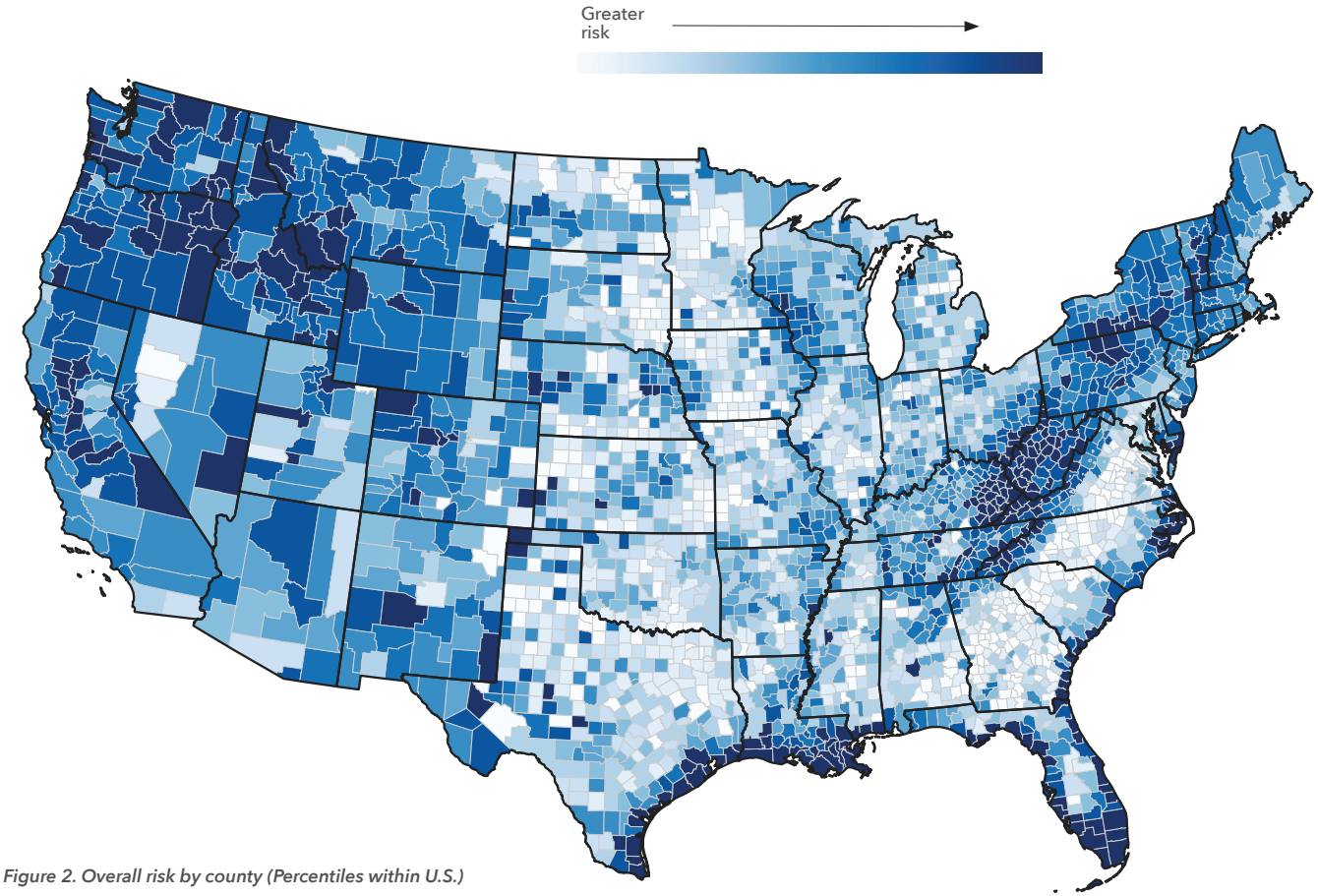


Figure 2. Overall risk by county (Percentiles within U.S.)

Results

Similar patterns exist for each of the 5 dimensions that make up the overall Community Risk level, which can be seen in the paneled maps in Figure 3.

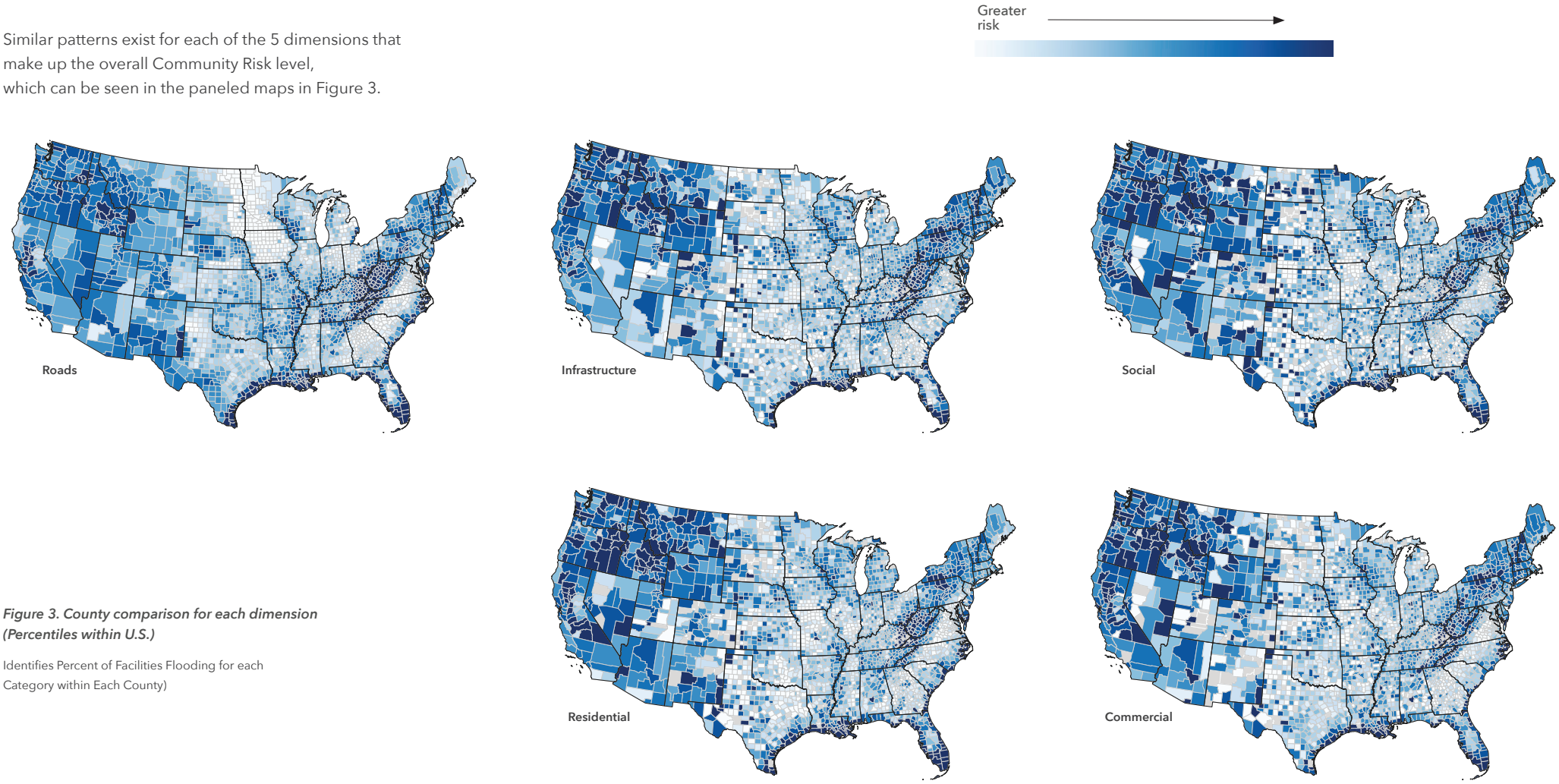


Figure 3. County comparison for each dimension (Percentiles within U.S.)

Identifies Percent of Facilities Flooding for each Category within Each County)

Results

Table 3 lists the top 20 counties by overall risk across the U.S. inclusive of risk across dimensional impacts associated with residential properties, roads, commercial properties, critical infrastructure, and social infrastructure. These 5 dimensions are combined to produce the overall risk ranking. However, the risk to each dimension varies from county to county. For instance, the top 4 counties in regards to infrastructure at risk are all in Louisiana, but are spread throughout the top list presented in Table 3. Of those counties, Cameron (96.4%), Orleans (94.5%), Jefferson (95.4%), and St. Bernard (92.5%) all have over 90% of their physical infrastructure at risk of flooding today. Hyde County, NC (94.1%) rounds out the top 5 counties with relative infrastructure at risk. Outside of the top 20 list, Harris County, TX (Houston area); Miami-Dade County, FL; Broward County, FL; Lee County, FL; and Pinellas County, FL (Tampa area) all have over 50% of their critical infrastructure at risk of flooding today.

Similar results are found when examining the top 5 counties in regards to social infrastructure, percent of residential properties at risk, percent of commercial properties at risk, and percent of roads at risk among the top 20 list.

In regards to the percent of social infrastructure at risk, Cameron (100%), Orleans (100%), St. Bernard (100%), and Jefferson (100%) Parishes from Louisiana; and Hyde County, NC (100%) make up the top 5 most at risk counties. Nine of the top 10 most at risk counties for percent of social infrastructure at risk are all located in the states of Florida and Louisiana. Again, Lee County, FL; Miami-Dade County, FL; and Fort Bend County, TX (Houston area) all fall outside of the top 20, but have over 50% of their social infrastructure at risk of flooding.

A similar pattern exists when looking at the distribution of risk for residential and commercial properties from the top 20 list. In regards to residential properties, 4 of the top 5 in regards to the percent of residential properties at risk are again in the state of Louisiana, with the 5th located in North Carolina. Orleans (100%), Jefferson (100%), St. Bernard (99.9%), and Plaquemines (99.6%) top the list and are all located in the state of Louisiana, while Hyde County, NC (99.3%) rounds out the top 5. In regards to the percent of commercial properties at risk in the county, the top 5 from the list are all located in the state of Louisiana; Jefferson (100%), St. Bernard (100%), Cameron (100%), Orleans (99.9%), and Palquemines (99.8%). In regards to both residential and commercial properties, Lee County, FL and Miami-Dade County, FL both fall outside of the top 20, but have over 50% of those respective properties at risk of flooding.

In the final dimension of the percentage of roads at risk, the results again find that the top 5 are all located in the state of Louisiana. While the order is shuffled slightly, the top 5 counties are St. Bernard (98.8%), Orleans (98.5%), Cameron (98.3%), Jefferson (97.5%), and Plaquemines (96.4%). Outside of the top 20, counties with over 50% of their roads at risk of flooding are concentrated along the coast of FL (Miami-Dade, Lee, Broward, and Pinellas Counties) and in the Houston, TX area (Harris and Fort Bend Counties).

			% of properties with operational risk today				
Rank	County name	State	Residential	Roads	Commercial	Infrastructure	Social
1	Cameron Parish	LA	99.2	98.3	100	96.4	100
2	Orleans Parish	LA	100	98.5	99.9	94.5	100
3	Jefferson Parish	LA	100	97.5	100	95.4	100
4	St. Bernard Parish	LA	99.9	98.8	100	92.5	100
5	Hyde County	NC	99.3	94.8	96.6	94.1	100
6	Plaquemines Parish	LA	99.6	96.4	99.8	85.4	95.5
7	Terrebonne Parish	LA	96.7	92.6	96.5	93.2	94.6
8	Monroe County	FL	98.5	89.4	97.5	82.5	97.5
9	St. Charles Parish	LA	97	87.5	98.3	68.6	95.7
10	Charlotte County	FL	87.7	82	86.8	76.6	92.9
11	Sutter County	CA	92.6	76.8	86.9	64.4	93.7
12	Galveston County	TX	79	83	80.9	80.5	84.8
13	Franklin County	FL	86.7	77.2	93.3	68.2	82.1
14	Tyrrell County	NC	81.3	79.5	84.5	66.7	87.5
15	St. John the Baptist Parish	LA	92.6	72.6	95.6	55.2	80.9
16	Poquoson city	VA	78.4	84.2	72	66.7	84.6
17	Glynn County	GA	79	60.7	86.3	84	75.2
18	Logan County	WV	70.3	69.7	88.9	78.4	73.9
19	McDowell County	WV	64.1	60.4	87.9	85.4	71.2
20	Johnson County	KY	70.6	74	77.3	66.7	79.7

Table 3. Top 20 "most at risk" counties in the U.S.

Results

City Level Analysis

When examining risk within the city level, high level patterns emerge that mimic those seen at the county level, but with more of a focus on population centers.

When shifting focus from counties to cites, again a large percentage of the representation in the top 20 list is made up of cities from the states of Louisiana (3 cities) and Florida (6 cities). Among those cities, the major population centers of New Orleans, LA (ranked 2nd); Miami, FL (ranked 8th); St. Petersburg, FL (ranked 12th); and Tampa, FL (ranked 14th) all rank highly in the "most at risk" cities list. Topping the list is Metarie, LA and New Orleans, LA (two adjacent cities in the New Orleans Metro Area), followed by Cape Coral, FL; Fort Lauderdale, FL; and Charleston, SC. It is notable that compared to the county list, the city list includes more representation from the mid-Atlantic, with Hampton, VA sitting outside the top 10 most at risk cities, ranked 18th. Additionally, the cities of Sacramento, CA; Fresno, CA; and Eugene, OR highlight the risk in cities on the West Coast.

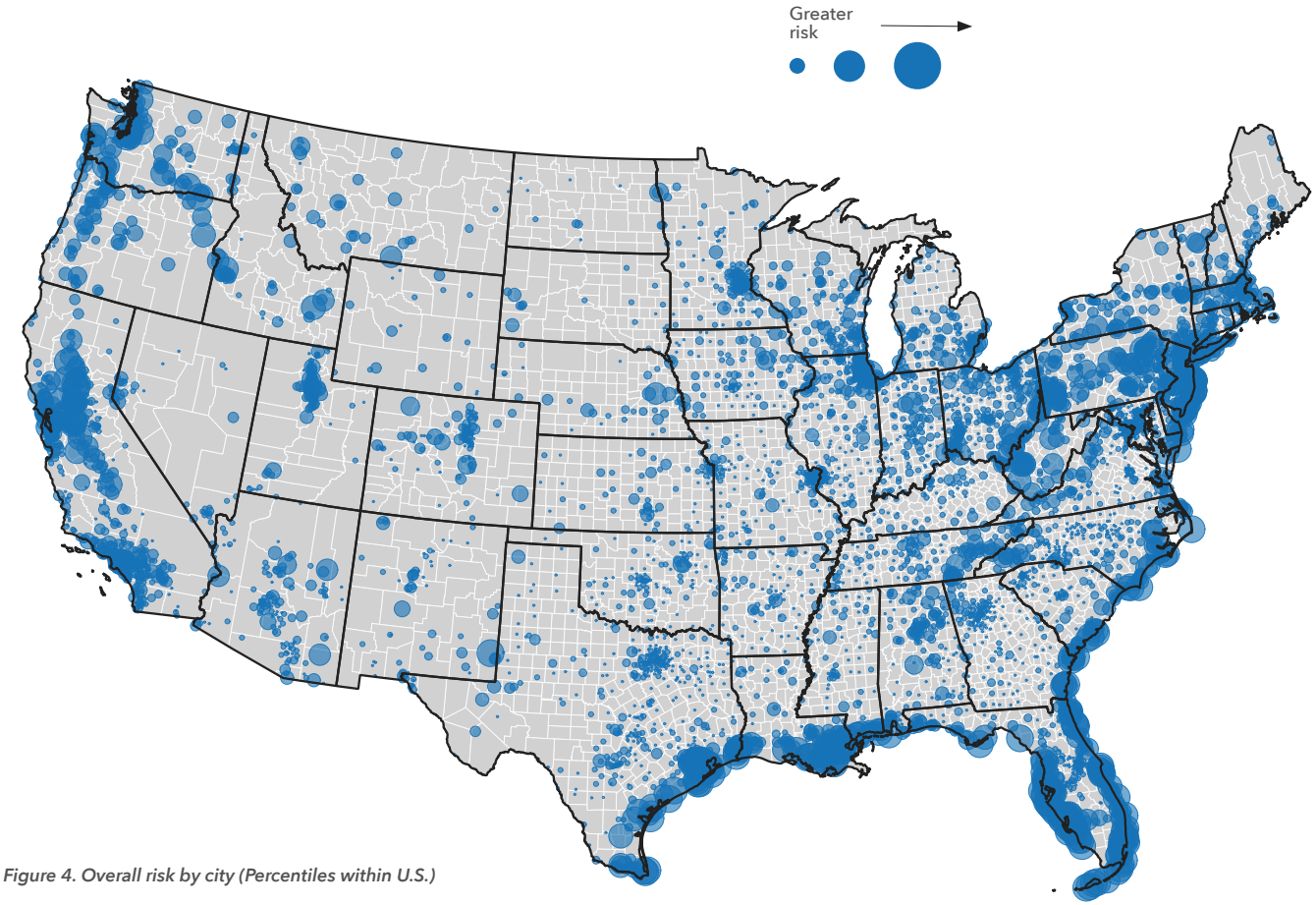


Figure 4. Overall risk by city (Percentiles within U.S.)

Results

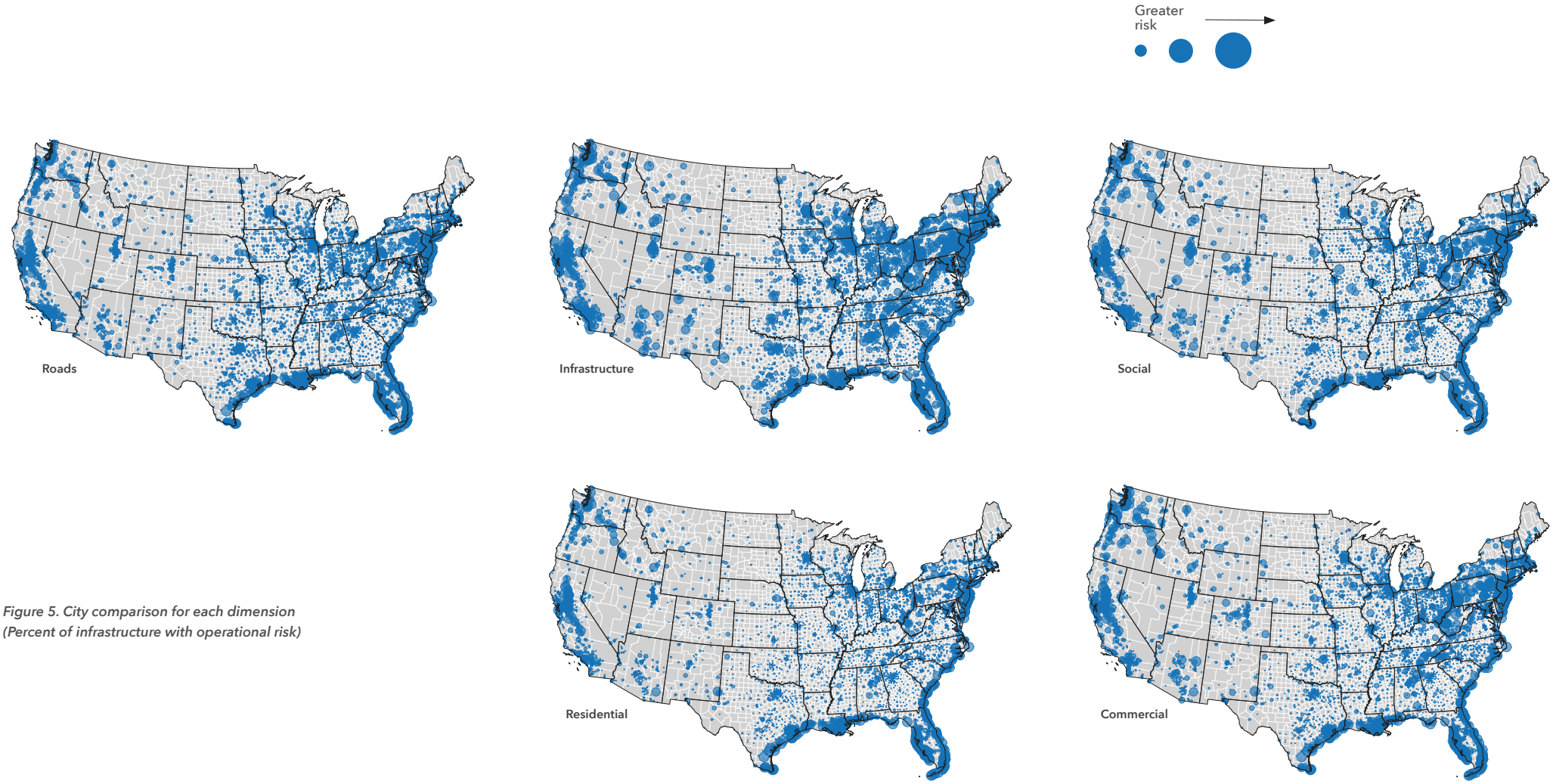


Figure 5. City comparison for each dimension (Percent of infrastructure with operational risk)

Results

When examining the risk rankings by dimension, the highest percentage of critical infrastructure at risk among this list of cities are in Metairie, LA (100%) and New Orleans, LA (94.5%). This is particularly interesting as both of these cities are in the same Metro (New Orleans-Kenner-Metairie Metropolitan Area), meaning that there is a sizable concentration of population and risk in a small geographic area. Cape Coral, FL (87.5%); Fort Lauderdale, FL (83.6%); and Miami, FL (83.3%) round out the top 5 in regards to critical infrastructure at risk. The top cities at risk for social infrastructure look very similar with the exception of Stockton, CA (93.9%) and Charleston, SC (77.3%). Metairie, LA (100%); New Orleans, LA (100%;, and Cape Coral, FL (94.1%) again highlight the persistent extreme physical risk to flooding that exists in these cities. Outside of the top 20, Houston, TX and Jacksonville, FL have over 50% of critical infrastructure at risk and Chicago, IL has nearly one-third (31.4%) of social infrastructure at risk of flooding.

Rankings of the relative residential properties, commercial properties, and roads at risk look very similar to the rankings for critical and social infrastructure. In regards to residential properties at risk, Metairie, LA (100%); New Orleans, LA (100%); Stockton, CA (92%); Cape Coral, FL (89.6%); and Fort Lauderdale, FL (79.6%) rank 1-5, respectively. When looking at commercial properties, the same cities make up the top 5 in a slightly different order, with Metairie, LA (100%); New Orleans, LA (99.9%); Stockton, CA (97.3%); Cape Coral, FL (95.6%); and Fort Lauderdale (78.7%) respectively. Again, Houston, TX and Chicago, IL both fall outside of the top 20 but have around 30% of their residential and commercial properties within their city boundaries at risk of flooding.

Finally, the top 5 for the percentage of roads at risk are Metairie, LA (99.8%); New Orleans, LA (98.5%); Cape Coral, FL (93.8%); Stockton, CA (85.7%); and North Port, FL (81.6%). Ultimately, these results indicate a consistency in risk associated with top cities at risk across the 5 dimensions. Of note, Houston, TX (64.4%); Miami, FL (61.4%); Charleston, SC (52.8%); and Pittsburgh, PA (33.7%) are all major cities that have significant percentages of their road infrastructure at risk of flooding. While road infrastructure is unique in this analysis due to the fact that it is not building specific, previous research has highlighted the disproportionate effect that flooding on the road network has on perceptions of flood risk, impact on property values, and disruption of community activity (McAlpine and Porter; 2018).

			% of properties with operational risk today				
Rank	City name	State	Residential	Roads	Commercial	Infrastructure	Social
1	Metairie	LA	100	99.8	100	100	100
2	New Orleans	LA	100	98.5	99.9	94.5	100
3	Cape Coral	FL	89.6	93.8	95.6	87.5	94.1
4	Stockton	CA	92	85.7	97.3	75.4	93.9
5	Fort Lauderdale	FL	79.5	79.6	78.7	83.6	74.3
6	Sacramento	CA	68.9	73.2	66.8	67.6	70.6
7	Charleston	SC	60	52.8	68.5	82.6	77.3
8	Miami	FL	50.7	61.4	55.4	83.3	55.4
9	North Port	FL	50.9	81.6	66.5	50	37.3
10	Chattanooga	TN	38.8	51	67.9	69.7	57.6
11	Eugene	OR	48.3	60.4	57.9	60	49
12	St. Petersburg	FL	48.2	64.7	36.6	65.6	44.4
13	Santa Rosa	CA	36.7	37.3	54.3	50	53.8
14	Tampa	FL	44.3	50.5	44.3	45.5	35.2
15	Mobile	AL	25.9	41.4	40.6	71.7	40.2
16	Houston	TX	32	64.4	33.3	55	33.5
17	Lake Charles	LA	39.6	50.3	34.6	52.8	25.8
18	Hampton	VA	33.4	47.9	28.7	61.1	31.5
19	Fresno	CA	38	39.4	47.6	24.2	51.7
20	Palm Coast	FL	45.6	36.7	62.2	15.4	33.9

Table 4. Top 20 "most at risk" cities in the U.S.

Results

Change in Risk Over the Next 30 Years

When examining county level community risk in relation to its change from 2021 to 2051 (Figure 6.), the most distinct patterns highlight significant increasing risk along the Atlantic and Gulf Coasts, large increases in risk in the Northwest, and very little change in risk for the middle (non-coastal) portion of the country. All of these patterns are driven by different environmental sources and predict a widely different experience in flood risk vulnerability across the country.

Along the Atlantic and Gulf Coasts, risk increases almost universally due to associations with the forecasted increases in sea-level rise; increases in surge due to the forecasts of stronger coastal storm intensities; and increases in latitudinal reach of coastal storms due to a warming atmosphere and ocean. In the Northwestern portion of the country, there are more moderate increases in flooding which are primarily driven by increased precipitation, storm runoff, and snowmelt in areas that feed the rivers in the region. In comparison, the landlocked interior portion of the country, stretching from New Mexico to Iowa, is estimated to have a minimal increase in risk. Additionally, isolated locales may see a decrease in risk due to projected decreases in rainfall over the study period.

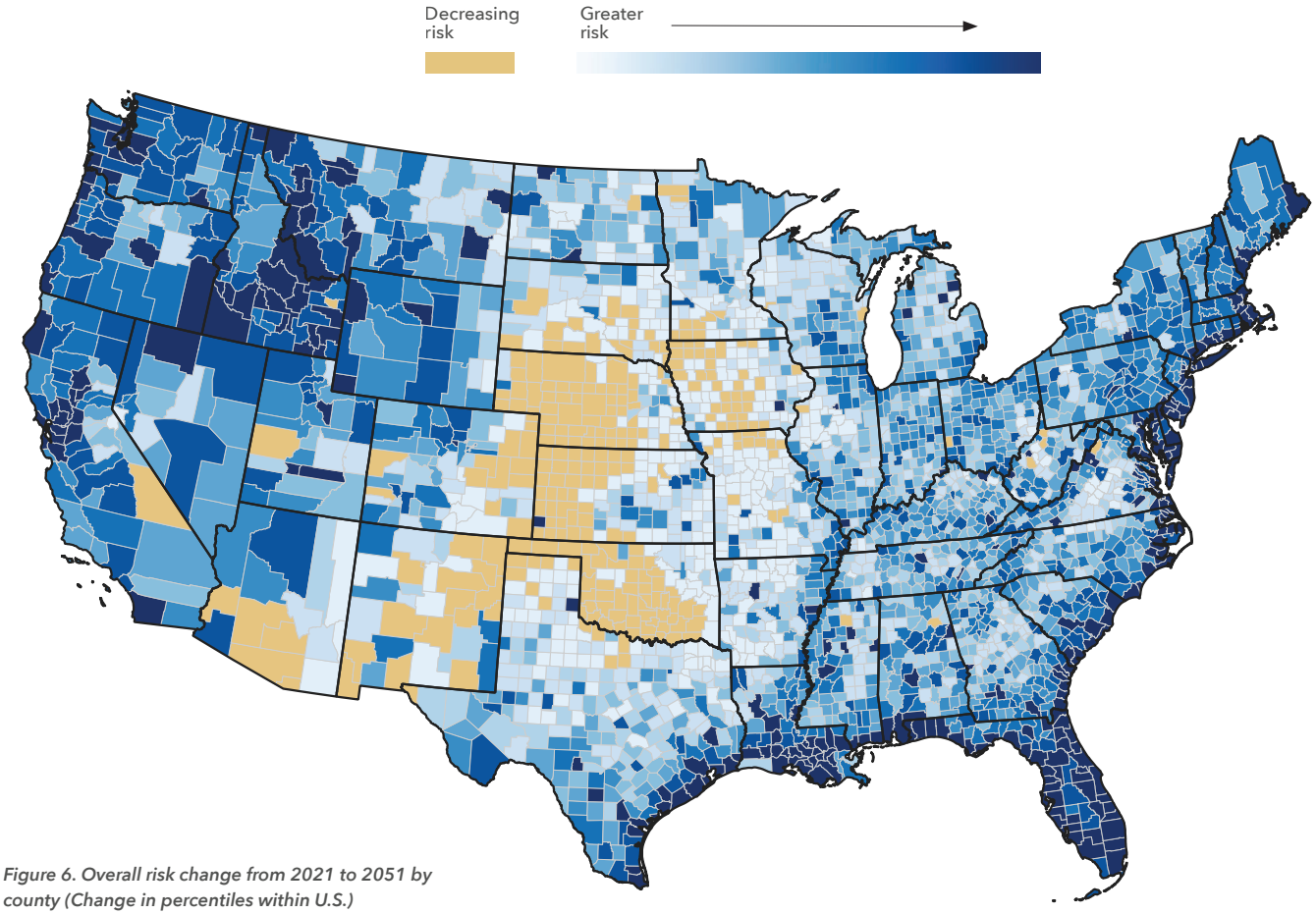


Figure 6. Overall risk change from 2021 to 2051 by county (Change in percentiles within U.S.)

Results

The counties with the "most change" in community risk (Table 5) generally fall into this coastal region, with Norfolk, VA ranking first in the analysis with a 22.6 percentage point increase in critical infrastructure flooding, a 55.3 percentage point increase in the flooding of residential properties, a 43.7 percentage point increase in the risk of flooding of commercial properties, and a 43.5 percentage point increase in the flooding of roads up to the year 2051. Other notable counties in this analysis include Beaufort County, SC (Charleston) which is projected to see increases in the risk of flooding of 25.5 percentage points for social infrastructure, 21.6 percentage point increase in residential property flooding, 24.2 percentage point increase in commercial property flooding, and 25.7 percentage point increase in road flooding over the time period. Additionally, Suffolk County, MA (Boston); Virginia Beach, VA; and a number of counties in the state of Louisiana all make the top 20 list for largest increase in risk and are expected to see increases in flood risk over this time period.

			% increase in proportion with operational risk over next 30 years				
Rank	County name	State	Residential	Roads	Commercial	Infrastructure	Social
1	Norfolk city	VA	55.3	43.5	43.7	22.6	47.7
2	Portsmouth city	VA	36.2	32.1	41	16.2	33.9
3	St. Mary Parish	LA	27.8	32.9	28.1	15.7	38.7
4	Hampton city	VA	33.7	28.3	27.2	13.9	30.9
5	Calhoun County	TX	23.5	18.2	32.1	20.9	36.7
6	Beaufort County	SC	20.7	25.7	24.2	21.6	25.5
7	Poquoson city	VA	21.2	15.7	27.1	33.3	15.4
8	Mathews County	VA	25.7	23.9	23.8	9	29.2
9	Iberia Parish	LA	27.1	18	16	12.5	37.4
10	Camden County	NC	12.5	11.1	17.2	33.3	35.7
11	Wakulla County	FL	17.3	11.5	18.9	16.7	36.2
12	Currituck County	NC	11	20.7	13.7	39.2	13.9
13	Vermilion Parish	LA	18.9	12.3	22.7	5.3	27.8
14	Suffolk County	MA	7.7	13.6	22.3	19.8	17.5
15	Salem County	NJ	19.6	9.4	12.4	14.1	24.6
16	Talbot County	MD	15.6	19.3	8.7	17.7	16.9
17	Washington County	NC	14.9	14.2	18.6	22.8	7.7
18	Chambers County	TX	15.8	10.8	9.8	7.8	32.4
19	Virginia Beach city	VA	15.2	17.7	16	14.3	13.4
20	Volusia County	FL	15.3	12.2	20	13	15.7

Table 5. Top 20 "greatest change" in risk from 2021 to 2051 by county

Implications

The impact of these changes in risk on local communities has the potential to be devastating. For example, in Harris County, TX (Houston), there are 770 hospitals, public utilities, and water treatment plants at risk of flooding above their operational threshold this year. In Miami-Dade, FL, there are 1,640 schools, churches, and museums at risk of being inoperable due to their flood risk. In Cook County, IL (Chicago), there are nearly a quarter of a million residential properties (225k) of risk of flooding. In Kings County, NY (Brooklyn), there are nearly 4k commercial properties at risk of being made inoperable due to flooding. Finally, in Orleans Parish, LA (New Orleans), nearly all (99%) of roads are at risk of being undrivable due to their estimated flood risk.

There are a number of important implications associated with these results that center around a community's ability to assess current levels of resilience, plan for future resource allocation around infrastructure and development, and inform individuals of risk that may not be immediate to their specific properties (but rather to the surrounding community resources). In all cases a multi-dimensional approach to measuring and assessing risk is important in order to gain a more complete understanding of flooding risk today and into the future as well as to better assess a community's needs in order to address the issue at a collective level. Making this information publicly available to elected officials and policy makers allows for a better understanding of risk, informed by high quality risk models which are often inaccessible for most communities. This may help facilitate collaboration within and across communities, better funding for adaptation and mitigation strategies, streamlined permitting, and higher levels of civic engagement.

More specifically, at the center of this work is a focus on quantifying and understanding the changes that are occurring in the environment and planning in such a way that local communities may be resilient to those changes. Climate resilience planning requires a rigorous method for the estimation of how risk levels and critical facility vulnerability changes over time. Many previous efforts assessing current day risk are not suitable for proper resilience planning as they do not include quantified risk under true current or future climate conditions, or with a high precision indicator of risk.

At a more practical level, planning and development in local communities may be immensely improved through the use of proper tools and risk models. The use of these tools to identify all infrastructure at risk in an area (including in varying return periods) allows for the determination of appropriate levels of protection needed for future conditions as well as helping to inform decisions around future development. Additionally, identifying areas with higher amounts of risk than others allows for appropriate allocation of resources to provide protection where it is most needed, meaning a more efficient use of capital in protecting the most vulnerable areas of the community while not repeating development practices that have led to the location of populations and infrastructure in high risk areas.

Quantified information about community flood risk allows for improved planning and development within and between local communities, as well as across levels of government, allowing for greater efficiency of resource allocation at various levels. Quantifying risk under current and future climate conditions is particularly important to ensure funding is allocated to the projects and areas most in need, as funding decisions usually occur at a different level of government than at the level at which they are implemented. Publicly available information regarding flood risk for communities that is shared across a given area also provides a common knowledge base to facilitate collaboration. Not only is this important for the allocation of resources, but also for collaboration between different communities in order to address vulnerability and adaptation interdependencies. Vulnerability interdependence is when the vulnerability of one area spills over into a surrounding area. For example, flooding in one community that causes the primary hospital to become inoperable may result in patient relocation to the hospital of a neighboring community. Adaptation interdependence operates similarly, where the adaptation efforts of a community may impact a nearby community. For example, if a community constructs a seawall, the water may be relocated to increase flooding in the neighboring area. A common platform for sharing knowledge about community flood risk allows for a better understanding of individual community risk as well as risk in neighboring localities, which allows for increased collaboration.

Finally, there is a strong need for individual consumers to understand what is at risk in their immediate area and plan accordingly for service disruptions in the event of a flood. Community level flood risk is much more than an individual problem and affects everyone, regardless of the risk of their own specific property. Understanding one's risk is a combination of both individual property risk, which is acutely important to those at risk, in combination with the risk of their local community. Homeowners and renters may feel a false sense of security if their specific property is not at risk of flooding directly, however, the indirect effects of living in a community with high levels of risk can be just as impactful. In fact, road closures, school closures, utility issues, and lack of access to emergency services and hospitals can arguably have more dire consequences than the economic losses that come with flood waters entering a home. If local communities do not properly plan to be resilient in these areas, indirect consequences of population out-migration decreases muni-bond ratings, and the increased likelihood of catastrophic outcomes associated with the observed risk are all more likely and will affect the entire population of a community, not just the properties that are at risk of flooding directly.

Contributors to the The 3rd National Risk Assessment

The following First Street Foundation current and past personnel contributed to the preparation of this report, data, or First Street Foundation products supporting this report. Our First Street Foundation Flood Model partners, First Street Foundation Flood Lab members, Advisory Board members, and many others also deserve credit for their valuable contributions.

Mike Amodeo
Mark Bauer
Sara Chadwick
Ziyan Chu
Matthew Eby
Colleen Ensor
Neil Freeman
Raphael Halloran
Ho Hsieh
Angela Jin
Mike Kaminski
Shannon Keane
Dr. Edward J. Kearns
Kelvin Lai
Marguerite Lally
Sharai Lewis-Gruss
Brett Lingle
Lucy Litvinova
Mike Lopes
Anna McIntosh
David Miller
Natalie Pardy
Dr. Jeremy Porter
Grisha (Gregory) Post
Nathan Rosler
Daniel Seripap
Michelle Shapiro
Evelyn Shu
Sean Surdovel
Otis Wilcox
Dr. Bradley Wilson
Ray Yong
Ralph Zagha

Special thanks to our valuable data partners

Without them, our analysis would not be possible.

LIGHTBOX

To define building characteristics, improvement percentages, and property parcel details, the Foundation leveraged data from LightBox, a leading provider of CRE data and workflow solutions.

mapbox

To calculate flood depths to the building structure, the Foundation leveraged building footprint data supplied by Mapbox. Mapbox also provided geocode lookups and map integrations for the Flood Factor experience.

State and county boundaries from the U.S. Census TIGER dataset is used on all pages showing maps. This report is not endorsed or certified by the Census Bureau.

This report is neither affiliated with, nor authorized, sponsored, approved, endorsed, or certified by any of the foregoing providers.

Disclaimers

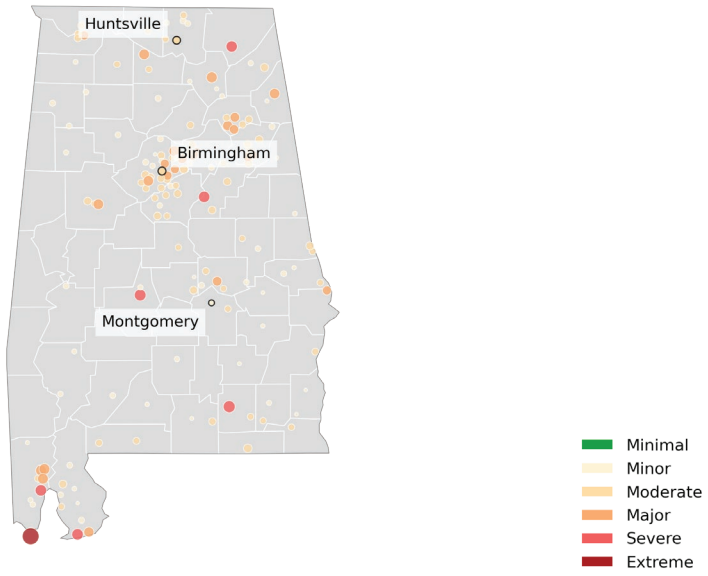
First Street Foundation's flood and climate change risk and damage estimates are based on one or more models designed to approximate risk and are not intended as precise estimates, or to be a comprehensive analysis of all possible flood-related and climate change risks.

City Details
Alabama

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Alabama, there are 181,575 residential properties, 32,963 miles of roads, 15,815 commercial properties, 779 infrastructure facilities, and 801 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Alabama, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Dauphin Island	98.8%	89.4%	96.2%	71.4%	100.0%
2	Selma	70.0%	69.8%	69.3%	66.7%	64.6%
3	Scottsboro	46.2%	47.0%	42.9%	60.0%	40.0%
4	Elba	37.7%	36.3%	71.3%	50.0%	37.5%
5	Decatur	32.4%	47.3%	55.4%	57.1%	40.0%
6	Brighton	22.2%	35.5%	41.5%	100.0%	25.0%
7	Mobile	25.9%	41.4%	40.6%	71.7%	40.2%
8	Tarrant	13.7%	30.4%	40.0%	100.0%	28.6%
9	Gulf Shores	44.5%	51.3%	43.1%	41.7%	28.6%
10	Guntersville	30.9%	47.7%	44.8%	43.8%	37.5%
	• State Average	12.3%	19.8%	20.0%	22.3%	15.2%

Highest proportion of operational risk by category

- **Residential: Dauphin Island, 98.8%**

Greatest risk to property owners with 825 out of 835 residential properties at risk of water reaching their building.

- **Roads: Dauphin Island, 89.4%**

Greatest risk to commutes and transportation with 53 out of 59 miles of roads at risk of becoming impassable.

- **Commercial: Dauphin Island, 96.2%**

Greatest risk to businesses with 25 out of 26 commercial buildings at risk of water reaching their building.

- **Social: Wetumpka, 72.2%**

Greatest risk to government, education or social facilities with 13 out of 18 at risk of becoming inoperable.

- **Infrastructure: Childersburg, 83.3%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 6 at risk of becoming inoperable.

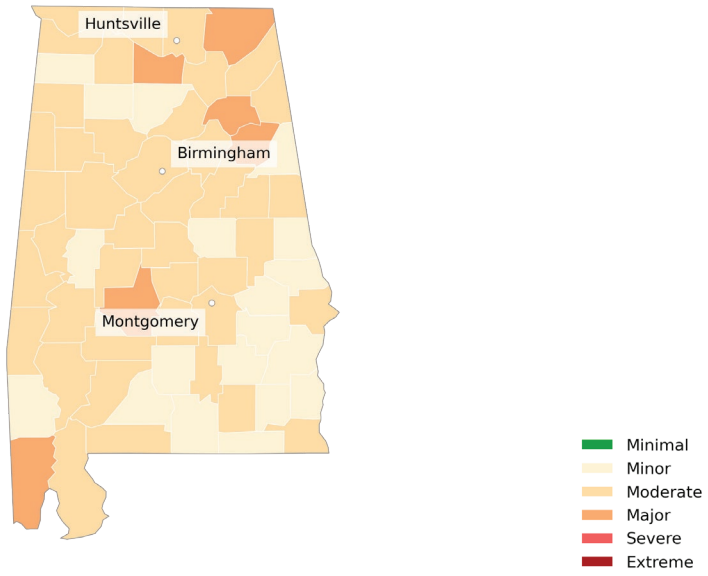
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Alabama

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Alabama, Montgomery County has the largest number of properties currently protected with community flood mitigation projects or structures with 73,324 out of 101,805 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Dallas County	50.2%	32.6%	53.6%	33.9%	47.7%
2	Mobile County	19.6%	25.8%	33.3%	58.3%	31.9%
3	Jackson County	27.9%	33.9%	39.2%	24.6%	22.7%
4	Morgan County	19.2%	24.9%	42.8%	31.8%	24.6%
5	Etowah County	23.8%	34.3%	28.9%	27.0%	20.8%
6	Calhoun County	16.0%	30.1%	26.3%	25.8%	18.9%
7	Jefferson County	11.7%	25.0%	22.5%	26.9%	19.5%
8	Madison County	12.8%	22.9%	22.0%	26.3%	20.9%
9	Talladega County	16.2%	24.2%	22.2%	22.8%	17.8%
10	Cherokee County	18.2%	33.8%	5.6%	30.4%	10.0%
	• State Average	12.3%	19.8%	20.0%	22.3%	15.2%

Highest proportion of operational risk by category

- **Residential: Dallas County, 50.2%**

Greatest risk to property owners with 6,066 out of 12,078 residential properties at risk of water reaching their building.

- **Roads: Etowah County, 34.3%**

Greatest risk to commutes and transportation with 864 out of 2,517 miles of roads at risk of becoming impassable.

- **Commercial: Dallas County, 53.6%**

Greatest risk to businesses with 497 out of 928 commercial buildings at risk of water reaching their building.

- **Social: Dallas County, 47.7%**

Greatest risk to government, education or social facilities with 42 out of 88 at risk of becoming inoperable.

- **Infrastructure: Mobile County, 58.3%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 172 out of 295 at risk of becoming inoperable.

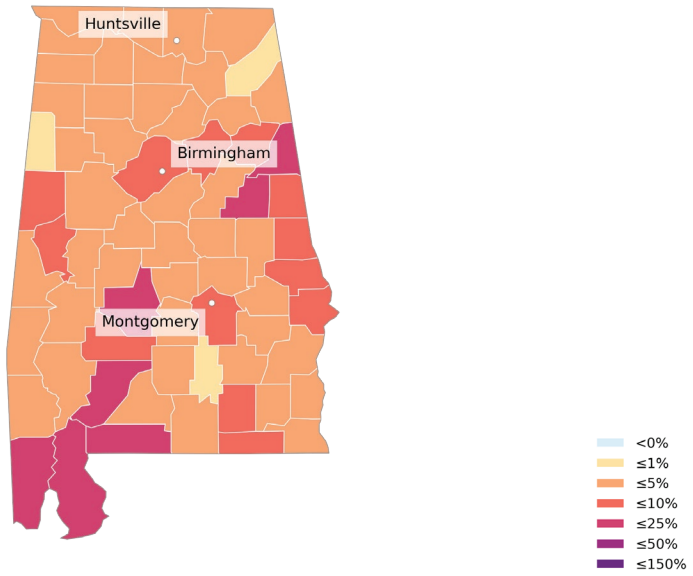
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Alabama

As severity and frequency of flood events in Alabama increase over the next 30 years with a changing environment, an additional 10,957 residential properties, 1,182.0 miles of roads, 773 commercial properties, 34 infrastructure facilities, and 46 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Escambia County	0.6%	0.6%	0.8%	1.9%	13.6%
2	Dallas County	3.1%	1.2%	4.0%	0.0%	9.1%
3	Mobile County	2.3%	2.4%	3.3%	4.7%	1.7%
4	Cleburne County	0.2%	0.5%	0.0%	10.5%	0.0%
5	Baldwin County	2.4%	2.1%	2.6%	1.4%	0.4%
6	Lee County	0.4%	0.4%	0.1%	5.7%	0.0%
7	Jefferson County	0.7%	1.1%	1.6%	1.2%	1.2%
8	Montgomery County	0.8%	0.9%	1.2%	1.1%	1.2%
9	Pickens County	0.3%	0.3%	1.9%	2.4%	0.0%
10	Talladega County	1.4%	0.9%	1.3%	0.0%	1.4%
	• State Average	0.7%	0.7%	1.0%	1.0%	0.9%

Greatest growing operational risk by category

- **Residential: Dallas County, 3.1%**

Greatest growing risk to property owners with 378 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Mobile County, 2.4%**

Greatest growing risk to commutes and transportation with 198 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Dallas County, 4.0%**

Greatest growing risk to businesses with 37 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Escambia County, 13.6%**

Greatest growing risk to government, education or social facilities with 6 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Cleburne County, 10.5%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 2 additional facilities at risk of becoming inoperable in 30 years.

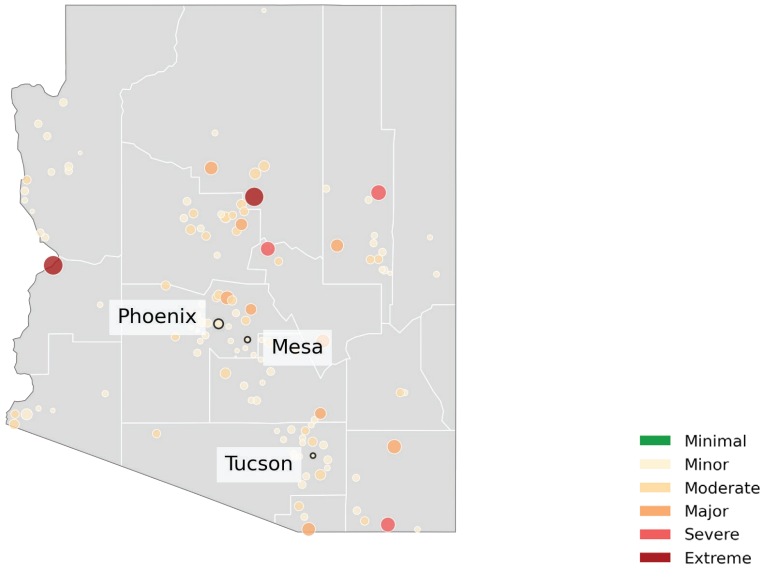
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Arizona

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Arizona, there are 256,732 residential properties, 44,588 miles of roads, 11,577 commercial properties, 210 infrastructure facilities, and 917 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Arizona, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Willcox	85.0%	63.2%	81.6%	80.0%	83.3%
2	Cienega Springs	44.7%	55.7%	66.7%	100.0%	100.0%
3	Munds Park	15.3%	43.2%	81.5%	100.0%	100.0%
4	Maricopa	46.1%	31.3%	59.3%	75.0%	53.1%
5	Tolleson	38.9%	23.6%	45.7%	66.7%	50.0%
6	Nogales	22.1%	37.8%	61.6%	33.3%	62.1%
7	Cave Creek	17.4%	28.9%	34.7%	83.3%	46.7%
8	Williams	41.6%	32.8%	43.5%	71.4%	14.3%
9	Bisbee	13.1%	33.3%	30.0%	66.7%	57.1%
10	Pine	23.8%	34.3%	58.8%	0.0%	75.0%
	• State Average	12.0%	22.5%	14.3%	15.0%	12.4%

Highest proportion of operational risk by category

- **Residential: Willcox, 85.0%**

Greatest risk to property owners with 920 out of 1,082 residential properties at risk of water reaching their building.

- **Roads: Willcox, 63.2%**

Greatest risk to commutes and transportation with 56 out of 89 miles of roads at risk of becoming impassable.

- **Commercial: Willcox, 81.6%**

Greatest risk to businesses with 120 out of 147 commercial buildings at risk of water reaching their building.

- **Social: Heber-Overgaard, 85.7%**

Greatest risk to government, education or social facilities with 6 out of 7 at risk of becoming inoperable.

- **Infrastructure: Cave Creek, 83.3%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 6 at risk of becoming inoperable.

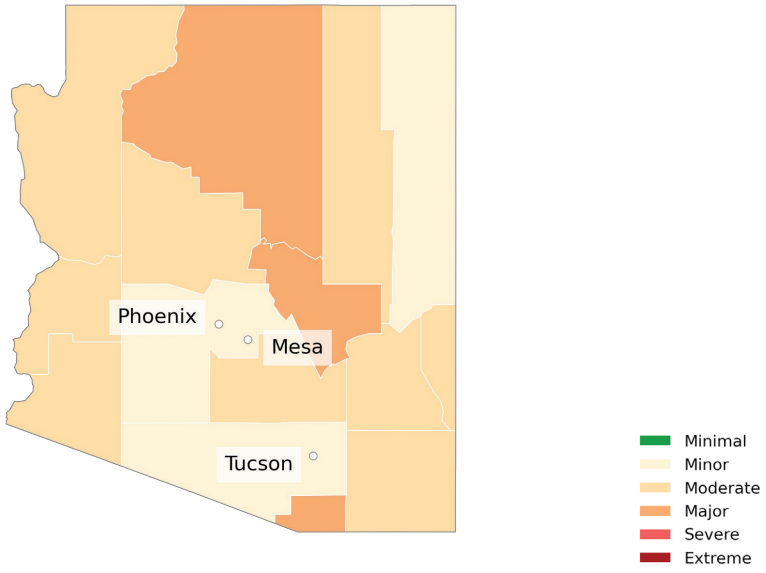
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Arizona

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Arizona, Maricopa County has the largest number of properties currently protected with community flood mitigation projects or structures with 650,801 out of 1,580,273 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Gila County	21.2%	34.1%	43.6%	33.3%	39.0%
2	Santa Cruz County	14.7%	31.9%	46.1%	28.6%	40.6%
3	Coconino County	19.1%	25.5%	28.4%	32.9%	28.0%
4	Cochise County	15.2%	26.1%	20.4%	21.2%	20.8%
5	La Paz County	32.5%	25.2%	23.0%	15.8%	6.3%
6	Greenlee County	12.2%	24.6%	19.5%	0.0%	38.1%
7	Navajo County	10.8%	17.8%	24.3%	22.6%	14.3%
8	Yavapai County	14.5%	30.7%	18.1%	10.3%	11.1%
9	Pinal County	16.5%	21.6%	18.5%	16.7%	11.2%
10	Graham County	12.4%	28.5%	15.3%	5.6%	20.3%
	• State Average	12.0%	22.5%	14.3%	15.0%	12.4%

Highest proportion of operational risk by category

- **Residential: La Paz County, 32.5%**

Greatest risk to property owners with 1,108 out of 3,404 residential properties at risk of water reaching their building.

- **Roads: Gila County, 34.1%**

Greatest risk to commutes and transportation with 1,919 out of 5,623 miles of roads at risk of becoming impassable.

- **Commercial: Santa Cruz County, 46.1%**

Greatest risk to businesses with 365 out of 791 commercial buildings at risk of water reaching their building.

- **Social: Santa Cruz County, 40.6%**

Greatest risk to government, education or social facilities with 41 out of 101 at risk of becoming inoperable.

- **Infrastructure: Gila County, 33.3%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 13 out of 39 at risk of becoming inoperable.

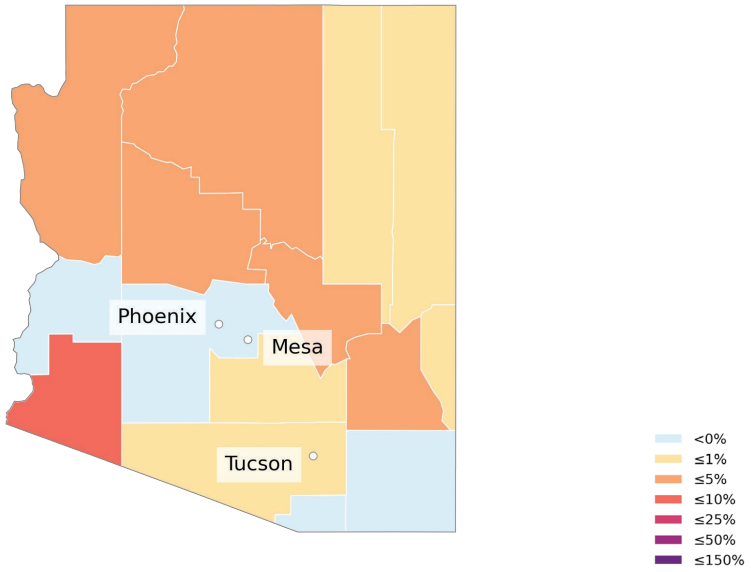
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Arizona

As severity and frequency of flood events in Arizona increase over the next 30 years with a changing environment, an additional 8 residential properties, 427.0 miles of roads, 61 commercial properties, 3 infrastructure facilities, and 12 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Yuma County	1.0%	0.5%	1.4%	1.9%	1.9%
2	Coconino County	0.5%	0.6%	1.3%	1.2%	0.7%
3	Mohave County	0.0%	0.5%	0.3%	1.0%	0.4%
4	Yavapai County	0.4%	0.4%	0.4%	0.0%	0.4%
5	Navajo County	0.1%	0.3%	0.4%	0.0%	0.0%
6	Gila County	0.2%	0.1%	0.0%	0.0%	0.0%
7	Graham County	0.2%	0.1%	0.0%	0.0%	0.0%
8	Apache County	0.0%	0.2%	0.0%	0.0%	0.0%
9	Greenlee County	0.1%	0.1%	0.0%	0.0%	0.0%
10	Maricopa County	-0.1%	0.0%	0.0%	0.0%	0.2%
	• State Average	0.0%	0.2%	0.1%	0.2%	0.2%

Greatest growing operational risk by category

- **Residential: Yuma County, 1.0%**

Greatest growing risk to property owners with 594 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Coconino County, 0.6%**

Greatest growing risk to commutes and transportation with 161 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Yuma County, 1.4%**

Greatest growing risk to businesses with 36 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Yuma County, 1.9%**

Greatest growing risk to government, education or social facilities with 4 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Yuma County, 1.9%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

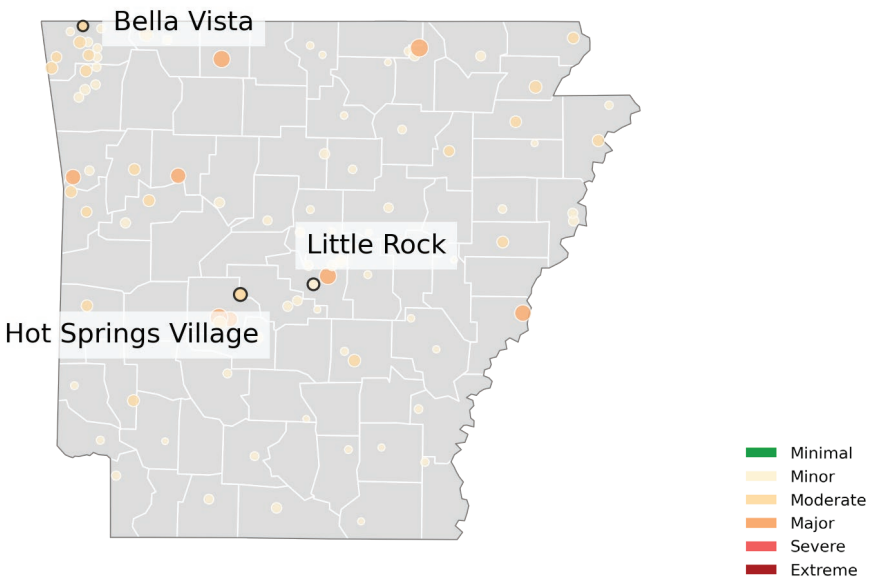
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Arkansas

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Arkansas, there are 72,276 residential properties, 39,374 miles of roads, 6,708 commercial properties, 403 infrastructure facilities, and 571 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Arkansas, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	North Little Rock	26.7%	40.3%	51.8%	38.9%	42.4%
2	Helena-West Helena	17.3%	33.7%	40.5%	66.7%	39.1%
3	Hardy	17.5%	33.0%	25.0%	66.7%	40.0%
4	Piney	16.4%	40.5%	33.3%	50.0%	25.0%
5	Harrison	9.0%	21.8%	38.3%	60.0%	18.2%
6	Clarksville	7.3%	23.2%	30.3%	33.3%	47.4%
7	Van Buren	5.0%	21.0%	25.1%	50.0%	31.0%
8	Hot Springs	10.5%	29.2%	22.9%	16.7%	32.2%
9	Paragould	24.8%	29.0%	29.2%	0.0%	21.4%
10	Pine Bluff	6.5%	23.5%	13.6%	47.8%	11.1%
	• State Average	7.9%	23.7%	14.0%	16.1%	11.3%

Highest proportion of operational risk by category

- **Residential: North Little Rock, 26.7%**

Greatest risk to property owners with 5,598 out of 21,001 residential properties at risk of water reaching their building.

- **Roads: Rockwell, 44.2%**

Greatest risk to commutes and transportation with 22 out of 49 miles of roads at risk of becoming impassable.

- **Commercial: North Little Rock, 51.8%**

Greatest risk to businesses with 880 out of 1,700 commercial buildings at risk of water reaching their building.

- **Social: Clarksville, 47.4%**

Greatest risk to government, education or social facilities with 9 out of 19 at risk of becoming inoperable.

- **Infrastructure: Helena-West Helena, 66.7%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 4 out of 6 at risk of becoming inoperable.

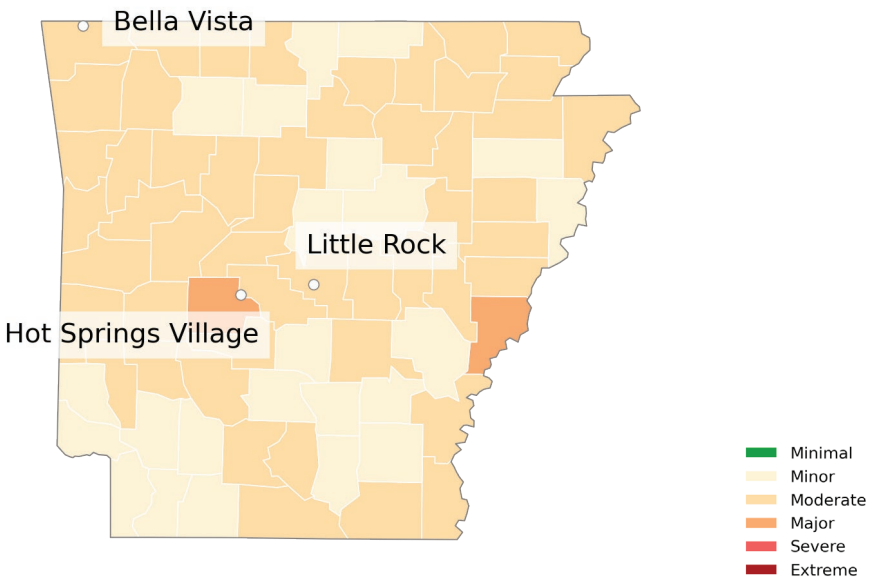
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Arkansas

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Arkansas, Crittenden County has the largest number of properties currently protected with community flood mitigation projects or structures with 21,997 out of 22,300 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Phillips County	19.7%	56.1%	36.5%	53.1%	30.3%
2	Greene County	23.4%	36.0%	29.4%	20.0%	20.0%
3	Monroe County	21.1%	46.3%	16.5%	18.8%	25.0%
4	Garland County	13.2%	32.5%	22.3%	27.0%	27.0%
5	Clay County	18.8%	34.1%	16.0%	23.3%	12.5%
6	Chicot County	9.4%	29.4%	17.9%	40.0%	8.1%
7	St. Francis County	8.1%	22.1%	3.8%	50.0%	14.3%
8	Lee County	9.7%	30.6%	16.7%	15.4%	25.0%
9	Jackson County	11.6%	31.5%	13.8%	24.2%	13.6%
10	Boone County	6.9%	19.4%	32.5%	23.3%	10.4%
	• State Average	7.9%	23.7%	14.0%	16.1%	11.3%

Highest proportion of operational risk by category

- **Residential: Greene County, 23.4%**

Greatest risk to property owners with 1,793 out of 7,672 residential properties at risk of water reaching their building.

- **Roads: Phillips County, 56.1%**

Greatest risk to commutes and transportation with 841 out of 1,499 miles of roads at risk of becoming impassable.

- **Commercial: Phillips County, 36.5%**

Greatest risk to businesses with 88 out of 241 commercial buildings at risk of water reaching their building.

- **Social: Pike County, 30.4%**

Greatest risk to government, education or social facilities with 7 out of 23 at risk of becoming inoperable.

- **Infrastructure: Phillips County, 53.1%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 17 out of 32 at risk of becoming inoperable.

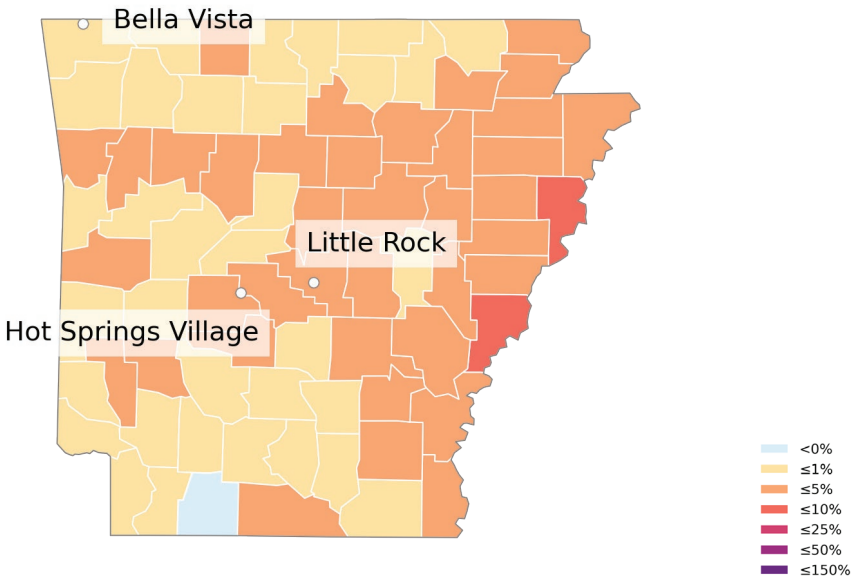
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Arkansas

As severity and frequency of flood events in Arkansas increase over the next 30 years with a changing environment, an additional 1,763 residential properties, 451.0 miles of roads, 173 commercial properties, 6 infrastructure facilities, and 20 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Pope County	0.2%	0.2%	2.5%	0.0%	10.0%
2	Lee County	0.1%	0.5%	0.0%	7.7%	0.0%
3	Phillips County	0.8%	1.4%	2.1%	3.1%	0.0%
4	Monroe County	0.6%	1.3%	0.4%	0.0%	3.6%
5	Chicot County	0.5%	0.3%	0.6%	4.0%	0.0%
6	Garland County	0.1%	0.2%	0.2%	3.2%	0.0%
7	Clay County	1.0%	0.7%	0.8%	0.0%	0.0%
8	Craighead County	0.6%	0.7%	1.2%	0.0%	0.0%
9	Pulaski County	0.3%	0.5%	0.6%	0.0%	1.0%
10	Crittenden County	0.8%	0.6%	0.9%	0.0%	0.0%
	• State Average	0.2%	0.3%	0.4%	0.2%	0.4%

Greatest growing operational risk by category

- **Residential: Clay County, 1.0%**

Greatest growing risk to property owners with 61 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Phillips County, 1.4%**

Greatest growing risk to commutes and transportation with 22 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Pope County, 2.5%**

Greatest growing risk to businesses with 24 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Pope County, 10.0%**

Greatest growing risk to government, education or social facilities with 11 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Lee County, 7.7%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

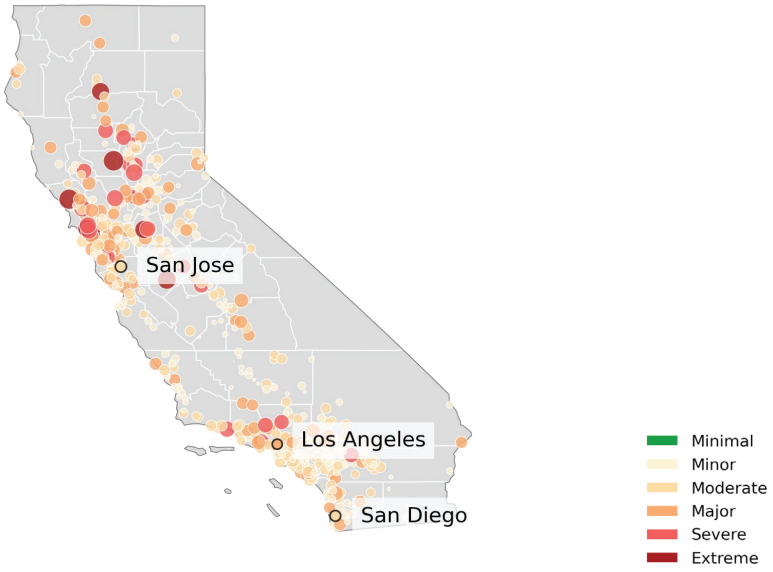
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
California

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In California, there are 1,593,684 residential properties, 114,620 miles of roads, 73,795 commercial properties, 2,189 infrastructure facilities, and 9,215 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in California, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Orland	99.6%	98.5%	100.0%	100.0%	100.0%
2	Colusa	95.5%	98.0%	100.0%	100.0%	100.0%
3	Yuba City	99.9%	97.3%	99.1%	94.1%	100.0%
4	August	97.9%	94.3%	96.9%	100.0%	100.0%
5	Linda	94.3%	91.6%	96.6%	100.0%	100.0%
6	Plumas Lake	87.5%	84.1%	100.0%	100.0%	100.0%
7	Garden Acres	91.6%	76.1%	97.3%	100.0%	81.8%
8	Stockton	92.0%	85.7%	97.3%	75.4%	93.9%
9	Foster City	99.9%	75.7%	99.1%	66.7%	100.0%
10	Winters	84.3%	78.6%	96.9%	100.0%	72.7%
	• State Average	19.3%	26.5%	28.4%	26.2%	21.9%

Highest proportion of operational risk by category

- **Residential: Foster City, 99.9%**

Greatest risk to property owners with 6,826 out of 6,830 residential properties at risk of water reaching their building.

- **Roads: Country Club, 99.4%**

Greatest risk to commutes and transportation with 44 out of 44 miles of roads at risk of becoming impassable.

- **Commercial: Orland, 100.0%**

Greatest risk to businesses with 197 out of 197 commercial buildings at risk of water reaching their building.

- **Social: Yuba City, 100.0%**

Greatest risk to government, education or social facilities with 73 out of 73 at risk of becoming inoperable.

- **Infrastructure: Lathrop, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 8 out of 8 at risk of becoming inoperable.

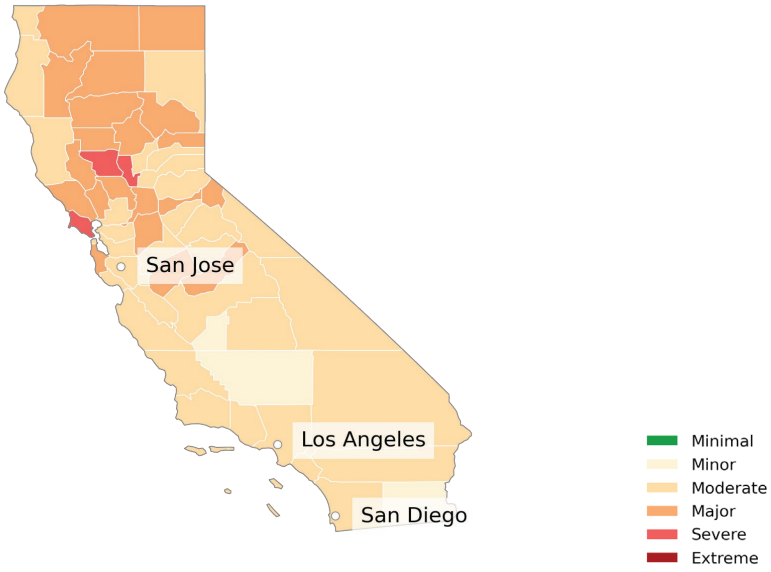
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
California

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In California, Sutter County has the largest number of properties currently protected with community flood mitigation projects or structures with 34,416 out of 34,994 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Sutter County	92.6%	76.8%	86.9%	64.4%	93.7%
2	San Joaquin County	61.9%	46.6%	59.7%	48.0%	61.0%
3	Colusa County	63.5%	47.0%	63.0%	40.6%	59.0%
4	Merced County	57.7%	44.2%	53.3%	52.9%	52.5%
5	Yolo County	50.4%	46.2%	50.1%	56.7%	42.6%
6	Marin County	28.0%	34.0%	65.2%	43.5%	50.9%
7	Inyo County	38.9%	27.8%	70.3%	20.0%	55.6%
8	Madera County	43.6%	33.3%	51.9%	40.4%	42.1%
9	Glenn County	53.5%	34.6%	47.8%	33.3%	39.2%
10	Butte County	38.5%	32.5%	50.0%	32.2%	42.0%
	• State Average	19.3%	26.5%	28.4%	26.2%	21.9%

Highest proportion of operational risk by category

- **Residential: Sutter County, 92.6%**

Greatest risk to property owners with 23,099 out of 24,932 residential properties at risk of water reaching their building.

- **Roads: Sutter County, 76.8%**

Greatest risk to commutes and transportation with 1,506 out of 1,962 miles of roads at risk of becoming impassable.

- **Commercial: Sutter County, 86.9%**

Greatest risk to businesses with 2,121 out of 2,441 commercial buildings at risk of water reaching their building.

- **Social: Sutter County, 93.7%**

Greatest risk to government, education or social facilities with 104 out of 111 at risk of becoming inoperable.

- **Infrastructure: Sutter County, 64.4%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 29 out of 45 at risk of becoming inoperable.

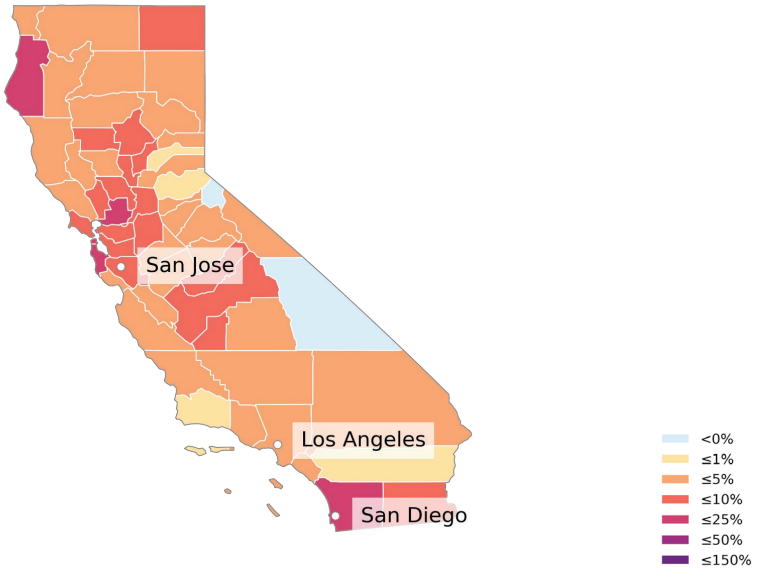
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
California

As severity and frequency of flood events in California increase over the next 30 years with a changing environment, an additional 82,739 residential properties, 3,464.0 miles of roads, 4,603 commercial properties, 166 infrastructure facilities, and 432 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	San Mateo County	3.0%	3.1%	8.3%	4.6%	5.0%
2	Solano County	2.0%	3.0%	6.3%	4.9%	4.8%
3	Marin County	2.4%	1.5%	8.2%	6.1%	2.6%
4	Humboldt County	1.5%	1.1%	7.6%	0.0%	8.1%
5	San Francisco County	0.6%	2.3%	3.9%	5.6%	2.2%
6	Yuba County	7.7%	1.2%	2.3%	0.0%	2.7%
7	Alameda County	2.2%	2.3%	4.3%	1.9%	1.9%
8	Butte County	2.2%	1.5%	3.8%	3.5%	0.9%
9	Sacramento County	2.3%	2.0%	2.5%	2.9%	2.0%
10	San Diego County	0.3%	0.9%	1.2%	8.3%	0.7%
	• State Average	1.0%	0.8%	1.8%	2.0%	1.0%

Greatest growing operational risk by category

- **Residential: Yuba County, 7.7%**

Greatest growing risk to property owners with 1,509 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Sutter County, 3.1%**

Greatest growing risk to commutes and transportation with 61 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: San Mateo County, 8.3%**

Greatest growing risk to businesses with 588 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Humboldt County, 8.1%**

Greatest growing risk to government, education or social facilities with 21 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: San Diego County, 8.3%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 46 additional facilities at risk of becoming inoperable in 30 years.

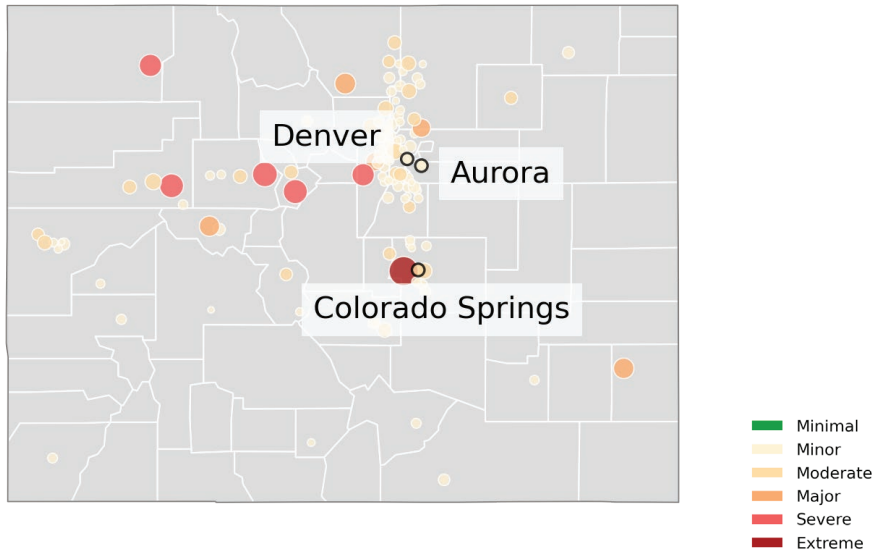
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Colorado

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Colorado, there are 96,151 residential properties, 40,319 miles of roads, 8,229 commercial properties, 557 infrastructure facilities, and 963 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Colorado, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Manitou Springs	28.4%	46.7%	83.2%	100.0%	83.9%
2	Craig	34.9%	45.7%	77.7%	83.3%	87.0%
3	Breckenridge	51.2%	32.5%	71.4%	66.7%	61.5%
4	Vail	35.6%	36.7%	66.7%	57.1%	82.1%
5	Lamar	43.0%	45.4%	71.3%	66.7%	47.8%
6	Snowmass Village	13.5%	19.7%	80.0%	16.7%	66.7%
7	Glenwood Springs	12.9%	38.2%	25.9%	66.7%	50.0%
8	Twin Lakes	2.9%	19.2%	23.7%	100.0%	25.0%
9	Estes Park	16.3%	30.3%	22.9%	71.4%	24.2%
10	Florence	35.5%	31.4%	46.9%	0.0%	50.0%
	• State Average	6.7%	22.0%	14.3%	24.7%	13.2%

Highest proportion of operational risk by category

- **Residential: Breckenridge, 51.2%**

Greatest risk to property owners with 85 out of 166 residential properties at risk of water reaching their building.

- **Roads: Manitou Springs, 46.7%**

Greatest risk to commutes and transportation with 24 out of 51 miles of roads at risk of becoming impassable.

- **Commercial: Manitou Springs, 83.2%**

Greatest risk to businesses with 129 out of 155 commercial buildings at risk of water reaching their building.

- **Social: Craig, 87.0%**

Greatest risk to government, education or social facilities with 20 out of 23 at risk of becoming inoperable.

- **Infrastructure: Craig, 83.3%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 6 at risk of becoming inoperable.

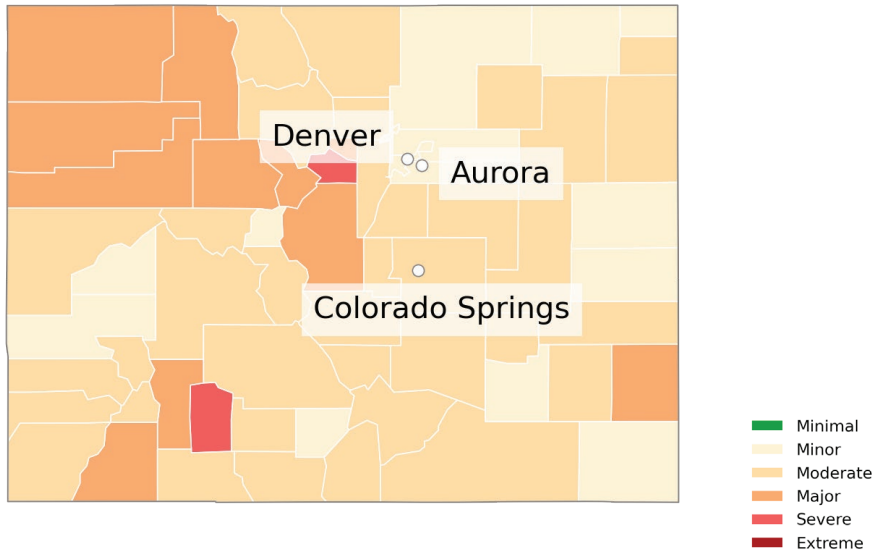
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Colorado

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Colorado, Alamosa County has the largest number of properties currently protected with community flood mitigation projects or structures with 3,053 out of 14,319 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Mineral County	19.8%	26.3%	42.9%	75.0%	100.0%
2	Clear Creek County	25.1%	35.3%	40.0%	69.2%	52.5%
3	Prowers County	38.3%	20.1%	47.8%	52.2%	53.8%
4	Moffat County	28.5%	21.4%	34.1%	60.0%	66.7%
5	Eagle County	26.4%	27.1%	42.9%	37.9%	53.8%
6	Summit County	16.7%	28.2%	37.5%	55.6%	47.1%
7	Gilpin County	6.5%	31.6%	16.7%	45.5%	45.5%
8	Garfield County	10.1%	29.3%	19.7%	46.2%	26.2%
9	Costilla County	14.0%	24.3%	27.5%	26.7%	36.4%
10	Sedgwick County	22.2%	20.3%	16.5%	20.0%	44.4%
	• State Average	6.7%	22.0%	14.3%	24.7%	13.2%

Highest proportion of operational risk by category

- **Residential: Prowers County, 38.3%**

Greatest risk to property owners with 1,369 out of 3,574 residential properties at risk of water reaching their building.

- **Roads: Clear Creek County, 35.3%**

Greatest risk to commutes and transportation with 458 out of 1,300 miles of roads at risk of becoming impassable.

- **Commercial: Prowers County, 47.8%**

Greatest risk to businesses with 174 out of 364 commercial buildings at risk of water reaching their building.

- **Social: Mineral County, 100.0%**

Greatest risk to government, education or social facilities with 5 out of 5 at risk of becoming inoperable.

- **Infrastructure: Clear Creek County, 69.2%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 27 out of 39 at risk of becoming inoperable.

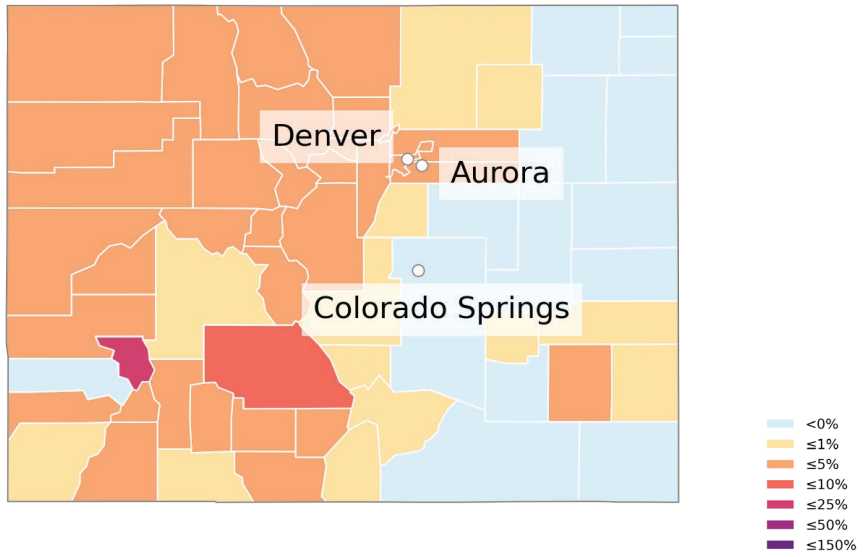
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Colorado

As severity and frequency of flood events in Colorado increase over the next 30 years with a changing environment, an additional 1,925 residential properties, 438.0 miles of roads, 145 commercial properties, 9 infrastructure facilities, and 30 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Gilpin County	0.1%	0.2%	0.0%	0.0%	9.1%
2	Ouray County	0.4%	0.4%	3.1%	0.0%	3.6%
3	Grand County	0.6%	0.3%	0.0%	2.4%	2.9%
4	Larimer County	0.3%	0.4%	0.4%	1.6%	2.5%
5	Boulder County	0.2%	0.4%	0.5%	3.6%	0.2%
6	Montezuma County	0.3%	0.3%	0.1%	0.0%	3.3%
7	Denver County	0.2%	0.9%	0.4%	1.2%	0.8%
8	Clear Creek County	0.2%	0.4%	0.0%	2.6%	0.0%
9	Summit County	0.6%	0.5%	1.8%	0.0%	0.0%
10	Arapahoe County	0.1%	0.2%	0.2%	2.3%	0.0%
	• State Average	0.1%	0.2%	0.3%	0.4%	0.4%

Greatest growing operational risk by category

- **Residential: Eagle County, 0.9%**

Greatest growing risk to property owners with 53 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Denver County, 0.9%**

Greatest growing risk to commutes and transportation with 25 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Ouray County, 3.1%**

Greatest growing risk to businesses with 4 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Gilpin County, 9.1%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Boulder County, 3.6%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 5 additional facilities at risk of becoming inoperable in 30 years.

*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

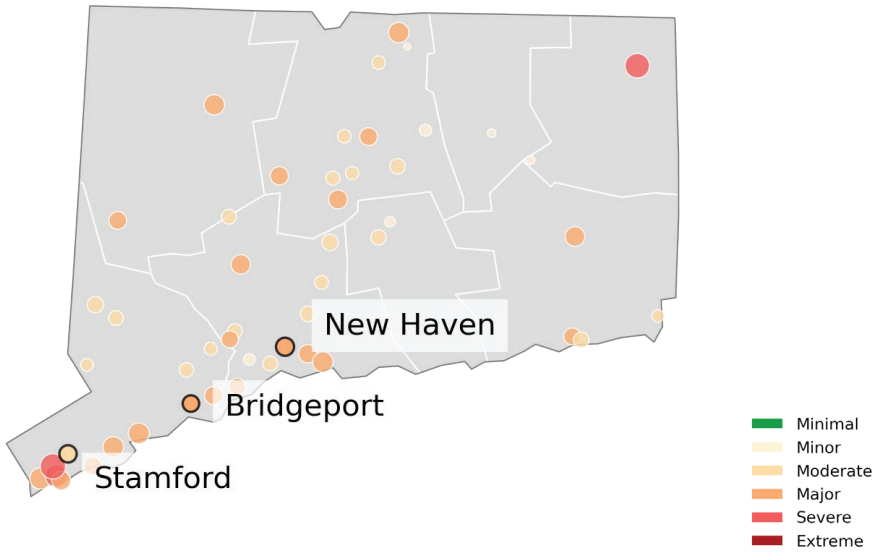
City Details

Connecticut

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Connecticut, there are 99,001 residential properties, 8,487 miles of roads, 10,038 commercial properties, 407 infrastructure facilities, and 846 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Connecticut, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Cos Cob	27.3%	49.9%	50.0%	100.0%	53.8%
2	Putnam	9.2%	30.7%	28.5%	100.0%	53.3%
3	Riverside	18.5%	33.8%	28.2%	100.0%	33.3%
4	Branford Center	27.3%	38.1%	34.6%	55.6%	45.5%
5	Westport	24.5%	32.2%	47.6%	63.6%	30.6%
6	Greenwich	20.7%	35.5%	20.4%	100.0%	17.1%
7	Naugatuck	10.6%	29.1%	56.2%	66.7%	31.0%
8	Torrington	13.4%	26.0%	37.2%	71.4%	36.4%
9	Norwalk	20.5%	34.3%	33.9%	72.5%	22.4%
10	Hartford	14.1%	41.2%	47.5%	35.3%	34.9%
	• State Average	12.1%	25.0%	28.4%	35.2%	20.1%

Highest proportion of operational risk by category

- **Residential: Old Greenwich, 31.6%**

Greatest risk to property owners with 614 out of 1,945 residential properties at risk of water reaching their building.

- **Roads: Cos Cob, 49.9%**

Greatest risk to commutes and transportation with 19 out of 38 miles of roads at risk of becoming impassable.

- **Commercial: Naugatuck, 56.2%**

Greatest risk to businesses with 173 out of 308 commercial buildings at risk of water reaching their building.

- **Social: Cos Cob, 53.8%**

Greatest risk to government, education or social facilities with 7 out of 13 at risk of becoming inoperable.

- **Infrastructure: Greenwich, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 9 out of 9 at risk of becoming inoperable.

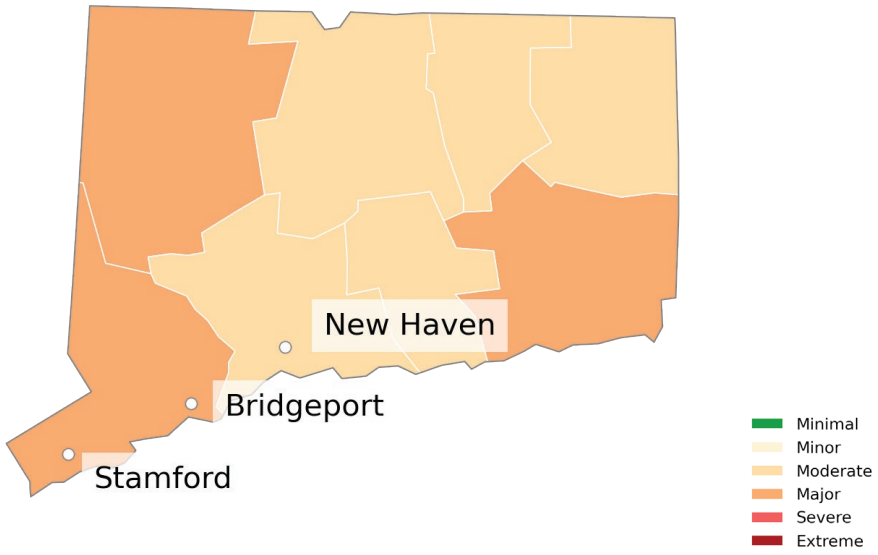
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Connecticut

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Connecticut, New London County has the largest number of properties currently protected with community flood mitigation projects or structures with 2,924 out of 104,542 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Fairfield County	15.3%	27.2%	34.7%	41.3%	19.3%
2	Litchfield County	10.7%	28.7%	30.0%	33.7%	26.6%
3	New Haven County	12.4%	24.3%	26.9%	38.6%	19.1%
4	Hartford County	11.3%	24.1%	27.4%	31.6%	23.7%
5	New London County	10.4%	22.9%	24.6%	40.0%	16.8%
6	Middlesex County	10.7%	26.6%	24.8%	25.6%	17.1%
7	Tolland County	7.6%	21.3%	22.0%	28.3%	9.9%
8	Windham County	8.0%	21.2%	20.8%	23.7%	14.3%
	• State Average	12.1%	25.0%	28.4%	35.2%	20.1%

Highest proportion of operational risk by category

- **Residential: Fairfield County, 15.3%**
Greatest risk to property owners with 32,347 out of 212,007 residential properties at risk of water reaching their building.
- **Roads: Litchfield County, 28.7%**
Greatest risk to commutes and transportation with 1,229 out of 4,288 miles of roads at risk of becoming impassable.
- **Commercial: Fairfield County, 34.7%**
Greatest risk to businesses with 2,929 out of 8,430 commercial buildings at risk of water reaching their building.
- **Social: Litchfield County, 26.6%**
Greatest risk to government, education or social facilities with 75 out of 282 at risk of becoming inoperable.
- **Infrastructure: Fairfield County, 41.3%**
Greatest risk to critical infrastructure (utilities, emergency services, etc) with 104 out of 252 at risk of becoming inoperable.

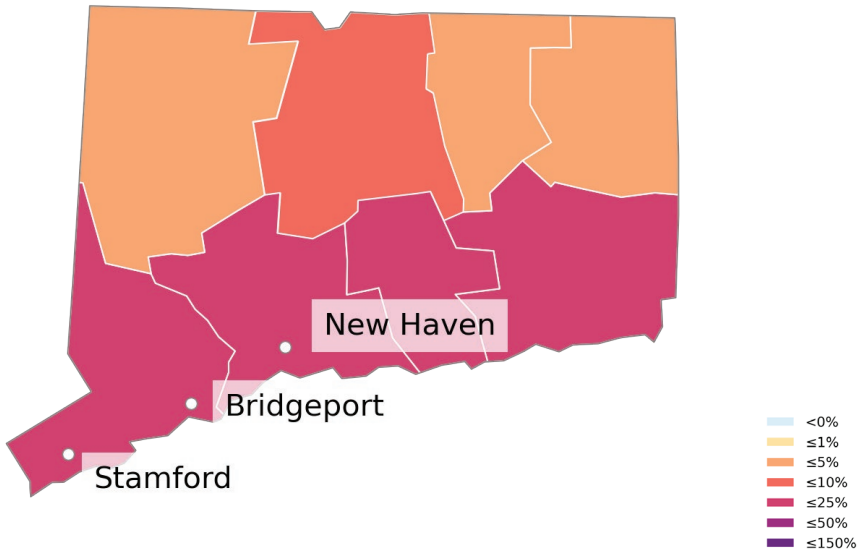
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Connecticut

As severity and frequency of flood events in Connecticut increase over the next 30 years with a changing environment, an additional 15,018 residential properties, 555.0 miles of roads, 1,136 commercial properties, 39 infrastructure facilities, and 113 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Middlesex County	5.9%	2.9%	7.1%	7.8%	4.4%
2	Fairfield County	2.0%	2.1%	5.5%	6.7%	4.3%
3	New London County	2.7%	2.4%	5.0%	2.4%	3.1%
4	New Haven County	2.5%	2.5%	3.4%	2.9%	2.8%
5	Hartford County	0.5%	0.9%	1.0%	1.4%	1.6%
6	Tolland County	0.3%	0.5%	1.1%	1.7%	0.0%
7	Windham County	0.3%	0.5%	0.5%	1.3%	0.7%
8	Litchfield County	0.3%	0.6%	0.6%	0.0%	0.7%
	• State Average	1.8%	1.6%	3.2%	3.4%	2.7%

Greatest growing operational risk by category

- **Residential: Middlesex County, 5.9%**

Greatest growing risk to property owners with 2,900 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Middlesex County, 2.9%**

Greatest growing risk to commutes and transportation with 73 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Middlesex County, 7.1%**

Greatest growing risk to businesses with 140 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Middlesex County, 4.4%**

Greatest growing risk to government, education or social facilities with 10 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Middlesex County, 7.8%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 7 additional facilities at risk of becoming inoperable in 30 years.

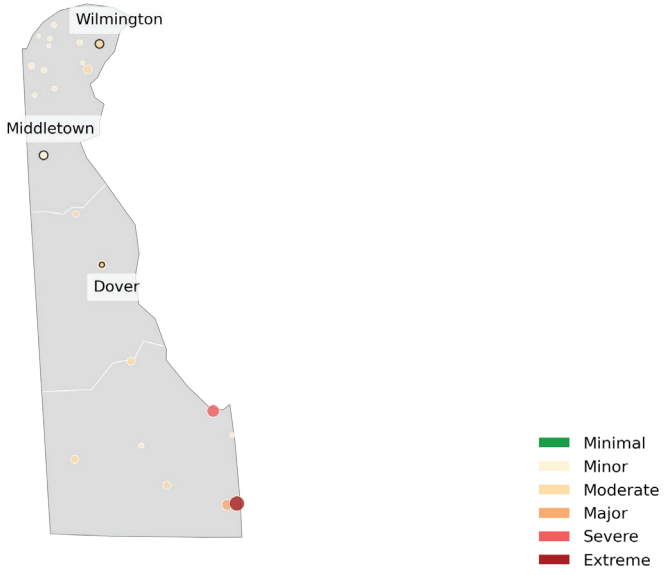
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Delaware

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Delaware, there are 32,159 residential properties, 3,202 miles of roads, 1,950 commercial properties, 93 infrastructure facilities, and 154 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Delaware, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Bethany Beach	97.1%	96.0%	100.0%	100.0%	100.0%
2	Ocean View	38.0%	47.8%	71.4%	0.0%	66.7%
3	Lewes	45.8%	56.6%	25.5%	66.7%	10.0%
4	Millsboro	23.4%	34.0%	36.7%	50.0%	0.0%
5	Seaford	21.4%	31.7%	27.3%	25.0%	34.4%
6	New Castle	17.8%	34.8%	22.5%	25.0%	9.5%
7	Milford	7.0%	15.0%	26.5%	40.0%	14.7%
8	Wilmington	4.0%	27.3%	16.6%	37.5%	13.5%
9	Smyrna	5.1%	13.5%	3.4%	60.0%	0.0%
10	Dover	7.2%	20.0%	9.7%	26.3%	7.0%
	• State Average	10.7%	23.3%	16.0%	30.4%	9.9%

Highest proportion of operational risk by category

- **Residential: Bethany Beach, 97.1%**

Greatest risk to property owners with 796 out of 820 residential properties at risk of water reaching their building.

- **Roads: Bethany Beach, 96.0%**

Greatest risk to commutes and transportation with 32 out of 33 miles of roads at risk of becoming impassable.

- **Commercial: Bethany Beach, 100.0%**

Greatest risk to businesses with 28 out of 28 commercial buildings at risk of water reaching their building.

- **Social: Seaford, 34.4%**

Greatest risk to government, education or social facilities with 11 out of 32 at risk of becoming inoperable.

- **Infrastructure: Lewes, 66.7%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 8 out of 12 at risk of becoming inoperable.

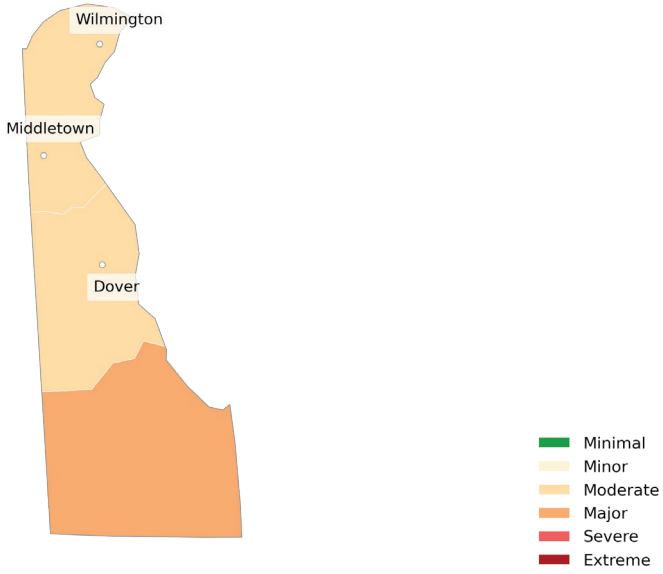
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Delaware

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Delaware, Sussex County has the largest number of properties currently protected with community flood mitigation projects or structures with 32,815 out of 144,824 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Sussex County	28.4%	29.1%	18.8%	43.8%	17.4%
2	Kent County	7.2%	18.3%	12.4%	21.9%	8.7%
3	New Castle County	3.4%	18.3%	14.8%	24.2%	7.4%
	• State Average	10.7%	23.3%	16.0%	30.4%	9.9%

Highest proportion of operational risk by category

- **Residential: Sussex County, 28.4%**

Greatest risk to property owners with 22,616 out of 79,643 residential properties at risk of water reaching their building.

- **Roads: Sussex County, 29.1%**

Greatest risk to commutes and transportation with 1,860 out of 6,391 miles of roads at risk of becoming impassable.

- **Commercial: Sussex County, 18.8%**

Greatest risk to businesses with 871 out of 4,624 commercial buildings at risk of water reaching their building.

- **Social: Sussex County, 17.4%**

Greatest risk to government, education or social facilities with 59 out of 340 at risk of becoming inoperable.

- **Infrastructure: Sussex County, 43.8%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 46 out of 105 at risk of becoming inoperable.

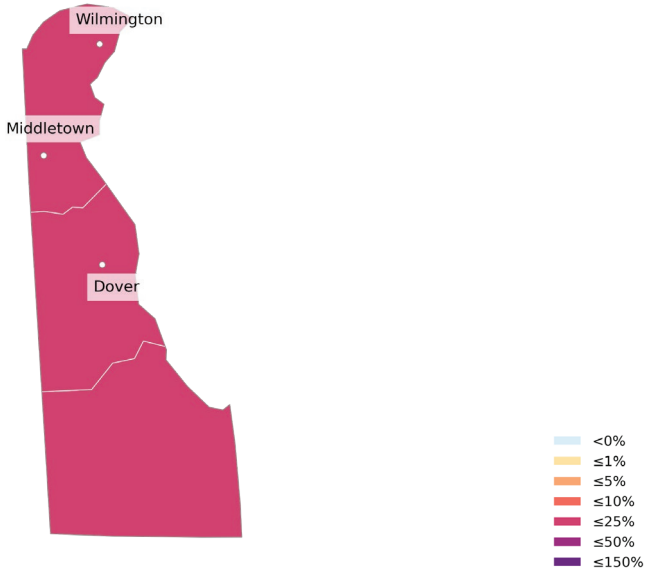
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Delaware

As severity and frequency of flood events in Delaware increase over the next 30 years with a changing environment, an additional 7,635 residential properties, 432.0 miles of roads, 339 commercial properties, 15 infrastructure facilities, and 31 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Sussex County	8.3%	5.1%	4.8%	6.7%	5.9%
2	New Castle County	0.4%	1.3%	1.6%	6.3%	0.9%
3	Kent County	0.6%	1.6%	1.4%	0.0%	1.0%
	• State Average	2.5%	3.1%	2.8%	4.9%	2.0%

Greatest growing operational risk by category

- **Residential: Sussex County, 8.3%**

Greatest growing risk to property owners with 6,575 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Sussex County, 5.1%**

Greatest growing risk to commutes and transportation with 328 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Sussex County, 4.8%**

Greatest growing risk to businesses with 221 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Sussex County, 5.9%**

Greatest growing risk to government, education or social facilities with 20 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Sussex County, 6.7%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 7 additional facilities at risk of becoming inoperable in 30 years.

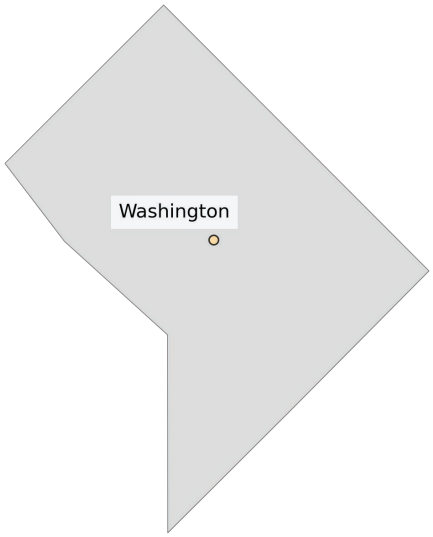
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details

District of Columbia

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In District of Columbia, there are 8,454 residential properties, 338 miles of roads, 859 commercial properties, 30 infrastructure facilities, and 251 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in District of Columbia, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

As severity and frequency of flood events in District of Columbia increase over the next 30 years with a changing environment, an additional 638 residential properties, 32.0 miles of roads, 57 commercial properties, 3 infrastructure facilities, and 26 social facilities will be at risk of becoming inoperable.*



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Washington	7.5%	24.7%	15.0%	31.9%	16.5%

Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	District of Columbia	0.6%	2.3%	1.0%	3.2%	1.7%

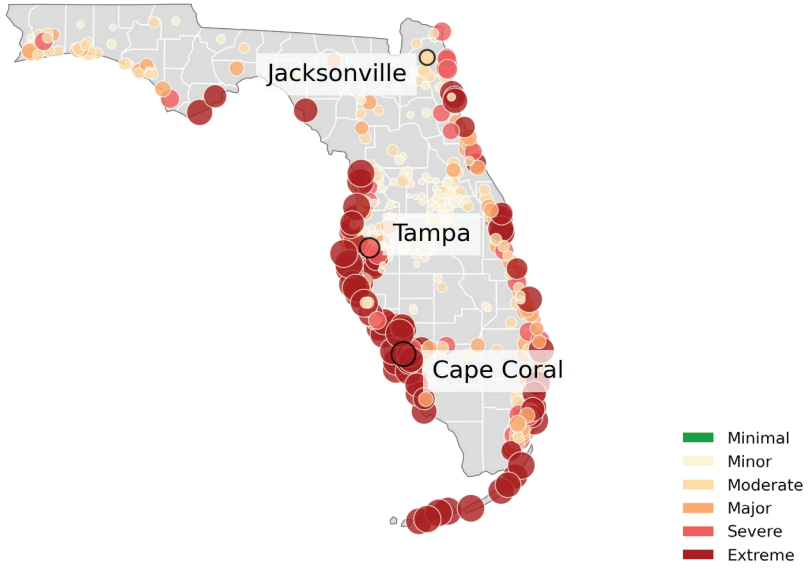
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Florida

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Florida, there are 1,927,660 residential properties, 87,320 miles of roads, 86,515 commercial properties, 1,736 infrastructure facilities, and 8,141 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Florida, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Rotonda	100.0%	100.0%	100.0%	100.0%	100.0%
2	Cypress Lake	100.0%	100.0%	100.0%	100.0%	100.0%
3	Siesta Key	100.0%	100.0%	100.0%	100.0%	100.0%
4	Hernando Beach	99.9%	100.0%	100.0%	100.0%	100.0%
5	Bokeelia	99.9%	100.0%	100.0%	100.0%	100.0%
6	Cortez	100.0%	99.7%	100.0%	100.0%	100.0%
7	Indian Rocks Beach	99.8%	99.9%	100.0%	100.0%	100.0%
8	Holmes Beach	100.0%	99.7%	100.0%	100.0%	100.0%
9	Sanibel	99.8%	99.8%	100.0%	100.0%	100.0%
10	Crystal River	99.5%	100.0%	100.0%	100.0%	100.0%
	• State Average	30.7%	35.6%	32.7%	36.6%	32.6%

Highest proportion of operational risk by category

- **Residential: Rotonda, 100.0%**

Greatest risk to property owners with 6,046 out of 6,046 residential properties at risk of water reaching their building.

- **Roads: Crystal River, 100.0%**

Greatest risk to commutes and transportation with 107 out of 107 miles of roads at risk of becoming impassable.

- **Commercial: Port Charlotte, 100.0%**

Greatest risk to businesses with 991 out of 991 commercial buildings at risk of water reaching their building.

- **Social: Miami Beach, 100.0%**

Greatest risk to government, education or social facilities with 104 out of 104 at risk of becoming inoperable.

- **Infrastructure: Miami Beach, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 11 out of 11 at risk of becoming inoperable.

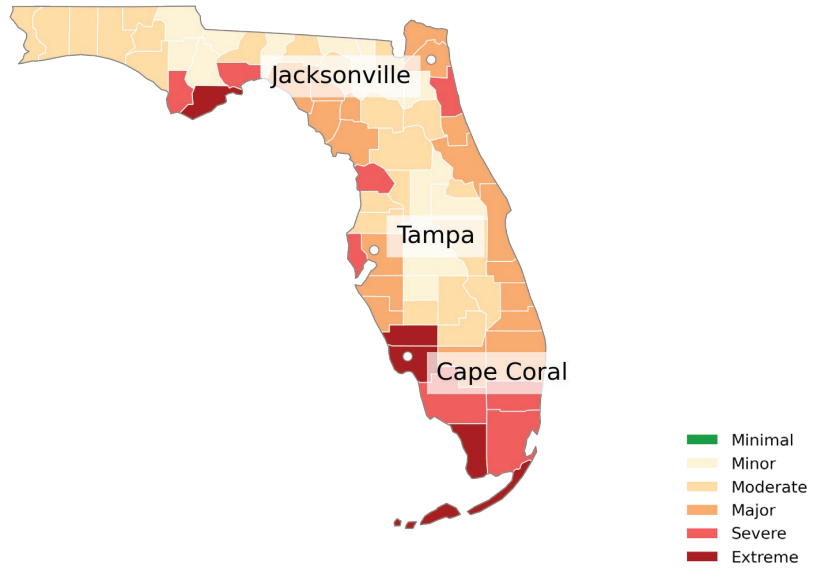
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Florida

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Florida, Okeechobee County has the largest number of properties currently protected with community flood mitigation projects or structures with 11,586 out of 31,903 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Monroe County	98.5%	89.4%	97.5%	82.5%	97.5%
2	Charlotte County	87.7%	82.0%	86.8%	76.6%	92.9%
3	Franklin County	86.7%	77.2%	93.3%	68.2%	82.1%
4	Lee County	66.6%	70.4%	75.9%	59.8%	71.9%
5	Miami-Dade County	51.9%	62.0%	57.6%	68.7%	58.1%
6	Collier County	56.4%	55.2%	63.9%	59.7%	62.8%
7	Wakulla County	59.8%	59.3%	54.7%	61.1%	43.1%
8	Broward County	41.2%	56.6%	53.7%	56.1%	48.1%
9	Dixie County	43.0%	64.1%	47.9%	53.8%	33.3%
10	Gulf County	52.2%	58.9%	60.3%	31.8%	36.7%
	• State Average	30.7%	35.6%	32.7%	36.6%	32.6%

Highest proportion of operational risk by category

- **Residential: Monroe County, 98.5%**

Greatest risk to property owners with 31,524 out of 31,996 residential properties at risk of water reaching their building.

- **Roads: Monroe County, 89.4%**

Greatest risk to commutes and transportation with 1,253 out of 1,402 miles of roads at risk of becoming impassable.

- **Commercial: Monroe County, 97.5%**

Greatest risk to businesses with 1,974 out of 2,024 commercial buildings at risk of water reaching their building.

- **Social: Monroe County, 97.5%**

Greatest risk to government, education or social facilities with 193 out of 198 at risk of becoming inoperable.

- **Infrastructure: Monroe County, 82.5%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 47 out of 57 at risk of becoming inoperable.

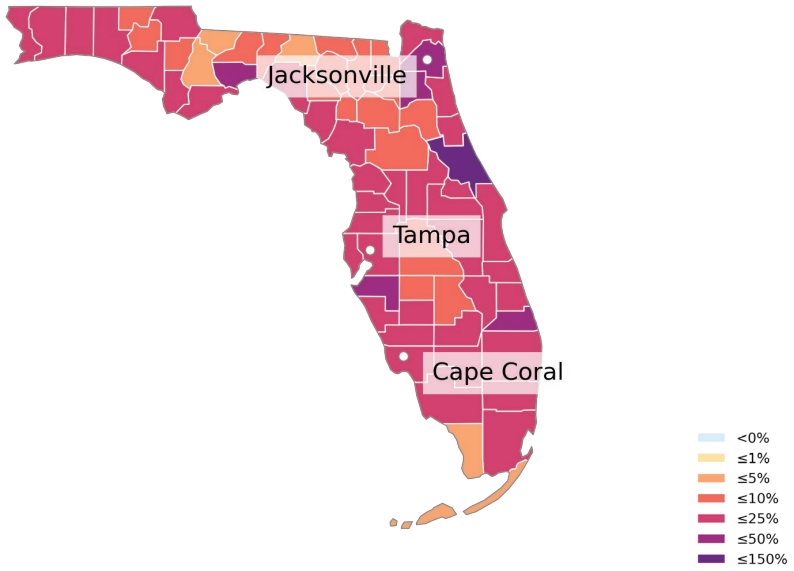
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Florida

As severity and frequency of flood events in Florida increase over the next 30 years with a changing environment, an additional 379,897 residential properties, 11,353.0 miles of roads, 17,302 commercial properties, 214 infrastructure facilities, and 1,534 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Wakulla County	17.3%	11.5%	18.9%	16.7%	36.2%
2	Volusia County	15.3%	12.2%	19.9%	13.0%	15.7%
3	Manatee County	14.7%	11.0%	17.8%	10.4%	18.1%
4	Collier County	15.0%	8.6%	11.3%	6.5%	18.6%
5	Lee County	10.2%	9.3%	11.0%	11.5%	10.6%
6	Broward County	10.2%	8.1%	11.4%	6.6%	12.5%
7	Pinellas County	8.9%	9.2%	11.3%	8.6%	8.9%
8	Martin County	9.4%	7.5%	10.3%	12.3%	6.9%
9	Franklin County	7.8%	8.8%	5.5%	9.1%	10.7%
10	Palm Beach County	8.2%	6.6%	11.3%	6.5%	8.9%
	• State Average	6.0%	4.6%	6.5%	4.5%	6.1%

Greatest growing operational risk by category

- **Residential: Wakulla County, 17.3%**

Greatest growing risk to property owners with 2,067 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Volusia County, 12.2%**

Greatest growing risk to commutes and transportation with 712 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Volusia County, 19.9%**

Greatest growing risk to businesses with 1,902 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Wakulla County, 36.2%**

Greatest growing risk to government, education or social facilities with 21 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Wakulla County, 16.7%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 3 additional facilities at risk of becoming inoperable in 30 years.

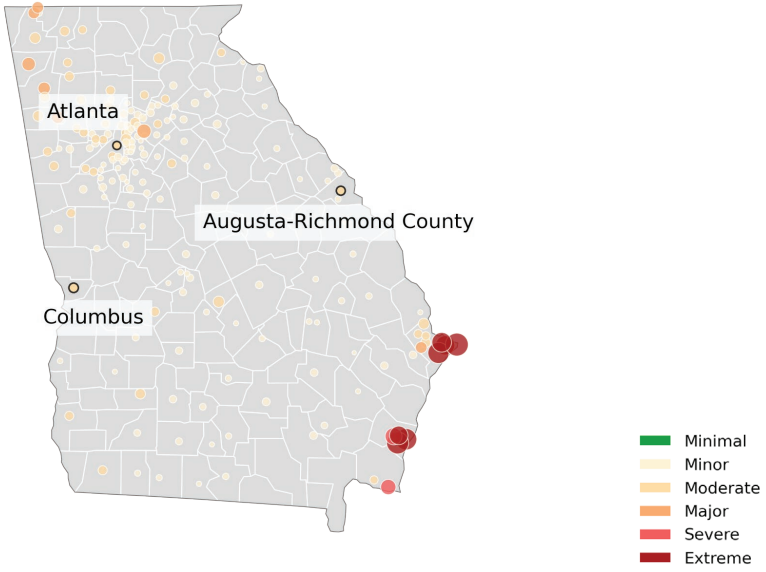
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Georgia

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Georgia, there are 297,222 residential properties, 39,569 miles of roads, 17,065 commercial properties, 679 infrastructure facilities, and 1,284 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Georgia, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Skidaway Island	100.0%	99.9%	100.0%	100.0%	100.0%
2	Brunswick	100.0%	98.3%	100.0%	100.0%	100.0%
3	Tybee Island	99.8%	99.6%	97.8%	100.0%	100.0%
4	St. Simons	97.8%	97.7%	100.0%	100.0%	100.0%
5	Whitemarsh Island	99.7%	94.2%	100.0%	75.0%	100.0%
6	Wilmington Island	99.8%	99.5%	100.0%	0.0%	90.0%
7	Dock Junction	73.5%	63.2%	81.4%	100.0%	66.7%
8	St. Marys	76.4%	64.9%	51.6%	36.4%	53.6%
9	Summerville	9.6%	19.4%	28.1%	75.0%	58.3%
10	Port Wentworth	22.0%	28.0%	100.0%	0.0%	0.0%
	• State Average	9.5%	17.2%	12.2%	15.8%	9.6%

Highest proportion of operational risk by category

- **Residential: Brunswick, 100.0%**

Greatest risk to property owners with 4,434 out of 4,434 residential properties at risk of water reaching their building.

- **Roads: Skidaway Island, 99.9%**

Greatest risk to commutes and transportation with 100 out of 100 miles of roads at risk of becoming impassable.

- **Commercial: Brunswick, 100.0%**

Greatest risk to businesses with 801 out of 801 commercial buildings at risk of water reaching their building.

- **Social: St. Simons, 100.0%**

Greatest risk to government, education or social facilities with 32 out of 32 at risk of becoming inoperable.

- **Infrastructure: Brunswick, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 29 out of 29 at risk of becoming inoperable.

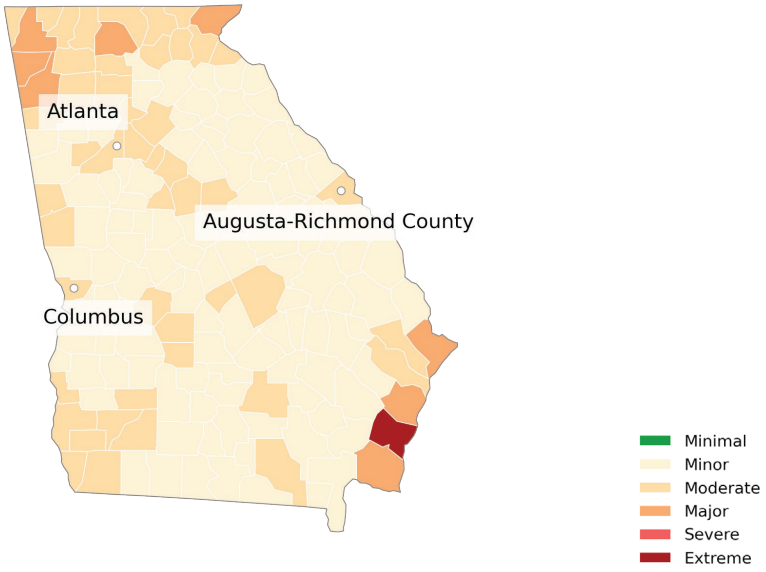
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Georgia

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Georgia, Richmond County has the largest number of properties currently protected with community flood mitigation projects or structures with 6,830 out of 80,269 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Glynn County	79.0%	60.7%	86.3%	84.0%	75.2%
2	Chatham County	41.1%	42.1%	55.8%	54.6%	27.9%
3	Camden County	55.7%	42.4%	35.5%	40.5%	46.5%
4	McIntosh County	48.2%	45.5%	38.2%	37.5%	50.0%
5	Rabun County	20.2%	34.9%	37.5%	34.2%	35.5%
6	Liberty County	25.7%	34.6%	20.9%	39.3%	11.9%
7	Walker County	15.0%	30.0%	25.6%	29.3%	30.1%
8	Floyd County	12.4%	31.3%	30.8%	30.3%	24.2%
9	Gilmer County	16.0%	33.0%	32.2%	16.0%	30.8%
10	Chattooga County	11.5%	30.3%	14.4%	22.7%	44.7%
	• State Average	9.5%	17.2%	12.2%	15.8%	9.6%

Highest proportion of operational risk by category

- **Residential: Glynn County, 79.0%**

Greatest risk to property owners with 22,657 out of 28,687 residential properties at risk of water reaching their building.

- **Roads: Glynn County, 60.7%**

Greatest risk to commutes and transportation with 1,253 out of 2,066 miles of roads at risk of becoming impassable.

- **Commercial: Glynn County, 86.3%**

Greatest risk to businesses with 1,632 out of 1,891 commercial buildings at risk of water reaching their building.

- **Social: Glynn County, 75.2%**

Greatest risk to government, education or social facilities with 94 out of 125 at risk of becoming inoperable.

- **Infrastructure: Glynn County, 84.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 63 out of 75 at risk of becoming inoperable.

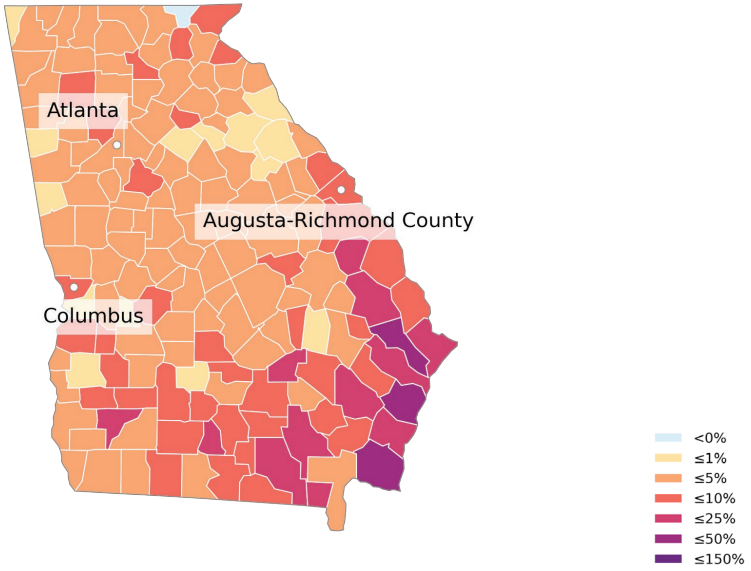
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Georgia

As severity and frequency of flood events in Georgia increase over the next 30 years with a changing environment, an additional 22,406 residential properties, 2,341.0 miles of roads, 1,104 commercial properties, 47 infrastructure facilities, and 124 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	McIntosh County	21.2%	17.5%	12.4%	12.5%	8.3%
2	Camden County	5.4%	11.3%	7.5%	13.5%	7.0%
3	Glynn County	9.0%	8.8%	7.4%	5.3%	12.0%
4	Bryan County	7.0%	5.3%	4.6%	13.6%	2.7%
5	Liberty County	3.6%	7.3%	1.6%	10.7%	6.0%
6	Chatham County	6.3%	6.1%	3.9%	5.4%	5.8%
7	Clinch County	3.0%	2.7%	3.7%	0.0%	7.7%
8	Dougherty County	2.2%	1.9%	2.3%	5.3%	1.3%
9	Muscogee County	0.9%	1.3%	2.0%	0.0%	8.2%
10	Worth County	0.6%	0.7%	0.0%	8.3%	0.0%
	• State Average	0.7%	1.0%	0.8%	1.1%	0.9%

Greatest growing operational risk by category

- **Residential: McIntosh County, 21.2%**

Greatest growing risk to property owners with 701 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: McIntosh County, 17.5%**

Greatest growing risk to commutes and transportation with 224 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: McIntosh County, 12.4%**

Greatest growing risk to businesses with 11 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Glynn County, 12.0%**

Greatest growing risk to government, education or social facilities with 15 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Bryan County, 13.6%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 3 additional facilities at risk of becoming inoperable in 30 years.

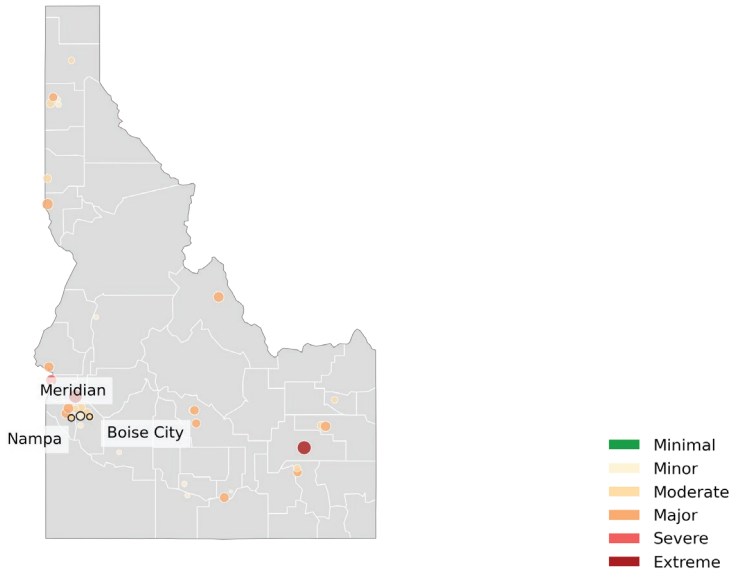
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Idaho

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Idaho, there are 112,408 residential properties, 48,602 miles of roads, 11,262 commercial properties, 426 infrastructure facilities, and 689 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Idaho, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Blackfoot	83.3%	77.2%	85.2%	100.0%	87.0%
2	Emmett	75.5%	69.1%	93.9%	85.7%	87.5%
3	Payette	56.7%	62.4%	83.1%	80.0%	91.7%
4	Ammon	52.5%	51.4%	69.1%	100.0%	83.3%
5	Middleton	43.9%	42.3%	52.1%	100.0%	50.0%
6	Salmon	34.5%	38.7%	54.1%	50.0%	58.3%
7	Garden City	65.8%	47.0%	41.3%	50.0%	25.0%
8	Weiser	33.0%	41.0%	62.6%	42.9%	40.6%
9	Caldwell	24.8%	31.7%	58.5%	66.7%	37.5%
10	Star	51.8%	40.1%	50.0%	50.0%	20.0%
	• State Average	22.1%	31.6%	27.8%	36.5%	25.7%

Highest proportion of operational risk by category

- **Residential: Blackfoot, 83.3%**

Greatest risk to property owners with 2,670 out of 3,207 residential properties at risk of water reaching their building.

- **Roads: Blackfoot, 77.2%**

Greatest risk to commutes and transportation with 77 out of 100 miles of roads at risk of becoming impassable.

- **Commercial: Emmett, 93.9%**

Greatest risk to businesses with 154 out of 164 commercial buildings at risk of water reaching their building.

- **Social: Payette, 91.7%**

Greatest risk to government, education or social facilities with 22 out of 24 at risk of becoming inoperable.

- **Infrastructure: Blackfoot, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 9 out of 9 at risk of becoming inoperable.

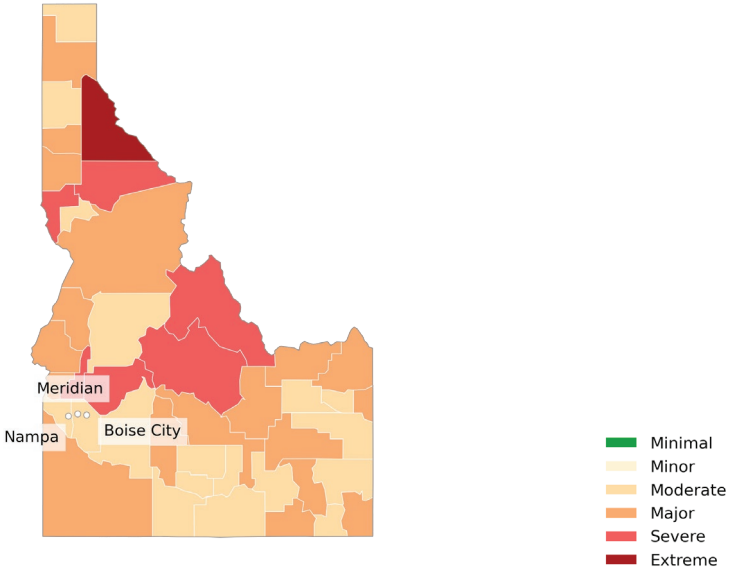
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Idaho

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Idaho, Jefferson County has the largest number of properties currently protected with community flood mitigation projects or structures with 4,314 out of 16,052 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Shoshone County	77.2%	34.7%	79.3%	70.4%	77.5%
2	Gem County	42.7%	34.2%	73.8%	76.9%	70.6%
3	Butte County	55.0%	41.4%	100.0%	40.0%	57.1%
4	Custer County	39.5%	44.0%	40.9%	61.9%	62.5%
5	Lemhi County	42.4%	30.5%	50.2%	60.0%	59.4%
6	Clark County	50.5%	34.5%	61.5%	60.0%	25.0%
7	Bingham County	41.5%	28.8%	58.9%	46.7%	55.6%
8	Camas County	34.1%	38.9%	50.0%	36.4%	66.7%
9	Boise County	24.0%	33.9%	50.0%	55.0%	56.3%
10	Washington County	36.9%	45.1%	56.8%	44.4%	33.3%
	• State Average	22.1%	31.6%	27.8%	36.5%	25.7%

Highest proportion of operational risk by category

- **Residential: Shoshone County, 77.2%**

Greatest risk to property owners with 2,391 out of 3,097 residential properties at risk of water reaching their building.

- **Roads: Latah County, 46.3%**

Greatest risk to commutes and transportation with 1,097 out of 2,368 miles of roads at risk of becoming impassable.

- **Commercial: Shoshone County, 79.3%**

Greatest risk to businesses with 238 out of 300 commercial buildings at risk of water reaching their building.

- **Social: Shoshone County, 77.5%**

Greatest risk to government, education or social facilities with 31 out of 40 at risk of becoming inoperable.

- **Infrastructure: Gem County, 76.9%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 10 out of 13 at risk of becoming inoperable.

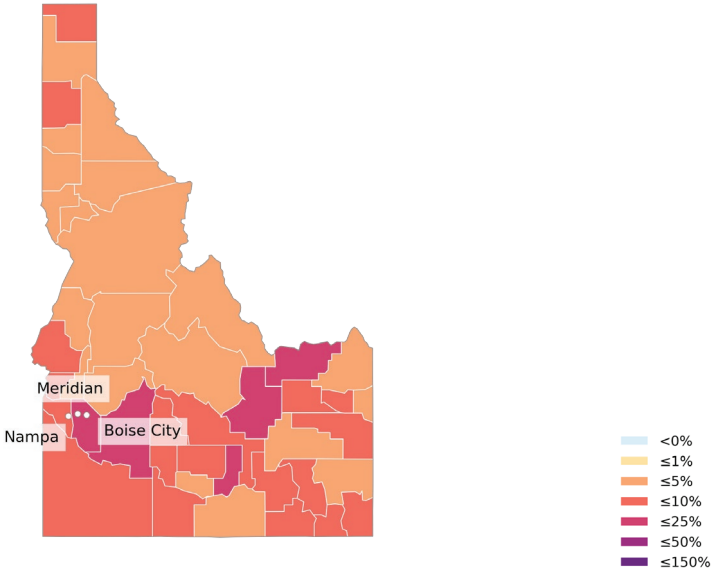
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Idaho

As severity and frequency of flood events in Idaho increase over the next 30 years with a changing environment, an additional 7,616 residential properties, 1,558.0 miles of roads, 616 commercial properties, 20 infrastructure facilities, and 57 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Clark County	4.5%	1.8%	0.0%	40.0%	0.0%
2	Minidoka County	3.8%	2.4%	2.3%	0.0%	13.6%
3	Elmore County	3.8%	1.1%	3.0%	2.2%	11.1%
4	Camas County	0.8%	1.1%	0.0%	18.2%	0.0%
5	Butte County	2.9%	2.3%	0.0%	0.0%	14.3%
6	Oneida County	1.9%	1.2%	2.9%	0.0%	13.3%
7	Franklin County	1.4%	0.8%	1.0%	14.3%	0.0%
8	Lemhi County	1.2%	0.6%	0.6%	5.0%	9.4%
9	Bannock County	1.5%	1.3%	2.0%	0.0%	10.5%
10	Caribou County	1.1%	1.1%	0.6%	11.1%	0.0%
	• State Average	1.5%	1.0%	1.5%	1.7%	2.1%

Greatest growing operational risk by category

- **Residential: Clark County, 4.5%**

Greatest growing risk to property owners with 5 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Minidoka County, 2.4%**

Greatest growing risk to commutes and transportation with 68 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Custer County, 3.2%**

Greatest growing risk to businesses with 3 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Butte County, 14.3%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Clark County, 40.0%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 2 additional facilities at risk of becoming inoperable in 30 years.

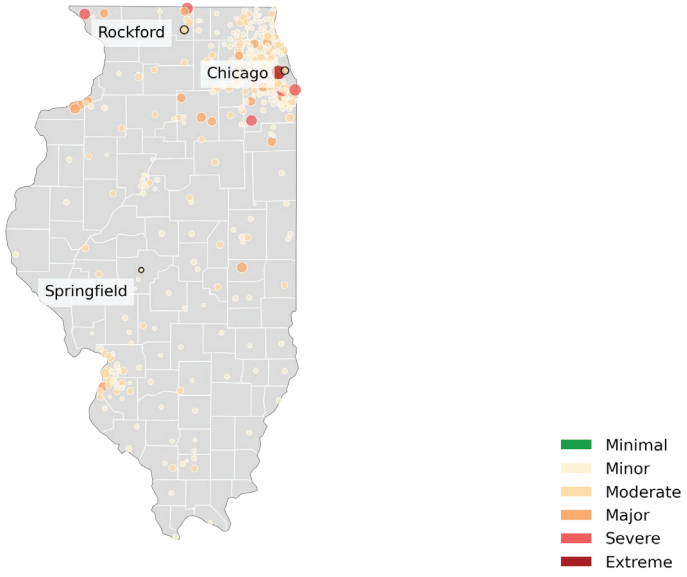
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Illinois

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Illinois, there are 413,129 residential properties, 50,977 miles of roads, 36,816 commercial properties, 996 infrastructure facilities, and 2,476 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Illinois, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Stickney	97.9%	80.2%	97.8%	100.0%	75.0%
2	Burnham	70.4%	65.7%	83.3%	100.0%	25.0%
3	Midlothian	48.2%	45.5%	54.7%	100.0%	69.2%
4	Tuscola	50.6%	58.7%	46.3%	57.1%	33.3%
5	Milan	40.4%	39.3%	64.2%	100.0%	0.0%
6	South Beloit	18.7%	28.0%	62.1%	100.0%	33.3%
7	Palos Hills	61.9%	54.4%	49.1%	25.0%	50.0%
8	Beardstown	58.1%	49.6%	73.5%	0.0%	55.6%
9	Galena	14.2%	31.1%	64.4%	75.0%	38.1%
10	Wilmington	19.7%	26.5%	51.4%	80.0%	44.4%
	• State Average	12.1%	19.6%	16.0%	18.6%	16.2%

Highest proportion of operational risk by category

- **Residential: Stickney, 97.9%**

Greatest risk to property owners with 1,916 out of 1,958 residential properties at risk of water reaching their building.

- **Roads: Stickney, 80.2%**

Greatest risk to commutes and transportation with 32 out of 40 miles of roads at risk of becoming impassable.

- **Commercial: Stickney, 97.8%**

Greatest risk to businesses with 89 out of 91 commercial buildings at risk of water reaching their building.

- **Social: Midlothian, 69.2%**

Greatest risk to government, education or social facilities with 9 out of 13 at risk of becoming inoperable.

- **Infrastructure: Stickney, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 7 out of 7 at risk of becoming inoperable.

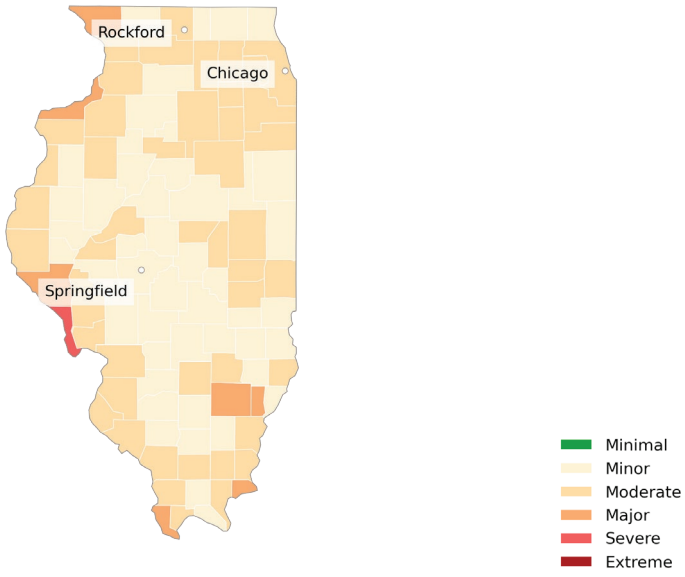
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Illinois

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Illinois, Cook County has the largest number of properties currently protected with community flood mitigation projects or structures with 971,350 out of 1,413,062 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Alexander County	32.9%	52.8%	31.6%	31.6%	35.7%
2	Rock Island County	14.4%	27.1%	31.0%	52.6%	20.7%
3	Cass County	37.7%	30.4%	34.6%	0.0%	30.0%
4	Cook County	20.3%	22.5%	26.7%	26.2%	25.0%
5	Pulaski County	23.9%	22.0%	14.7%	16.0%	42.9%
6	Jo Daviess County	8.0%	21.7%	15.0%	40.8%	31.5%
7	Douglas County	21.0%	18.8%	22.1%	19.2%	16.7%
8	Scott County	15.4%	31.7%	14.5%	26.7%	8.3%
9	Union County	11.8%	37.7%	16.2%	15.8%	15.2%
10	LaSalle County	13.0%	19.7%	15.6%	30.0%	16.9%
	• State Average	12.1%	19.6%	16.0%	18.6%	16.2%

Highest proportion of operational risk by category

- **Residential: Cass County, 37.7%**

Greatest risk to property owners with 1,477 out of 3,920 residential properties at risk of water reaching their building.

- **Roads: Alexander County, 52.8%**

Greatest risk to commutes and transportation with 352 out of 666 miles of roads at risk of becoming impassable.

- **Commercial: Cass County, 34.6%**

Greatest risk to businesses with 189 out of 547 commercial buildings at risk of water reaching their building.

- **Social: Pulaski County, 42.9%**

Greatest risk to government, education or social facilities with 6 out of 14 at risk of becoming inoperable.

- **Infrastructure: Rock Island County, 52.6%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 40 out of 76 at risk of becoming inoperable.

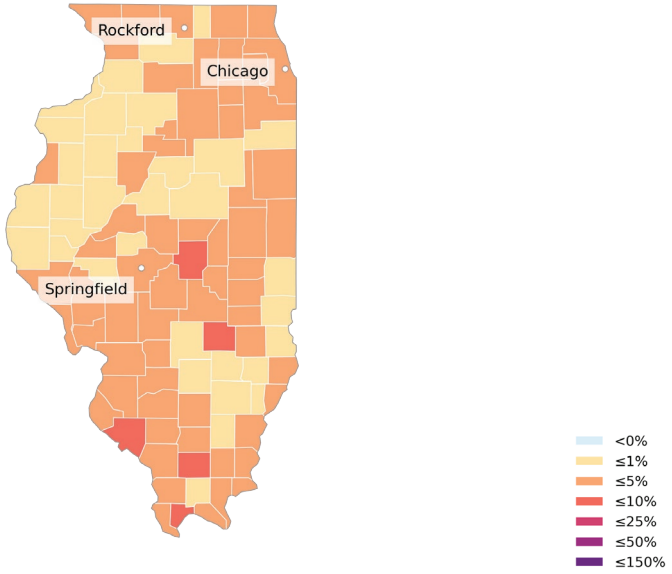
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Illinois

As severity and frequency of flood events in Illinois increase over the next 30 years with a changing environment, an additional 13,823 residential properties, 973.0 miles of roads, 880 commercial properties, 29 infrastructure facilities, and 88 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Union County	0.3%	0.5%	0.0%	10.5%	0.0%
2	Putnam County	0.1%	0.2%	0.0%	0.0%	8.3%
3	Effingham County	0.1%	0.4%	0.1%	6.5%	0.0%
4	Jersey County	0.3%	0.6%	0.3%	5.9%	0.0%
5	Madison County	0.4%	0.6%	0.5%	4.8%	0.0%
6	Lake County	0.2%	0.6%	0.4%	2.4%	0.5%
7	Cook County	0.8%	0.9%	0.7%	0.4%	1.2%
8	Jackson County	0.4%	0.6%	0.8%	2.0%	0.0%
9	Christian County	0.4%	0.4%	0.2%	2.3%	0.0%
10	Grundy County	0.4%	0.3%	0.5%	2.0%	0.0%
	• State Average	0.4%	0.4%	0.4%	0.5%	0.6%

Greatest growing operational risk by category

- **Residential: Alexander County, 1.1%**

Greatest growing risk to property owners with 16 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Greene County, 1.0%**

Greatest growing risk to commutes and transportation with 15 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Gallatin County, 1.6%**

Greatest growing risk to businesses with 1 additional commercial building at risk of water reaching their building in 30 years.

- **Social: Putnam County, 8.3%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Union County, 10.5%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 2 additional facilities at risk of becoming inoperable in 30 years.

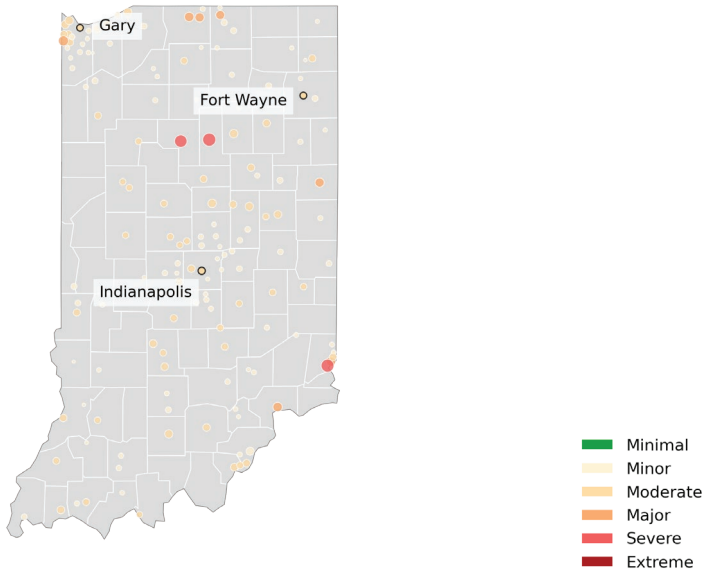
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Indiana

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Indiana, there are 208,993 residential properties, 33,025 miles of roads, 17,289 commercial properties, 792 infrastructure facilities, and 1,107 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Indiana, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Peru	80.4%	67.2%	85.5%	70.0%	60.7%
2	Aurora	28.7%	57.2%	88.3%	62.5%	81.8%
3	Logansport	48.9%	51.1%	58.6%	60.0%	43.3%
4	Portland	32.8%	29.0%	49.0%	70.6%	61.1%
5	East Chicago	51.9%	49.2%	37.9%	23.5%	46.5%
6	Dyer	37.0%	57.2%	37.7%	60.0%	16.7%
7	Tipton	33.1%	52.3%	45.5%	40.0%	12.5%
8	Hammond	33.6%	48.3%	30.2%	33.3%	30.5%
9	Munster	37.1%	67.3%	23.5%	14.3%	19.0%
10	Mishawaka	26.0%	40.5%	28.1%	31.3%	27.1%
	• State Average	9.4%	19.3%	14.5%	19.6%	11.8%

Highest proportion of operational risk by category

- **Residential: Peru, 80.4%**

Greatest risk to property owners with 3,501 out of 4,352 residential properties at risk of water reaching their building.

- **Roads: Munster, 67.3%**

Greatest risk to commutes and transportation with 77 out of 115 miles of roads at risk of becoming impassable.

- **Commercial: Aurora, 88.3%**

Greatest risk to businesses with 106 out of 120 commercial buildings at risk of water reaching their building.

- **Social: Aurora, 81.8%**

Greatest risk to government, education or social facilities with 9 out of 11 at risk of becoming inoperable.

- **Infrastructure: Portland, 70.6%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 12 out of 17 at risk of becoming inoperable.

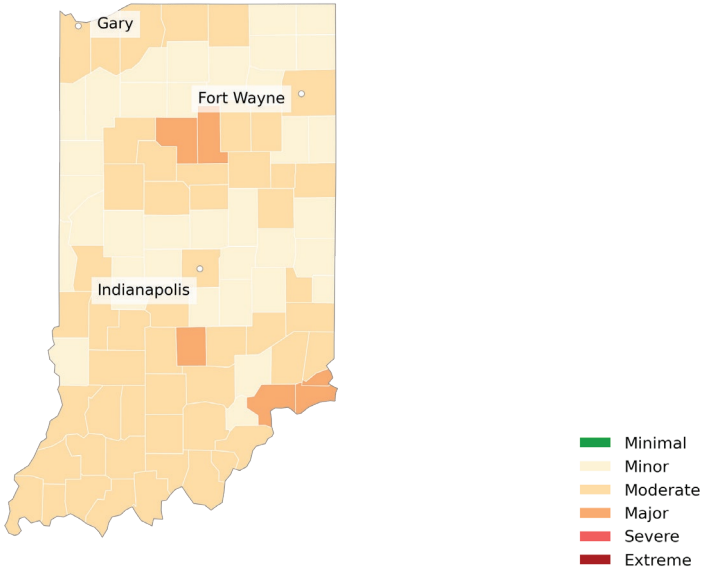
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Indiana

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Indiana, Vanderburgh County has the largest number of properties currently protected with community flood mitigation projects or structures with 29,936 out of 78,692 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Miami County	33.3%	18.1%	45.0%	41.7%	34.4%
2	Switzerland County	21.2%	39.5%	22.3%	42.1%	34.8%
3	Cass County	27.7%	17.6%	44.0%	28.2%	32.0%
4	Brown County	13.5%	33.8%	27.1%	40.0%	25.0%
5	Ohio County	18.4%	35.3%	25.7%	50.0%	9.1%
6	Jay County	14.7%	14.1%	25.6%	42.1%	29.7%
7	Dearborn County	6.6%	24.0%	29.9%	30.8%	20.3%
8	Orange County	12.5%	25.5%	20.1%	36.4%	14.3%
9	St. Joseph County	14.4%	21.6%	19.6%	30.6%	21.3%
10	Posey County	8.1%	35.7%	11.7%	27.8%	22.6%
	• State Average	9.4%	19.3%	14.5%	19.6%	11.8%

Highest proportion of operational risk by category

- **Residential: Miami County, 33.3%**

Greatest risk to property owners with 4,343 out of 13,031 residential properties at risk of water reaching their building.

- **Roads: Switzerland County, 39.5%**

Greatest risk to commutes and transportation with 238 out of 603 miles of roads at risk of becoming impassable.

- **Commercial: Miami County, 45.0%**

Greatest risk to businesses with 411 out of 914 commercial buildings at risk of water reaching their building.

- **Social: Switzerland County, 34.8%**

Greatest risk to government, education or social facilities with 8 out of 23 at risk of becoming inoperable.

- **Infrastructure: Ohio County, 50.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 4 out of 8 at risk of becoming inoperable.

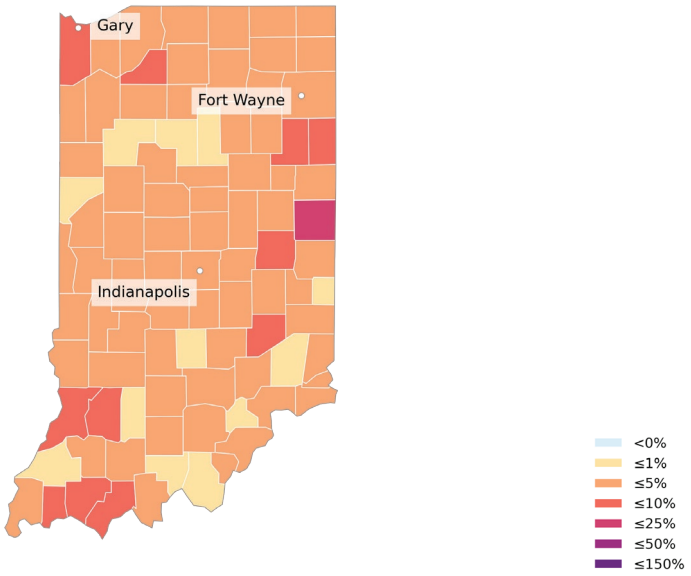
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Indiana

As severity and frequency of flood events in Indiana increase over the next 30 years with a changing environment, an additional 7,009 residential properties, 832.0 miles of roads, 563 commercial properties, 12 infrastructure facilities, and 41 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Switzerland County	0.9%	0.5%	2.6%	0.0%	4.3%
2	Knox County	1.0%	0.5%	1.4%	0.0%	4.1%
3	Randolph County	0.3%	0.5%	0.5%	4.8%	0.0%
4	Crawford County	0.2%	0.3%	0.0%	5.0%	0.0%
5	Henry County	0.3%	0.4%	0.1%	0.0%	4.6%
6	Owen County	0.1%	0.3%	0.2%	4.3%	0.0%
7	Vigo County	0.6%	0.7%	0.5%	0.0%	3.0%
8	Dearborn County	0.3%	0.4%	0.6%	0.0%	3.1%
9	Carroll County	0.4%	0.3%	0.3%	0.0%	3.2%
10	Floyd County	0.2%	0.6%	1.0%	2.3%	0.0%
	• State Average	0.3%	0.5%	0.5%	0.3%	0.4%

Greatest growing operational risk by category

- **Residential: Knox County, 1.0%**

Greatest growing risk to property owners with 135 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Vanderburgh County, 1.2%**

Greatest growing risk to commutes and transportation with 22 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Switzerland County, 2.6%**

Greatest growing risk to businesses with 9 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Henry County, 4.6%**

Greatest growing risk to government, education or social facilities with 4 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Crawford County, 5.0%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

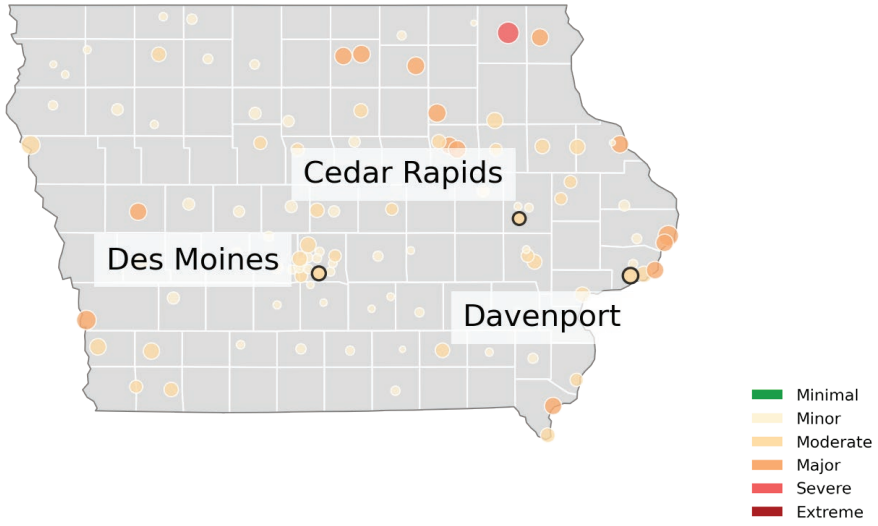
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Iowa

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Iowa, there are 104,464 residential properties, 20,288 miles of roads, 12,673 commercial properties, 535 infrastructure facilities, and 697 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Iowa, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Evansdale	58.5%	49.4%	85.7%	66.7%	50.0%
2	Council Bluffs	31.8%	46.6%	46.6%	38.9%	54.2%
3	Decorah	34.2%	45.8%	44.1%	57.1%	20.8%
4	Charles City	19.1%	33.5%	30.7%	80.0%	20.8%
5	Waterloo	22.9%	35.1%	45.8%	43.8%	34.4%
6	Waverly	24.0%	28.9%	34.3%	33.3%	50.0%
7	Red Oak	26.8%	41.2%	42.0%	40.0%	12.5%
8	Camanche	31.7%	28.9%	17.8%	83.3%	0.0%
9	Dubuque	19.3%	30.4%	34.4%	45.8%	20.2%
10	Sioux City	16.4%	29.7%	42.2%	23.5%	31.3%
	• State Average	9.7%	11.2%	16.8%	18.1%	12.4%

Highest proportion of operational risk by category

- **Residential: Evansdale, 58.5%**

Greatest risk to property owners with 1,013 out of 1,732 residential properties at risk of water reaching their building.

- **Roads: Evansdale, 49.4%**

Greatest risk to commutes and transportation with 29 out of 58 miles of roads at risk of becoming impassable.

- **Commercial: Evansdale, 85.7%**

Greatest risk to businesses with 60 out of 70 commercial buildings at risk of water reaching their building.

- **Social: Clinton, 58.8%**

Greatest risk to government, education or social facilities with 20 out of 34 at risk of becoming inoperable.

- **Infrastructure: Camanche, 83.3%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 6 at risk of becoming inoperable.

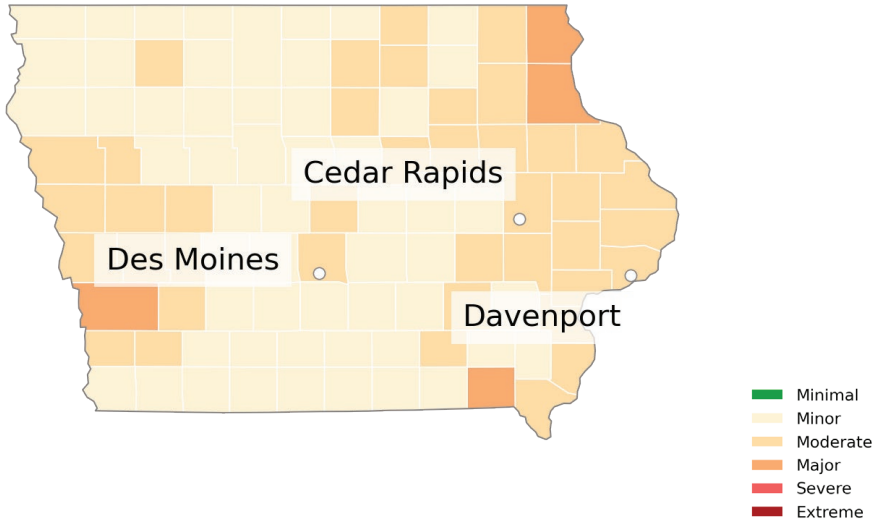
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Iowa

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Iowa, Pottawattamie County has the largest number of properties currently protected with community flood mitigation projects or structures with 13,647 out of 76,099 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Pottawattamie County	24.2%	21.3%	35.7%	28.3%	41.7%
2	Black Hawk County	19.9%	20.1%	36.7%	26.3%	29.4%
3	Clayton County	21.4%	19.1%	26.9%	32.5%	29.9%
4	Van Buren County	19.7%	19.0%	25.9%	13.6%	50.0%
5	Allamakee County	14.1%	26.3%	25.3%	32.0%	27.5%
6	Wapello County	16.4%	17.3%	41.9%	33.3%	11.8%
7	Mills County	18.2%	21.1%	36.9%	31.6%	12.0%
8	Woodbury County	16.4%	16.9%	37.6%	21.7%	25.5%
9	Clinton County	23.4%	15.1%	10.1%	32.7%	31.4%
10	Dubuque County	14.5%	17.9%	25.8%	28.8%	20.2%
	• State Average	9.7%	11.2%	16.8%	18.1%	12.4%

Highest proportion of operational risk by category

- **Residential: Pottawattamie County, 24.2%**

Greatest risk to property owners with 7,535 out of 31,166 residential properties at risk of water reaching their building.

- **Roads: Allamakee County, 26.3%**

Greatest risk to commutes and transportation with 404 out of 1,539 miles of roads at risk of becoming impassable.

- **Commercial: Franklin County, 60.0%**

Greatest risk to businesses with 3 out of 5 commercial buildings at risk of water reaching their building.

- **Social: Van Buren County, 50.0%**

Greatest risk to government, education or social facilities with 8 out of 16 at risk of becoming inoperable.

- **Infrastructure: Shelby County, 50.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 13 out of 26 at risk of becoming inoperable.

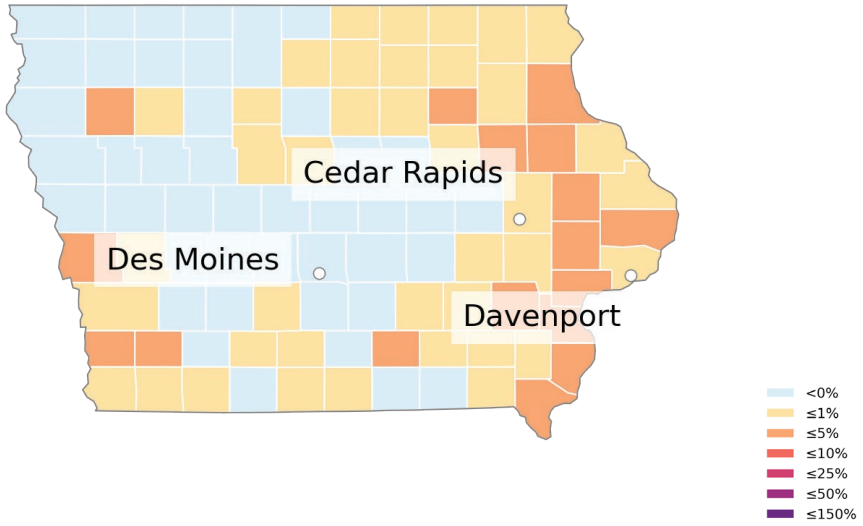
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Iowa

As severity and frequency of flood events in Iowa increase over the next 30 years with a changing environment, an additional 172 residential properties, 19 commercial properties, and 5 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Washington County	0.1%	0.1%	0.3%	0.0%	8.0%
2	Winneshiek County	0.1%	0.0%	0.0%	0.0%	1.5%
3	Johnson County	0.1%	0.1%	0.1%	0.0%	1.1%
4	Delaware County	0.4%	0.1%	0.7%	0.0%	0.0%
5	Page County	0.2%	0.2%	0.8%	0.0%	0.0%
6	Muscatine County	0.3%	0.3%	0.4%	0.0%	0.0%
7	Mills County	0.2%	0.6%	0.0%	0.0%	0.0%
8	Louisa County	0.1%	0.3%	0.3%	0.0%	0.0%
9	Bremer County	0.1%	0.1%	0.5%	0.0%	0.0%
10	Fremont County	0.0%	0.2%	0.3%	0.0%	0.0%
	• State Average	0.0%	0.0%	0.0%	-0.1%	0.1%

Greatest growing operational risk by category

- **Residential: Delaware County, 0.4%**

Greatest growing risk to property owners with 26 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Mills County, 0.6%**

Greatest growing risk to commutes and transportation with 8 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Page County, 0.8%**

Greatest growing risk to businesses with 6 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Washington County, 8.0%**

Greatest growing risk to government, education or social facilities with 4 additional facilities at risk of becoming inoperable in 30 years.

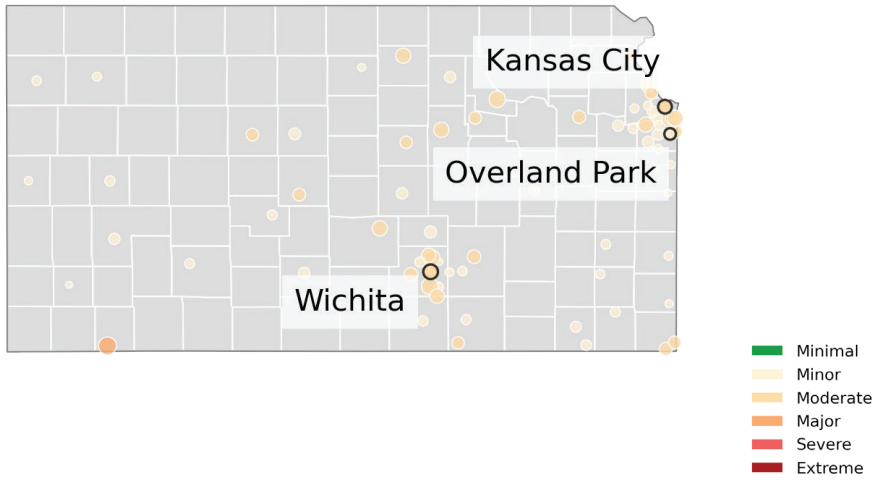
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Kansas

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Kansas, there are 80,685 residential properties, 41,186 miles of roads, 9,644 commercial properties, 334 infrastructure facilities, and 482 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Kansas, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Haysville	31.8%	47.3%	47.8%	100.0%	20.0%
2	Abilene	22.6%	38.2%	32.4%	50.0%	34.2%
3	Hutchinson	28.7%	52.0%	41.2%	25.0%	22.2%
4	Liberal	22.2%	36.1%	27.8%	60.0%	19.4%
5	Manhattan	13.6%	30.9%	30.9%	46.7%	29.9%
6	Concordia	11.0%	29.2%	28.9%	50.0%	21.1%
7	Valley Center	31.4%	40.4%	27.5%	0.0%	35.7%
8	Park City	11.1%	20.2%	40.5%	60.0%	0.0%
9	Fairway	5.0%	23.6%	25.0%	0.0%	60.0%
10	Mission	5.0%	19.5%	31.6%	50.0%	6.7%
	• State Average	8.6%	18.8%	15.0%	12.5%	9.3%

Highest proportion of operational risk by category

- **Residential: Haysville, 31.8%**

Greatest risk to property owners with 1,164 out of 3,666 residential properties at risk of water reaching their building.

- **Roads: Hutchinson, 52.0%**

Greatest risk to commutes and transportation with 183 out of 351 miles of roads at risk of becoming impassable.

- **Commercial: Haysville, 47.8%**

Greatest risk to businesses with 77 out of 161 commercial buildings at risk of water reaching their building.

- **Social: Fairway, 60.0%**

Greatest risk to government, education or social facilities with 3 out of 5 at risk of becoming inoperable.

- **Infrastructure: Liberal, 60.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 6 out of 10 at risk of becoming inoperable.

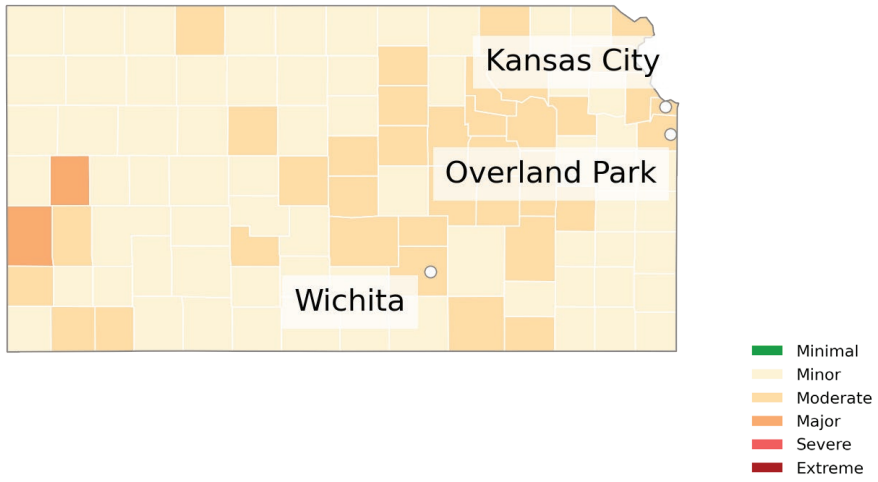
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Kansas

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Kansas, Saline County has the largest number of properties currently protected with community flood mitigation projects or structures with 17,353 out of 26,225 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Wichita County	63.8%	11.7%	45.2%	60.0%	100.0%
2	Edwards County	57.4%	34.9%	44.3%	44.4%	44.4%
3	Stevens County	38.4%	19.2%	20.3%	30.0%	20.0%
4	Seward County	20.8%	16.6%	26.8%	46.7%	16.7%
5	Riley County	13.4%	20.5%	26.6%	21.7%	25.9%
6	Reno County	22.4%	22.5%	32.4%	8.2%	17.8%
7	Cloud County	9.4%	14.8%	23.6%	36.8%	17.2%
8	Chase County	15.6%	21.7%	17.6%	26.7%	18.2%
9	Pottawatomie County	12.1%	21.1%	22.9%	32.7%	10.6%
10	Wyandotte County	8.4%	23.3%	30.5%	29.2%	7.0%
	• State Average	8.6%	18.8%	15.0%	12.5%	9.3%

Highest proportion of operational risk by category

- **Residential: Edwards County, 57.4%**

Greatest risk to property owners with 731 out of 1,273 residential properties at risk of water reaching their building.

- **Roads: Edwards County, 34.9%**

Greatest risk to commutes and transportation with 521 out of 1,494 miles of roads at risk of becoming impassable.

- **Commercial: Wichita County, 45.2%**

Greatest risk to businesses with 28 out of 62 commercial buildings at risk of water reaching their building.

- **Social: Wichita County, 100.0%**

Greatest risk to government, education or social facilities with 3 out of 3 at risk of becoming inoperable.

- **Infrastructure: Wichita County, 60.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 3 out of 5 at risk of becoming inoperable.

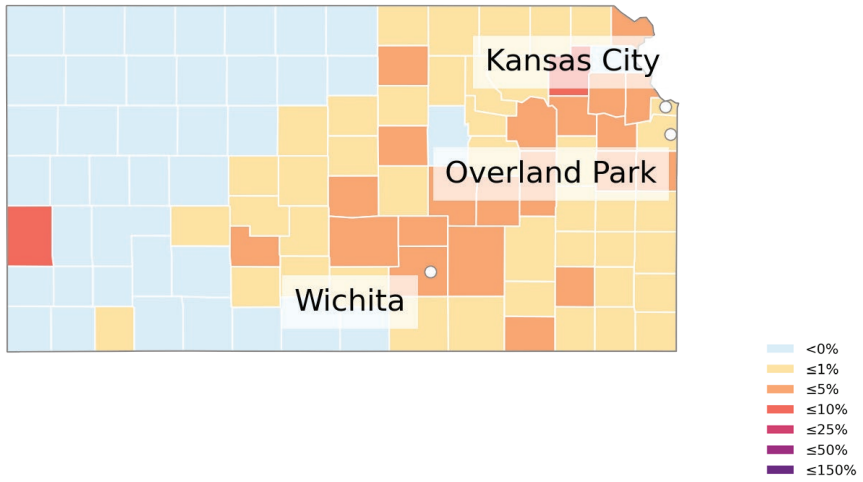
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Kansas

As severity and frequency of flood events in Kansas increase over the next 30 years with a changing environment, an additional 1,226 residential properties, 73.0 miles of roads, 102 commercial properties, 2 infrastructure facilities, and 9 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Wilson County	0.1%	0.2%	1.6%	3.6%	0.0%
2	Wabaunsee County	0.2%	0.3%	0.0%	0.0%	4.2%
3	Shawnee County	0.2%	0.4%	0.3%	2.7%	0.7%
4	Rice County	0.4%	0.4%	0.0%	0.0%	3.2%
5	Jefferson County	0.2%	0.2%	0.2%	2.4%	0.0%
6	Leavenworth County	0.1%	0.2%	0.0%	2.2%	0.0%
7	Reno County	0.6%	0.4%	0.5%	0.0%	1.0%
8	Harvey County	0.3%	0.4%	0.4%	0.0%	1.2%
9	Butler County	0.1%	0.2%	0.8%	0.0%	0.8%
10	Sedgwick County	0.3%	0.4%	0.3%	0.0%	0.6%
	• State Average	0.1%	0.0%	0.2%	0.1%	0.2%

Greatest growing operational risk by category

- **Residential: Edwards County, 0.6%**

Greatest growing risk to property owners with 8 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Sedgwick County, 0.4%**

Greatest growing risk to commutes and transportation with 27 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Wilson County, 1.6%**

Greatest growing risk to businesses with 5 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Stanton County, 33.3%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Wilson County, 3.6%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

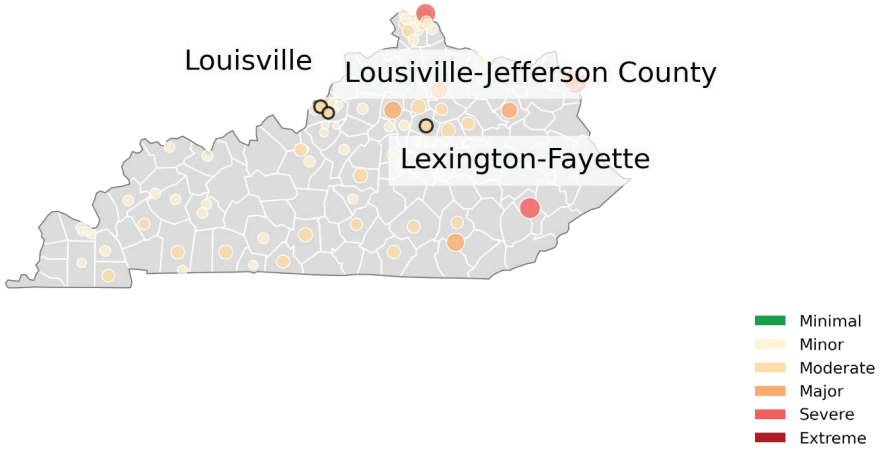
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Kentucky

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Kentucky, there are 143,468 residential properties, 44,663 miles of roads, 15,363 commercial properties, 757 infrastructure facilities, and 991 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Kentucky, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Ashland	17.9%	45.8%	80.1%	85.0%	61.7%
2	Hazard	29.4%	47.4%	68.5%	75.0%	25.0%
3	Dayton	20.9%	51.5%	42.6%	60.0%	25.0%
4	Frankfort	13.7%	28.2%	35.0%	62.5%	54.3%
5	Westwood	22.5%	40.7%	50.0%	66.7%	0.0%
6	Corbin	21.8%	29.9%	37.1%	60.0%	21.7%
7	Cynthiana	15.0%	32.2%	39.7%	50.0%	8.0%
8	Lebanon	7.7%	20.1%	19.6%	42.9%	43.8%
9	Morehead	36.0%	40.6%	31.3%	14.3%	9.1%
10	Louisville	12.8%	33.5%	18.0%	34.0%	16.4%
	• State Average	11.7%	33.1%	16.0%	29.6%	15.3%

Highest proportion of operational risk by category

- **Residential: Morehead, 36.0%**

Greatest risk to property owners with 420 out of 1,167 residential properties at risk of water reaching their building.

- **Roads: Dayton, 51.5%**

Greatest risk to commutes and transportation with 15 out of 29 miles of roads at risk of becoming impassable.

- **Commercial: Ashland, 80.1%**

Greatest risk to businesses with 419 out of 523 commercial buildings at risk of water reaching their building.

- **Social: Ashland, 61.7%**

Greatest risk to government, education or social facilities with 29 out of 47 at risk of becoming inoperable.

- **Infrastructure: Ashland, 85.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 17 out of 20 at risk of becoming inoperable.

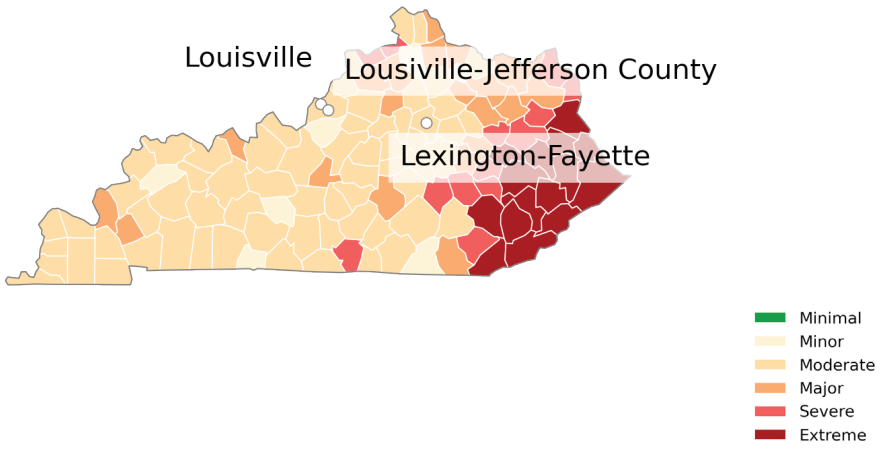
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Kentucky

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Kentucky, McCracken County has the largest number of properties currently protected with community flood mitigation projects or structures with 11,400 out of 34,617 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Johnson County	70.6%	74.0%	77.3%	66.7%	79.7%
2	Magoffin County	64.9%	76.4%	65.7%	66.7%	81.8%
3	Leslie County	71.1%	69.2%	61.7%	83.3%	69.2%
4	Letcher County	68.8%	70.3%	44.4%	90.5%	65.4%
5	Floyd County	70.4%	75.5%	54.1%	68.3%	68.3%
6	Martin County	73.2%	69.4%	62.0%	61.5%	66.7%
7	Lawrence County	53.8%	64.1%	64.8%	64.3%	73.7%
8	Perry County	49.9%	63.9%	60.4%	86.4%	48.4%
9	Harlan County	60.7%	58.9%	72.2%	46.3%	48.3%
10	Breathitt County	65.6%	71.6%	55.5%	60.0%	33.3%
	• State Average	11.7%	33.1%	16.0%	29.6%	15.3%

Highest proportion of operational risk by category

- **Residential: Martin County, 73.2%**

Greatest risk to property owners with 1,368 out of 1,868 residential properties at risk of water reaching their building.

- **Roads: Magoffin County, 76.4%**

Greatest risk to commutes and transportation with 790 out of 1,035 miles of roads at risk of becoming impassable.

- **Commercial: Johnson County, 77.3%**

Greatest risk to businesses with 170 out of 220 commercial buildings at risk of water reaching their building.

- **Social: Magoffin County, 81.8%**

Greatest risk to government, education or social facilities with 18 out of 22 at risk of becoming inoperable.

- **Infrastructure: Letcher County, 90.5%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 19 out of 21 at risk of becoming inoperable.

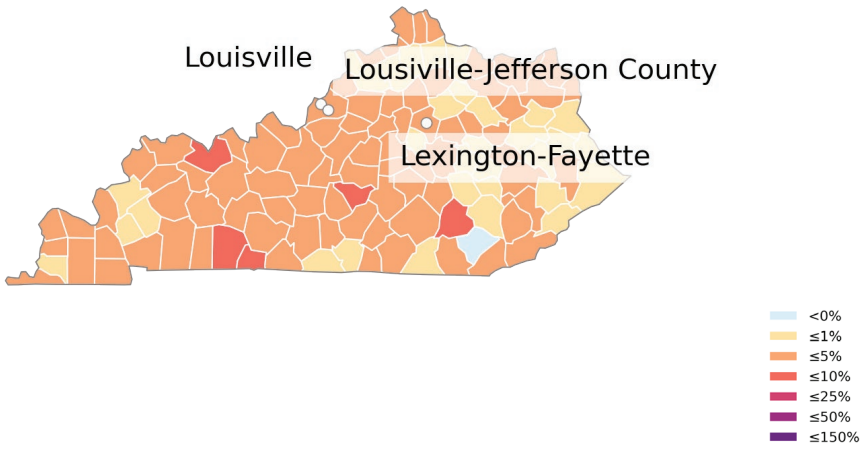
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Kentucky

As severity and frequency of flood events in Kentucky increase over the next 30 years with a changing environment, an additional 4,528 residential properties, 578.0 miles of roads, 442 commercial properties, 11 infrastructure facilities, and 29 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Leslie County	0.4%	0.2%	1.1%	0.0%	7.7%
2	Lewis County	0.6%	0.7%	0.6%	7.1%	0.0%
3	Daviess County	0.7%	0.9%	0.7%	1.7%	2.8%
4	Ohio County	0.2%	0.4%	0.1%	5.0%	0.0%
5	Perry County	0.5%	0.4%	1.1%	0.0%	3.2%
6	Union County	0.4%	0.4%	1.0%	3.3%	0.0%
7	Adair County	0.3%	0.5%	0.5%	0.0%	3.7%
8	Jefferson County	0.5%	0.9%	0.9%	1.4%	1.0%
9	Woodford County	0.3%	0.4%	0.5%	0.0%	3.5%
10	Harlan County	0.7%	0.4%	3.5%	0.0%	0.0%
	• State Average	0.4%	0.4%	0.5%	0.4%	0.4%

Greatest growing operational risk by category

- **Residential: Carroll County, 2.6%**

Greatest growing risk to property owners with 77 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Jefferson County, 0.9%**

Greatest growing risk to commutes and transportation with 41 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Harlan County, 3.5%**

Greatest growing risk to businesses with 8 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Leslie County, 7.7%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Lewis County, 7.1%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

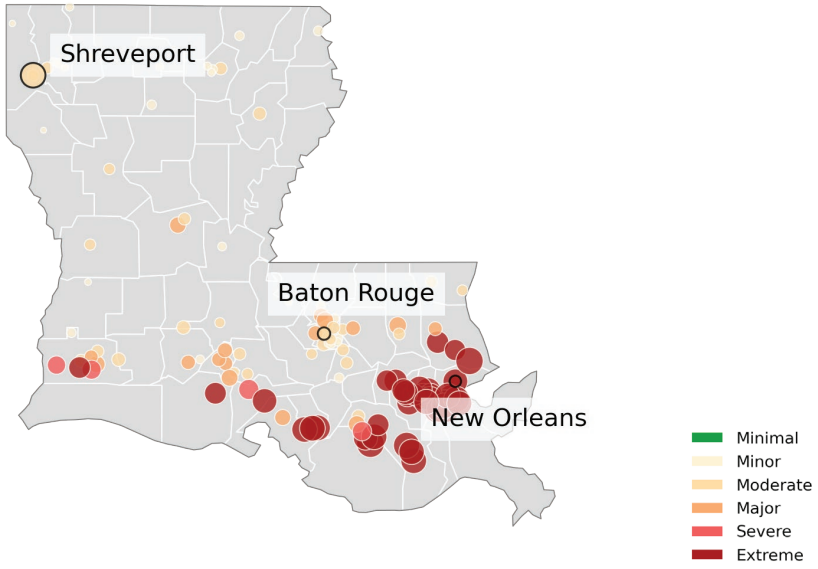
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Louisiana

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Louisiana, there are 527,860 residential properties, 46,543 miles of roads, 23,838 commercial properties, 1,481 infrastructure facilities, and 2,154 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Louisiana, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Terrytown	100.0%	100.0%	100.0%	100.0%	100.0%
2	Galliano	100.0%	100.0%	100.0%	100.0%	100.0%
3	Cut Off	100.0%	100.0%	100.0%	100.0%	100.0%
4	Patterson	100.0%	100.0%	100.0%	100.0%	100.0%
5	Woodmere	100.0%	100.0%	100.0%	100.0%	100.0%
6	Timberlane	100.0%	100.0%	100.0%	100.0%	100.0%
7	Houma	100.0%	99.9%	100.0%	100.0%	100.0%
8	Arabi	100.0%	99.9%	100.0%	100.0%	100.0%
9	Metairie	100.0%	99.8%	100.0%	100.0%	100.0%
10	Bayou Cane	100.0%	99.9%	100.0%	100.0%	100.0%
	• State Average	42.1%	36.0%	37.2%	44.9%	40.0%

Highest proportion of operational risk by category

- **Residential: Metairie, 100.0%**

Greatest risk to property owners with 36,577 out of 36,577 residential properties at risk of water reaching their building.

- **Roads: Galliano, 100.0%**

Greatest risk to commutes and transportation with 97 out of 97 miles of roads at risk of becoming impassable.

- **Commercial: Houma, 100.0%**

Greatest risk to businesses with 825 out of 825 commercial buildings at risk of water reaching their building.

- **Social: New Orleans, 100.0%**

Greatest risk to government, education or social facilities with 801 out of 801 at risk of becoming inoperable.

- **Infrastructure: Belle Chasse, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 40 out of 40 at risk of becoming inoperable.

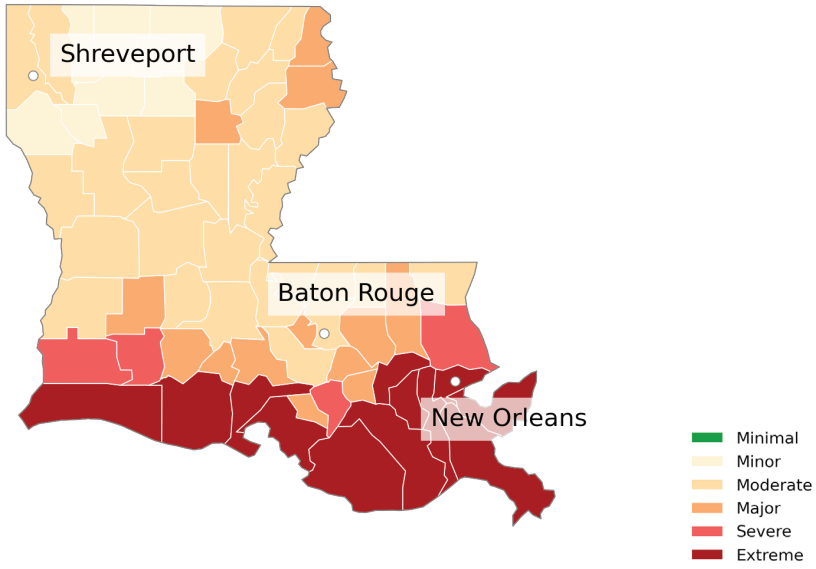
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Louisiana

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Louisiana, Avoyelles Parish has the largest number of properties currently protected with community flood mitigation projects or structures with 26,460 out of 26,460 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Cameron Parish	99.2%	98.3%	100.0%	96.4%	100.0%
2	Orleans Parish	100.0%	98.5%	99.9%	94.5%	100.0%
3	Jefferson Parish	100.0%	97.5%	100.0%	95.4%	100.0%
4	St. Bernard Parish	99.9%	98.8%	100.0%	92.5%	100.0%
5	Plaquemines Parish	99.6%	96.4%	99.8%	85.4%	95.5%
6	Terrebonne Parish	96.7%	92.6%	96.5%	93.2%	94.6%
7	St. Charles Parish	97.0%	87.5%	98.3%	68.6%	95.7%
8	St. John the Baptist Parish	92.6%	72.6%	95.6%	55.2%	80.9%
9	Vermilion Parish	70.7%	76.6%	74.9%	84.2%	61.1%
10	Lafourche Parish	72.3%	79.2%	63.6%	67.7%	70.0%
	• State Average	42.1%	36.0%	37.2%	44.9%	40.0%

Highest proportion of operational risk by category

- **Residential: Orleans Parish, 100.0%**

Greatest risk to property owners with 96,215 out of 96,224 residential properties at risk of water reaching their building.

- **Roads: St. Bernard Parish, 98.8%**

Greatest risk to commutes and transportation with 533 out of 539 miles of roads at risk of becoming impassable.

- **Commercial: Jefferson Parish, 100.0%**

Greatest risk to businesses with 843 out of 843 commercial buildings at risk of water reaching their building.

- **Social: Orleans Parish, 100.0%**

Greatest risk to government, education or social facilities with 801 out of 801 at risk of becoming inoperable.

- **Infrastructure: Cameron Parish, 96.4%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 107 out of 111 at risk of becoming inoperable.

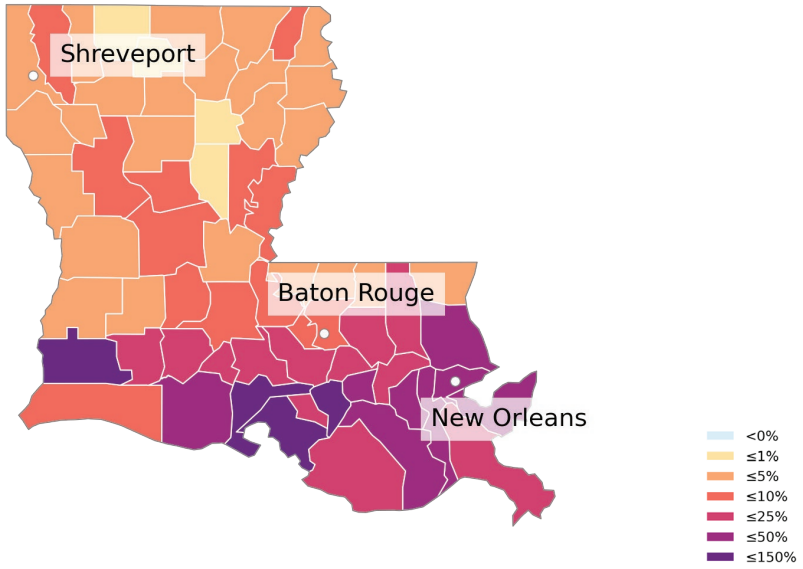
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Louisiana

As severity and frequency of flood events in Louisiana increase over the next 30 years with a changing environment, an additional 46,065 residential properties, 3,699.0 miles of roads, 2,018 commercial properties, 124 infrastructure facilities, and 218 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	St. Mary Parish	27.8%	32.9%	28.1%	15.7%	38.7%
2	Iberia Parish	27.1%	18.0%	15.9%	12.5%	37.4%
3	Vermilion Parish	18.9%	12.3%	22.7%	5.3%	27.8%
4	Lafourche Parish	11.7%	9.1%	18.5%	7.5%	16.7%
5	Assumption Parish	14.1%	11.6%	15.8%	11.5%	6.7%
6	St. Tammany Parish	13.1%	7.8%	6.0%	11.7%	17.8%
7	Calcasieu Parish	12.5%	9.8%	12.5%	8.6%	9.8%
8	St. James Parish	11.9%	8.4%	5.2%	8.9%	9.1%
9	Acadia Parish	3.9%	7.3%	3.5%	13.7%	4.9%
10	Livingston Parish	3.0%	6.0%	4.4%	9.3%	9.6%
	• State Average	3.7%	2.9%	3.1%	3.8%	4.0%

Greatest growing operational risk by category

- **Residential: St. Mary Parish, 27.8%**

Greatest growing risk to property owners with 3,844 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: St. Mary Parish, 32.9%**

Greatest growing risk to commutes and transportation with 496 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: St. Mary Parish, 28.1%**

Greatest growing risk to businesses with 455 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: St. Mary Parish, 38.7%**

Greatest growing risk to government, education or social facilities with 36 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: St. Mary Parish, 15.7%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 19 additional facilities at risk of becoming inoperable in 30 years.

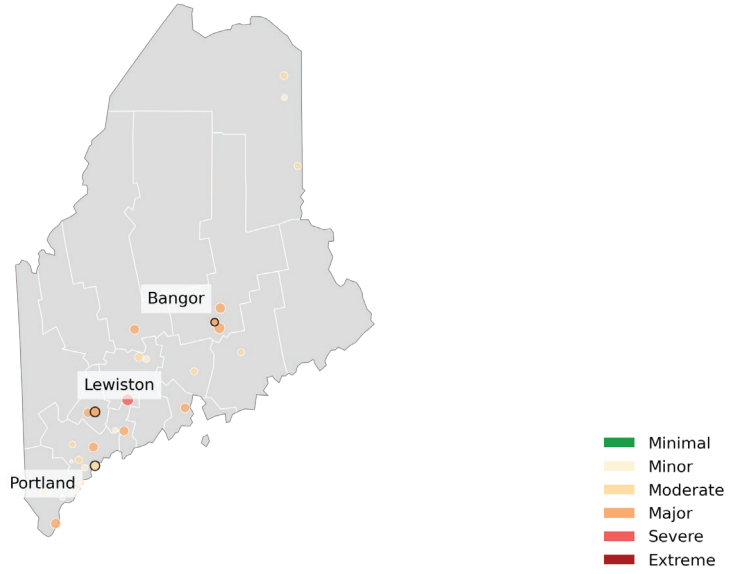
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Maine

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Maine, there are 23,544 residential properties, 11,618 miles of roads, 1,989 commercial properties, 244 infrastructure facilities, and 292 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Maine, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Gardiner	5.7%	20.4%	50.4%	100.0%	20.0%
2	Brewer	20.1%	31.7%	36.4%	40.0%	33.3%
3	Skowhegan	12.2%	24.4%	29.6%	57.1%	28.6%
4	Old Town	16.9%	22.6%	24.0%	50.0%	20.0%
5	Auburn	9.0%	20.5%	35.8%	36.4%	30.2%
6	Bath	13.6%	20.1%	24.5%	63.6%	8.7%
7	Yarmouth	5.5%	18.0%	13.7%	75.0%	15.8%
8	Bangor	6.2%	19.4%	19.7%	53.8%	22.7%
9	Lewiston	10.6%	24.2%	22.2%	47.1%	11.1%
10	Rockland	6.9%	12.6%	16.6%	66.7%	11.4%
	• State Average	8.1%	17.8%	15.8%	23.6%	12.9%

Highest proportion of operational risk by category

- **Residential: Brewer, 20.1%**

Greatest risk to property owners with 590 out of 2,932 residential properties at risk of water reaching their building.

- **Roads: Brewer, 31.7%**

Greatest risk to commutes and transportation with 30 out of 95 miles of roads at risk of becoming impassable.

- **Commercial: Gardiner, 50.4%**

Greatest risk to businesses with 60 out of 119 commercial buildings at risk of water reaching their building.

- **Social: Brewer, 33.3%**

Greatest risk to government, education or social facilities with 3 out of 9 at risk of becoming inoperable.

- **Infrastructure: Gardiner, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 5 at risk of becoming inoperable.

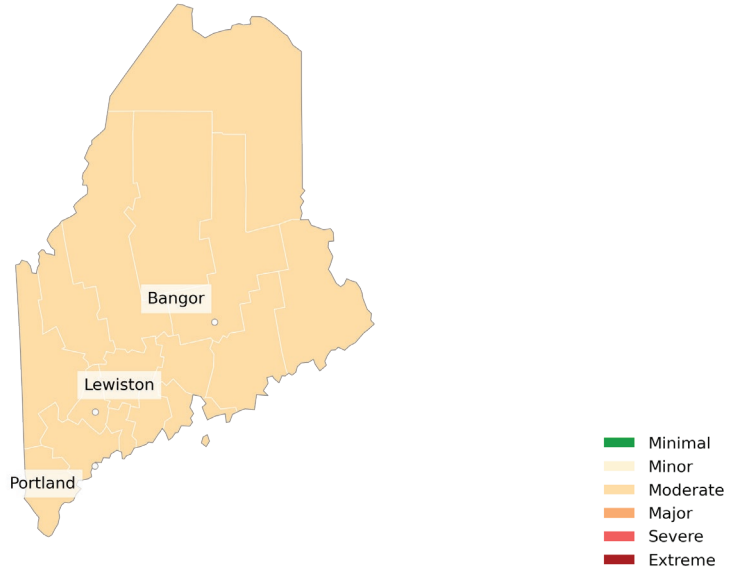
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Maine

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Maine, Sagadahoc County has the largest number of properties currently protected with community flood mitigation projects or structures with 507 out of 19,620 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Somerset County	9.7%	22.3%	22.5%	39.5%	20.0%
2	Oxford County	13.9%	28.5%	17.9%	28.1%	17.6%
3	Penobscot County	10.2%	16.9%	21.2%	37.7%	15.8%
4	Androscoggin County	9.3%	17.1%	27.1%	29.1%	18.9%
5	Aroostook County	8.9%	16.9%	18.4%	26.5%	23.0%
6	Knox County	5.0%	14.0%	15.8%	42.6%	15.5%
7	Franklin County	10.2%	27.4%	17.6%	16.7%	18.8%
8	Kennebec County	7.1%	13.5%	17.9%	31.3%	15.9%
9	Piscataquis County	13.0%	20.0%	24.0%	21.4%	5.6%
10	Sagadahoc County	8.0%	15.8%	15.6%	28.6%	8.1%
	• State Average	8.1%	17.8%	15.8%	23.6%	12.9%

Highest proportion of operational risk by category

- **Residential: Oxford County, 13.9%**

Greatest risk to property owners with 1,526 out of 11,014 residential properties at risk of water reaching their building.

- **Roads: Oxford County, 28.5%**

Greatest risk to commutes and transportation with 1,262 out of 4,424 miles of roads at risk of becoming impassable.

- **Commercial: Androscoggin County, 27.1%**

Greatest risk to businesses with 310 out of 1,143 commercial buildings at risk of water reaching their building.

- **Social: Aroostook County, 23.0%**

Greatest risk to government, education or social facilities with 26 out of 113 at risk of becoming inoperable.

- **Infrastructure: Knox County, 42.6%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 23 out of 54 at risk of becoming inoperable.

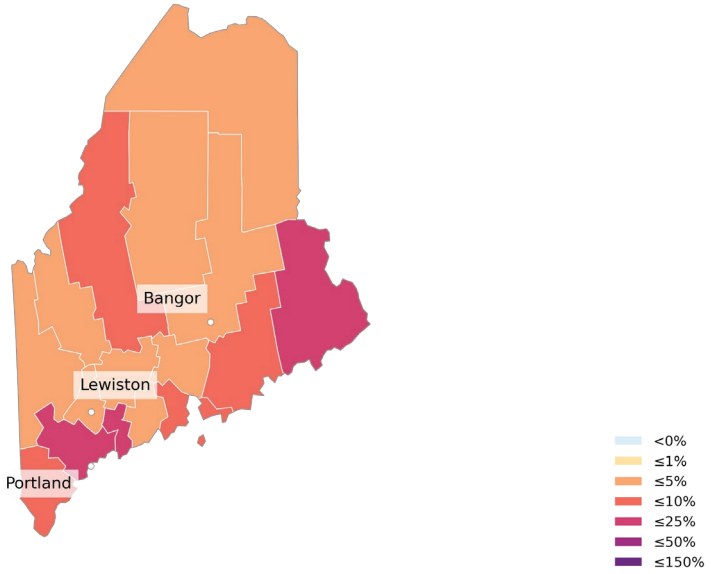
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Maine

As severity and frequency of flood events in Maine increase over the next 30 years with a changing environment, an additional 2,771 residential properties, 506.0 miles of roads, 274 commercial properties, 21 infrastructure facilities, and 22 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Cumberland County	1.3%	1.2%	3.4%	7.9%	1.5%
2	Washington County	2.1%	1.0%	4.4%	3.5%	0.0%
3	York County	2.0%	1.2%	5.2%	1.0%	1.5%
4	Knox County	0.7%	1.2%	1.2%	1.9%	2.7%
5	Franklin County	0.5%	0.7%	1.8%	0.0%	3.1%
6	Sagadahoc County	0.8%	1.1%	1.5%	0.0%	2.7%
7	Androscoggin County	0.4%	0.8%	1.0%	0.0%	1.3%
8	Somerset County	0.5%	0.6%	0.5%	0.0%	1.7%
9	Hancock County	0.6%	0.9%	0.6%	1.1%	0.0%
10	Kennebec County	0.3%	0.6%	0.7%	1.6%	0.0%
	• State Average	0.9%	0.8%	2.2%	2.0%	1.0%

Greatest growing operational risk by category

- **Residential: Washington County, 2.1%**

Greatest growing risk to property owners with 156 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: York County, 1.2%**

Greatest growing risk to commutes and transportation with 56 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: York County, 5.2%**

Greatest growing risk to businesses with 126 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Franklin County, 3.1%**

Greatest growing risk to government, education or social facilities with 2 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Cumberland County, 7.9%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 14 additional facilities at risk of becoming inoperable in 30 years.

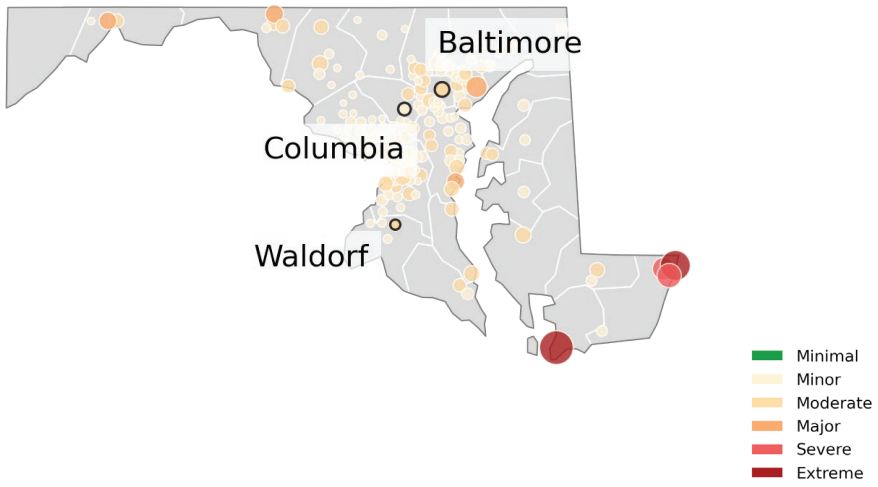
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Maryland

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Maryland, there are 112,187 residential properties, 11,990 miles of roads, 8,445 commercial properties, 379 infrastructure facilities, and 826 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Maryland, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Crisfield	96.2%	99.4%	85.6%	80.0%	100.0%
2	Ocean City	87.5%	81.3%	82.6%	87.5%	77.8%
3	Ocean Pines	49.3%	45.1%	5.6%	33.3%	100.0%
4	West Ocean City	62.5%	56.9%	29.7%	0.0%	66.7%
5	Shady Side	43.2%	37.8%	30.2%	50.0%	22.2%
6	Bowleys Quarters	33.4%	46.6%	22.1%	50.0%	0.0%
7	Cambridge	21.8%	29.9%	10.8%	55.6%	27.0%
8	East Riverdale	4.3%	15.9%	15.4%	100.0%	7.1%
9	Forestville	4.1%	13.0%	8.6%	100.0%	16.0%
10	La Vale	20.0%	32.0%	37.1%	0.0%	50.0%
	• State Average	6.6%	19.1%	13.6%	21.9%	9.7%

Highest proportion of operational risk by category

- **Residential: Crisfield, 96.2%**

Greatest risk to property owners with 955 out of 993 residential properties at risk of water reaching their building.

- **Roads: Crisfield, 99.4%**

Greatest risk to commutes and transportation with 42 out of 43 miles of roads at risk of becoming impassable.

- **Commercial: Crisfield, 85.6%**

Greatest risk to businesses with 77 out of 90 commercial buildings at risk of water reaching their building.

- **Social: Crisfield, 100.0%**

Greatest risk to government, education or social facilities with 11 out of 11 at risk of becoming inoperable.

- **Infrastructure: Ocean City, 87.5%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 7 out of 8 at risk of becoming inoperable.

*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Maryland

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Maryland, Montgomery County has the largest number of properties currently protected with community flood mitigation projects or structures with 57,248 out of 274,379 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Somerset County	55.5%	50.0%	46.0%	54.1%	34.2%
2	Worcester County	50.4%	41.6%	37.2%	33.3%	26.7%
3	Dorchester County	30.5%	48.8%	23.4%	43.6%	31.7%
4	Allegany County	17.2%	31.1%	22.2%	47.4%	23.4%
5	Washington County	9.6%	23.7%	15.7%	31.3%	23.1%
6	Talbot County	13.3%	21.1%	12.8%	38.2%	14.1%
7	Wicomico County	11.5%	23.2%	20.0%	24.5%	18.7%
8	Garrett County	8.8%	17.3%	11.6%	31.5%	18.2%
9	Baltimore city	5.5%	20.3%	13.2%	30.3%	12.2%
10	Caroline County	9.5%	18.2%	19.4%	14.8%	16.1%
	• State Average	6.6%	19.1%	13.6%	21.9%	9.7%

Highest proportion of operational risk by category

- **Residential: Somerset County, 55.5%**

Greatest risk to property owners with 4,610 out of 8,311 residential properties at risk of water reaching their building.

- **Roads: Somerset County, 50.0%**

Greatest risk to commutes and transportation with 619 out of 1,237 miles of roads at risk of becoming impassable.

- **Commercial: Somerset County, 46.0%**

Greatest risk to businesses with 324 out of 704 commercial buildings at risk of water reaching their building.

- **Social: Somerset County, 34.2%**

Greatest risk to government, education or social facilities with 25 out of 73 at risk of becoming inoperable.

- **Infrastructure: Somerset County, 54.1%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 20 out of 37 at risk of becoming inoperable.

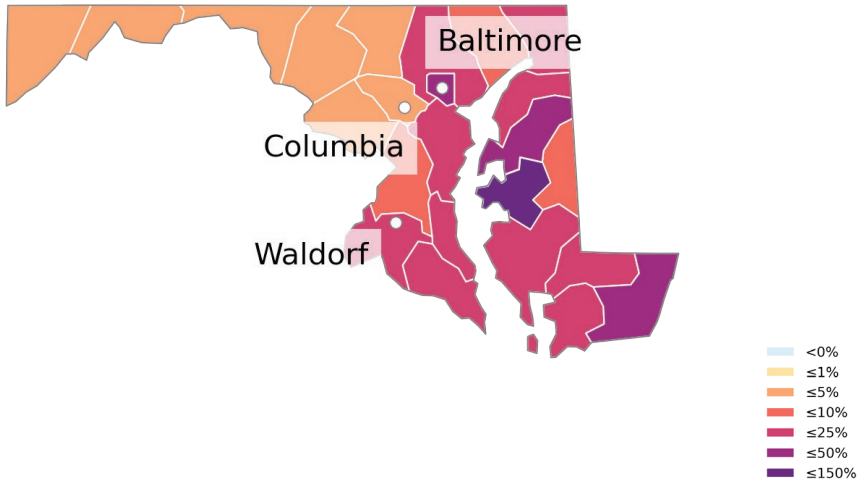
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Maryland

As severity and frequency of flood events in Maryland increase over the next 30 years with a changing environment, an additional 22,849 residential properties, 1,536.0 miles of roads, 1,379 commercial properties, 73 infrastructure facilities, and 102 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Talbot County	15.7%	19.3%	8.7%	17.6%	16.9%
2	Worcester County	15.6%	7.8%	16.8%	8.3%	5.6%
3	Queen Anne's County	12.8%	6.8%	11.1%	4.1%	11.4%
4	Dorchester County	5.4%	8.6%	5.9%	7.7%	3.2%
5	Somerset County	6.1%	5.8%	5.1%	5.4%	6.8%
6	Baltimore city	0.6%	2.9%	3.3%	16.3%	2.8%
7	St. Mary's County	1.6%	2.4%	0.8%	5.3%	1.8%
8	Wicomico County	1.5%	4.5%	2.2%	1.9%	1.5%
9	Charles County	0.8%	2.0%	0.7%	7.2%	0.5%
10	Cecil County	1.4%	1.3%	2.0%	3.6%	1.7%
	• State Average	1.3%	2.4%	2.2%	4.2%	1.2%

Greatest growing operational risk by category

- **Residential: Talbot County, 15.7%**

Greatest growing risk to property owners with 2,220 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Talbot County, 19.3%**

Greatest growing risk to commutes and transportation with 310 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Worcester County, 16.8%**

Greatest growing risk to businesses with 346 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Talbot County, 16.9%**

Greatest growing risk to government, education or social facilities with 12 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Talbot County, 17.6%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 6 additional facilities at risk of becoming inoperable in 30 years.

*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

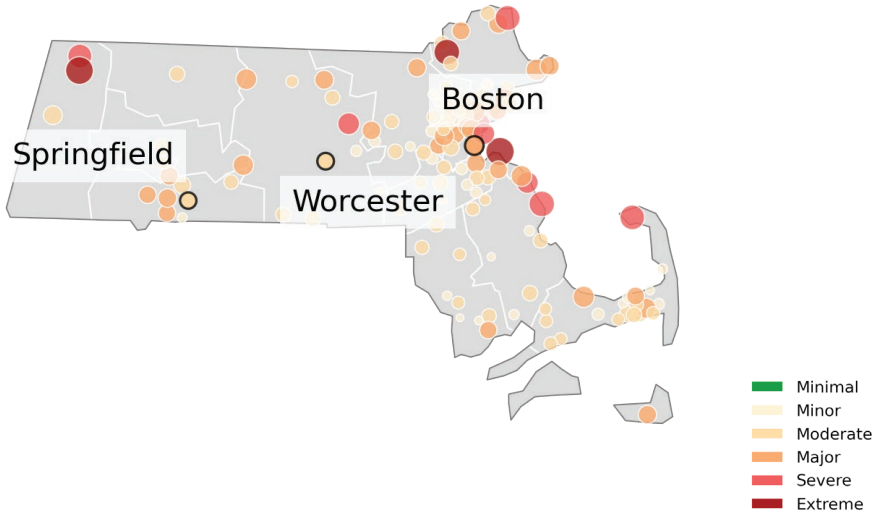
City Details

Massachusetts

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Massachusetts, there are 162,798 residential properties, 12,918 miles of roads, 14,644 commercial properties, 698 infrastructure facilities, and 1,780 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Massachusetts, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Hull	68.6%	67.1%	88.6%	66.7%	81.8%
2	Adams	43.0%	64.1%	93.6%	66.7%	81.8%
3	Lawrence	27.6%	52.6%	69.2%	75.0%	61.5%
4	Provincetown	38.4%	50.0%	59.7%	50.0%	67.1%
5	North Adams	27.4%	44.6%	66.9%	50.0%	60.6%
6	Salisbury	49.5%	55.3%	51.0%	60.0%	33.3%
7	Athol	20.8%	32.8%	69.0%	50.0%	62.5%
8	Saugus	20.9%	37.6%	42.0%	100.0%	26.3%
9	East Sandwich	10.1%	23.0%	28.9%	100.0%	55.6%
10	West Springfield Town	16.2%	36.2%	67.6%	50.0%	36.4%
	• State Average	11.6%	22.6%	25.3%	30.2%	19.6%

Highest proportion of operational risk by category

- **Residential: Hull, 68.6%**
  Greatest risk to property owners with 2,765 out of 4,030 residential properties at risk of water reaching their building.
- **Roads: Hull, 67.1%**
  Greatest risk to commutes and transportation with 47 out of 71 miles of roads at risk of becoming impassable.
- **Commercial: Adams, 93.6%**
  Greatest risk to businesses with 88 out of 94 commercial buildings at risk of water reaching their building.
- **Social: Ware, 87.5%**
  Greatest risk to government, education or social facilities with 7 out of 8 at risk of becoming inoperable.
- **Infrastructure: Webster, 85.7%**
  Greatest risk to critical infrastructure (utilities, emergency services, etc) with 6 out of 7 at risk of becoming inoperable.

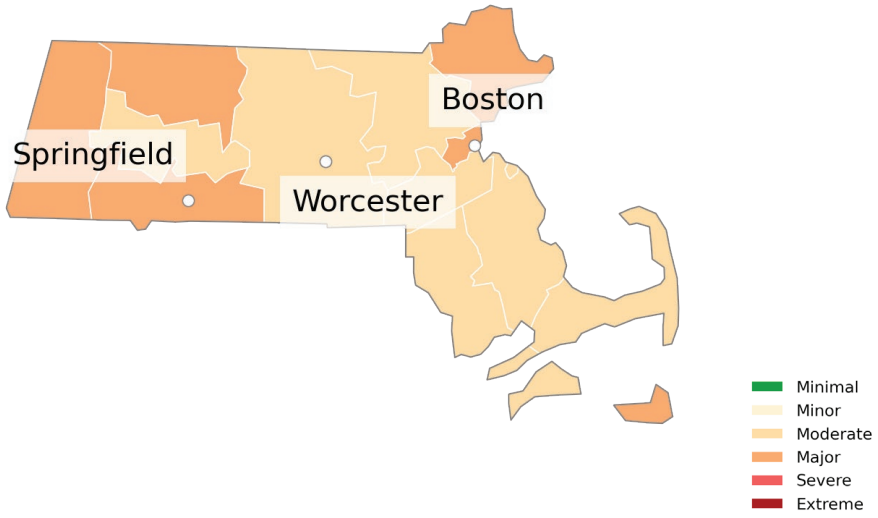
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Massachusetts

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Massachusetts, Hampden County has the largest number of properties currently protected with community flood mitigation projects or structures with 7,255 out of 155,596 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Suffolk County	19.4%	34.1%	31.6%	45.2%	22.0%
2	Franklin County	15.8%	30.1%	28.9%	42.4%	22.1%
3	Berkshire County	16.7%	27.1%	37.4%	28.9%	25.5%
4	Nantucket County	15.0%	27.7%	25.9%	30.8%	35.8%
5	Essex County	14.0%	24.1%	33.1%	37.6%	23.4%
6	Hampden County	10.7%	25.9%	32.7%	33.2%	29.4%
7	Barnstable County	12.3%	23.3%	18.4%	34.7%	22.0%
8	Hampshire County	10.0%	23.6%	27.4%	29.9%	19.3%
9	Middlesex County	11.4%	22.2%	25.4%	28.8%	18.8%
10	Norfolk County	11.7%	21.1%	22.5%	25.3%	16.4%
	• State Average	11.6%	22.6%	25.3%	30.2%	19.6%

Highest proportion of operational risk by category

- **Residential: Suffolk County, 19.4%**

Greatest risk to property owners with 15,544 out of 80,306 residential properties at risk of water reaching their building.

- **Roads: Suffolk County, 34.1%**

Greatest risk to commutes and transportation with 586 out of 1,717 miles of roads at risk of becoming impassable.

- **Commercial: Berkshire County, 37.4%**

Greatest risk to businesses with 704 out of 1,883 commercial buildings at risk of water reaching their building.

- **Social: Nantucket County, 35.8%**

Greatest risk to government, education or social facilities with 19 out of 53 at risk of becoming inoperable.

- **Infrastructure: Suffolk County, 45.2%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 80 out of 177 at risk of becoming inoperable.

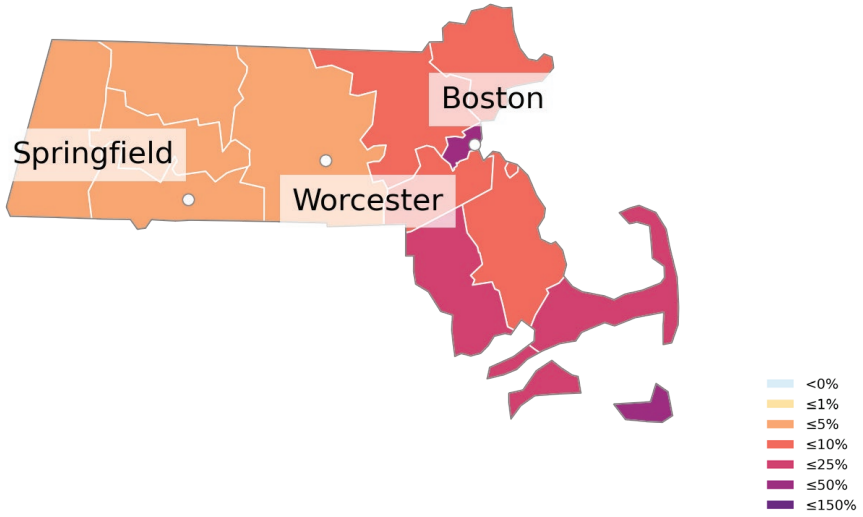
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Massachusetts

As severity and frequency of flood events in Massachusetts increase over the next 30 years with a changing environment, an additional 27,714 residential properties, 1,181.0 miles of roads, 2,119 commercial properties, 72 infrastructure facilities, and 379 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Suffolk County	7.7%	13.6%	22.3%	19.8%	17.5%
2	Nantucket County	4.8%	8.8%	4.7%	7.7%	3.8%
3	Barnstable County	6.0%	4.6%	6.3%	3.0%	5.7%
4	Essex County	2.5%	2.2%	4.7%	2.2%	4.5%
5	Dukes County	2.2%	3.0%	2.6%	2.9%	5.0%
6	Bristol County	1.4%	2.0%	2.3%	3.2%	1.7%
7	Plymouth County	2.2%	2.1%	2.7%	2.1%	1.4%
8	Norfolk County	1.7%	1.5%	1.5%	1.3%	2.7%
9	Middlesex County	0.6%	1.9%	1.3%	2.2%	2.6%
10	Hampden County	0.5%	0.9%	0.9%	1.6%	1.4%
	• State Average	2.0%	2.1%	3.7%	3.1%	4.2%

Greatest growing operational risk by category

- **Residential: Suffolk County, 7.7%**

Greatest growing risk to property owners with 6,221 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Suffolk County, 13.6%**

Greatest growing risk to commutes and transportation with 234 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Suffolk County, 22.3%**

Greatest growing risk to businesses with 875 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Suffolk County, 17.5%**

Greatest growing risk to government, education or social facilities with 179 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Suffolk County, 19.8%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 35 additional facilities at risk of becoming inoperable in 30 years.

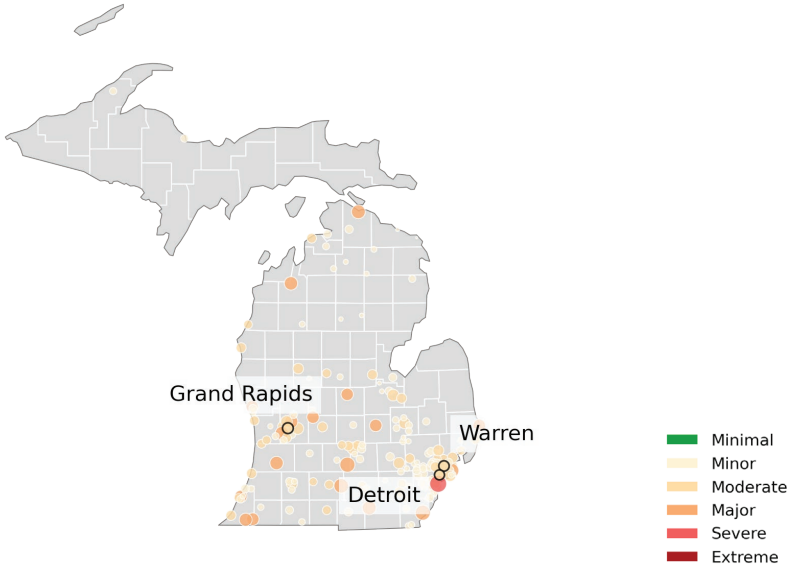
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Michigan

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Michigan, there are 341,902 residential properties, 27,517 miles of roads, 27,367 commercial properties, 595 infrastructure facilities, and 1,549 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Michigan, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Grosse Pointe Woods	61.1%	70.7%	53.9%	100.0%	63.6%
2	Manitou Beach-Devils Lake	54.8%	38.7%	16.7%	100.0%	50.0%
3	Monroe	34.0%	53.7%	39.5%	50.0%	48.3%
4	Benton Harbor	5.9%	52.3%	43.1%	50.0%	52.6%
5	Albion	13.1%	22.6%	27.8%	100.0%	38.5%
6	Grandville	18.1%	38.6%	40.0%	50.0%	48.6%
7	Eaton Rapids	29.1%	40.2%	59.2%	40.0%	20.0%
8	Traverse City	19.9%	35.1%	42.3%	54.5%	28.2%
9	Cheboygan	18.5%	23.4%	46.3%	45.5%	40.0%
10	Muskegon	13.3%	36.4%	22.8%	66.7%	24.2%
	• State Average	10.5%	17.7%	14.1%	16.6%	12.4%

Highest proportion of operational risk by category

- **Residential: River Rouge, 83.1%**

Greatest risk to property owners with 2,055 out of 2,472 residential properties at risk of water reaching their building.

- **Roads: Huntington Woods, 65.5%**

Greatest risk to commutes and transportation with 26 out of 39 miles of roads at risk of becoming impassable.

- **Commercial: River Rouge, 70.1%**

Greatest risk to businesses with 122 out of 174 commercial buildings at risk of water reaching their building.

- **Social: Grosse Pointe Woods, 63.6%**

Greatest risk to government, education or social facilities with 7 out of 11 at risk of becoming inoperable.

- **Infrastructure: Muskegon, 66.7%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 16 out of 24 at risk of becoming inoperable.

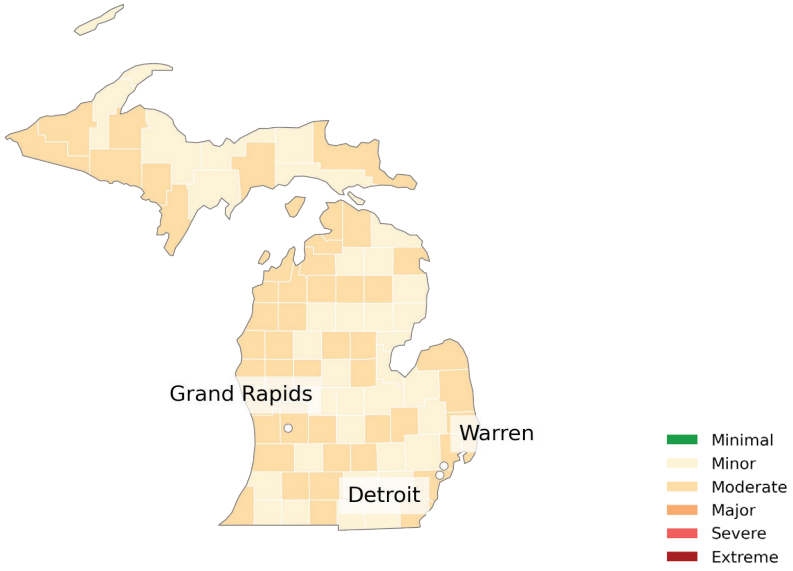
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Michigan

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Michigan, Macomb County has the largest number of properties currently protected with community flood mitigation projects or structures with 9,798 out of 326,529 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Monroe County	16.9%	29.5%	21.6%	24.4%	19.9%
2	Midland County	16.3%	20.4%	24.8%	22.2%	26.5%
3	Wayne County	10.7%	36.2%	20.0%	23.9%	15.8%
4	Macomb County	16.6%	38.6%	17.9%	18.0%	14.9%
5	Grand Traverse County	11.2%	16.8%	21.4%	36.0%	18.9%
6	Benzie County	15.8%	23.9%	25.9%	22.2%	16.2%
7	Leelanau County	18.0%	23.7%	20.5%	18.2%	17.2%
8	Kent County	11.2%	20.1%	23.4%	23.8%	17.6%
9	St. Clair County	14.8%	31.1%	14.4%	21.0%	14.2%
10	Muskegon County	10.3%	18.4%	13.8%	32.4%	14.1%
	• State Average	10.5%	17.7%	14.1%	16.6%	12.4%

Highest proportion of operational risk by category

- **Residential: Gladwin County, 27.1%**

Greatest risk to property owners with 3,869 out of 14,285 residential properties at risk of water reaching their building.

- **Roads: Macomb County, 38.6%**

Greatest risk to commutes and transportation with 1,855 out of 4,805 miles of roads at risk of becoming impassable.

- **Commercial: Benzie County, 25.9%**

Greatest risk to businesses with 129 out of 498 commercial buildings at risk of water reaching their building.

- **Social: Oceana County, 32.1%**

Greatest risk to government, education or social facilities with 17 out of 53 at risk of becoming inoperable.

- **Infrastructure: Grand Traverse County, 36.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 9 out of 25 at risk of becoming inoperable.

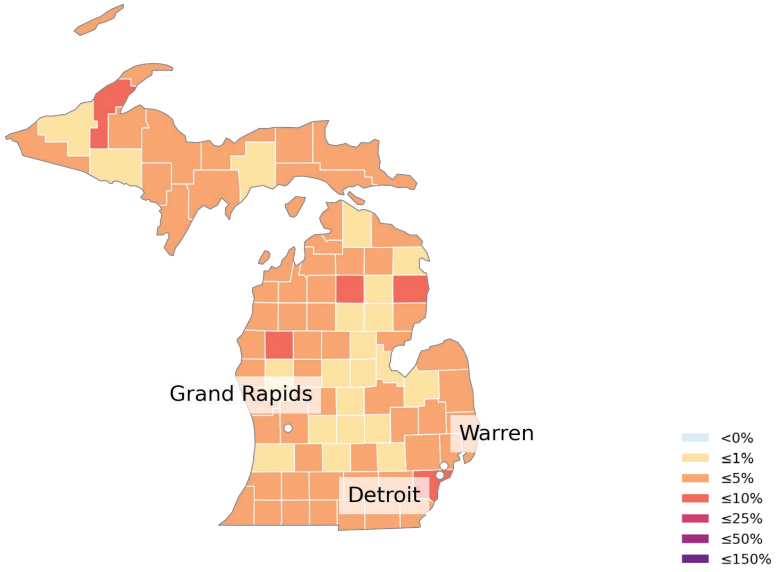
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Michigan

As severity and frequency of flood events in Michigan increase over the next 30 years with a changing environment, an additional 10,482 residential properties, 608.0 miles of roads, 833 commercial properties, 15 infrastructure facilities, and 72 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Alcona County	0.2%	0.3%	0.0%	0.0%	8.3%
2	Lake County	0.1%	0.4%	-0.6%	8.3%	0.0%
3	Wayne County	0.5%	0.9%	1.0%	1.2%	1.2%
4	Macomb County	0.6%	1.4%	0.9%	0.0%	1.6%
5	Muskegon County	0.3%	0.5%	0.3%	2.8%	0.4%
6	St. Joseph County	0.3%	0.4%	0.4%	2.6%	0.0%
7	Chippewa County	0.2%	0.3%	0.5%	0.0%	2.4%
8	Washtenaw County	0.4%	0.4%	0.4%	1.1%	1.0%
9	Mackinac County	0.0%	0.4%	0.7%	0.0%	2.0%
10	Oakland County	0.3%	0.7%	0.4%	1.0%	0.6%
	• State Average	0.3%	0.4%	0.4%	0.4%	0.6%

Greatest growing operational risk by category

- **Residential: Monroe County, 0.7%**

Greatest growing risk to property owners with 361 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Macomb County, 1.4%**

Greatest growing risk to commutes and transportation with 69 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Wayne County, 1.0%**

Greatest growing risk to businesses with 261 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Alcona County, 8.3%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Lake County, 8.3%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

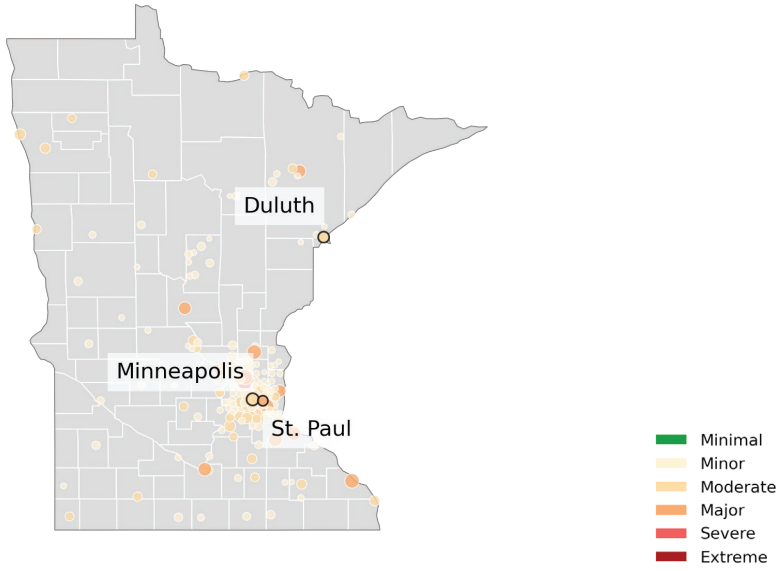
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Minnesota

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Minnesota, there are 155,269 residential properties, 29,473 miles of roads, 13,680 commercial properties, 515 infrastructure facilities, and 1,141 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Minnesota, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	East Grand Forks	53.4%	60.6%	46.9%	75.0%	64.3%
2	Winona	48.6%	57.6%	65.0%	46.7%	49.1%
3	Champlin	35.2%	56.3%	34.2%	100.0%	33.3%
4	Anoka	27.1%	43.1%	33.2%	100.0%	38.7%
5	North Mankato	35.9%	39.0%	49.4%	66.7%	44.4%
6	Little Falls	34.3%	38.9%	55.6%	57.1%	24.1%
7	South St. Paul	10.5%	43.3%	68.2%	40.0%	31.6%
8	Isanti	11.0%	15.8%	40.3%	100.0%	12.5%
9	Arden Hills	9.1%	22.9%	15.5%	100.0%	27.3%
10	Red Wing	18.1%	32.7%	35.0%	53.8%	33.3%
	• State Average	9.1%	11.9%	12.8%	15.8%	13.2%

Highest proportion of operational risk by category

- **Residential: East Grand Forks, 53.4%**

Greatest risk to property owners with 1,365 out of 2,555 residential properties at risk of water reaching their building.

- **Roads: East Grand Forks, 60.6%**

Greatest risk to commutes and transportation with 56 out of 93 miles of roads at risk of becoming impassable.

- **Commercial: South St. Paul, 68.2%**

Greatest risk to businesses with 150 out of 220 commercial buildings at risk of water reaching their building.

- **Social: East Grand Forks, 64.3%**

Greatest risk to government, education or social facilities with 9 out of 14 at risk of becoming inoperable.

- **Infrastructure: St. Louis Park, 66.7%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 4 out of 6 at risk of becoming inoperable.

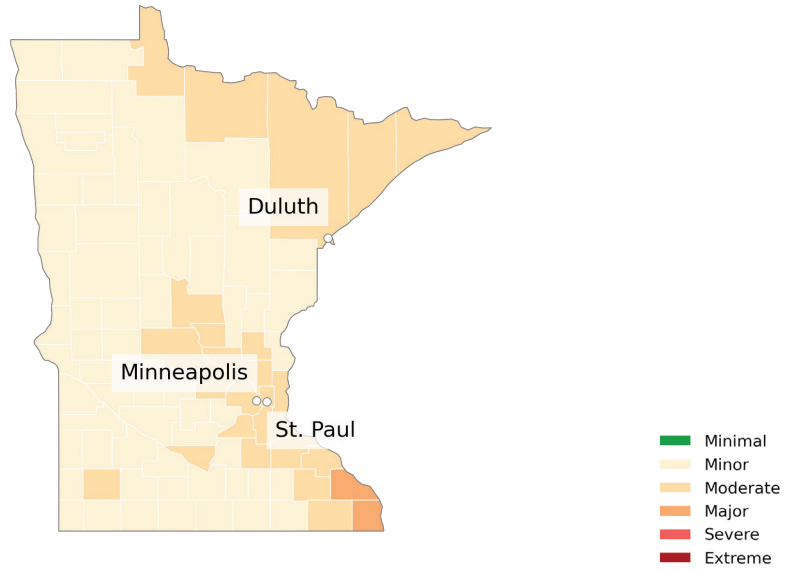
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Minnesota

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Minnesota, Winona County has the largest number of properties currently protected with community flood mitigation projects or structures with 6,535 out of 24,594 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Winona County	33.1%	24.5%	49.5%	21.7%	36.6%
2	Murray County	9.7%	5.5%	7.0%	43.2%	87.5%
3	Houston County	18.0%	24.9%	21.3%	34.8%	29.8%
4	Ramsey County	7.6%	27.9%	18.5%	41.3%	16.2%
5	Fillmore County	15.5%	17.7%	21.2%	29.7%	24.0%
6	Lake of the Woods County	27.8%	11.2%	20.3%	0.0%	45.5%
7	Goodhue County	14.0%	20.6%	15.8%	30.2%	17.5%
8	Marshall County	9.6%	9.4%	7.0%	29.7%	37.5%
9	Cook County	8.8%	19.1%	22.9%	18.5%	23.8%
10	Hennepin County	9.8%	28.7%	18.9%	20.1%	15.2%
	• State Average	9.1%	11.9%	12.8%	15.8%	13.2%

Highest proportion of operational risk by category

- **Residential: Winona County, 33.1%**

Greatest risk to property owners with 5,110 out of 15,460 residential properties at risk of water reaching their building.

- **Roads: Hennepin County, 28.7%**

Greatest risk to commutes and transportation with 2,076 out of 7,228 miles of roads at risk of becoming impassable.

- **Commercial: Winona County, 49.5%**

Greatest risk to businesses with 470 out of 949 commercial buildings at risk of water reaching their building.

- **Social: Murray County, 87.5%**

Greatest risk to government, education or social facilities with 28 out of 32 at risk of becoming inoperable.

- **Infrastructure: Murray County, 43.2%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 16 out of 37 at risk of becoming inoperable.

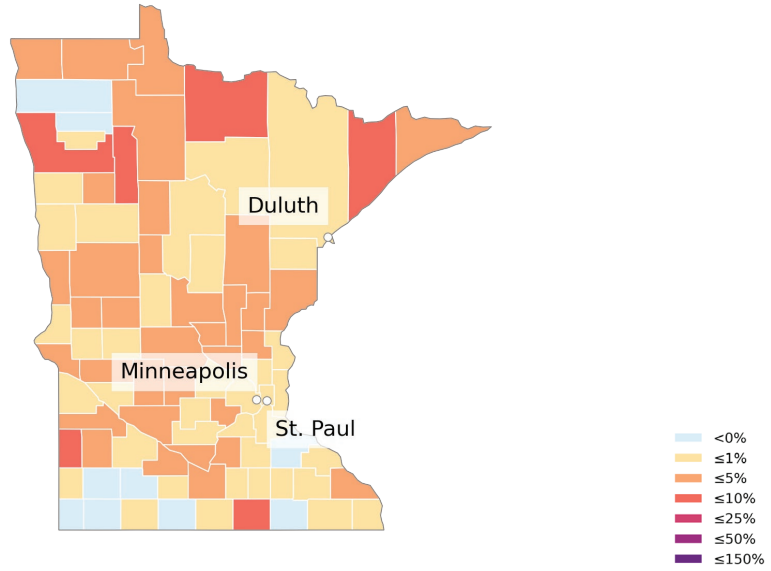
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Minnesota

As severity and frequency of flood events in Minnesota increase over the next 30 years with a changing environment, an additional 1,401 residential properties, 292.0 miles of roads, 137 commercial properties, and 5 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Clearwater County	0.1%	0.3%	0.4%	0.0%	4.3%
2	Yellow Medicine County	0.3%	0.1%	0.1%	3.8%	0.0%
3	Beltrami County	0.2%	0.3%	0.0%	3.4%	0.0%
4	Sherburne County	0.1%	0.3%	0.2%	2.5%	0.0%
5	Stearns County	0.3%	0.3%	0.4%	1.0%	0.5%
6	Wright County	0.1%	0.1%	0.1%	1.6%	0.0%
7	Koochiching County	0.6%	0.4%	0.8%	0.0%	0.0%
8	Otter Tail County	0.1%	0.2%	0.1%	0.0%	1.3%
9	Lake County	0.3%	0.4%	0.7%	0.0%	0.0%
10	Fillmore County	0.1%	0.0%	0.1%	0.0%	1.0%
	• State Average	0.1%	0.1%	0.1%	0.0%	0.1%

Greatest growing operational risk by category

- **Residential: Koochiching County, 0.6%**

Greatest growing risk to property owners with 28 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Hubbard County, 0.5%**

Greatest growing risk to commutes and transportation with 14 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Koochiching County, 0.8%**

Greatest growing risk to businesses with 2 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Clearwater County, 4.3%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Yellow Medicine County, 3.8%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

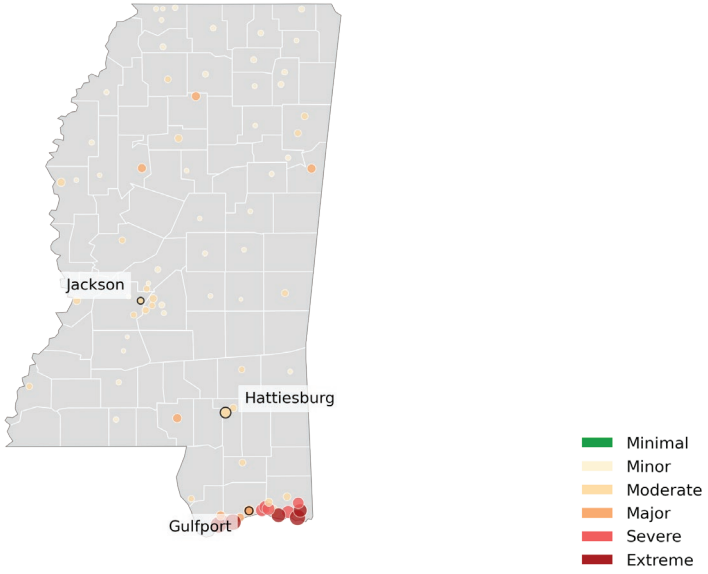
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Mississippi

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Mississippi, there are 118,754 residential properties, 25,992 miles of roads, 9,470 commercial properties, 404 infrastructure facilities, and 481 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Mississippi, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Waveland	95.1%	97.2%	100.0%	100.0%	100.0%
2	Pascagoula	99.9%	95.3%	99.7%	96.0%	98.1%
3	Pass Christian	81.3%	93.3%	92.6%	83.3%	100.0%
4	Bay St. Louis	86.6%	91.2%	89.3%	100.0%	70.0%
5	Moss Point	75.7%	73.2%	75.9%	87.5%	66.7%
6	Gautier	67.2%	60.5%	61.3%	50.0%	76.5%
7	D'Iberville	55.4%	53.4%	69.5%	100.0%	28.6%
8	Gulf Park Estates	53.6%	82.0%	13.3%	50.0%	100.0%
9	St. Martin	40.8%	65.2%	63.3%	66.7%	25.0%
10	Biloxi	46.1%	60.2%	41.7%	47.4%	49.2%
	• State Average	13.7%	19.3%	20.1%	16.7%	12.9%

Highest proportion of operational risk by category

- **Residential: Pascagoula, 99.9%**

Greatest risk to property owners with 6,639 out of 6,645 residential properties at risk of water reaching their building.

- **Roads: Waveland, 97.2%**

Greatest risk to commutes and transportation with 134 out of 138 miles of roads at risk of becoming impassable.

- **Commercial: Waveland, 100.0%**

Greatest risk to businesses with 128 out of 128 commercial buildings at risk of water reaching their building.

- **Social: Pass Christian, 100.0%**

Greatest risk to government, education or social facilities with 5 out of 5 at risk of becoming inoperable.

- **Infrastructure: Bay St. Louis, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 6 out of 6 at risk of becoming inoperable.

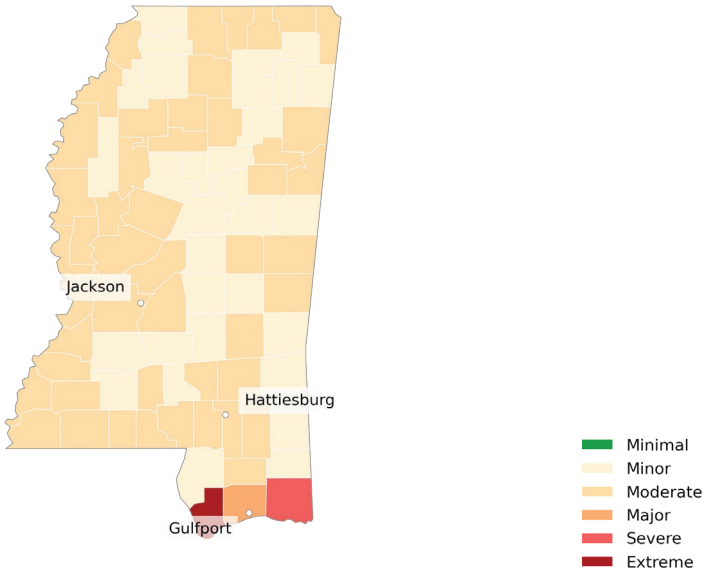
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Mississippi

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Mississippi, Sunflower County has the largest number of properties currently protected with community flood mitigation projects or structures with 16,046 out of 16,046 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Hancock County	54.5%	60.6%	75.1%	63.6%	56.1%
2	Jackson County	49.2%	50.6%	60.7%	62.0%	56.7%
3	Leflore County	55.6%	29.8%	48.5%	20.0%	50.0%
4	Harrison County	28.9%	38.7%	35.1%	46.7%	32.5%
5	Lowndes County	18.1%	27.4%	24.7%	20.0%	21.9%
6	Franklin County	8.6%	16.0%	0.0%	30.8%	50.0%
7	Marion County	14.7%	21.5%	26.6%	19.2%	20.0%
8	Claiborne County	14.4%	22.8%	26.7%	12.5%	24.2%
9	Forrest County	17.1%	22.2%	25.7%	18.2%	13.3%
10	Grenada County	12.7%	20.8%	17.0%	22.2%	20.8%
	• State Average	13.7%	19.3%	20.1%	16.7%	12.9%

Highest proportion of operational risk by category

- **Residential: Leflore County, 55.6%**

Greatest risk to property owners with 4,446 out of 7,997 residential properties at risk of water reaching their building.

- **Roads: Hancock County, 60.6%**

Greatest risk to commutes and transportation with 1,005 out of 1,658 miles of roads at risk of becoming impassable.

- **Commercial: Hancock County, 75.1%**

Greatest risk to businesses with 450 out of 599 commercial buildings at risk of water reaching their building.

- **Social: Jackson County, 56.7%**

Greatest risk to government, education or social facilities with 102 out of 180 at risk of becoming inoperable.

- **Infrastructure: Hancock County, 63.6%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 21 out of 33 at risk of becoming inoperable.

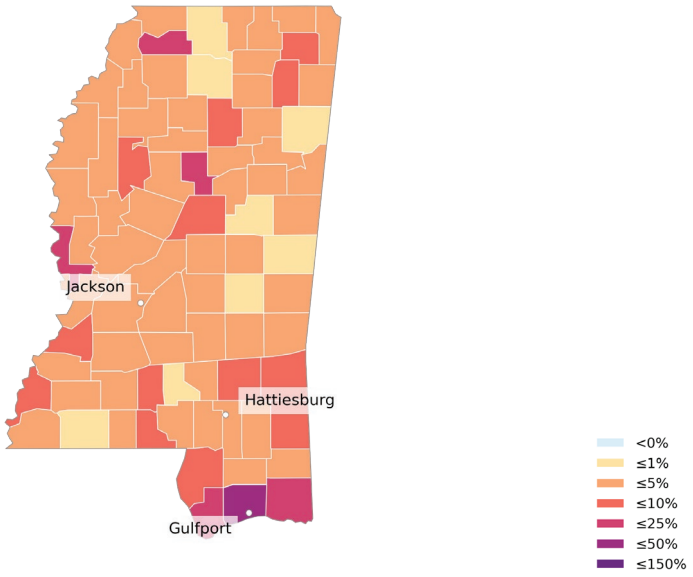
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Mississippi

As severity and frequency of flood events in Mississippi increase over the next 30 years with a changing environment, an additional 19,452 residential properties, 1,167.0 miles of roads, 1,289 commercial properties, 31 infrastructure facilities, and 96 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Harrison County	14.0%	7.7%	14.5%	14.0%	17.5%
2	Jackson County	12.4%	8.9%	16.4%	7.0%	21.7%
3	Hancock County	2.8%	5.1%	3.7%	0.0%	14.6%
4	Leflore County	6.9%	1.0%	8.8%	3.3%	5.0%
5	Montgomery County	0.6%	0.6%	0.0%	0.0%	18.2%
6	Calhoun County	0.3%	0.3%	2.4%	8.3%	0.0%
7	Lowndes County	1.3%	1.0%	1.2%	4.0%	1.9%
8	Yazoo County	1.4%	1.4%	1.0%	4.2%	0.0%
9	Covington County	0.4%	0.6%	0.0%	6.7%	0.0%
10	Tallahatchie County	0.7%	0.8%	3.6%	0.0%	0.0%
	• State Average	2.2%	0.9%	2.7%	1.3%	2.6%

Greatest growing operational risk by category

- **Residential: Harrison County, 14.0%**

Greatest growing risk to property owners with 8,817 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Jackson County, 8.9%**

Greatest growing risk to commutes and transportation with 186 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Jackson County, 16.4%**

Greatest growing risk to businesses with 373 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Jackson County, 21.7%**

Greatest growing risk to government, education or social facilities with 39 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Harrison County, 14.0%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 15 additional facilities at risk of becoming inoperable in 30 years.

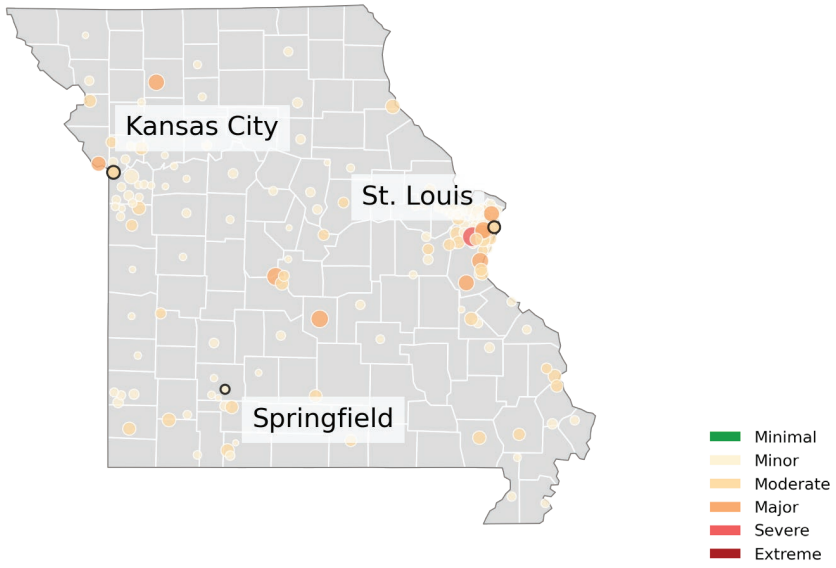
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Missouri

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Missouri, there are 137,835 residential properties, 56,098 miles of roads, 12,115 commercial properties, 1,238 infrastructure facilities, and 806 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Missouri, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Valley Park	22.1%	50.3%	63.6%	60.0%	55.6%
2	Waynesville	18.4%	34.9%	31.0%	50.0%	70.0%
3	Village of Four Seasons	28.8%	5.5%	0.0%	35.7%	100.0%
4	Rock Hill	6.7%	16.9%	31.3%	66.7%	40.0%
5	De Soto	13.1%	28.4%	51.0%	42.9%	8.3%
6	Smithville	6.0%	20.1%	37.5%	42.9%	36.4%
7	Glendale	6.4%	13.3%	16.7%	100.0%	0.0%
8	Maplewood	6.9%	19.8%	9.2%	100.0%	0.0%
9	University City	10.2%	25.5%	26.4%	60.0%	8.5%
10	Dellwood	4.9%	10.9%	13.2%	100.0%	0.0%
	• State Average	7.4%	22.7%	13.7%	19.8%	8.9%

Highest proportion of operational risk by category

- **Residential: Osage Beach, 31.2%**

Greatest risk to property owners with 519 out of 1,665 residential properties at risk of water reaching their building.

- **Roads: Valley Park, 50.3%**

Greatest risk to commutes and transportation with 30 out of 60 miles of roads at risk of becoming impassable.

- **Commercial: Valley Park, 63.6%**

Greatest risk to businesses with 103 out of 162 commercial buildings at risk of water reaching their building.

- **Social: Waynesville, 70.0%**

Greatest risk to government, education or social facilities with 7 out of 10 at risk of becoming inoperable.

- **Infrastructure: Pleasant Hill, 66.7%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 4 out of 6 at risk of becoming inoperable.

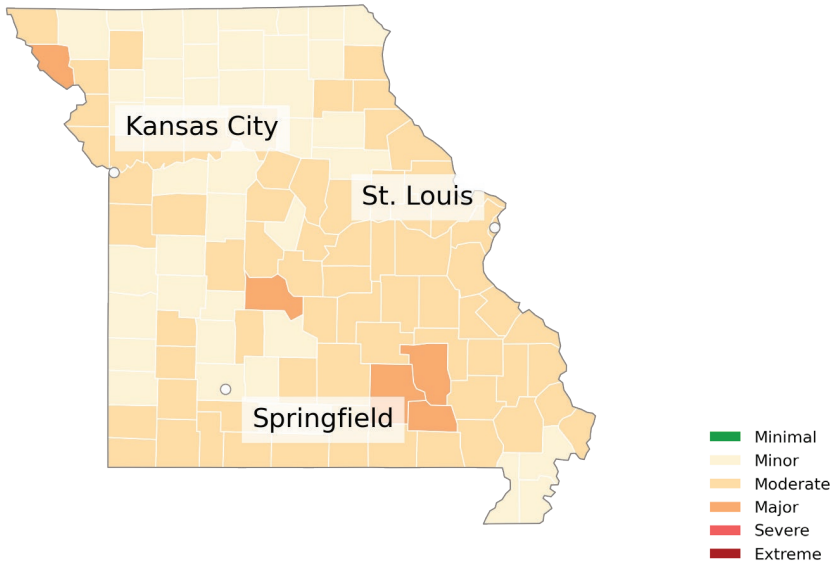
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Missouri

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Missouri, Pemiscot County has the largest number of properties currently protected with community flood mitigation projects or structures with 12,570 out of 12,888 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Holt County	27.4%	38.0%	20.7%	30.0%	47.8%
2	Lewis County	12.9%	25.9%	86.7%	9.1%	21.1%
3	Reynolds County	28.7%	36.9%	39.4%	31.8%	13.3%
4	Camden County	43.2%	24.4%	10.6%	48.9%	18.2%
5	Butler County	19.2%	42.4%	23.0%	20.8%	16.0%
6	Shannon County	15.4%	24.6%	19.2%	29.4%	25.0%
7	Wayne County	23.5%	33.4%	5.9%	17.4%	33.3%
8	Marion County	10.1%	26.1%	18.8%	26.9%	31.0%
9	Atchison County	10.7%	28.6%	17.8%	28.0%	27.8%
10	Stoddard County	11.4%	32.0%	20.2%	28.6%	14.5%
	• State Average	7.4%	22.7%	13.7%	19.8%	8.9%

Highest proportion of operational risk by category

- **Residential: Camden County, 43.2%**

Greatest risk to property owners with 8,998 out of 20,827 residential properties at risk of water reaching their building.

- **Roads: Butler County, 42.4%**

Greatest risk to commutes and transportation with 1,156 out of 2,723 miles of roads at risk of becoming impassable.

- **Commercial: Lewis County, 86.7%**

Greatest risk to businesses with 13 out of 15 commercial buildings at risk of water reaching their building.

- **Social: Holt County, 47.8%**

Greatest risk to government, education or social facilities with 11 out of 23 at risk of becoming inoperable.

- **Infrastructure: Camden County, 48.9%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 235 out of 481 at risk of becoming inoperable.

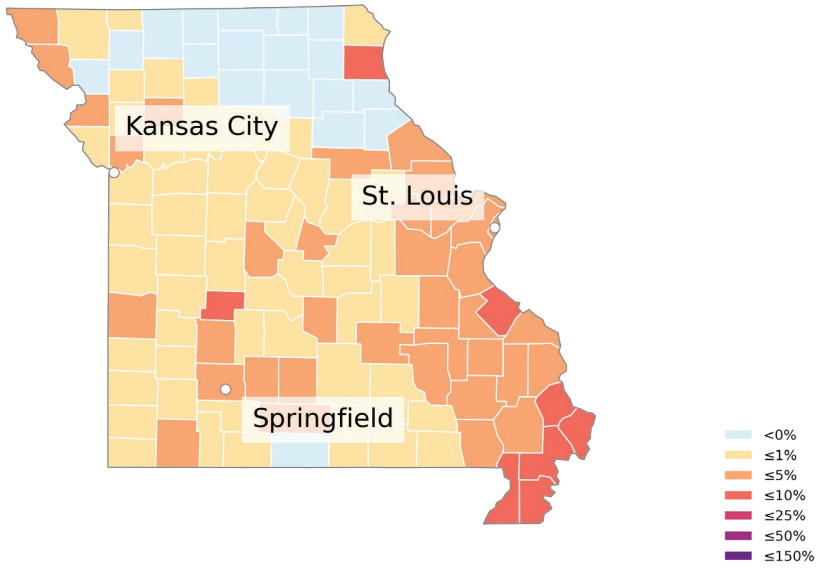
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Missouri

As severity and frequency of flood events in Missouri increase over the next 30 years with a changing environment, an additional 2,568 residential properties, 431.0 miles of roads, 228 commercial properties, 10 infrastructure facilities, and 12 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Mississippi County	1.3%	0.7%	0.6%	5.0%	0.0%
2	Cape Girardeau County	0.3%	0.4%	4.9%	1.0%	0.0%
3	New Madrid County	0.6%	0.6%	0.8%	4.3%	0.0%
4	Holt County	0.5%	0.5%	0.0%	0.0%	4.3%
5	St. Louis city	0.3%	0.8%	0.9%	2.3%	0.5%
6	Lawrence County	0.1%	0.3%	0.2%	0.0%	3.6%
7	Scott County	0.6%	0.6%	1.0%	0.0%	1.5%
8	St. Francois County	0.2%	0.3%	0.4%	2.7%	0.0%
9	St. Charles County	0.2%	0.6%	0.6%	1.9%	0.0%
10	Pemiscot County	1.0%	0.8%	1.4%	0.0%	0.0%
	• State Average	0.1%	0.2%	0.3%	0.2%	0.1%

Greatest growing operational risk by category

- **Residential: Mississippi County, 1.3%**

Greatest growing risk to property owners with 55 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: St. Louis city, 0.8%**

Greatest growing risk to commutes and transportation with 15 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Cape Girardeau County, 4.9%**

Greatest growing risk to businesses with 2 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Holt County, 4.3%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Mississippi County, 5.0%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

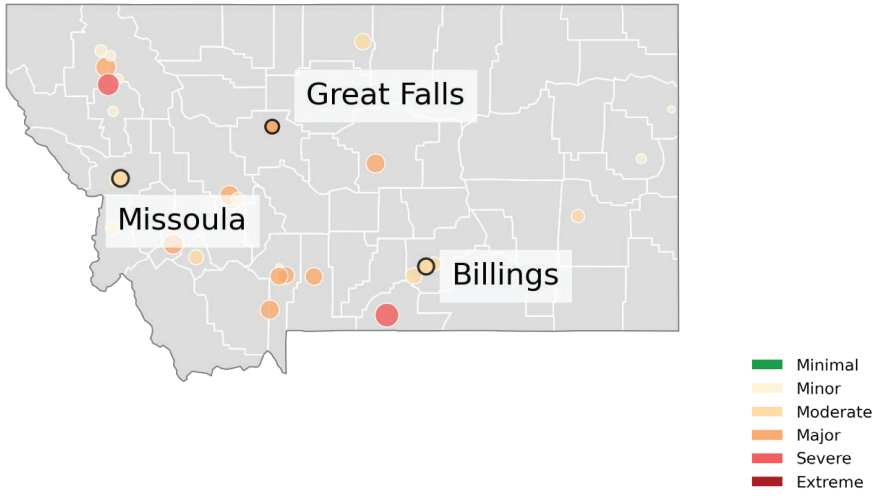
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Montana

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Montana, there are 66,401 residential properties, 48,752 miles of roads, 6,703 commercial properties, 448 infrastructure facilities, and 812 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Montana, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Red Lodge	62.7%	54.8%	100.0%	60.0%	85.7%
2	Evergreen	79.2%	70.2%	87.0%	0.0%	72.7%
3	Helena Valley West Central	44.8%	37.2%	55.4%	60.0%	66.7%
4	Anaconda-Deer Lodge County	40.5%	29.6%	58.3%	47.6%	67.6%
5	Lewistown	29.1%	35.5%	52.9%	50.0%	41.4%
6	Lakeside	20.4%	27.2%	59.6%	100.0%	0.0%
7	Laurel	17.9%	16.3%	29.8%	100.0%	33.3%
8	Four Corners	29.1%	36.6%	35.8%	40.0%	50.0%
9	Big Sky	22.8%	21.0%	50.0%	66.7%	28.6%
10	Great Falls	14.1%	22.2%	22.0%	45.5%	60.2%
	• State Average	21.8%	25.1%	28.3%	32.1%	29.1%

Highest proportion of operational risk by category

- **Residential: Evergreen, 79.2%**

Greatest risk to property owners with 1,547 out of 1,953 residential properties at risk of water reaching their building.

- **Roads: Evergreen, 70.2%**

Greatest risk to commutes and transportation with 50 out of 72 miles of roads at risk of becoming impassable.

- **Commercial: Red Lodge, 100.0%**

Greatest risk to businesses with 103 out of 103 commercial buildings at risk of water reaching their building.

- **Social: Red Lodge, 85.7%**

Greatest risk to government, education or social facilities with 12 out of 14 at risk of becoming inoperable.

- **Infrastructure: Livingston, 68.8%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 11 out of 16 at risk of becoming inoperable.

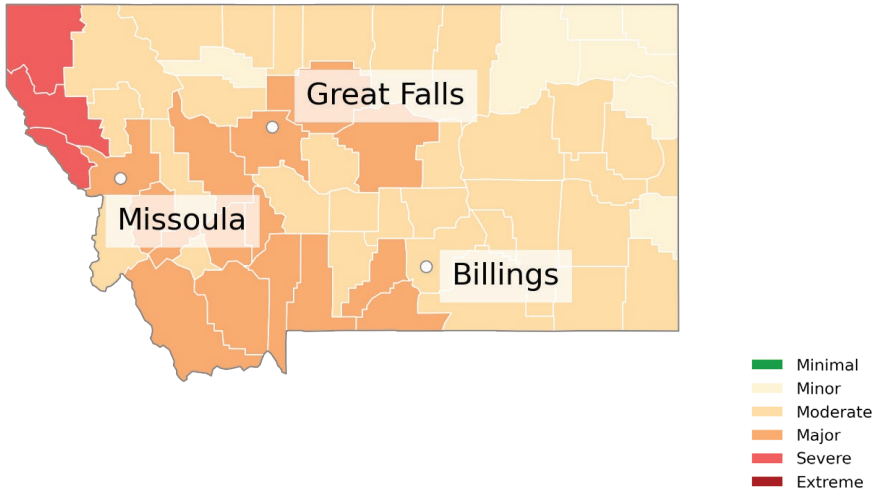
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Montana

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Montana, Custer County has the largest number of properties currently protected with community flood mitigation projects or structures with 2,424 out of 11,826 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Lincoln County	45.8%	22.1%	57.0%	57.1%	63.0%
2	Deer Lodge County	40.5%	29.6%	58.3%	47.6%	67.6%
3	Sanders County	36.1%	34.6%	41.3%	56.3%	52.4%
4	Beaverhead County	53.9%	32.5%	44.3%	36.4%	50.0%
5	Broadwater County	41.5%	32.4%	57.5%	40.0%	41.7%
6	Madison County	33.8%	33.1%	39.7%	48.1%	40.0%
7	Mineral County	46.8%	23.8%	56.3%	36.4%	26.3%
8	Carbon County	35.1%	27.6%	50.4%	24.1%	50.0%
9	Jefferson County	25.5%	33.8%	43.4%	46.4%	35.3%
10	Stillwater County	33.8%	29.4%	35.0%	47.8%	32.5%
	• State Average	21.8%	25.1%	28.3%	32.1%	29.1%

Highest proportion of operational risk by category

- **Residential: Beaverhead County, 53.9%**

Greatest risk to property owners with 1,401 out of 2,600 residential properties at risk of water reaching their building.

- **Roads: Lewis and Clark County, 36.4%**

Greatest risk to commutes and transportation with 1,368 out of 3,757 miles of roads at risk of becoming impassable.

- **Commercial: Deer Lodge County, 58.3%**

Greatest risk to businesses with 154 out of 264 commercial buildings at risk of water reaching their building.

- **Social: Deer Lodge County, 67.6%**

Greatest risk to government, education or social facilities with 23 out of 34 at risk of becoming inoperable.

- **Infrastructure: Carter County, 66.7%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 6 out of 9 at risk of becoming inoperable.

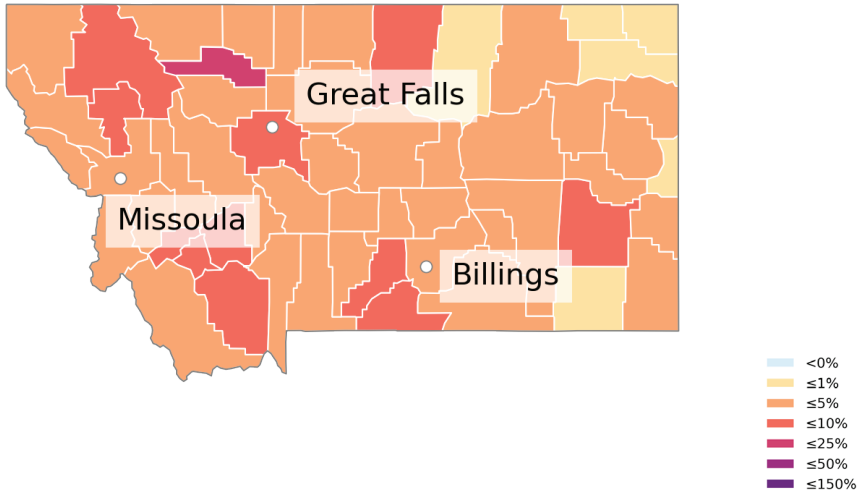
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Montana

As severity and frequency of flood events in Montana increase over the next 30 years with a changing environment, an additional 2,982 residential properties, 1,041.0 miles of roads, 321 commercial properties, 14 infrastructure facilities, and 50 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Pondera County	0.7%	0.6%	1.6%	16.7%	3.8%
2	Broadwater County	0.5%	0.5%	1.1%	20.0%	0.0%
3	Lake County	1.0%	0.9%	2.2%	3.1%	5.8%
4	Custer County	2.6%	0.4%	3.3%	0.0%	6.5%
5	Richland County	0.3%	0.3%	1.3%	0.0%	10.0%
6	Granite County	0.9%	0.5%	3.7%	6.7%	0.0%
7	Ravalli County	1.5%	0.6%	1.8%	2.1%	4.9%
8	Gallatin County	0.9%	0.7%	1.5%	2.2%	3.4%
9	Beaverhead County	1.9%	0.9%	2.5%	0.0%	3.1%
10	Teton County	0.7%	0.7%	2.3%	0.0%	4.5%
	• State Average	1.0%	0.5%	1.4%	1.0%	1.8%

Greatest growing operational risk by category

- **Residential: Blaine County, 3.4%**

Greatest growing risk to property owners with 11 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Deer Lodge County, 0.9%**

Greatest growing risk to commutes and transportation with 12 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Granite County, 3.7%**

Greatest growing risk to businesses with 3 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Richland County, 10.0%**

Greatest growing risk to government, education or social facilities with 3 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Broadwater County, 20.0%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 3 additional facilities at risk of becoming inoperable in 30 years.

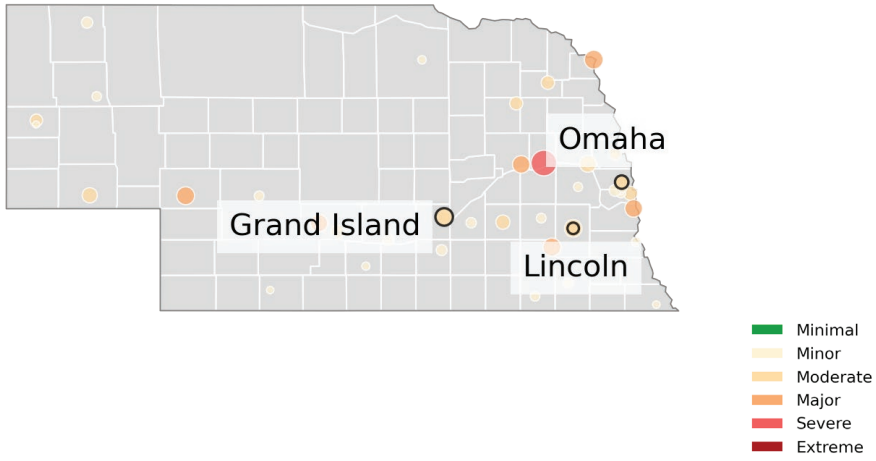
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Nebraska

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Nebraska, there are 56,589 residential properties, 32,998 miles of roads, 7,246 commercial properties, 331 infrastructure facilities, and 550 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Nebraska, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Schuyler	76.0%	75.0%	77.0%	75.0%	90.9%
2	Cozad	47.2%	69.8%	41.6%	16.7%	66.7%
3	Fremont	38.3%	64.9%	39.9%	50.0%	28.1%
4	South Sioux City	24.5%	41.1%	42.8%	50.0%	60.0%
5	Columbus	46.0%	49.3%	49.1%	28.6%	45.0%
6	Ogallala	13.3%	29.9%	53.9%	40.0%	50.0%
7	Crete	26.7%	37.4%	41.8%	50.0%	30.8%
8	Plattsmouth	13.2%	33.9%	46.2%	50.0%	4.5%
9	Norfolk	19.3%	36.7%	35.7%	20.0%	30.8%
10	Sidney	14.5%	30.6%	35.6%	33.3%	23.1%
	• State Average	9.5%	20.7%	16.8%	19.7%	13.9%

Highest proportion of operational risk by category

- **Residential: Schuyler, 76.0%**

Greatest risk to property owners with 1,173 out of 1,543 residential properties at risk of water reaching their building.

- **Roads: Schuyler, 75.0%**

Greatest risk to commutes and transportation with 47 out of 62 miles of roads at risk of becoming impassable.

- **Commercial: Schuyler, 77.0%**

Greatest risk to businesses with 114 out of 148 commercial buildings at risk of water reaching their building.

- **Social: Schuyler, 90.9%**

Greatest risk to government, education or social facilities with 10 out of 11 at risk of becoming inoperable.

- **Infrastructure: Wayne, 50.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 4 out of 8 at risk of becoming inoperable.

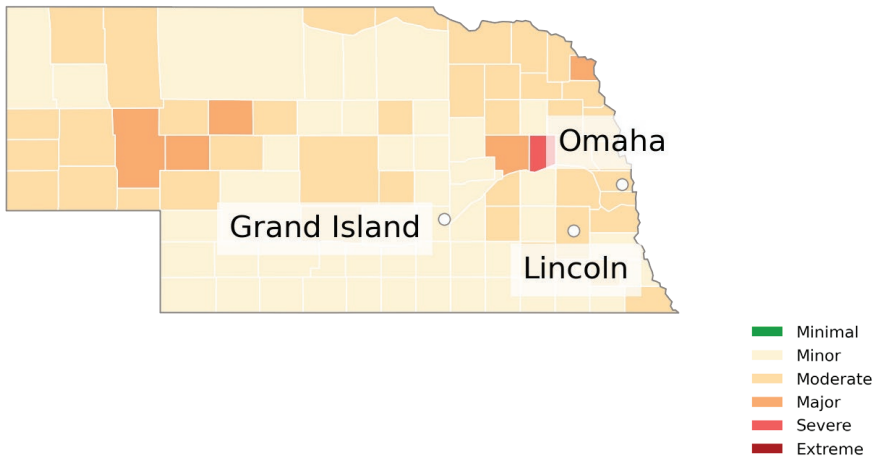
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Nebraska

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Nebraska, Colfax County has the largest number of properties currently protected with community flood mitigation projects or structures with 2,755 out of 8,207 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Colfax County	48.0%	34.1%	55.2%	80.0%	60.6%
2	Platte County	35.5%	28.9%	43.2%	37.9%	51.8%
3	Garden County	42.8%	28.5%	50.6%	44.4%	27.3%
4	Dakota County	27.9%	31.5%	43.8%	40.0%	48.6%
5	Madison County	18.0%	25.5%	31.4%	38.5%	46.3%
6	Arthur County	40.7%	40.7%	0.0%	50.0%	25.0%
7	Dodge County	35.3%	35.1%	36.0%	25.8%	23.2%
8	Keith County	11.6%	24.0%	47.4%	23.5%	39.3%
9	Burt County	22.2%	25.1%	23.6%	22.7%	42.9%
10	Garfield County	12.8%	29.9%	27.6%	42.9%	22.2%
	• State Average	9.5%	20.7%	16.8%	19.7%	13.9%

Highest proportion of operational risk by category

- **Residential: Colfax County, 48.0%**

Greatest risk to property owners with 1,573 out of 3,278 residential properties at risk of water reaching their building.

- **Roads: Arthur County, 40.7%**

Greatest risk to commutes and transportation with 218 out of 537 miles of roads at risk of becoming impassable.

- **Commercial: Colfax County, 55.2%**

Greatest risk to businesses with 155 out of 281 commercial buildings at risk of water reaching their building.

- **Social: Colfax County, 60.6%**

Greatest risk to government, education or social facilities with 20 out of 33 at risk of becoming inoperable.

- **Infrastructure: Colfax County, 80.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 12 out of 15 at risk of becoming inoperable.

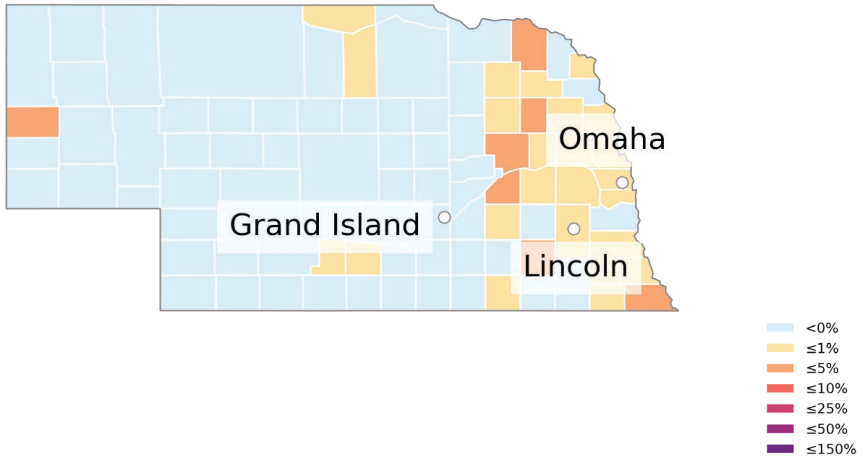
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Nebraska

As severity and frequency of flood events in Nebraska change over the next 30 years with a changing environment, an additional 70 residential properties will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Scotts Bluff County	0.3%	0.1%	0.1%	0.0%	2.6%
2	Dodge County	0.8%	0.4%	1.0%	0.0%	0.0%
3	Colfax County	0.9%	0.6%	0.0%	0.0%	0.0%
4	Butler County	0.3%	0.4%	0.4%	0.0%	0.0%
5	Dakota County	0.9%	-0.1%	0.2%	0.0%	0.0%
6	Cuming County	0.5%	0.1%	0.3%	0.0%	0.0%
7	Madison County	0.2%	0.1%	0.5%	0.0%	0.0%
8	Merrick County	0.1%	-0.1%	0.6%	0.0%	0.0%
9	Richardson County	0.1%	0.2%	0.4%	0.0%	0.0%
10	Platte County	0.2%	0.3%	0.2%	0.0%	0.0%
	• State Average	0.0%	-0.1%	0.0%	-0.2%	-0.3%

Greatest growing operational risk by category

- **Residential: Dakota County, 0.9%**

Greatest growing risk to property owners with 48 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Colfax County, 0.6%**

Greatest growing risk to commutes and transportation with 10 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Dodge County, 1.0%**

Greatest growing risk to businesses with 9 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Scotts Bluff County, 2.6%**

Greatest growing risk to government, education or social facilities with 2 additional facilities at risk of becoming inoperable in 30 years.

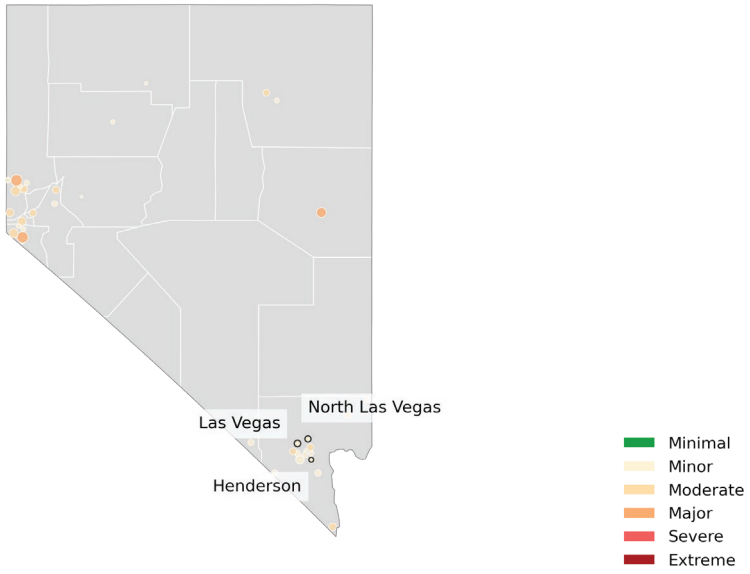
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Nevada

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Nevada, there are 53,567 residential properties, 33,217 miles of roads, 2,979 commercial properties, 133 infrastructure facilities, and 399 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Nevada, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Gardnerville	44.3%	52.9%	56.5%	50.0%	71.4%
2	Lemmon Valley	29.8%	27.8%	66.7%	66.7%	50.0%
3	Carson City	18.4%	24.3%	26.4%	52.0%	45.7%
4	Ely	21.6%	23.8%	43.6%	25.0%	41.2%
5	Fernley	24.0%	23.3%	14.5%	40.0%	41.2%
6	Kingsbury	4.0%	22.6%	36.0%	33.3%	40.0%
7	Reno	20.2%	22.2%	24.9%	26.8%	21.8%
8	Dayton	14.7%	23.5%	34.7%	16.7%	23.1%
9	Sandy Valley	36.3%	23.0%	0.0%	0.0%	50.0%
10	Sparks	14.8%	15.4%	23.7%	40.0%	8.0%
	• State Average	14.2%	26.6%	23.8%	18.1%	15.2%

Highest proportion of operational risk by category

- **Residential: Gardnerville, 44.3%**

Greatest risk to property owners with 911 out of 2,055 residential properties at risk of water reaching their building.

- **Roads: Gardnerville, 52.9%**

Greatest risk to commutes and transportation with 27 out of 52 miles of roads at risk of becoming impassable.

- **Commercial: Lemmon Valley, 66.7%**

Greatest risk to businesses with 6 out of 9 commercial buildings at risk of water reaching their building.

- **Social: Gardnerville, 71.4%**

Greatest risk to government, education or social facilities with 10 out of 14 at risk of becoming inoperable.

- **Infrastructure: Carson City, 52.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 13 out of 25 at risk of becoming inoperable.

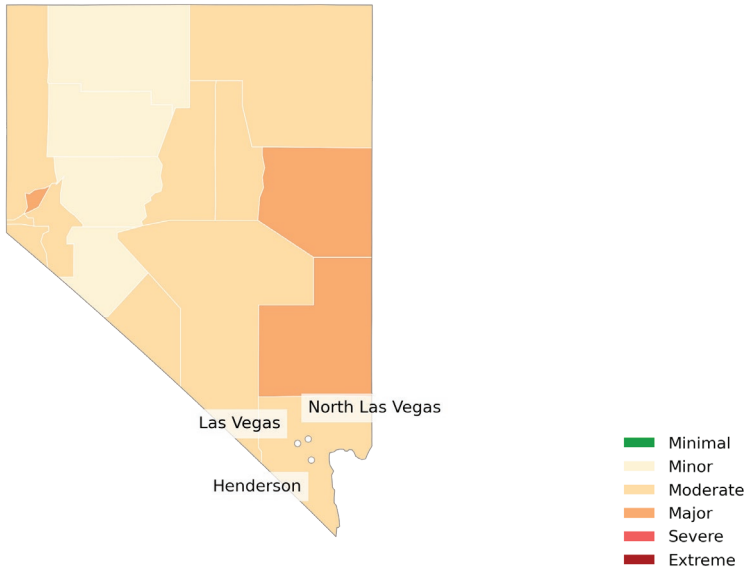
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Nevada

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Nevada, Clark County has the largest number of properties currently protected with community flood mitigation projects or structures with 127,524 out of 764,624 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Lincoln County	41.0%	35.1%	63.2%	26.7%	52.6%
2	Douglas County	19.0%	30.1%	59.1%	24.1%	42.6%
3	Carson City	18.4%	24.3%	26.4%	52.0%	45.7%
4	Storey County	21.7%	29.8%	34.2%	46.7%	17.6%
5	White Pine County	21.2%	31.0%	40.2%	27.8%	28.6%
6	Lyon County	21.9%	23.5%	27.7%	25.6%	42.1%
7	Washoe County	16.6%	25.0%	23.8%	24.8%	16.4%
8	Nye County	23.5%	24.5%	18.5%	10.0%	24.6%
9	Lander County	17.6%	23.3%	9.8%	22.2%	25.0%
10	Elko County	8.0%	28.9%	19.6%	25.5%	13.3%
	• State Average	14.2%	26.6%	23.8%	18.1%	15.2%

Highest proportion of operational risk by category

- **Residential: Lincoln County, 41.0%**

Greatest risk to property owners with 454 out of 1,106 residential properties at risk of water reaching their building.

- **Roads: Lincoln County, 35.1%**

Greatest risk to commutes and transportation with 2,851 out of 8,122 miles of roads at risk of becoming impassable.

- **Commercial: Lincoln County, 63.2%**

Greatest risk to businesses with 12 out of 19 commercial buildings at risk of water reaching their building.

- **Social: Lincoln County, 52.6%**

Greatest risk to government, education or social facilities with 10 out of 19 at risk of becoming inoperable.

- **Infrastructure: Carson City, 52.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 13 out of 25 at risk of becoming inoperable.

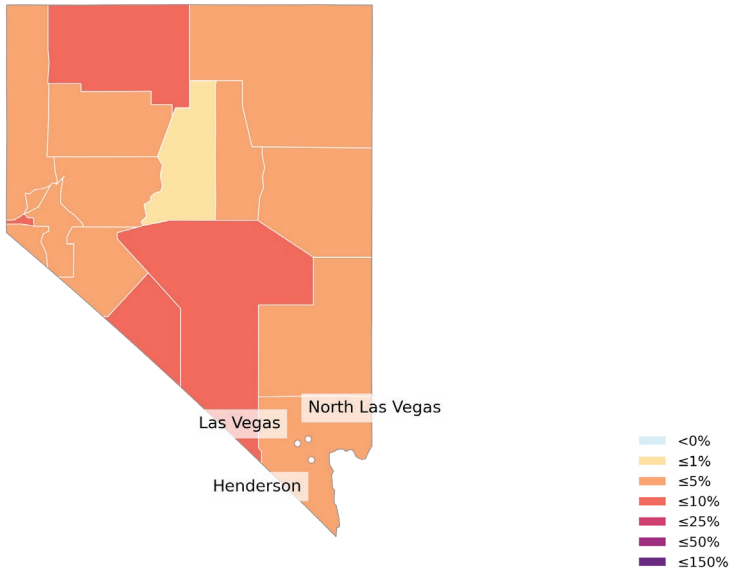
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Nevada

As severity and frequency of flood events in Nevada increase over the next 30 years with a changing environment, an additional 2,163 residential properties, 921.0 miles of roads, 218 commercial properties, 2 infrastructure facilities, and 13 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Humboldt County	1.3%	0.8%	1.0%	4.0%	3.7%
2	Nye County	1.2%	0.7%	1.0%	2.5%	0.0%
3	Washoe County	0.9%	0.8%	2.9%	0.0%	0.7%
4	Elko County	0.5%	0.8%	0.3%	0.0%	3.3%
5	Storey County	0.3%	0.4%	2.5%	0.0%	0.0%
6	Carson City	0.6%	0.4%	1.0%	0.0%	1.0%
7	Lyon County	1.4%	0.5%	0.8%	0.0%	0.0%
8	Clark County	0.2%	0.7%	0.2%	0.0%	0.4%
9	Lincoln County	0.5%	0.9%	0.0%	0.0%	0.0%
10	Eureka County	0.7%	0.6%	0.0%	0.0%	0.0%
	• State Average	0.6%	0.7%	1.7%	0.3%	0.5%

Greatest growing operational risk by category

- **Residential: Lyon County, 1.4%**

Greatest growing risk to property owners with 275 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Lincoln County, 0.9%**

Greatest growing risk to commutes and transportation with 76 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Washoe County, 2.9%**

Greatest growing risk to businesses with 180 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Humboldt County, 3.7%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Humboldt County, 4.0%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

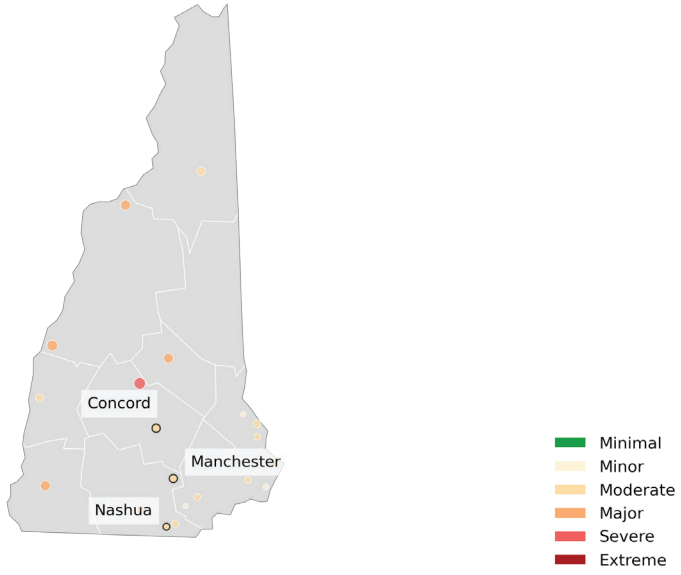
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
New Hampshire

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In New Hampshire, there are 38,857 residential properties, 7,917 miles of roads, 3,529 commercial properties, 230 infrastructure facilities, and 298 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in New Hampshire, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Franklin	11.3%	27.5%	44.0%	66.7%	55.6%
2	Lebanon	14.6%	31.4%	42.3%	63.6%	42.9%
3	Keene	20.1%	35.5%	50.6%	66.7%	11.1%
4	Littleton	26.4%	31.0%	43.0%	33.3%	36.8%
5	Milford	8.7%	24.0%	27.8%	50.0%	33.3%
6	Laconia	22.0%	20.8%	44.8%	25.0%	30.8%
7	Berlin	11.8%	29.6%	36.2%	28.6%	23.1%
8	Portsmouth	11.7%	21.2%	18.0%	65.0%	12.7%
9	Claremont	10.3%	31.4%	30.6%	25.0%	15.8%
10	Somersworth	5.4%	8.2%	4.3%	60.0%	30.0%
	• State Average	11.9%	25.8%	24.9%	28.8%	17.4%

Highest proportion of operational risk by category

- **Residential: Littleton, 26.4%**

Greatest risk to property owners with 356 out of 1,349 residential properties at risk of water reaching their building.

- **Roads: Keene, 35.5%**

Greatest risk to commutes and transportation with 95 out of 269 miles of roads at risk of becoming impassable.

- **Commercial: Keene, 50.6%**

Greatest risk to businesses with 229 out of 453 commercial buildings at risk of water reaching their building.

- **Social: Franklin, 55.6%**

Greatest risk to government, education or social facilities with 5 out of 9 at risk of becoming inoperable.

- **Infrastructure: Keene, 66.7%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 4 out of 6 at risk of becoming inoperable.

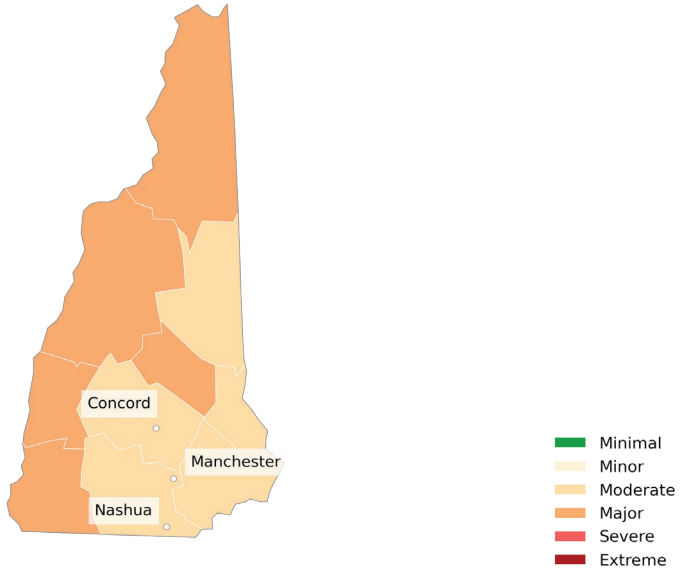
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
New Hampshire

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In New Hampshire, Cheshire County has the largest number of properties currently protected with community flood mitigation projects or structures with 1,232 out of 38,183 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Coos County	21.5%	31.4%	42.5%	41.2%	36.7%
2	Grafton County	15.9%	32.9%	35.7%	33.6%	28.9%
3	Cheshire County	15.0%	29.6%	42.6%	35.3%	14.4%
4	Sullivan County	12.6%	31.9%	31.3%	41.0%	20.0%
5	Carroll County	14.3%	27.1%	26.5%	13.7%	35.2%
6	Belknap County	14.2%	21.3%	28.4%	33.3%	18.3%
7	Hillsborough County	11.2%	23.5%	23.5%	31.9%	18.4%
8	Merrimack County	10.1%	27.1%	24.1%	21.1%	13.7%
9	Rockingham County	11.1%	15.7%	16.8%	23.0%	8.7%
10	Strafford County	6.9%	15.4%	13.3%	22.0%	8.9%
	• State Average	11.9%	25.8%	24.9%	28.8%	17.4%

Highest proportion of operational risk by category

- **Residential: Coos County, 21.5%**

Greatest risk to property owners with 1,781 out of 8,295 residential properties at risk of water reaching their building.

- **Roads: Grafton County, 32.9%**

Greatest risk to commutes and transportation with 1,338 out of 4,062 miles of roads at risk of becoming impassable.

- **Commercial: Cheshire County, 42.6%**

Greatest risk to businesses with 409 out of 959 commercial buildings at risk of water reaching their building.

- **Social: Coos County, 36.7%**

Greatest risk to government, education or social facilities with 18 out of 49 at risk of becoming inoperable.

- **Infrastructure: Coos County, 41.2%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 21 out of 51 at risk of becoming inoperable.

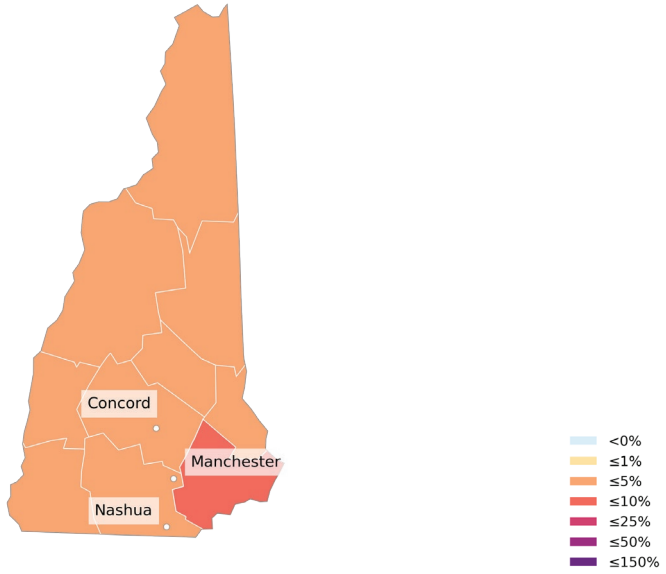
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
New Hampshire

As severity and frequency of flood events in New Hampshire increase over the next 30 years with a changing environment, an additional 2,031 residential properties, 204.0 miles of roads, 171 commercial properties, 6 infrastructure facilities, and 15 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Rockingham County	1.3%	1.0%	2.0%	0.7%	2.9%
2	Carroll County	0.4%	0.7%	2.0%	2.0%	1.1%
3	Strafford County	0.5%	0.8%	0.3%	4.0%	0.0%
4	Coos County	0.5%	0.7%	2.1%	0.0%	2.0%
5	Hillsborough County	0.4%	0.5%	1.0%	1.4%	0.5%
6	Grafton County	0.4%	0.7%	1.3%	0.0%	0.0%
7	Sullivan County	0.4%	0.6%	1.4%	0.0%	0.0%
8	Merrimack County	0.3%	0.5%	0.5%	0.0%	0.9%
9	Belknap County	0.4%	0.5%	0.8%	0.0%	0.0%
10	Cheshire County	0.4%	0.5%	0.5%	0.0%	0.0%
	• State Average	0.6%	0.7%	1.2%	0.8%	0.9%

Greatest growing operational risk by category

- **Residential: Rockingham County, 1.3%**

Greatest growing risk to property owners with 1,020 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Rockingham County, 1.0%**

Greatest growing risk to commutes and transportation with 40 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Coos County, 2.1%**

Greatest growing risk to businesses with 10 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Rockingham County, 2.9%**

Greatest growing risk to government, education or social facilities with 9 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Strafford County, 4.0%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 2 additional facilities at risk of becoming inoperable in 30 years.

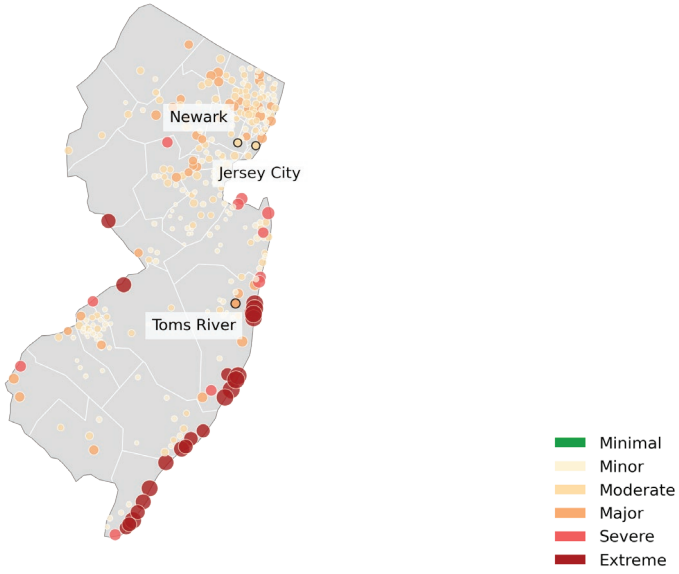
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
New Jersey

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In New Jersey, there are 272,177 residential properties, 13,645 miles of roads, 19,019 commercial properties, 835 infrastructure facilities, and 1,535 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in New Jersey, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	North Wildwood	99.5%	99.6%	97.2%	100.0%	100.0%
2	Surf City	96.5%	99.4%	100.0%	100.0%	100.0%
3	Ship Bottom	92.3%	95.3%	100.0%	100.0%	100.0%
4	Lavallette	93.5%	93.3%	100.0%	100.0%	100.0%
5	Sea Isle City	92.1%	95.0%	94.5%	100.0%	100.0%
6	North Beach Haven	82.3%	94.4%	100.0%	100.0%	100.0%
7	Dover Beaches North	81.0%	91.7%	100.0%	100.0%	100.0%
8	Seaside Heights	95.2%	88.9%	87.8%	100.0%	100.0%
9	Burlington	90.1%	92.7%	98.8%	85.7%	100.0%
10	Ocean City	82.2%	91.9%	91.9%	100.0%	100.0%
	• State Average	12.0%	23.3%	19.5%	26.2%	14.8%

Highest proportion of operational risk by category

- **Residential: Wildwood, 99.9%**

Greatest risk to property owners with 1,686 out of 1,688 residential properties at risk of water reaching their building.

- **Roads: North Wildwood, 99.6%**

Greatest risk to commutes and transportation with 43 out of 43 miles of roads at risk of becoming impassable.

- **Commercial: North Beach Haven, 100.0%**

Greatest risk to businesses with 59 out of 59 commercial buildings at risk of water reaching their building.

- **Social: Lambertville, 100.0%**

Greatest risk to government, education or social facilities with 42 out of 42 at risk of becoming inoperable.

- **Infrastructure: Ocean City, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 6 out of 6 at risk of becoming inoperable.

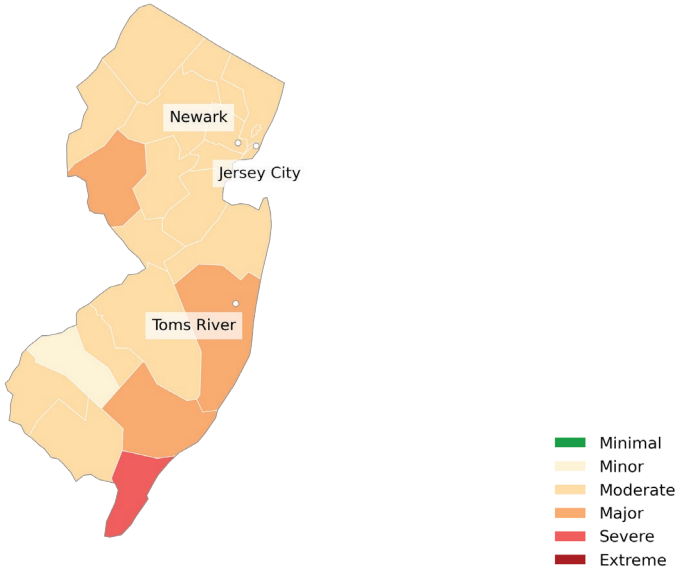
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
New Jersey

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In New Jersey, Cape May County has the largest number of properties currently protected with community flood mitigation projects or structures with 11,078 out of 148,432 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Cape May County	53.4%	41.7%	52.0%	45.3%	44.3%
2	Atlantic County	28.3%	26.5%	30.1%	26.0%	30.2%
3	Ocean County	25.7%	30.8%	23.6%	32.2%	10.7%
4	Hunterdon County	9.0%	23.1%	20.3%	28.2%	35.8%
5	Passaic County	10.9%	27.4%	24.8%	29.6%	15.9%
6	Union County	11.9%	32.8%	22.5%	22.1%	17.1%
7	Mercer County	8.9%	26.4%	17.6%	31.3%	19.7%
8	Warren County	10.6%	29.1%	19.0%	30.2%	14.4%
9	Salem County	24.3%	16.9%	16.6%	29.6%	11.0%
10	Essex County	10.1%	25.4%	24.1%	24.5%	13.6%
	• State Average	12.0%	23.3%	19.5%	26.2%	14.8%

Highest proportion of operational risk by category

- **Residential: Cape May County, 53.4%**

Greatest risk to property owners with 34,045 out of 63,712 residential properties at risk of water reaching their building.

- **Roads: Cape May County, 41.7%**

Greatest risk to commutes and transportation with 691 out of 1,659 miles of roads at risk of becoming impassable.

- **Commercial: Cape May County, 52.0%**

Greatest risk to businesses with 1,101 out of 2,118 commercial buildings at risk of water reaching their building.

- **Social: Cape May County, 44.3%**

Greatest risk to government, education or social facilities with 74 out of 167 at risk of becoming inoperable.

- **Infrastructure: Cape May County, 45.3%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 34 out of 75 at risk of becoming inoperable.

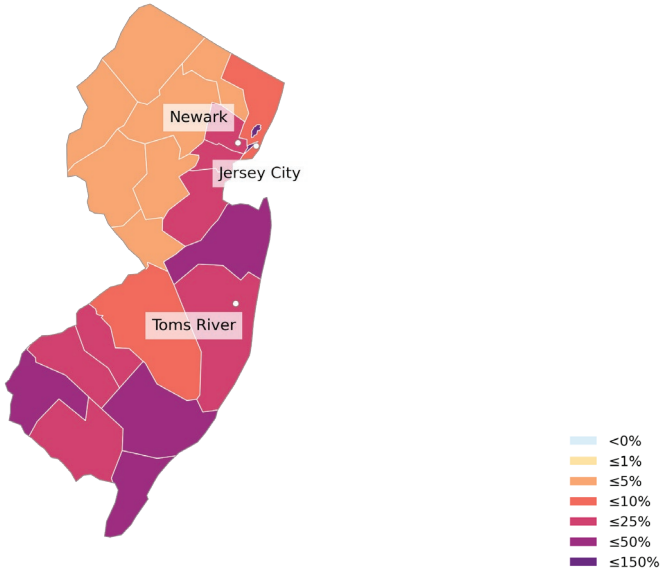
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
New Jersey

As severity and frequency of flood events in New Jersey increase over the next 30 years with a changing environment, an additional 58,500 residential properties, 1,547.0 miles of roads, 2,647 commercial properties, 191 infrastructure facilities, and 276 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Salem County	19.6%	9.4%	12.4%	14.1%	24.6%
2	Hudson County	14.9%	13.7%	7.7%	18.9%	11.5%
3	Cape May County	9.6%	5.9%	5.1%	8.0%	5.4%
4	Monmouth County	5.3%	4.4%	5.1%	8.9%	5.8%
5	Ocean County	5.8%	4.9%	7.1%	6.4%	3.6%
6	Atlantic County	3.8%	2.7%	7.8%	6.3%	4.8%
7	Union County	0.9%	3.4%	1.0%	18.3%	0.8%
8	Essex County	0.6%	3.8%	2.6%	14.1%	3.1%
9	Gloucester County	1.8%	2.3%	3.0%	4.1%	1.7%
10	Middlesex County	0.6%	1.7%	1.6%	8.0%	0.7%
	• State Average	2.6%	2.6%	2.7%	6.0%	2.7%

Greatest growing operational risk by category

- **Residential: Salem County, 19.6%**

Greatest growing risk to property owners with 3,730 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Hudson County, 13.7%**

Greatest growing risk to commutes and transportation with 139 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Salem County, 12.4%**

Greatest growing risk to businesses with 180 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Salem County, 24.6%**

Greatest growing risk to government, education or social facilities with 29 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Hudson County, 18.9%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 37 additional facilities at risk of becoming inoperable in 30 years.

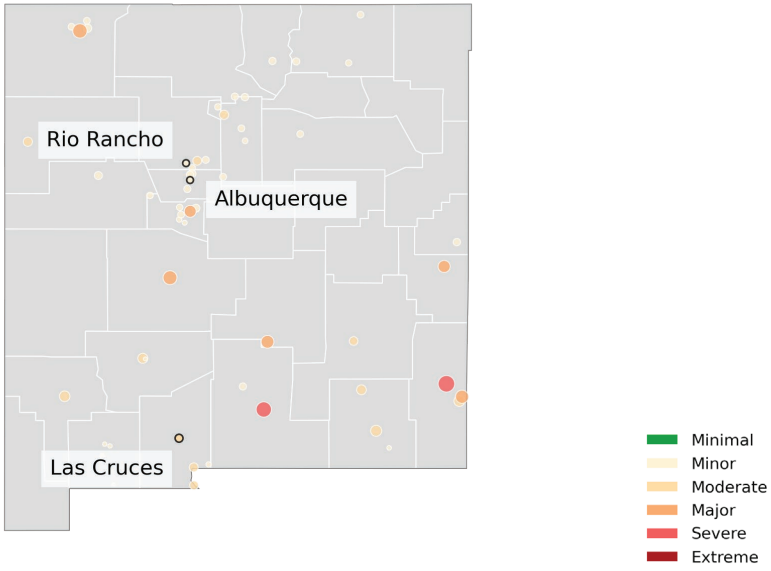
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
New Mexico

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In New Mexico, there are 70,316 residential properties, 52,143 miles of roads, 2,888 commercial properties, 224 infrastructure facilities, and 560 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in New Mexico, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Lovington	84.5%	68.3%	100.0%	100.0%	100.0%
2	Lee Acres	20.3%	23.7%	20.5%	100.0%	50.0%
3	Portales	32.1%	59.8%	33.3%	57.1%	17.2%
4	Artesia	39.7%	35.4%	0.0%	28.6%	70.4%
5	Hobbs	36.9%	41.1%	40.0%	25.0%	25.8%
6	Los Ranchos de Albuquerque	65.5%	18.8%	38.2%	0.0%	30.8%
7	North Valley	30.4%	33.9%	30.0%	33.3%	23.1%
8	Timberon	6.3%	25.4%	66.7%	50.0%	0.0%
9	Bernalillo	32.4%	29.9%	26.4%	33.3%	18.8%
10	Corrales	26.9%	18.9%	50.8%	0.0%	37.5%
	• State Average	12.8%	24.9%	13.1%	19.0%	15.2%

Highest proportion of operational risk by category

- **Residential: Lovington, 84.5%**

Greatest risk to property owners with 2,941 out of 3,482 residential properties at risk of water reaching their building.

- **Roads: Lovington, 68.3%**

Greatest risk to commutes and transportation with 115 out of 168 miles of roads at risk of becoming impassable.

- **Commercial: Corrales, 50.8%**

Greatest risk to businesses with 33 out of 65 commercial buildings at risk of water reaching their building.

- **Social: Lovington, 100.0%**

Greatest risk to government, education or social facilities with 33 out of 33 at risk of becoming inoperable.

- **Infrastructure: Lovington, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 5 at risk of becoming inoperable.

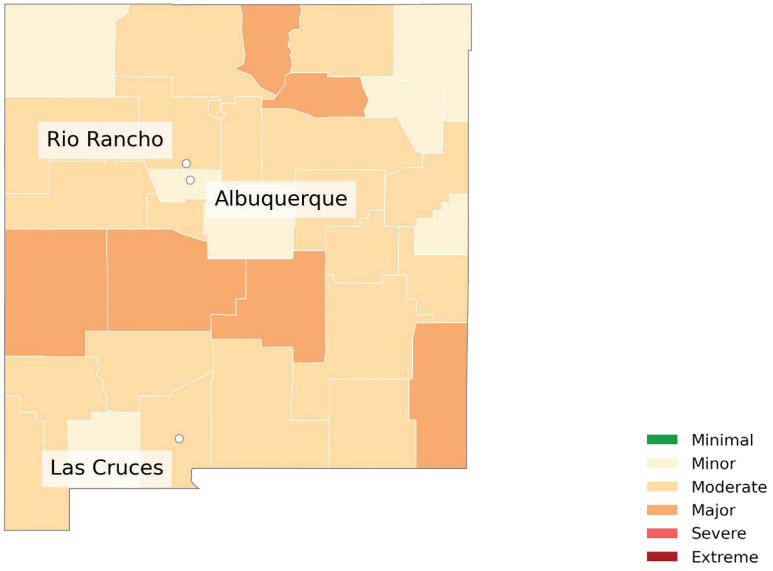
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
New Mexico

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In New Mexico, Bernalillo County has the largest number of properties currently protected with community flood mitigation projects or structures with 111,621 out of 251,265 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Lea County	52.5%	40.1%	70.0%	47.2%	45.4%
2	Roosevelt County	33.4%	44.2%	33.9%	31.6%	25.0%
3	Eddy County	23.1%	24.3%	22.2%	16.0%	35.5%
4	Lincoln County	19.4%	33.3%	10.0%	14.6%	38.3%
5	Do√±a Ana County	17.3%	25.9%	29.0%	18.3%	23.2%
6	Sierra County	21.0%	31.2%	0.0%	27.6%	25.7%
7	Valencia County	25.3%	20.9%	10.0%	22.9%	24.7%
8	Otero County	12.2%	35.0%	8.8%	24.2%	12.8%
9	Grant County	9.8%	27.9%	18.1%	23.1%	8.7%
10	Rio Arriba County	10.6%	27.2%	17.2%	17.8%	9.1%
	• State Average	12.8%	24.9%	13.1%	19.0%	15.2%

Highest proportion of operational risk by category

- **Residential: Lea County, 52.5%**

Greatest risk to property owners with 9,471 out of 18,037 residential properties at risk of water reaching their building.

- **Roads: Roosevelt County, 44.2%**

Greatest risk to commutes and transportation with 1,246 out of 2,819 miles of roads at risk of becoming impassable.

- **Commercial: Lea County, 70.0%**

Greatest risk to businesses with 7 out of 10 commercial buildings at risk of water reaching their building.

- **Social: Lea County, 45.4%**

Greatest risk to government, education or social facilities with 54 out of 119 at risk of becoming inoperable.

- **Infrastructure: Lea County, 47.2%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 17 out of 36 at risk of becoming inoperable.

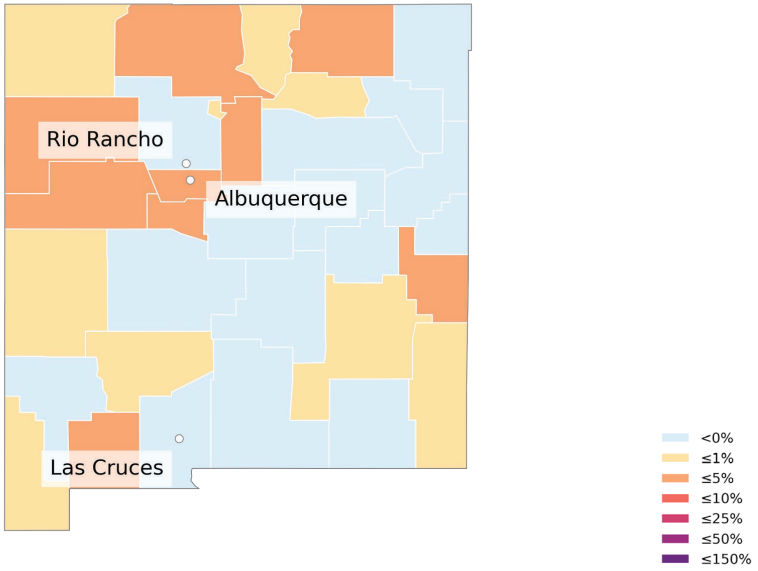
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
New Mexico

As severity and frequency of flood events in New Mexico increase over the next 30 years with a changing environment, an additional 1,215 residential properties, 28.0 miles of roads, 4 commercial properties, and 4 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Lea County	0.5%	0.2%	0.0%	0.0%	2.5%
2	Sierra County	-0.1%	-0.1%	0.0%	0.0%	2.9%
3	Roosevelt County	1.0%	0.2%	1.4%	0.0%	0.0%
4	San Juan County	0.1%	0.3%	0.5%	1.5%	0.0%
5	Cibola County	0.5%	0.3%	1.3%	0.0%	0.0%
6	Luna County	0.8%	0.4%	0.0%	0.0%	0.0%
7	Bernalillo County	0.5%	0.1%	0.0%	0.0%	0.1%
8	Chaves County	0.0%	-0.2%	0.0%	0.0%	0.9%
9	Valencia County	0.2%	0.2%	0.0%	0.0%	0.0%
10	Rio Arriba County	0.1%	0.3%	0.0%	0.0%	0.0%
	• State Average	0.2%	0.0%	0.0%	0.0%	0.1%

Greatest growing operational risk by category

- **Residential: Roosevelt County, 1.0%**

Greatest growing risk to property owners with 59 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Luna County, 0.4%**

Greatest growing risk to commutes and transportation with 27 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Roosevelt County, 1.4%**

Greatest growing risk to businesses with 4 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Sierra County, 2.9%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: San Juan County, 1.5%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

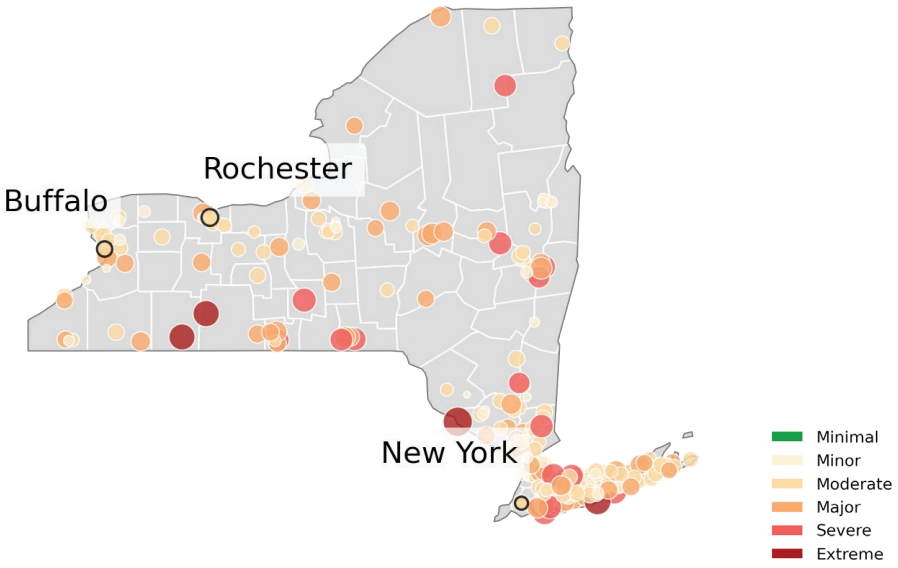
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
New York

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In New York, there are 595,504 residential properties, 47,838 miles of roads, 51,364 commercial properties, 2,178 infrastructure facilities, and 4,782 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in New York, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Hornell	75.5%	72.5%	89.7%	50.0%	89.5%
2	Port Jervis	64.0%	62.5%	72.3%	87.5%	70.0%
3	Wellsville	45.8%	62.2%	60.7%	80.0%	76.9%
4	Elmira	51.5%	55.4%	69.9%	66.7%	66.7%
5	Fire Island	89.5%	75.2%	60.0%	75.0%	0.0%
6	Binghamton	37.6%	52.1%	71.3%	78.6%	58.3%
7	Watervliet	36.2%	51.2%	54.9%	100.0%	55.6%
8	Endicott	37.7%	44.7%	46.6%	100.0%	60.0%
9	Troy	35.4%	43.8%	69.0%	70.8%	69.3%
10	Amsterdam	20.2%	41.8%	61.0%	100.0%	56.3%
	• State Average	15.5%	26.2%	22.6%	33.5%	19.0%

Highest proportion of operational risk by category

- **Residential: Fire Island, 89.5%**

Greatest risk to property owners with 162 out of 181 residential properties at risk of water reaching their building.

- **Roads: Fire Island, 75.2%**

Greatest risk to commutes and transportation with 50 out of 66 miles of roads at risk of becoming impassable.

- **Commercial: Hornell, 89.7%**

Greatest risk to businesses with 156 out of 174 commercial buildings at risk of water reaching their building.

- **Social: Hornell, 89.5%**

Greatest risk to government, education or social facilities with 17 out of 19 at risk of becoming inoperable.

- **Infrastructure: Endicott, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 5 at risk of becoming inoperable.

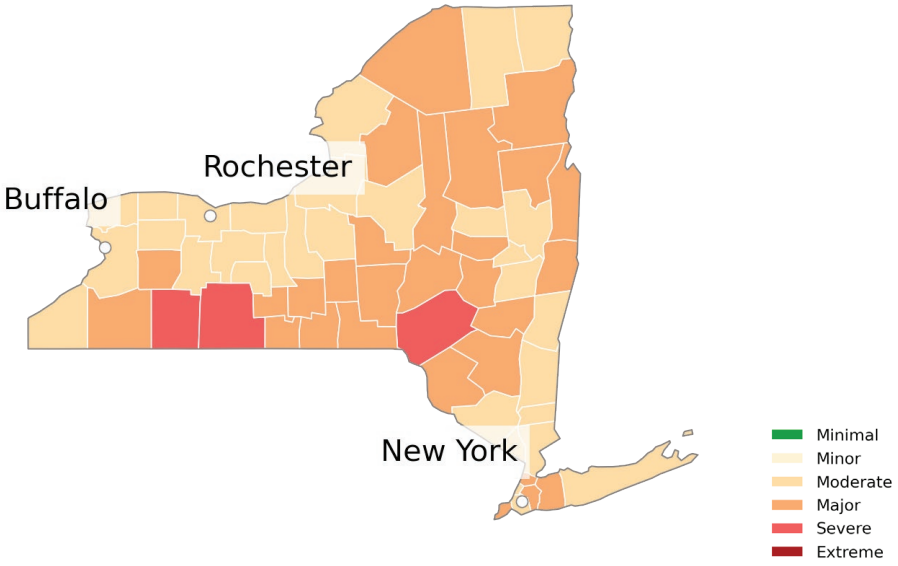
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
New York

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In New York, Chemung County has the largest number of properties currently protected with community flood mitigation projects or structures with 11,104 out of 39,362 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Chemung County	38.4%	39.1%	57.9%	40.7%	51.5%
2	Allegany County	32.2%	29.8%	43.5%	58.6%	55.3%
3	Steuben County	37.8%	33.6%	47.4%	46.9%	53.2%
4	Broome County	27.7%	32.7%	57.2%	58.7%	41.9%
5	Tioga County	28.2%	39.0%	52.3%	45.2%	50.0%
6	Delaware County	28.6%	35.7%	47.2%	52.1%	48.2%
7	Cortland County	30.9%	29.9%	39.7%	56.7%	41.9%
8	Schuyler County	25.8%	23.7%	45.2%	48.1%	46.4%
9	Montgomery County	20.9%	31.6%	35.2%	51.7%	42.3%
10	Rensselaer County	18.2%	30.3%	42.8%	50.5%	39.7%
	• State Average	15.5%	26.2%	22.6%	33.5%	19.0%

Highest proportion of operational risk by category

- **Residential: Chemung County, 38.4%**

Greatest risk to property owners with 10,688 out of 27,856 residential properties at risk of water reaching their building.

- **Roads: Nassau County, 40.5%**

Greatest risk to commutes and transportation with 2,101 out of 5,194 miles of roads at risk of becoming impassable.

- **Commercial: Chemung County, 57.9%**

Greatest risk to businesses with 879 out of 1,518 commercial buildings at risk of water reaching their building.

- **Social: Allegany County, 55.3%**

Greatest risk to government, education or social facilities with 42 out of 76 at risk of becoming inoperable.

- **Infrastructure: Broome County, 58.7%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 61 out of 104 at risk of becoming inoperable.

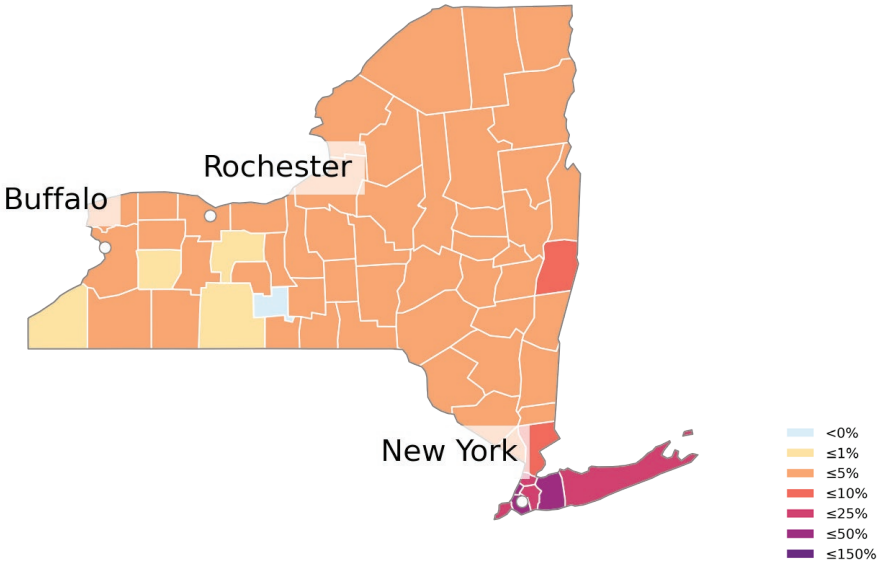
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
New York

As severity and frequency of flood events in New York increase over the next 30 years with a changing environment, an additional 87,046 residential properties, 1,987.0 miles of roads, 6,096 commercial properties, 151 infrastructure facilities, and 655 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Kings County	7.8%	11.3%	5.5%	9.9%	3.8%
2	Nassau County	8.6%	6.5%	7.3%	9.4%	5.7%
3	Richmond County	5.7%	5.8%	7.8%	7.8%	5.9%
4	New York County	4.5%	7.5%	5.1%	8.9%	6.2%
5	Queens County	3.1%	6.1%	4.0%	8.6%	3.2%
6	Suffolk County	2.3%	3.3%	3.6%	3.6%	3.1%
7	Bronx County	2.5%	5.2%	2.5%	1.4%	1.1%
8	Tioga County	0.6%	0.7%	0.7%	3.2%	4.4%
9	Westchester County	0.7%	1.2%	2.8%	3.1%	0.8%
10	Rockland County	0.5%	0.7%	0.6%	4.1%	1.4%
	• State Average	2.3%	1.1%	2.7%	2.3%	2.6%

Greatest growing operational risk by category

- **Residential: Nassau County, 8.6%**

Greatest growing risk to property owners with 30,856 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Kings County, 11.3%**

Greatest growing risk to commutes and transportation with 206 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Richmond County, 7.8%**

Greatest growing risk to businesses with 322 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: New York County, 6.2%**

Greatest growing risk to government, education or social facilities with 181 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Kings County, 9.9%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 25 additional facilities at risk of becoming inoperable in 30 years.

*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

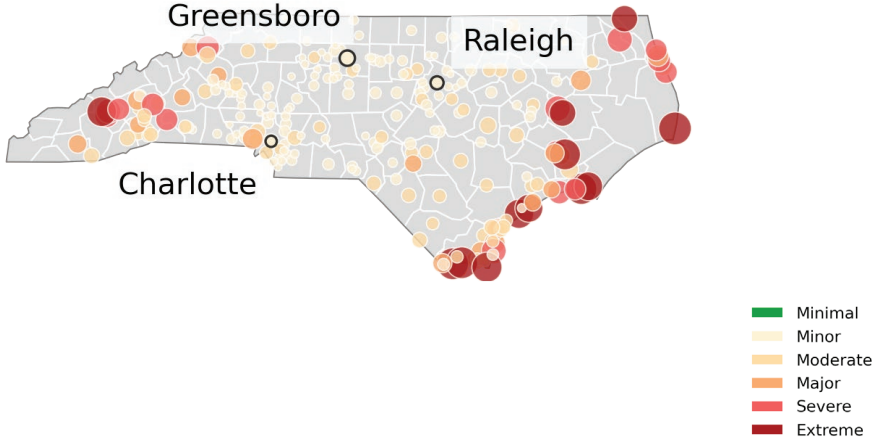
City Details

North Carolina

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In North Carolina, there are 345,617 residential properties, 58,585 miles of roads, 23,412 commercial properties, 1,017 infrastructure facilities, and 1,562 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in North Carolina, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Avon	99.6%	99.9%	96.0%	100.0%	100.0%
2	Fairfield Harbour	99.9%	99.9%	91.7%	100.0%	100.0%
3	Bald Head Island	87.3%	91.3%	100.0%	100.0%	100.0%
4	Atlantic Beach	63.5%	89.4%	89.7%	100.0%	100.0%
5	Beaufort	84.2%	91.1%	89.3%	66.7%	100.0%
6	Ocean Isle Beach	97.9%	86.0%	68.4%	50.0%	100.0%
7	Washington	77.6%	73.6%	86.4%	62.5%	93.9%
8	North Topsail Beach	69.0%	42.1%	95.5%	66.7%	100.0%
9	Maggie Valley	40.5%	62.8%	86.8%	66.7%	100.0%
10	Elizabeth City	64.7%	60.0%	62.8%	78.6%	72.7%
	• State Average	10.6%	23.9%	14.4%	20.5%	12.1%

Highest proportion of operational risk by category

- **Residential: Fairfield Harbour, 99.9%**

Greatest risk to property owners with 1,516 out of 1,518 residential properties at risk of water reaching their building.

- **Roads: Avon, 99.9%**

Greatest risk to commutes and transportation with 35 out of 35 miles of roads at risk of becoming impassable.

- **Commercial: Bald Head Island, 100.0%**

Greatest risk to businesses with 20 out of 20 commercial buildings at risk of water reaching their building.

- **Social: Beaufort, 100.0%**

Greatest risk to government, education or social facilities with 19 out of 19 at risk of becoming inoperable.

- **Infrastructure: Waynesville, 80.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 4 out of 5 at risk of becoming inoperable.

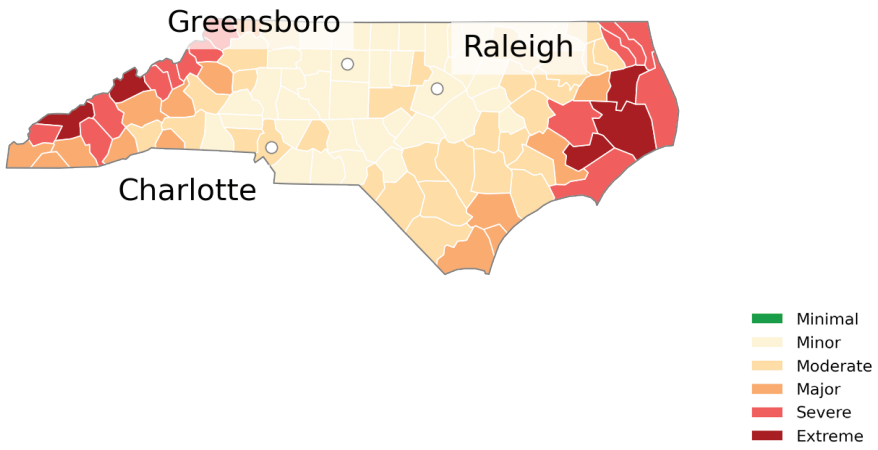
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
North Carolina

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In North Carolina, Dare County has the largest number of properties currently protected with community flood mitigation projects or structures with 7,853 out of 39,656 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Hyde County	99.3%	94.8%	96.6%	94.1%	100.0%
2	Tyrrell County	81.3%	79.5%	84.5%	66.7%	87.5%
3	Pamlico County	68.3%	74.0%	67.8%	70.8%	59.3%
4	Dare County	61.4%	74.8%	55.2%	64.4%	60.9%
5	Beaufort County	59.8%	56.2%	74.0%	54.5%	72.2%
6	Swain County	38.3%	58.0%	63.2%	64.7%	69.7%
7	Pasquotank County	51.4%	53.3%	60.2%	65.6%	63.0%
8	Currituck County	70.9%	62.6%	52.4%	30.4%	69.4%
9	Carteret County	50.7%	67.4%	43.6%	54.7%	63.7%
10	Madison County	36.5%	61.5%	54.5%	57.1%	59.4%
	• State Average	10.6%	23.9%	14.4%	20.5%	12.1%

Highest proportion of operational risk by category

- **Residential: Tyrrell County, 81.3%**

Greatest risk to property owners with 1,145 out of 1,408 residential properties at risk of water reaching their building.

- **Roads: Hyde County, 94.8%**

Greatest risk to commutes and transportation with 1,076 out of 1,135 miles of roads at risk of becoming impassable.

- **Commercial: Hyde County, 96.6%**

Greatest risk to businesses with 28 out of 29 commercial buildings at risk of water reaching their building.

- **Social: Hyde County, 100.0%**

Greatest risk to government, education or social facilities with 15 out of 15 at risk of becoming inoperable.

- **Infrastructure: Hyde County, 94.1%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 16 out of 17 at risk of becoming inoperable.

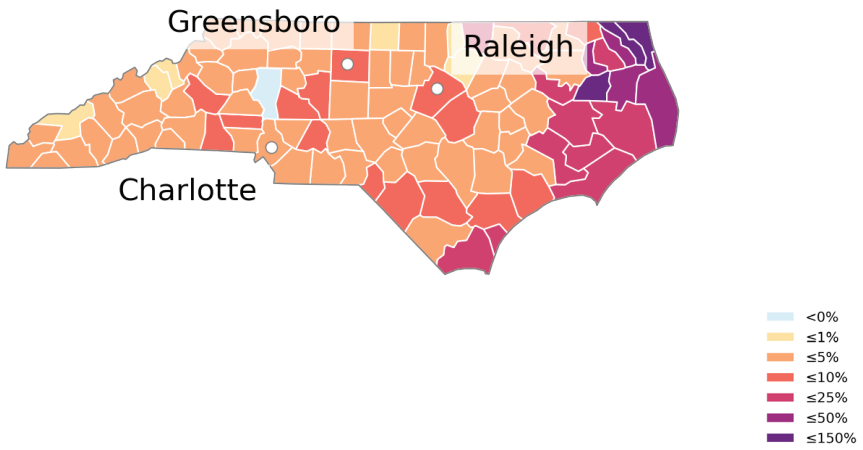
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
North Carolina

As severity and frequency of flood events in North Carolina increase over the next 30 years with a changing environment, an additional 25,838 residential properties, 2,678.0 miles of roads, 1,409 commercial properties, 68 infrastructure facilities, and 109 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Camden County	12.5%	11.2%	17.2%	33.3%	35.7%
2	Currituck County	11.0%	20.7%	13.7%	39.1%	13.9%
3	Washington County	14.9%	14.2%	18.5%	22.7%	7.7%
4	Dare County	7.9%	9.1%	12.7%	13.3%	13.8%
5	Tyrrell County	12.4%	15.2%	15.5%	11.1%	0.0%
6	Pasquotank County	8.3%	7.9%	8.7%	3.1%	15.2%
7	Chowan County	6.6%	8.1%	6.8%	15.8%	2.9%
8	Carteret County	8.2%	6.4%	8.3%	5.3%	6.6%
9	Craven County	4.9%	5.3%	3.3%	12.3%	5.2%
10	Perquimans County	5.5%	6.5%	4.9%	4.3%	6.5%
	• State Average	0.8%	1.1%	0.9%	1.4%	0.8%

Greatest growing operational risk by category

- **Residential: Washington County, 14.9%**

Greatest growing risk to property owners with 664 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Currituck County, 20.7%**

Greatest growing risk to commutes and transportation with 177 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Washington County, 18.5%**

Greatest growing risk to businesses with 74 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Camden County, 35.7%**

Greatest growing risk to government, education or social facilities with 5 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Currituck County, 39.1%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 9 additional facilities at risk of becoming inoperable in 30 years.

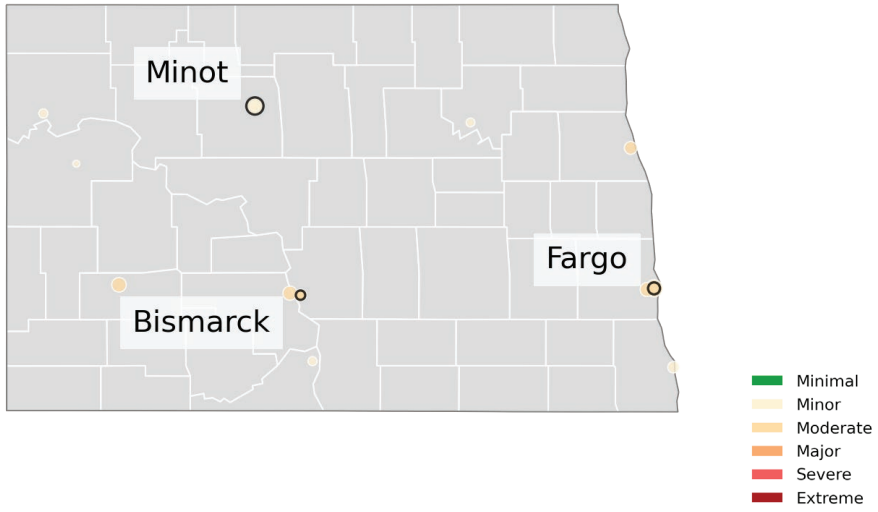
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
North Dakota

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In North Dakota, there are 15,828 residential properties, 25,584 miles of roads, 2,297 commercial properties, 165 infrastructure facilities, and 284 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in North Dakota, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Grand Forks	14.1%	56.6%	34.7%	13.3%	42.2%
2	West Fargo	33.1%	49.0%	32.4%	0.0%	18.5%
3	Fargo	8.4%	47.8%	19.5%	40.0%	15.2%
4	Bismarck	7.9%	24.5%	19.5%	35.0%	26.2%
5	Mandan	11.7%	25.5%	25.3%	16.7%	30.4%
6	Dickinson	10.7%	17.4%	12.0%	42.9%	12.5%
7	Wahpeton	6.7%	41.9%	6.6%	0.0%	12.5%
8	Williston	4.8%	13.6%	14.2%	0.0%	11.1%
9	Minot	5.4%	10.1%	8.6%	16.7%	1.5%
10	Devils Lake	6.1%	16.7%	6.3%	0.0%	4.8%
	• State Average	10.4%	14.9%	15.1%	14.7%	18.3%

Highest proportion of operational risk by category

- **Residential: West Fargo, 33.1%**

Greatest risk to property owners with 3,069 out of 9,280 residential properties at risk of water reaching their building.

- **Roads: Grand Forks, 56.6%**

Greatest risk to commutes and transportation with 188 out of 332 miles of roads at risk of becoming impassable.

- **Commercial: Grand Forks, 34.7%**

Greatest risk to businesses with 276 out of 795 commercial buildings at risk of water reaching their building.

- **Social: Grand Forks, 42.2%**

Greatest risk to government, education or social facilities with 43 out of 102 at risk of becoming inoperable.

- **Infrastructure: Dickinson, 42.9%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 3 out of 7 at risk of becoming inoperable.

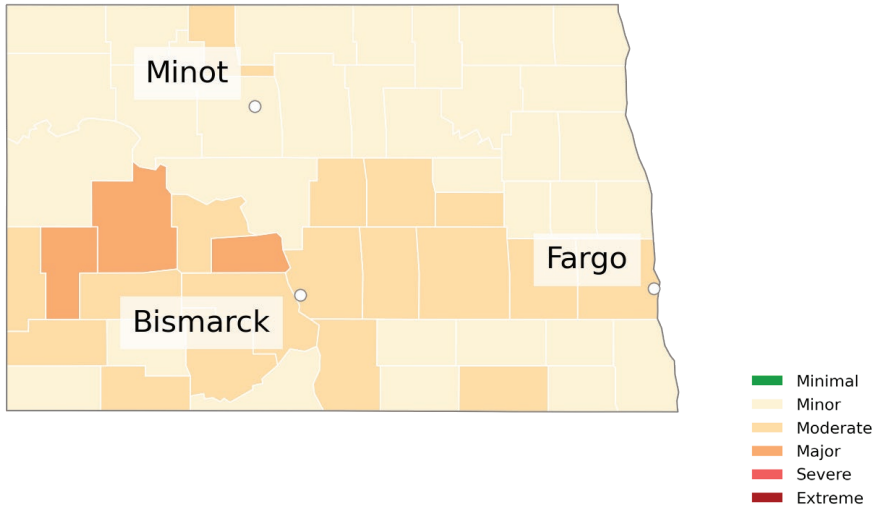
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
North Dakota

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In North Dakota, Grand Forks County has the largest number of properties currently protected with community flood mitigation projects or structures with 15,702 out of 31,100 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Billings County	18.1%	27.2%	22.6%	55.6%	40.0%
2	Morton County	12.2%	21.6%	20.0%	22.5%	47.1%
3	Golden Valley County	17.3%	22.1%	50.0%	20.0%	0.0%
4	Grand Forks County	13.0%	9.6%	31.5%	13.8%	33.3%
5	Barnes County	4.3%	7.9%	0.0%	25.0%	58.3%
6	Burleigh County	9.3%	20.1%	19.5%	22.0%	22.5%
7	Stutsman County	5.0%	17.7%	8.0%	13.9%	41.7%
8	Mercer County	10.6%	21.1%	17.0%	31.3%	0.0%
9	Cass County	14.9%	13.0%	20.4%	15.3%	13.8%
10	Stark County	10.2%	20.1%	10.9%	22.6%	11.4%
	• State Average	10.4%	14.9%	15.1%	14.7%	18.3%

Highest proportion of operational risk by category

- **Residential: Cass County, 14.9%**

Greatest risk to property owners with 5,866 out of 39,462 residential properties at risk of water reaching their building.

- **Roads: Billings County, 27.2%**

Greatest risk to commutes and transportation with 571 out of 2,101 miles of roads at risk of becoming impassable.

- **Commercial: Grand Forks County, 31.5%**

Greatest risk to businesses with 304 out of 966 commercial buildings at risk of water reaching their building.

- **Social: Slope County, 66.7%**

Greatest risk to government, education or social facilities with 2 out of 3 at risk of becoming inoperable.

- **Infrastructure: Billings County, 55.6%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 9 at risk of becoming inoperable.

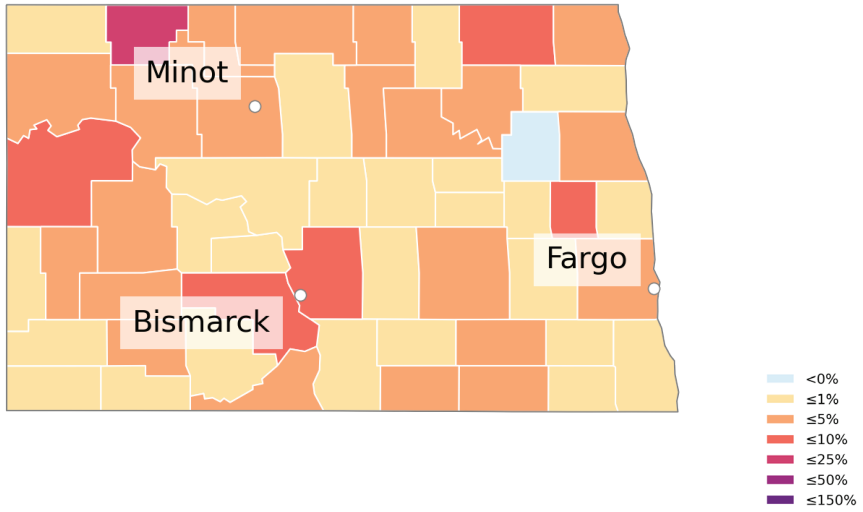
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
North Dakota

As severity and frequency of flood events in North Dakota increase over the next 30 years with a changing environment, an additional 377 residential properties, 401.0 miles of roads, 57 commercial properties, 6 infrastructure facilities, and 1 social facility will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	McKenzie County	0.5%	0.4%	0.6%	3.8%	0.0%
2	Grand Forks County	0.1%	0.2%	0.2%	3.4%	0.0%
3	Morton County	0.7%	0.2%	1.0%	0.0%	0.0%
4	Richland County	0.2%	0.1%	1.4%	0.0%	0.0%
5	Cass County	0.1%	0.2%	0.1%	1.0%	0.0%
6	Williams County	0.3%	0.4%	0.7%	0.0%	0.0%
7	Pierce County	1.0%	0.2%	0.0%	0.0%	0.0%
8	Burleigh County	0.4%	0.4%	0.4%	0.0%	0.0%
9	Stark County	0.3%	0.2%	0.6%	0.0%	0.0%
10	Stutsman County	0.3%	0.4%	0.4%	0.0%	0.0%
	• State Average	0.2%	0.2%	0.4%	0.5%	0.1%

Greatest growing operational risk by category

- **Residential: Grant County, 1.2%**

Greatest growing risk to property owners with 1 additional residential property at risk of water reaching their building in 30 years.

- **Roads: Bottineau County, 0.5%**

Greatest growing risk to commutes and transportation with 22 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Richland County, 1.4%**

Greatest growing risk to businesses with 4 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Sioux County, 10.0%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Sioux County, 9.1%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

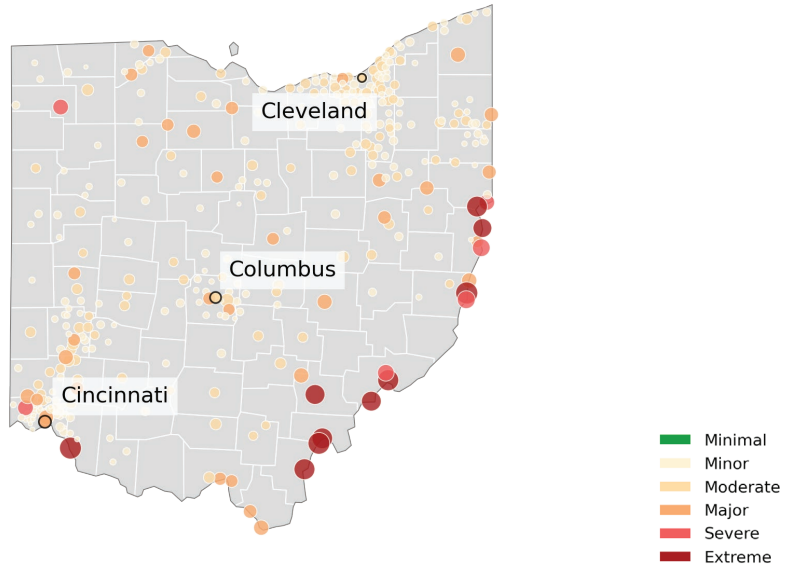
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Ohio

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Ohio, there are 297,587 residential properties, 42,861 miles of roads, 40,773 commercial properties, 1,573 infrastructure facilities, and 2,057 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Ohio, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Middleport	82.8%	83.4%	100.0%	80.0%	88.9%
2	Bellaire	64.5%	80.4%	99.2%	72.7%	83.3%
3	Pomeroy	47.4%	59.4%	98.8%	75.0%	100.0%
4	Shadyside	68.7%	75.0%	100.0%	100.0%	33.3%
5	New Richmond	53.2%	78.0%	90.2%	100.0%	55.6%
6	Wellsville	70.5%	67.1%	83.0%	66.7%	83.3%
7	Athens	48.5%	63.1%	73.6%	70.0%	76.3%
8	Marietta	42.1%	59.1%	88.7%	58.3%	78.4%
9	Toronto	42.0%	52.5%	73.2%	75.0%	50.0%
10	Belpre	43.2%	52.1%	56.0%	60.0%	72.2%
	• State Average	7.8%	22.4%	15.3%	25.0%	12.3%

Highest proportion of operational risk by category

- **Residential: Gallipolis, 87.8%**

Greatest risk to property owners with 1,073 out of 1,222 residential properties at risk of water reaching their building.

- **Roads: Middleport, 83.4%**

Greatest risk to commutes and transportation with 22 out of 26 miles of roads at risk of becoming impassable.

- **Commercial: Gallipolis, 100.0%**

Greatest risk to businesses with 235 out of 235 commercial buildings at risk of water reaching their building.

- **Social: Pomeroy, 100.0%**

Greatest risk to government, education or social facilities with 5 out of 5 at risk of becoming inoperable.

- **Infrastructure: New Richmond, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 6 out of 6 at risk of becoming inoperable.

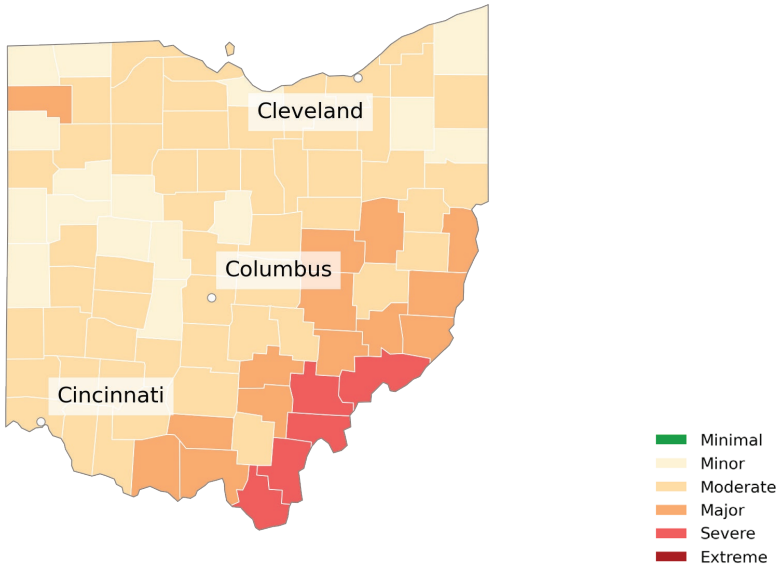
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Ohio

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Ohio, Ross County has the largest number of properties currently protected with community flood mitigation projects or structures with 5,487 out of 42,302 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Lawrence County	46.0%	56.5%	61.5%	61.2%	43.0%
2	Meigs County	40.4%	49.9%	28.7%	63.4%	62.8%
3	Gallia County	37.5%	33.4%	49.7%	54.8%	39.0%
4	Washington County	32.0%	39.8%	33.9%	51.3%	56.9%
5	Athens County	30.8%	44.4%	33.7%	50.0%	54.5%
6	Scioto County	31.6%	53.3%	37.1%	41.1%	21.1%
7	Belmont County	27.3%	29.9%	34.0%	48.8%	34.1%
8	Hocking County	24.9%	42.1%	23.3%	50.0%	25.6%
9	Jefferson County	18.5%	34.3%	22.2%	51.8%	22.9%
10	Tuscarawas County	16.1%	31.2%	25.8%	33.3%	26.3%
	• State Average	7.8%	22.4%	15.3%	25.0%	12.3%

Highest proportion of operational risk by category

- **Residential: Lawrence County, 46.0%**

Greatest risk to property owners with 6,785 out of 14,750 residential properties at risk of water reaching their building.

- **Roads: Lawrence County, 56.5%**

Greatest risk to commutes and transportation with 1,236 out of 2,190 miles of roads at risk of becoming impassable.

- **Commercial: Lawrence County, 61.5%**

Greatest risk to businesses with 396 out of 644 commercial buildings at risk of water reaching their building.

- **Social: Meigs County, 62.8%**

Greatest risk to government, education or social facilities with 27 out of 43 at risk of becoming inoperable.

- **Infrastructure: Meigs County, 63.4%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 26 out of 41 at risk of becoming inoperable.

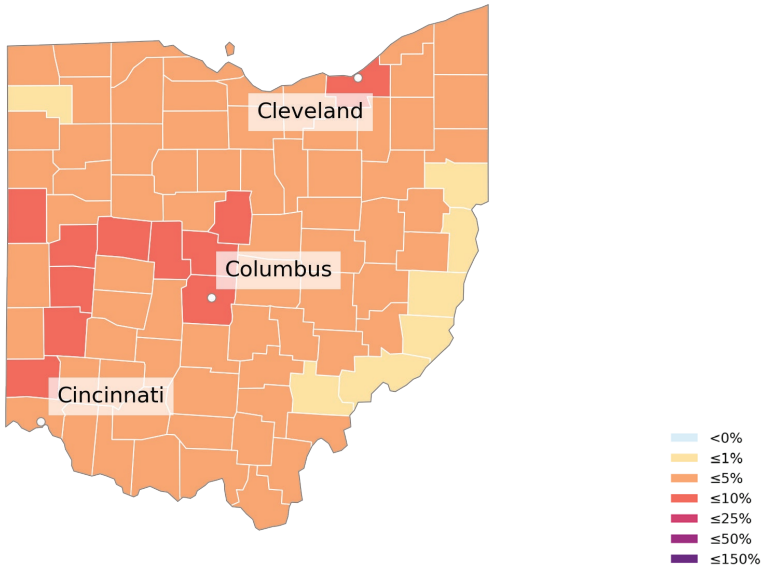
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Ohio

As severity and frequency of flood events in Ohio increase over the next 30 years with a changing environment, an additional 14,074 residential properties, 1,144.0 miles of roads, 1,552 commercial properties, 27 infrastructure facilities, and 103 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Scioto County	0.7%	0.6%	0.6%	3.3%	0.9%
2	Lucas County	0.5%	1.4%	0.9%	1.4%	1.6%
3	Lawrence County	1.2%	0.6%	1.1%	1.5%	1.2%
4	Gallia County	0.4%	0.7%	0.4%	2.4%	1.7%
5	Delaware County	0.2%	1.6%	1.2%	0.0%	2.5%
6	Montgomery County	0.5%	1.7%	1.3%	1.1%	0.7%
7	Cuyahoga County	0.4%	1.9%	0.9%	0.0%	1.6%
8	Union County	0.2%	0.4%	1.0%	0.0%	3.0%
9	Morgan County	0.1%	0.3%	0.4%	0.0%	3.7%
10	Hamilton County	0.4%	1.5%	0.9%	0.7%	0.9%
	• State Average	0.4%	0.6%	0.6%	0.4%	0.6%

Greatest growing operational risk by category

- **Residential: Lawrence County, 1.2%**

Greatest growing risk to property owners with 184 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Erie County, 2.0%**

Greatest growing risk to commutes and transportation with 1 additional mile of roads at risk of becoming impassable in 30 years.

- **Commercial: Montgomery County, 1.3%**

Greatest growing risk to businesses with 164 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Morgan County, 3.7%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Scioto County, 3.3%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 3 additional facilities at risk of becoming inoperable in 30 years.

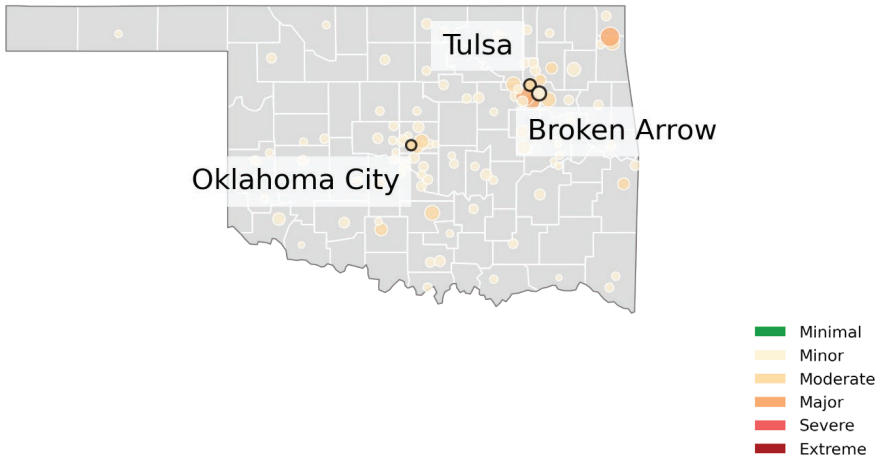
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Oklahoma

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Oklahoma, there are 82,053 residential properties, 47,984 miles of roads, 7,325 commercial properties, 324 infrastructure facilities, and 675 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Oklahoma, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Jenks	19.1%	30.0%	81.1%	62.5%	69.0%
2	Bixby	24.9%	33.6%	63.6%	40.0%	51.5%
3	Copeland	47.9%	37.9%	12.5%	0.0%	100.0%
4	Pauls Valley	11.5%	30.8%	38.5%	50.0%	26.7%
5	Sand Springs	8.6%	24.2%	33.1%	40.0%	43.4%
6	Chickasha	12.0%	29.7%	46.2%	37.5%	20.0%
7	Spencer	5.8%	12.1%	4.8%	100.0%	0.0%
8	Warr Acres	4.5%	6.4%	5.0%	100.0%	0.0%
9	Grove	18.4%	23.5%	15.9%	25.0%	31.3%
10	Duncan	5.5%	21.9%	14.3%	57.1%	0.0%
	• State Average	7.2%	20.6%	12.9%	12.2%	10.6%

Highest proportion of operational risk by category

- **Residential: Copeland, 47.9%**

Greatest risk to property owners with 271 out of 566 residential properties at risk of water reaching their building.

- **Roads: Anadarko, 39.8%**

Greatest risk to commutes and transportation with 46 out of 115 miles of roads at risk of becoming impassable.

- **Commercial: Jenks, 81.1%**

Greatest risk to businesses with 167 out of 206 commercial buildings at risk of water reaching their building.

- **Social: Jenks, 69.0%**

Greatest risk to government, education or social facilities with 20 out of 29 at risk of becoming inoperable.

- **Infrastructure: Jenks, 62.5%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 8 at risk of becoming inoperable.

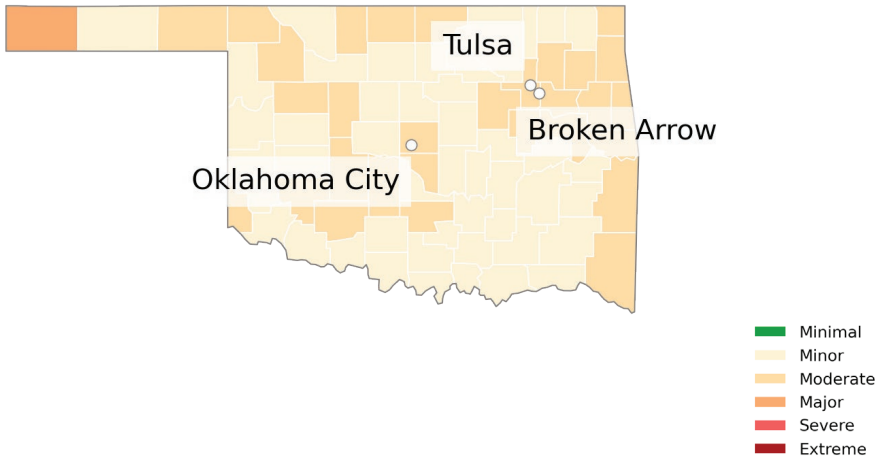
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Oklahoma

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Oklahoma, Comanche County has the largest number of properties currently protected with community flood mitigation projects or structures with 14,740 out of 55,095 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Cimarron County	25.3%	21.6%	100.0%	36.4%	50.0%
2	Alfalfa County	28.0%	29.1%	43.9%	22.2%	21.4%
3	Harmon County	24.7%	25.7%	5.7%	0.0%	40.0%
4	Tulsa County	12.2%	22.8%	21.7%	17.7%	21.0%
5	Garvin County	8.2%	18.1%	26.6%	18.2%	18.2%
6	Delaware County	17.9%	22.9%	13.5%	15.0%	16.5%
7	Kiowa County	13.4%	25.0%	21.7%	13.0%	11.1%
8	Rogers County	7.3%	19.9%	13.3%	35.1%	8.3%
9	Wagoner County	6.4%	23.2%	8.7%	22.5%	20.2%
10	Grady County	7.0%	18.0%	33.2%	8.6%	13.2%
	• State Average	7.2%	20.6%	12.9%	12.2%	10.6%

Highest proportion of operational risk by category

- **Residential: Alfalfa County, 28.0%**

Greatest risk to property owners with 519 out of 1,853 residential properties at risk of water reaching their building.

- **Roads: Alfalfa County, 29.1%**

Greatest risk to commutes and transportation with 728 out of 2,499 miles of roads at risk of becoming impassable.

- **Commercial: Alfalfa County, 43.9%**

Greatest risk to businesses with 68 out of 155 commercial buildings at risk of water reaching their building.

- **Social: Cimarron County, 50.0%**

Greatest risk to government, education or social facilities with 7 out of 14 at risk of becoming inoperable.

- **Infrastructure: Cimarron County, 36.4%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 4 out of 11 at risk of becoming inoperable.

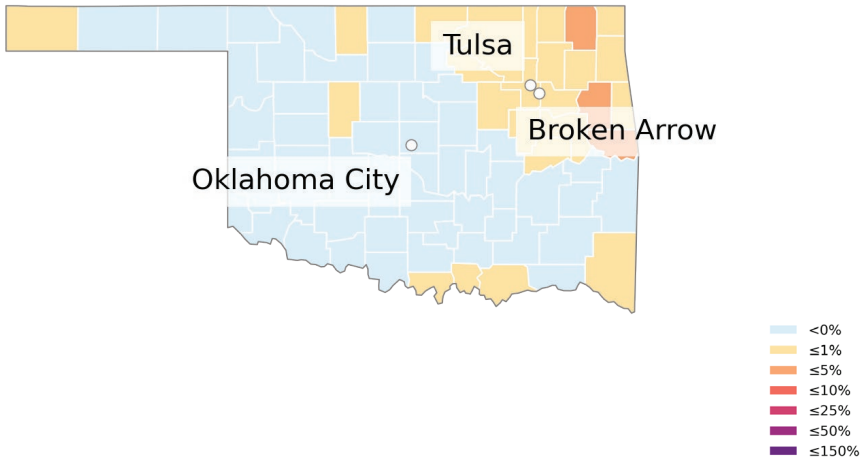
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Oklahoma

As severity and frequency of flood events in Oklahoma changes over the next 30 years with a changing environment, an additional 3 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Tulsa County	0.1%	0.2%	0.2%	0.7%	0.6%
2	Alfalfa County	0.2%	-0.1%	1.3%	0.0%	0.0%
3	Cherokee County	0.0%	0.1%	0.5%	0.0%	0.0%
4	Washington County	0.1%	0.2%	0.1%	0.0%	0.0%
5	Osage County	0.2%	0.1%	0.0%	0.0%	0.0%
6	Rogers County	0.1%	0.1%	0.1%	0.0%	0.0%
7	Nowata County	0.1%	0.1%	0.0%	0.0%	0.0%
8	Mayes County	0.1%	0.1%	0.0%	0.0%	0.0%
9	Ottawa County	0.2%	0.0%	0.0%	0.0%	0.0%
10	Wagoner County	0.0%	0.2%	0.0%	0.0%	0.0%
	• State Average	-0.1%	-0.1%	-0.1%	-0.1%	0.0%

Greatest growing operational risk by category

- **Residential: Osage County, 0.2%**

Greatest growing risk to property owners with 29 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Tulsa County, 0.2%**

Greatest growing risk to commutes and transportation with 14 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Alfalfa County, 1.3%**

Greatest growing risk to businesses with 2 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Tulsa County, 0.6%**

Greatest growing risk to government, education or social facilities with 8 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Tulsa County, 0.7%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

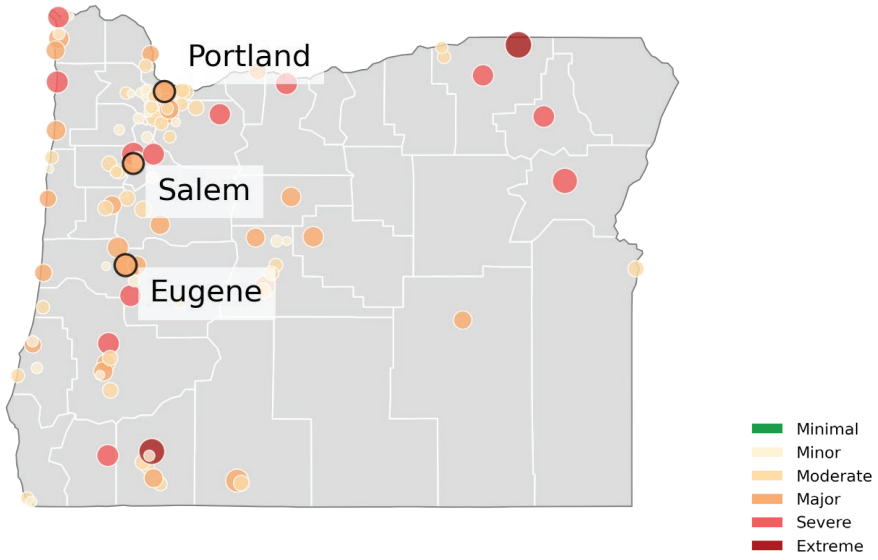
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Oregon

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Oregon, there are 239,700 residential properties, 72,983 miles of roads, 25,316 commercial properties, 808 infrastructure facilities, and 1,859 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Oregon, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Milton-Freewater	89.6%	90.8%	97.1%	100.0%	100.0%
2	Baker City	87.5%	67.2%	91.3%	100.0%	100.0%
3	Keizer	57.2%	68.5%	82.2%	66.7%	66.7%
4	Eagle Point	37.3%	45.3%	72.1%	100.0%	75.0%
5	La Grande	71.3%	72.8%	92.9%	20.0%	62.9%
6	Junction City	52.0%	64.2%	75.1%	50.0%	75.0%
7	Prineville	48.7%	48.2%	74.9%	50.0%	72.7%
8	Seaside	56.7%	61.7%	77.2%	20.0%	66.7%
9	Lebanon	42.9%	52.9%	58.9%	50.0%	73.1%
10	Eugene	48.3%	60.4%	57.9%	60.0%	49.0%
	• State Average	20.1%	30.2%	32.7%	33.0%	27.3%

Highest proportion of operational risk by category

- **Residential: Milton-Freewater, 89.6%**

Greatest risk to property owners with 1,590 out of 1,774 residential properties at risk of water reaching their building.

- **Roads: Milton-Freewater, 90.8%**

Greatest risk to commutes and transportation with 41 out of 45 miles of roads at risk of becoming impassable.

- **Commercial: Milton-Freewater, 97.1%**

Greatest risk to businesses with 169 out of 174 commercial buildings at risk of water reaching their building.

- **Social: Baker City, 100.0%**

Greatest risk to government, education or social facilities with 21 out of 21 at risk of becoming inoperable.

- **Infrastructure: Baker City, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 5 at risk of becoming inoperable.

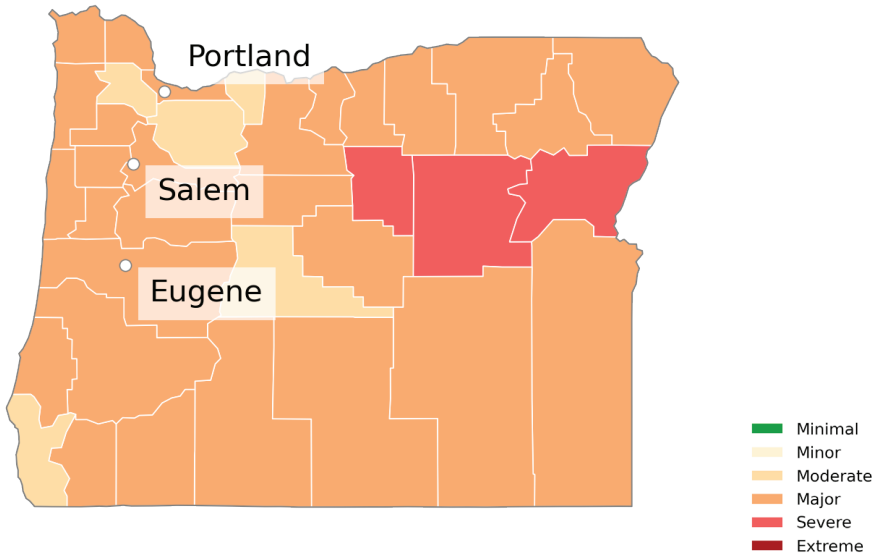
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Oregon

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Oregon, Umatilla County has the largest number of properties currently protected with community flood mitigation projects or structures with 5,339 out of 42,418 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Baker County	67.3%	34.4%	76.1%	28.9%	81.3%
2	Union County	57.1%	27.5%	77.0%	40.0%	52.9%
3	Grant County	33.3%	35.6%	66.7%	37.9%	61.5%
4	Malheur County	42.1%	33.1%	57.6%	50.0%	50.8%
5	Wheeler County	53.7%	39.0%	63.6%	44.4%	25.0%
6	Lane County	46.0%	35.0%	48.1%	44.2%	43.8%
7	Crook County	29.7%	34.6%	59.5%	25.0%	67.9%
8	Josephine County	31.4%	32.6%	46.7%	44.4%	50.0%
9	Umatilla County	30.0%	29.6%	43.5%	32.5%	48.6%
10	Tillamook County	27.5%	28.6%	44.7%	44.7%	37.0%
	• State Average	20.1%	30.2%	32.7%	33.0%	27.3%

Highest proportion of operational risk by category

- **Residential: Baker County, 67.3%**

Greatest risk to property owners with 4,454 out of 6,623 residential properties at risk of water reaching their building.

- **Roads: Sherman County, 41.0%**

Greatest risk to commutes and transportation with 361 out of 882 miles of roads at risk of becoming impassable.

- **Commercial: Union County, 77.0%**

Greatest risk to businesses with 127 out of 165 commercial buildings at risk of water reaching their building.

- **Social: Baker County, 81.2%**

Greatest risk to government, education or social facilities with 39 out of 48 at risk of becoming inoperable.

- **Infrastructure: Malheur County, 50.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 19 out of 38 at risk of becoming inoperable.

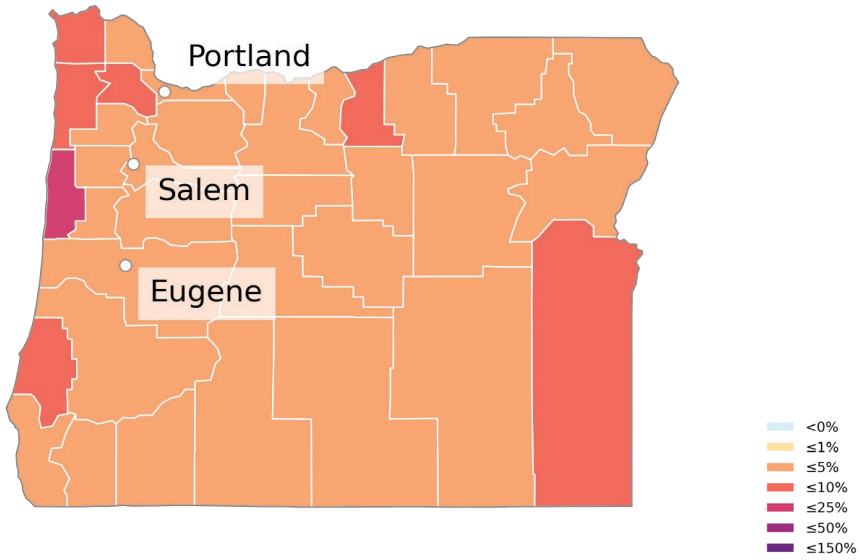
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Oregon

As severity and frequency of flood events in Oregon increase over the next 30 years with a changing environment, an additional 9,377 residential properties, 1,307.0 miles of roads, 991 commercial properties, 29 infrastructure facilities, and 93 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Clatsop County	3.3%	1.2%	4.8%	3.0%	2.5%
2	Lincoln County	2.0%	1.1%	5.7%	3.4%	2.2%
3	Tillamook County	2.7%	1.0%	4.8%	5.3%	0.0%
4	Malheur County	2.1%	0.9%	1.5%	5.3%	1.6%
5	Lane County	1.8%	0.6%	2.2%	1.9%	2.7%
6	Crook County	0.4%	0.4%	1.1%	0.0%	7.1%
7	Curry County	0.4%	0.4%	1.5%	3.8%	1.6%
8	Baker County	0.9%	0.5%	0.8%	5.3%	0.0%
9	Linn County	1.5%	0.6%	2.4%	1.4%	0.9%
10	Union County	1.0%	0.4%	1.2%	4.0%	0.0%
	• State Average	0.8%	0.5%	1.3%	1.2%	1.4%

Greatest growing operational risk by category

- **Residential: Clatsop County, 3.3%**

Greatest growing risk to property owners with 482 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Multnomah County, 1.4%**

Greatest growing risk to commutes and transportation with 60 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Lincoln County, 5.7%**

Greatest growing risk to businesses with 99 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Crook County, 7.1%**

Greatest growing risk to government, education or social facilities with 2 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Malheur County, 5.3%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 2 additional facilities at risk of becoming inoperable in 30 years.

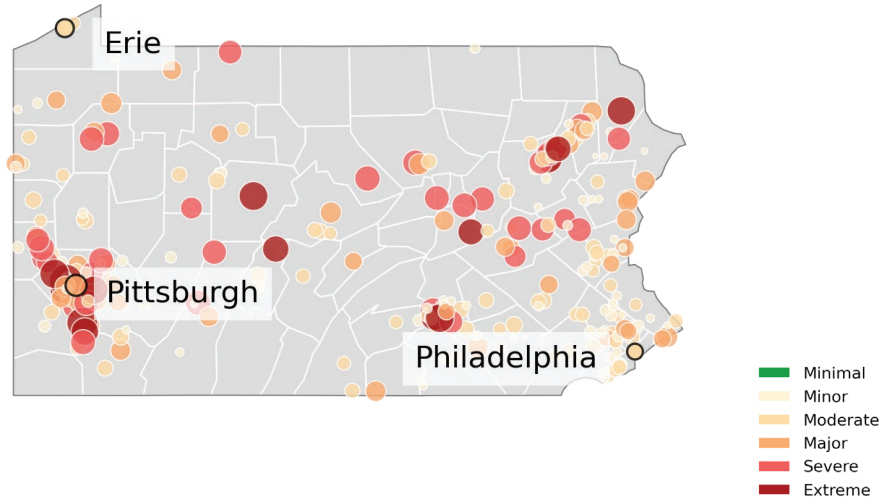
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Pennsylvania

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Pennsylvania, there are 404,280 residential properties, 61,418 miles of roads, 53,402 commercial properties, 2,207 infrastructure facilities, and 2,431 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Pennsylvania, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Kingston	98.0%	96.5%	100.0%	100.0%	100.0%
2	McKees Rocks	64.2%	76.2%	96.4%	100.0%	100.0%
3	Lock Haven	41.5%	63.3%	83.9%	80.0%	100.0%
4	Williamsport	46.7%	59.8%	84.1%	81.8%	71.1%
5	Swoyersville	79.3%	75.5%	63.0%	75.0%	50.0%
6	Monongahela	25.0%	50.5%	96.1%	100.0%	70.0%
7	Steelton	36.1%	58.4%	95.2%	100.0%	50.0%
8	Honesdale	41.5%	50.9%	86.8%	85.7%	73.3%
9	Clearfield	32.1%	49.0%	84.1%	80.0%	87.5%
10	Coraopolis	30.7%	55.9%	99.5%	100.0%	36.4%
	• State Average	10.2%	24.8%	22.4%	32.8%	17.0%

Highest proportion of operational risk by category

- **Residential: Kingston, 98.0%**

Greatest risk to property owners with 3,909 out of 3,990 residential properties at risk of water reaching their building.

- **Roads: Kingston, 96.5%**

Greatest risk to commutes and transportation with 53 out of 55 miles of roads at risk of becoming impassable.

- **Commercial: Kingston, 100.0%**

Greatest risk to businesses with 294 out of 294 commercial buildings at risk of water reaching their building.

- **Social: Lock Haven, 100.0%**

Greatest risk to government, education or social facilities with 11 out of 11 at risk of becoming inoperable.

- **Infrastructure: Shamokin, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 5 at risk of becoming inoperable.

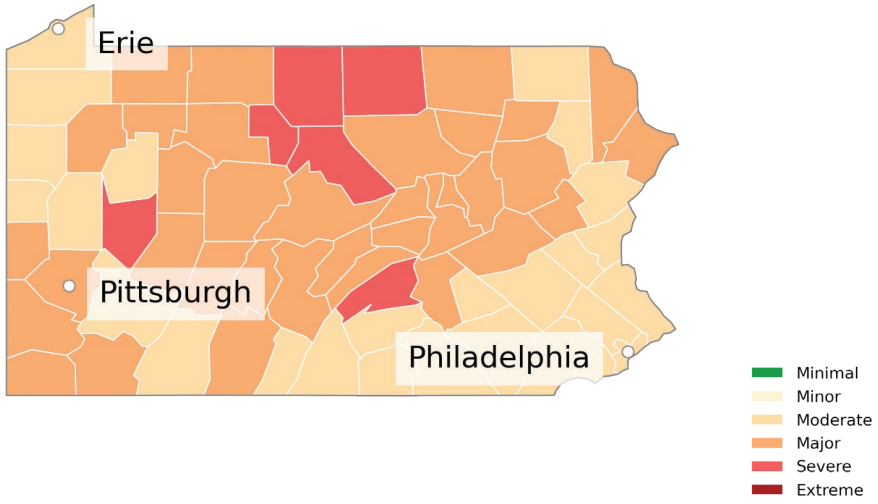
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Pennsylvania

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Pennsylvania, Lycoming County has the largest number of properties currently protected with community flood mitigation projects or structures with 9,033 out of 51,048 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Cameron County	53.2%	43.4%	68.1%	60.0%	75.0%
2	Clinton County	35.0%	36.4%	63.6%	46.8%	50.0%
3	Potter County	37.9%	39.2%	41.1%	62.5%	42.4%
4	Tioga County	30.1%	27.3%	48.6%	61.4%	49.2%
5	Perry County	22.3%	41.8%	51.0%	48.8%	41.8%
6	Armstrong County	24.4%	33.3%	52.4%	45.1%	35.2%
7	Lycoming County	29.1%	35.3%	32.9%	48.0%	43.9%
8	Wyoming County	18.6%	25.0%	47.1%	34.1%	47.8%
9	Columbia County	26.5%	33.4%	42.5%	31.4%	36.8%
10	Snyder County	23.0%	37.4%	25.8%	54.8%	27.8%
	• State Average	10.2%	24.8%	22.4%	32.8%	17.0%

Highest proportion of operational risk by category

- **Residential: Cameron County, 53.2%**

Greatest risk to property owners with 1,060 out of 1,993 residential properties at risk of water reaching their building.

- **Roads: Cameron County, 43.4%**

Greatest risk to commutes and transportation with 383 out of 883 miles of roads at risk of becoming impassable.

- **Commercial: Cameron County, 68.1%**

Greatest risk to businesses with 62 out of 91 commercial buildings at risk of water reaching their building.

- **Social: Cameron County, 75.0%**

Greatest risk to government, education or social facilities with 6 out of 8 at risk of becoming inoperable.

- **Infrastructure: Potter County, 62.5%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 20 out of 32 at risk of becoming inoperable.

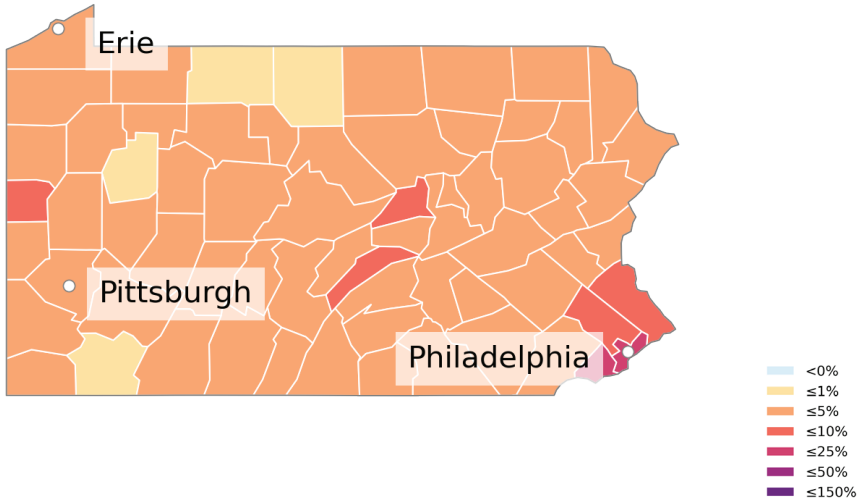
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Pennsylvania

As severity and frequency of flood events in Pennsylvania increase over the next 30 years with a changing environment, an additional 18,006 residential properties, 1,135.0 miles of roads, 1,570 commercial properties, 62 infrastructure facilities, and 82 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Philadelphia County	1.3%	2.8%	1.9%	5.8%	1.2%
2	Delaware County	0.5%	1.3%	1.0%	6.1%	0.6%
3	Juniata County	0.6%	0.5%	1.5%	5.6%	0.0%
4	Lawrence County	0.3%	0.7%	0.5%	4.5%	0.9%
5	Venango County	0.4%	0.3%	0.9%	1.8%	3.0%
6	Mifflin County	0.8%	0.5%	1.5%	0.0%	3.4%
7	Union County	1.0%	0.6%	1.2%	0.0%	3.3%
8	Northumberland County	0.9%	0.6%	1.1%	1.9%	0.9%
9	Dauphin County	0.5%	0.6%	0.4%	2.7%	0.9%
10	Lebanon County	0.2%	0.3%	0.8%	3.0%	0.7%
	• State Average	0.5%	0.5%	0.7%	0.9%	0.6%

Greatest growing operational risk by category

- **Residential: Philadelphia County, 1.3%**

Greatest growing risk to property owners with 6,163 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Philadelphia County, 2.8%**

Greatest growing risk to commutes and transportation with 88 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Philadelphia County, 1.9%**

Greatest growing risk to businesses with 377 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Mifflin County, 3.4%**

Greatest growing risk to government, education or social facilities with 2 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Delaware County, 6.1%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 11 additional facilities at risk of becoming inoperable in 30 years.

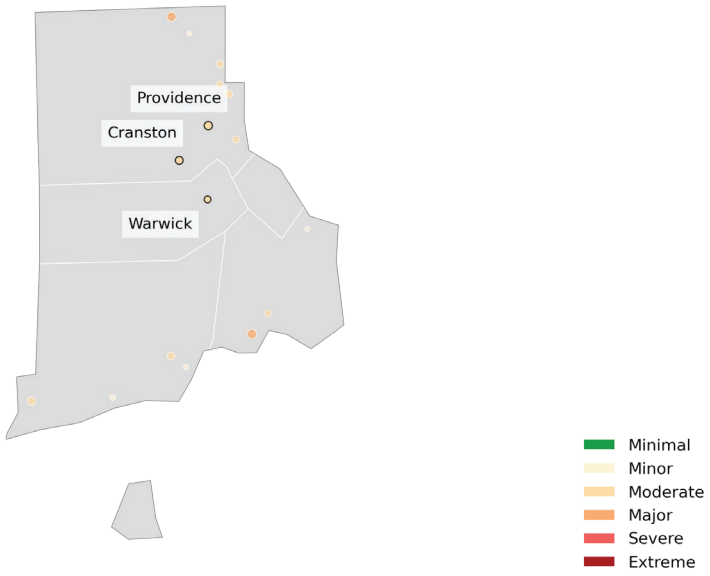
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Rhode Island

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Rhode Island, there are 22,253 residential properties, 1,618 miles of roads, 2,876 commercial properties, 120 infrastructure facilities, and 250 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Rhode Island, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Providence	10.4%	32.6%	29.2%	46.0%	28.1%
2	Woonsocket	9.1%	23.9%	24.8%	45.5%	27.9%
3	Newport	11.8%	25.4%	23.4%	38.5%	18.4%
4	Pawtucket	10.1%	32.9%	21.6%	40.0%	11.5%
5	Westerly	7.4%	17.0%	23.1%	37.5%	18.5%
6	Wakefield-Peacedale	7.3%	19.4%	29.9%	25.0%	16.7%
7	Warwick	6.9%	19.4%	14.0%	44.4%	11.6%
8	East Providence	8.9%	22.1%	13.3%	47.1%	4.5%
9	Cranston	6.9%	24.6%	20.3%	20.0%	21.4%
10	Newport East	2.1%	7.9%	9.4%	50.0%	23.5%
	• State Average	8.7%	19.1%	21.1%	29.2%	17.4%

Highest proportion of operational risk by category

- **Residential: Charlestown, 21.4%**

Greatest risk to property owners with 186 out of 870 residential properties at risk of water reaching their building.

- **Roads: Pawtucket, 32.9%**

Greatest risk to commutes and transportation with 79 out of 239 miles of roads at risk of becoming impassable.

- **Commercial: Wakefield-Peacedale, 29.9%**

Greatest risk to businesses with 55 out of 184 commercial buildings at risk of water reaching their building.

- **Social: Providence, 28.1%**

Greatest risk to government, education or social facilities with 97 out of 345 at risk of becoming inoperable.

- **Infrastructure: East Providence, 47.1%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 8 out of 17 at risk of becoming inoperable.

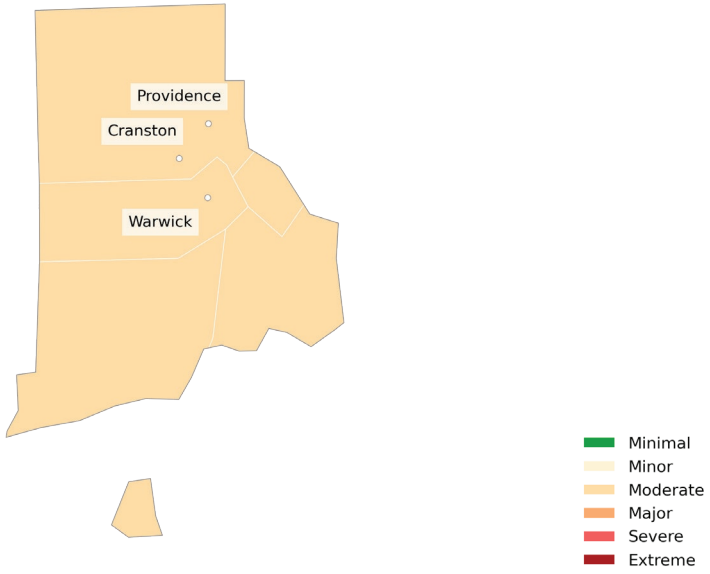
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Rhode Island

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Rhode Island, Washington County has the largest number of properties currently protected with community flood mitigation projects or structures with 764 out of 68,423 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Kent County	8.2%	18.5%	20.0%	44.8%	16.1%
2	Providence County	8.7%	21.3%	22.7%	29.2%	19.8%
3	Washington County	11.5%	19.1%	21.5%	23.8%	12.8%
4	Bristol County	9.6%	16.3%	17.2%	14.3%	15.1%
5	Newport County	5.4%	12.2%	14.4%	22.7%	12.7%
	• State Average	8.7%	19.1%	21.1%	29.2%	17.4%

Highest proportion of operational risk by category

- **Residential: Washington County, 11.5%**

Greatest risk to property owners with 4,363 out of 37,929 residential properties at risk of water reaching their building.

- **Roads: Providence County, 21.3%**

Greatest risk to commutes and transportation with 792 out of 3,711 miles of roads at risk of becoming impassable.

- **Commercial: Providence County, 22.7%**

Greatest risk to businesses with 1,827 out of 8,047 commercial buildings at risk of water reaching their building.

- **Social: Providence County, 19.8%**

Greatest risk to government, education or social facilities with 169 out of 852 at risk of becoming inoperable.

- **Infrastructure: Kent County, 44.8%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 30 out of 67 at risk of becoming inoperable.

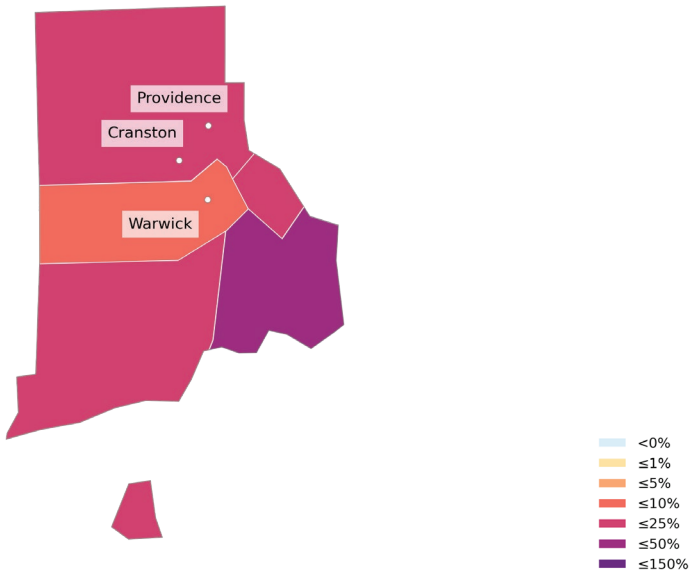
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Rhode Island

As severity and frequency of flood events in Rhode Island increase over the next 30 years with a changing environment, an additional 4,447 residential properties, 199.0 miles of roads, 306 commercial properties, 12 infrastructure facilities, and 39 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Newport County	3.4%	4.8%	7.1%	9.1%	6.6%
2	Bristol County	2.9%	6.1%	3.7%	4.8%	3.8%
3	Washington County	4.0%	2.9%	2.2%	2.4%	5.0%
4	Kent County	2.5%	2.1%	1.8%	0.0%	1.3%
5	Providence County	0.5%	1.2%	1.5%	2.6%	1.5%
	• State Average	1.7%	2.4%	2.2%	2.9%	2.7%

Greatest growing operational risk by category

- **Residential: Washington County, 4.0%**

Greatest growing risk to property owners with 1,499 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Bristol County, 6.1%**

Greatest growing risk to commutes and transportation with 20 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Newport County, 7.1%**

Greatest growing risk to businesses with 92 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Newport County, 6.6%**

Greatest growing risk to government, education or social facilities with 13 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Newport County, 9.1%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 4 additional facilities at risk of becoming inoperable in 30 years.

*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details

South Carolina

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In South Carolina, there are 203,400 residential properties, 23,728 miles of roads, 12,554 commercial properties, 410 infrastructure facilities, and 1,017 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in South Carolina, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Seabrook Island	98.3%	99.9%	100.0%	100.0%	100.0%
2	Folly Beach	97.9%	98.7%	100.0%	100.0%	100.0%
3	James Island	81.9%	77.3%	77.2%	100.0%	100.0%
4	Edisto Beach	98.6%	99.6%	75.0%	100.0%	33.3%
5	Charleston	60.0%	52.8%	68.5%	82.6%	77.3%
6	Port Royal	59.6%	65.5%	29.7%	72.7%	68.8%
7	Andrews	74.1%	34.9%	75.6%	0.0%	90.9%
8	Georgetown	33.7%	45.8%	55.4%	69.2%	42.3%
9	Forestbrook	30.7%	26.2%	16.7%	100.0%	66.7%
10	Beaufort	32.4%	37.4%	47.2%	38.5%	74.6%
	• State Average	12.9%	16.6%	13.4%	17.8%	13.2%

Highest proportion of operational risk by category

- **Residential: Edisto Beach, 98.6%**

Greatest risk to property owners with 911 out of 924 residential properties at risk of water reaching their building.

- **Roads: Seabrook Island, 99.9%**

Greatest risk to commutes and transportation with 36 out of 36 miles of roads at risk of becoming impassable.

- **Commercial: Seabrook Island, 100.0%**

Greatest risk to businesses with 15 out of 15 commercial buildings at risk of water reaching their building.

- **Social: James Island, 100.0%**

Greatest risk to government, education or social facilities with 6 out of 6 at risk of becoming inoperable.

- **Infrastructure: Bamberg, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 5 at risk of becoming inoperable.

*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
South Carolina

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In South Carolina, Charleston County has the largest number of properties currently protected with community flood mitigation projects or structures with 8,702 out of 168,728 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Charleston County	44.6%	44.6%	45.2%	55.8%	57.5%
2	Beaufort County	36.6%	57.0%	33.3%	36.9%	41.4%
3	Georgetown County	30.9%	35.2%	35.7%	51.9%	42.2%
4	Jasper County	31.7%	31.4%	31.8%	28.6%	10.9%
5	Horry County	29.1%	28.0%	25.4%	24.5%	25.5%
6	Allendale County	13.5%	13.3%	16.3%	26.7%	31.8%
7	Berkeley County	8.6%	21.7%	9.4%	35.3%	10.5%
8	Darlington County	15.1%	13.5%	13.8%	16.4%	17.7%
9	Colleton County	15.7%	23.2%	10.0%	16.0%	11.4%
10	Florence County	12.0%	17.7%	11.3%	14.9%	19.8%
	• State Average	12.9%	16.6%	13.4%	17.8%	13.2%

Highest proportion of operational risk by category

- **Residential: Charleston County, 44.6%**

Greatest risk to property owners with 52,961 out of 118,699 residential properties at risk of water reaching their building.

- **Roads: Beaufort County, 57.0%**

Greatest risk to commutes and transportation with 1,724 out of 3,024 miles of roads at risk of becoming impassable.

- **Commercial: Charleston County, 45.2%**

Greatest risk to businesses with 3,096 out of 6,855 commercial buildings at risk of water reaching their building.

- **Social: Charleston County, 57.5%**

Greatest risk to government, education or social facilities with 350 out of 609 at risk of becoming inoperable.

- **Infrastructure: Charleston County, 55.8%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 82 out of 147 at risk of becoming inoperable.

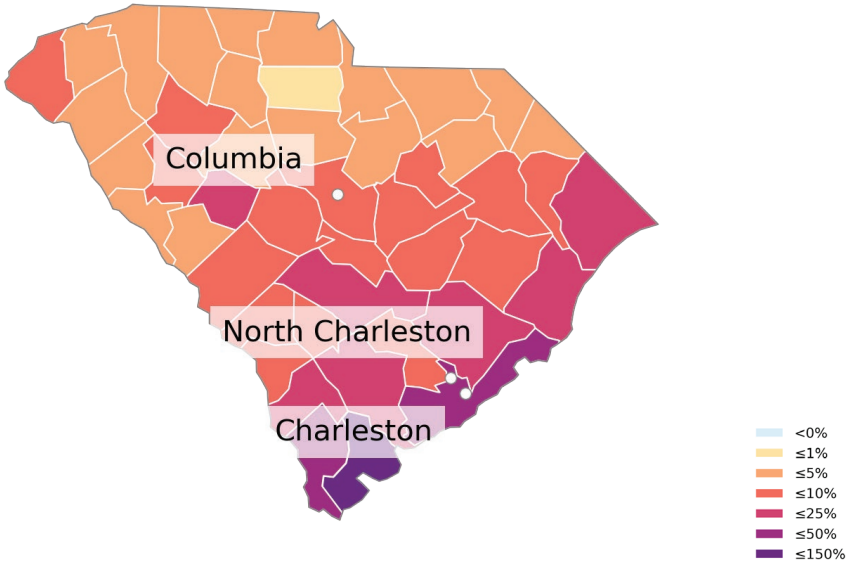
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
South Carolina

As severity and frequency of flood events in South Carolina increase over the next 30 years with a changing environment, an additional 40,038 residential properties, 3,081.0 miles of roads, 2,014 commercial properties, 43 infrastructure facilities, and 200 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Beaufort County	20.7%	25.7%	24.2%	21.5%	25.5%
2	Charleston County	11.6%	12.8%	9.1%	8.2%	8.7%
3	Georgetown County	11.2%	6.6%	8.2%	3.8%	16.5%
4	Jasper County	5.3%	8.5%	4.3%	10.7%	4.3%
5	Berkeley County	3.3%	3.1%	4.2%	1.0%	3.9%
6	Orangeburg County	0.7%	1.2%	1.1%	0.0%	12.1%
7	Horry County	3.0%	2.5%	2.9%	2.9%	2.6%
8	Colleton County	0.9%	2.9%	1.2%	0.0%	2.5%
9	Saluda County	0.5%	0.3%	0.0%	6.7%	0.0%
10	Darlington County	0.8%	0.9%	0.6%	3.0%	0.7%
	• State Average	2.5%	2.2%	2.2%	1.9%	2.6%

Greatest growing operational risk by category

- **Residential: Beaufort County, 20.7%**

Greatest growing risk to property owners with 13,174 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Beaufort County, 25.7%**

Greatest growing risk to commutes and transportation with 778 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Beaufort County, 24.2%**

Greatest growing risk to businesses with 443 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Beaufort County, 25.5%**

Greatest growing risk to government, education or social facilities with 61 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Beaufort County, 21.5%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 14 additional facilities at risk of becoming inoperable in 30 years.

*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

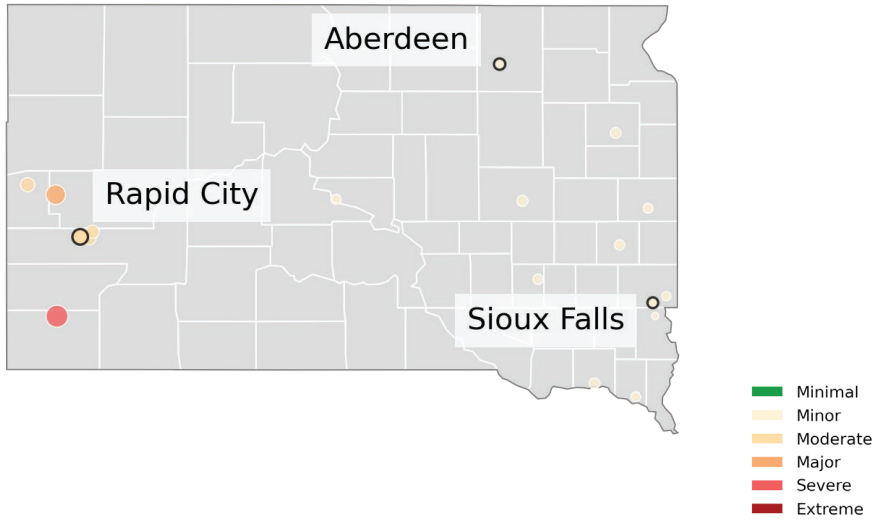
City Details

South Dakota

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In South Dakota, there are 22,889 residential properties, 20,348 miles of roads, 2,803 commercial properties, 145 infrastructure facilities, and 291 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in South Dakota, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Sturgis	38.0%	51.6%	61.6%	0.0%	62.5%
2	Hot Springs	17.2%	38.2%	60.0%	55.6%	41.7%
3	Spearfish	20.8%	23.5%	24.8%	12.5%	28.8%
4	Rapid City	17.2%	26.5%	21.2%	19.0%	24.4%
5	Box Elder	16.1%	25.8%	25.5%	33.3%	0.0%
6	Aberdeen	9.6%	25.6%	12.7%	18.2%	10.6%
7	Mitchell	7.0%	16.5%	12.6%	20.0%	14.6%
8	Brandon	3.3%	18.2%	4.5%	25.0%	12.5%
9	Yankton	4.0%	17.4%	9.9%	22.2%	8.1%
10	Huron	7.1%	18.6%	10.0%	0.0%	23.5%
	• State Average	10.0%	15.6%	14.4%	12.6%	12.6%

Highest proportion of operational risk by category

- **Residential: Sturgis, 38.0%**

Greatest risk to property owners with 817 out of 2,149 residential properties at risk of water reaching their building.

- **Roads: Sturgis, 51.6%**

Greatest risk to commutes and transportation with 51 out of 99 miles of roads at risk of becoming impassable.

- **Commercial: Sturgis, 61.6%**

Greatest risk to businesses with 162 out of 263 commercial buildings at risk of water reaching their building.

- **Social: Sturgis, 62.5%**

Greatest risk to government, education or social facilities with 10 out of 16 at risk of becoming inoperable.

- **Infrastructure: Hot Springs, 55.6%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 9 at risk of becoming inoperable.

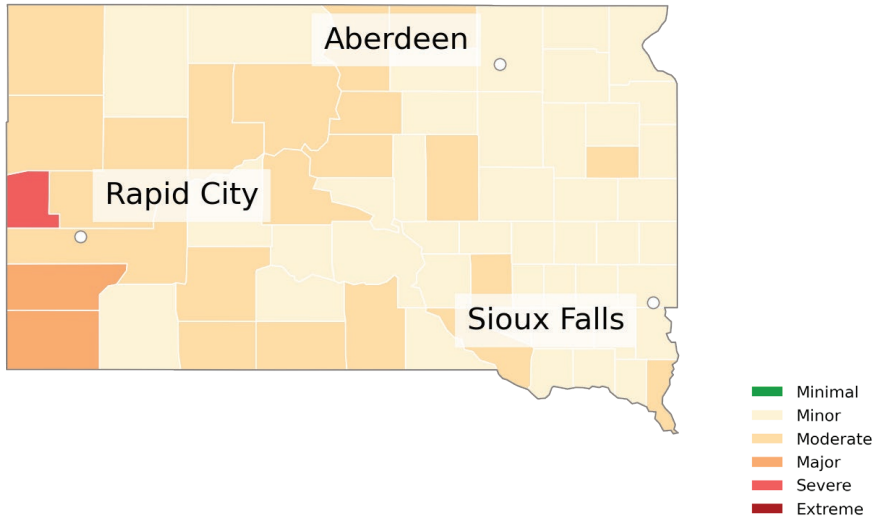
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
South Dakota

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In South Dakota, Yankton County has the largest number of properties currently protected with community flood mitigation projects or structures with 3,858 out of 14,991 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Lawrence County	26.4%	41.5%	40.1%	61.3%	43.8%
2	Custer County	19.9%	40.0%	29.6%	25.8%	35.3%
3	Fall River County	15.6%	21.3%	48.6%	20.8%	34.5%
4	Meade County	22.2%	22.5%	35.1%	15.6%	31.8%
5	Pennington County	18.2%	32.2%	23.2%	25.9%	25.1%
6	Harding County	12.5%	17.8%	13.3%	25.0%	35.3%
7	Campbell County	13.1%	20.8%	16.9%	10.0%	20.0%
8	Charles Mix County	6.1%	18.7%	10.3%	15.0%	20.0%
9	Perkins County	12.2%	19.1%	14.8%	7.7%	15.4%
10	Aurora County	7.0%	16.9%	11.8%	9.1%	24.0%
	• State Average	10.0%	15.6%	14.4%	12.6%	12.6%

Highest proportion of operational risk by category

- **Residential: Union County, 32.6%**

Greatest risk to property owners with 1,763 out of 5,413 residential properties at risk of water reaching their building.

- **Roads: Lawrence County, 41.5%**

Greatest risk to commutes and transportation with 807 out of 1,947 miles of roads at risk of becoming impassable.

- **Commercial: Fall River County, 48.6%**

Greatest risk to businesses with 106 out of 218 commercial buildings at risk of water reaching their building.

- **Social: Faulk County, 52.4%**

Greatest risk to government, education or social facilities with 11 out of 21 at risk of becoming inoperable.

- **Infrastructure: Lawrence County, 61.3%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 19 out of 31 at risk of becoming inoperable.

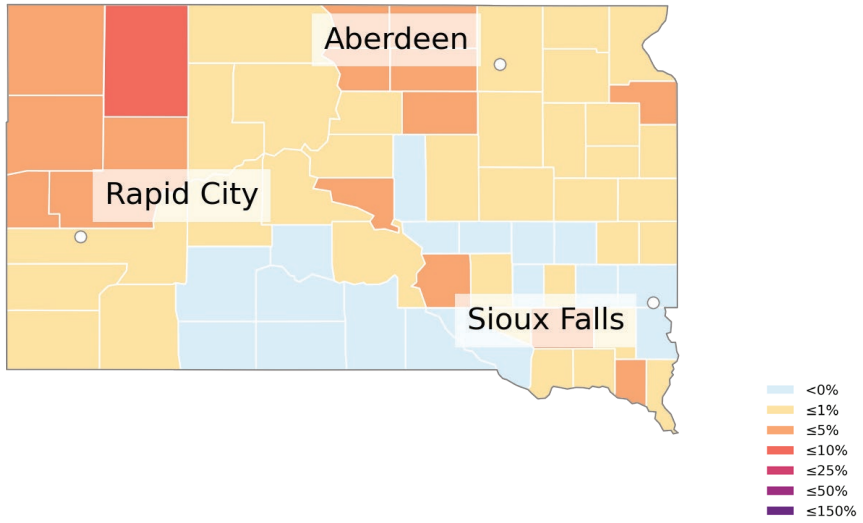
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
South Dakota

As severity and frequency of flood events in South Dakota increase over the next 30 years with a changing environment, an additional 122 residential properties, 79.0 miles of roads, 22 commercial properties, and 2 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Hughes County	0.3%	-0.1%	0.7%	0.0%	1.9%
2	Brown County	0.3%	0.1%	0.3%	0.0%	2.0%
3	Walworth County	0.1%	0.0%	1.8%	0.0%	0.0%
4	Lawrence County	0.2%	0.2%	0.7%	0.0%	0.0%
5	Deuel County	0.0%	0.1%	0.9%	0.0%	0.0%
6	Corson County	0.7%	0.1%	0.0%	0.0%	0.0%
7	Edmunds County	0.1%	0.2%	0.5%	0.0%	0.0%
8	Custer County	0.1%	0.2%	0.3%	0.0%	0.0%
9	Perkins County	0.3%	0.3%	0.0%	0.0%	0.0%
10	Harding County	0.4%	0.2%	0.0%	0.0%	0.0%
	• State Average	0.1%	0.1%	0.1%	0.0%	0.1%

Greatest growing operational risk by category

- **Residential: Corson County, 0.7%**

Greatest growing risk to property owners with 1 additional residential property at risk of water reaching their building in 30 years.

- **Roads: Perkins County, 0.3%**

Greatest growing risk to commutes and transportation with 6 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Walworth County, 1.8%**

Greatest growing risk to businesses with 1 additional commercial building at risk of water reaching their building in 30 years.

- **Social: Brown County, 2.0%**

Greatest growing risk to government, education or social facilities with 2 additional facilities at risk of becoming inoperable in 30 years.

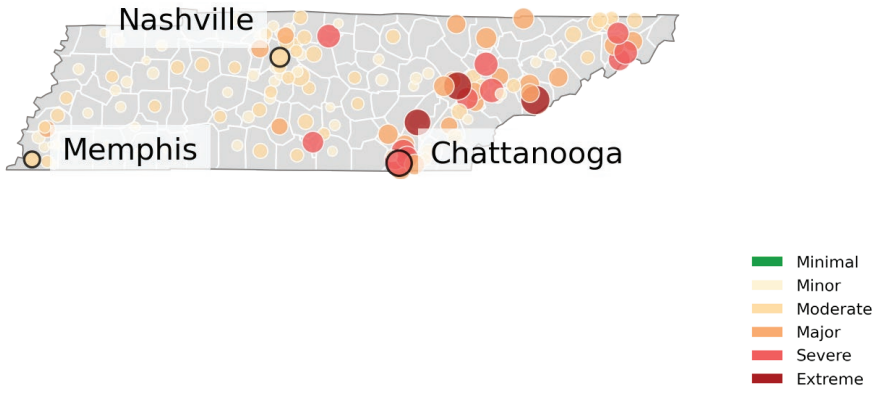
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Tennessee

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Tennessee, there are 287,589 residential properties, 47,017 miles of roads, 23,757 commercial properties, 844 infrastructure facilities, and 1,450 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Tennessee, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Dayton	31.6%	52.7%	79.8%	66.7%	83.3%
2	Gatlinburg	27.4%	49.1%	75.9%	80.0%	79.6%
3	Kingston	38.0%	47.8%	63.5%	80.0%	60.0%
4	Middle Valley	37.3%	55.5%	78.8%	66.7%	50.0%
5	Chattanooga	38.8%	51.0%	67.9%	69.7%	57.6%
6	Clinton	23.6%	41.3%	46.6%	80.0%	60.0%
7	Erwin	37.5%	50.4%	45.7%	50.0%	63.6%
8	Louisville	36.6%	55.7%	50.0%	50.0%	42.9%
9	Sevierville	20.4%	36.3%	45.8%	66.7%	48.7%
10	Red Bank	19.9%	36.3%	70.3%	60.0%	30.0%
	• State Average	12.9%	29.6%	22.9%	27.6%	17.8%

Highest proportion of operational risk by category

- **Residential: Chattanooga, 38.8%**

Greatest risk to property owners with 21,933 out of 56,586 residential properties at risk of water reaching their building.

- **Roads: Louisville, 55.7%**

Greatest risk to commutes and transportation with 51 out of 91 miles of roads at risk of becoming impassable.

- **Commercial: Dayton, 79.8%**

Greatest risk to businesses with 221 out of 277 commercial buildings at risk of water reaching their building.

- **Social: Harrison, 100.0%**

Greatest risk to government, education or social facilities with 6 out of 6 at risk of becoming inoperable.

- **Infrastructure: La Follette, 87.5%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 7 out of 8 at risk of becoming inoperable.

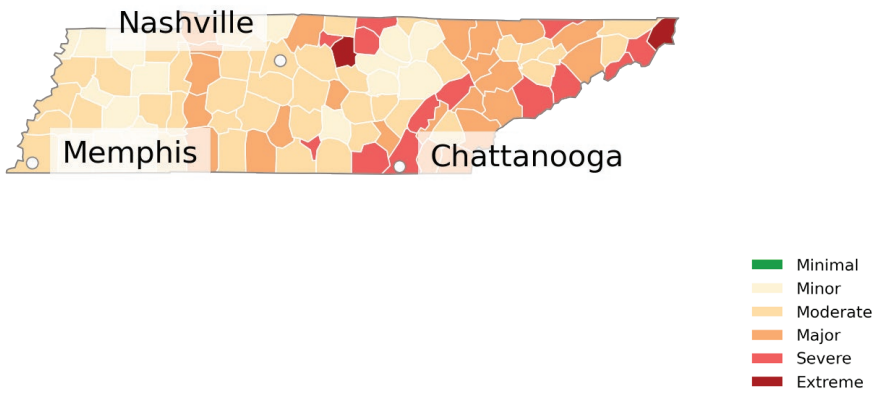
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Tennessee

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Tennessee, Lake County has the largest number of properties currently protected with community flood mitigation projects or structures with 3,616 out of 3,841 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Smith County	37.5%	60.1%	65.2%	73.9%	68.8%
2	Johnson County	44.2%	57.3%	56.3%	87.5%	43.5%
3	Unicoi County	38.4%	52.6%	44.2%	54.5%	64.7%
4	Hamilton County	28.8%	41.9%	63.2%	59.3%	48.0%
5	Rhea County	30.3%	40.5%	56.8%	54.8%	56.3%
6	Marion County	28.2%	36.3%	53.0%	50.0%	61.1%
7	Jackson County	26.1%	51.4%	44.1%	70.6%	30.8%
8	Hancock County	32.8%	61.9%	43.2%	26.7%	50.0%
9	Sevier County	17.4%	42.8%	47.0%	53.8%	48.9%
10	Trousdale County	24.0%	45.2%	54.6%	66.7%	12.5%
	• State Average	12.9%	29.6%	22.9%	27.6%	17.8%

Highest proportion of operational risk by category

- **Residential: Johnson County, 44.2%**

Greatest risk to property owners with 2,690 out of 6,091 residential properties at risk of water reaching their building.

- **Roads: Hancock County, 61.9%**

Greatest risk to commutes and transportation with 498 out of 804 miles of roads at risk of becoming impassable.

- **Commercial: Smith County, 65.2%**

Greatest risk to businesses with 359 out of 551 commercial buildings at risk of water reaching their building.

- **Social: Smith County, 68.8%**

Greatest risk to government, education or social facilities with 22 out of 32 at risk of becoming inoperable.

- **Infrastructure: Johnson County, 87.5%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 14 out of 16 at risk of becoming inoperable.

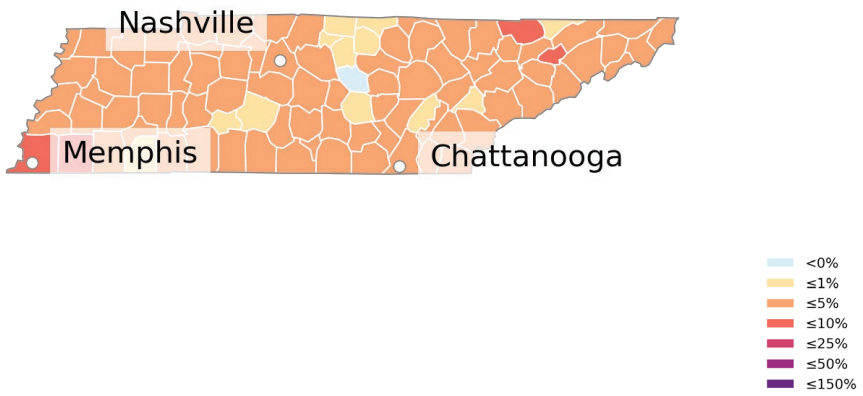
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Tennessee

As severity and frequency of flood events in Tennessee increase over the next 30 years with a changing environment, an additional 8,401 residential properties, 741.0 miles of roads, 609 commercial properties, 10 infrastructure facilities, and 59 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Wilson County	0.3%	0.4%	0.9%	0.0%	12.7%
2	Unicoi County	1.0%	0.6%	1.4%	0.0%	5.9%
3	Hamblen County	0.4%	0.6%	1.0%	4.8%	1.4%
4	Meigs County	0.3%	0.3%	0.0%	7.1%	0.0%
5	Morgan County	0.1%	0.3%	0.6%	0.0%	5.6%
6	Bledsoe County	0.1%	0.4%	0.0%	0.0%	5.9%
7	Washington County	0.4%	0.9%	0.6%	2.3%	1.3%
8	Marion County	0.6%	0.6%	1.2%	0.0%	2.8%
9	Bradley County	0.4%	0.7%	0.7%	3.2%	0.0%
10	Shelby County	1.1%	1.5%	1.6%	0.0%	0.8%
	• State Average	0.4%	0.5%	0.6%	0.3%	0.7%

Greatest growing operational risk by category

- **Residential: Shelby County, 1.1%**

Greatest growing risk to property owners with 3,005 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Shelby County, 1.5%**

Greatest growing risk to commutes and transportation with 100 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Shelby County, 1.6%**

Greatest growing risk to businesses with 171 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Wilson County, 12.7%**

Greatest growing risk to government, education or social facilities with 17 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Meigs County, 7.1%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

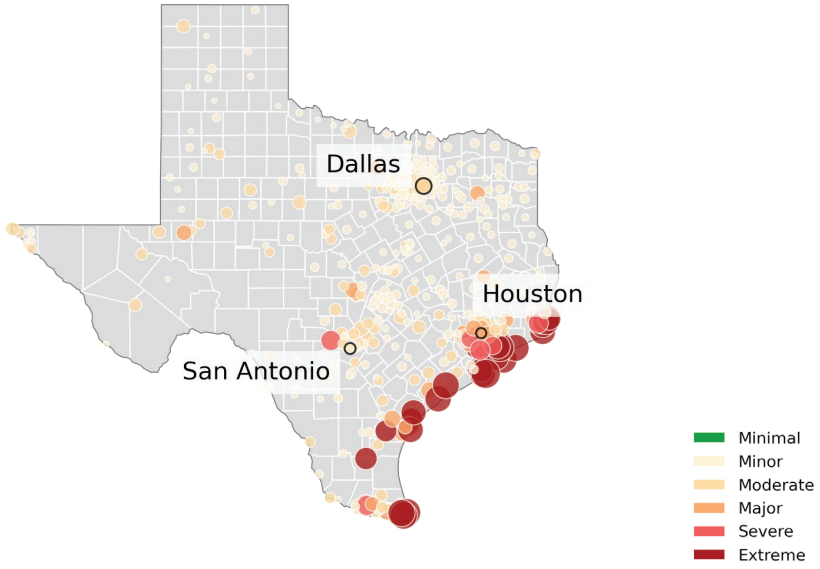
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Texas

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Texas, there are 1,087,720 residential properties, 172,143 miles of roads, 86,899 commercial properties, 2,840 infrastructure facilities, and 5,223 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Texas, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	San Leon	100.0%	100.0%	100.0%	100.0%	100.0%
2	Bridge City	100.0%	100.0%	100.0%	100.0%	100.0%
3	Seabrook	100.0%	99.9%	100.0%	100.0%	100.0%
4	Groves	100.0%	99.6%	100.0%	100.0%	100.0%
5	Port O'Connor	99.0%	100.0%	100.0%	100.0%	100.0%
6	Bacliff	98.5%	100.0%	100.0%	100.0%	100.0%
7	South Padre Island	99.1%	99.1%	100.0%	100.0%	100.0%
8	Clute	99.6%	98.5%	100.0%	100.0%	100.0%
9	Dickinson	99.6%	97.3%	100.0%	100.0%	100.0%
10	Laguna Vista	99.7%	97.1%	100.0%	100.0%	100.0%
	• State Average	15.6%	23.3%	17.5%	24.8%	16.6%

Highest proportion of operational risk by category

- **Residential: Port Arthur, 100.0%**

Greatest risk to property owners with 17,098 out of 17,098 residential properties at risk of water reaching their building.

- **Roads: Bridge City, 100.0%**

Greatest risk to commutes and transportation with 109 out of 109 miles of roads at risk of becoming impassable.

- **Commercial: Clute, 100.0%**

Greatest risk to businesses with 423 out of 423 commercial buildings at risk of water reaching their building.

- **Social: Galveston, 100.0%**

Greatest risk to government, education or social facilities with 110 out of 110 at risk of becoming inoperable.

- **Infrastructure: Port O'Connor, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 14 out of 14 at risk of becoming inoperable.

*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

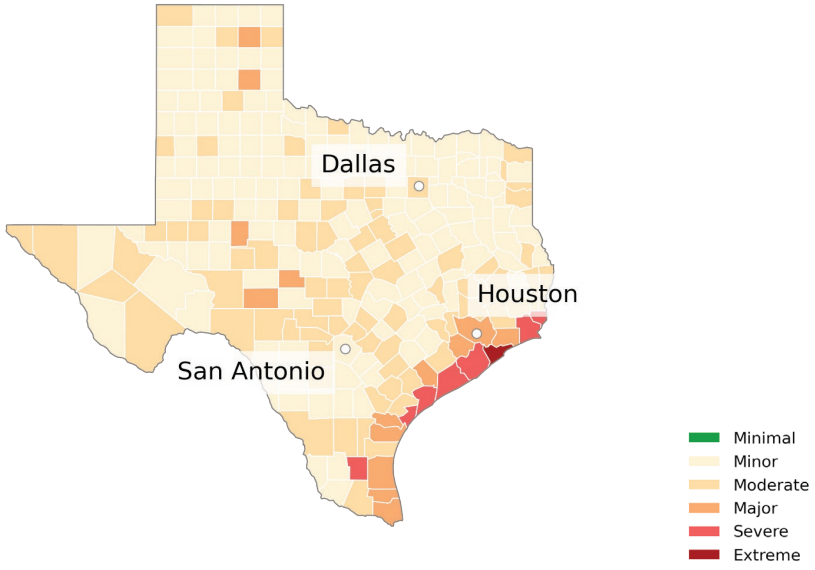
County Details

Texas

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Texas, Jefferson County has the largest number of properties currently protected with community flood mitigation projects or structures with 97,257 out of 123,526 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Galveston County	79.0%	83.0%	80.9%	80.5%	84.8%
2	Orange County	63.8%	63.6%	69.5%	67.7%	63.5%
3	Brooks County	88.0%	44.6%	73.5%	42.9%	77.8%
4	Aransas County	58.8%	62.0%	76.7%	61.5%	59.4%
5	Calhoun County	68.3%	60.1%	55.5%	64.8%	63.3%
6	Jefferson County	59.2%	69.6%	53.1%	68.7%	46.4%
7	Brazoria County	49.2%	60.9%	60.6%	51.8%	52.1%
8	Matagorda County	49.0%	56.4%	45.2%	60.0%	29.6%
9	Fort Bend County	41.1%	50.5%	36.0%	24.5%	54.8%
10	Harris County	28.7%	62.6%	34.1%	48.5%	31.3%
	• State Average	15.6%	23.3%	17.5%	24.8%	16.6%

Highest proportion of operational risk by category

- **Residential: Brooks County, 88.0%**

Greatest risk to property owners with 1,580 out of 1,796 residential properties at risk of water reaching their building.

- **Roads: Galveston County, 83.0%**

Greatest risk to commutes and transportation with 2,827 out of 3,406 miles of roads at risk of becoming impassable.

- **Commercial: Galveston County, 80.9%**

Greatest risk to businesses with 4,200 out of 5,189 commercial buildings at risk of water reaching their building.

- **Social: Sterling County, 100.0%**

Greatest risk to government, education or social facilities with 4 out of 4 at risk of becoming inoperable.

- **Infrastructure: Galveston County, 80.5%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 190 out of 236 at risk of becoming inoperable.

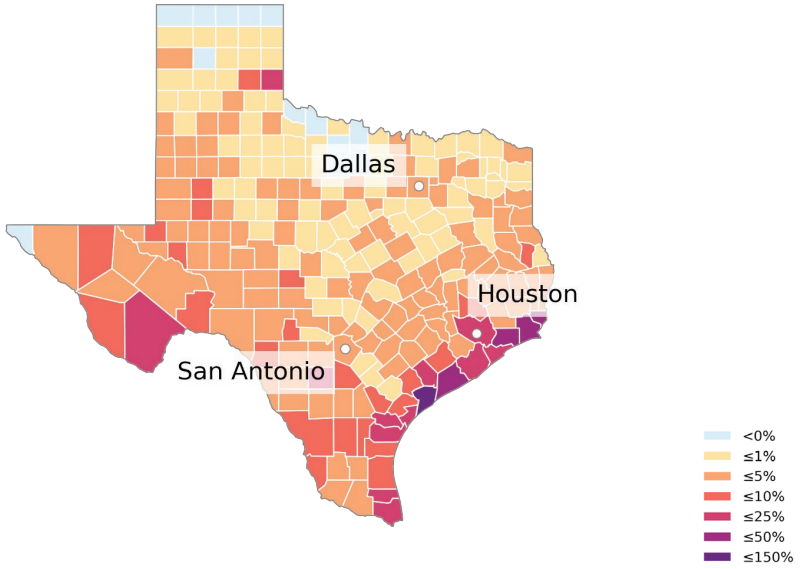
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Texas

As severity and frequency of flood events in Texas increase over the next 30 years with a changing environment, an additional 84,956 residential properties, 5,608.0 miles of roads, 5,033 commercial properties, 201 infrastructure facilities, and 343 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Calhoun County	23.5%	18.2%	32.1%	20.9%	36.7%
2	Chambers County	15.9%	10.8%	9.8%	7.8%	32.4%
3	Jefferson County	8.5%	10.5%	16.3%	8.2%	15.0%
4	Orange County	12.0%	13.5%	7.7%	7.3%	9.4%
5	San Patricio County	6.8%	3.1%	7.2%	11.7%	13.6%
6	Nueces County	9.1%	4.8%	3.6%	5.3%	4.0%
7	Matagorda County	4.2%	6.5%	4.6%	5.3%	2.8%
8	Aransas County	4.0%	7.2%	3.6%	5.1%	3.1%
9	Willacy County	4.0%	2.4%	2.7%	10.0%	3.3%
10	Galveston County	5.9%	5.0%	5.1%	2.1%	4.3%
	• State Average	1.2%	0.8%	1.0%	1.8%	1.1%

Greatest growing operational risk by category

- **Residential: Calhoun County, 23.5%**

Greatest growing risk to property owners with 1,367 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Calhoun County, 18.2%**

Greatest growing risk to commutes and transportation with 178 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Calhoun County, 32.1%**

Greatest growing risk to businesses with 195 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Calhoun County, 36.7%**

Greatest growing risk to government, education or social facilities with 11 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Calhoun County, 20.9%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 19 additional facilities at risk of becoming inoperable in 30 years.

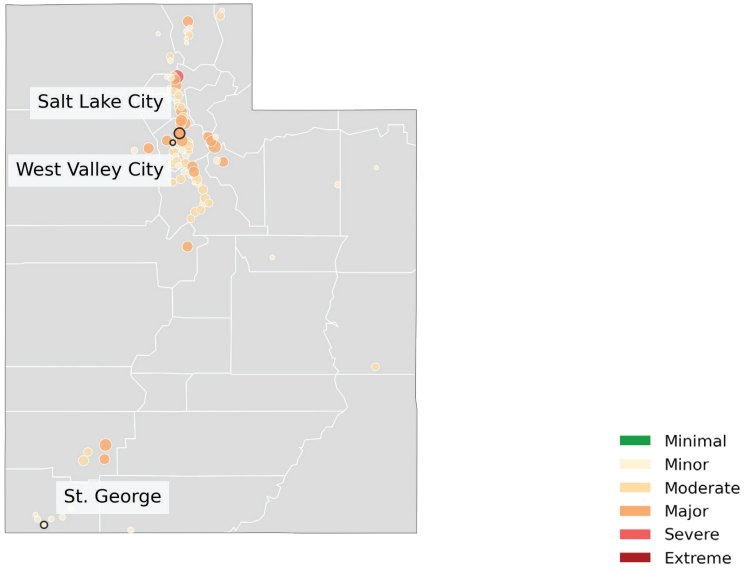
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Utah

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Utah, there are 113,511 residential properties, 36,125 miles of roads, 8,382 commercial properties, 210 infrastructure facilities, and 735 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Utah, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	West Bountiful	34.9%	40.7%	58.9%	100.0%	100.0%
2	Parowan	51.8%	51.0%	33.3%	33.3%	100.0%
3	North Ogden	36.6%	54.5%	50.9%	50.0%	70.6%
4	Bountiful	20.7%	32.4%	47.9%	100.0%	47.2%
5	Park City	21.2%	29.9%	74.0%	62.5%	59.2%
6	South Salt Lake	31.0%	50.0%	50.3%	60.0%	43.3%
7	Heber	38.3%	45.1%	45.5%	37.5%	62.1%
8	Nephi	28.7%	26.8%	35.0%	20.0%	100.0%
9	Snyderville	19.2%	28.8%	29.7%	50.0%	80.0%
10	Cedar Hills	18.3%	37.9%	50.0%	100.0%	0.0%
	• State Average	14.2%	25.4%	22.1%	22.4%	24.3%

Highest proportion of operational risk by category

- **Residential: Parowan, 51.8%**

Greatest risk to property owners with 127 out of 245 residential properties at risk of water reaching their building.

- **Roads: Stansbury Park, 54.6%**

Greatest risk to commutes and transportation with 26 out of 47 miles of roads at risk of becoming impassable.

- **Commercial: Park City, 74.0%**

Greatest risk to businesses with 97 out of 131 commercial buildings at risk of water reaching their building.

- **Social: Nephi, 100.0%**

Greatest risk to government, education or social facilities with 9 out of 9 at risk of becoming inoperable.

- **Infrastructure: Bountiful, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 7 out of 7 at risk of becoming inoperable.

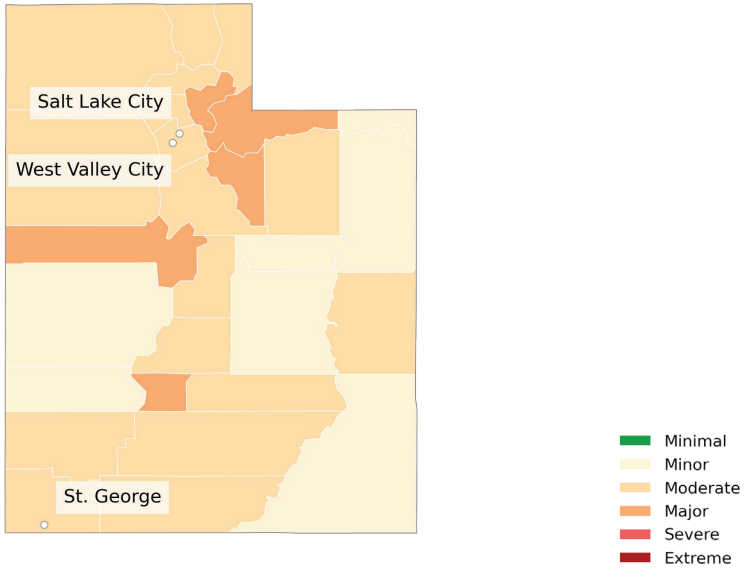
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Utah

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Utah, Beaver County has the largest number of properties currently protected with community flood mitigation projects or structures with 459 out of 8,422 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Piute County	36.6%	33.9%	72.7%	60.0%	60.0%
2	Juab County	22.7%	26.5%	29.7%	38.9%	78.9%
3	Summit County	17.1%	29.3%	44.7%	48.4%	51.7%
4	Wasatch County	27.6%	30.4%	3.1%	50.0%	56.1%
5	Sevier County	26.1%	33.1%	50.0%	0.0%	50.0%
6	Rich County	36.7%	29.1%	25.0%	20.0%	25.0%
7	Iron County	19.3%	33.1%	29.6%	13.0%	40.4%
8	Weber County	19.4%	27.0%	23.1%	36.2%	26.1%
9	Salt Lake County	14.3%	32.7%	26.5%	30.5%	27.0%
10	Davis County	13.2%	24.8%	25.2%	32.7%	24.3%
	• State Average	14.2%	25.4%	22.1%	22.4%	24.3%

Highest proportion of operational risk by category

- **Residential: Wasatch County, 27.6%**

Greatest risk to property owners with 2,603 out of 9,418 residential properties at risk of water reaching their building.

- **Roads: Morgan County, 38.4%**

Greatest risk to commutes and transportation with 497 out of 1,295 miles of roads at risk of becoming impassable.

- **Commercial: Piute County, 72.7%**

Greatest risk to businesses with 8 out of 11 commercial buildings at risk of water reaching their building.

- **Social: Juab County, 78.9%**

Greatest risk to government, education or social facilities with 15 out of 19 at risk of becoming inoperable.

- **Infrastructure: Piute County, 60.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 3 out of 5 at risk of becoming inoperable.

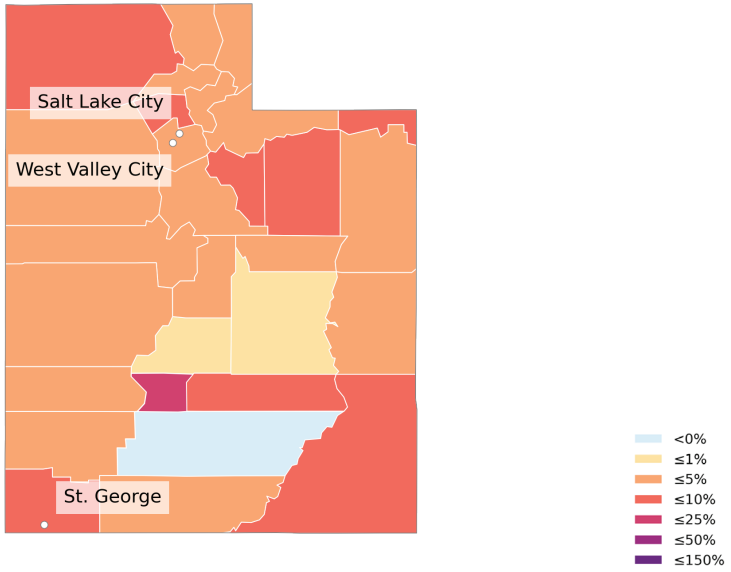
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Utah

As severity and frequency of flood events in Utah increase over the next 30 years with a changing environment, an additional 6,263 residential properties, 960.0 miles of roads, 369 commercial properties, 7 infrastructure facilities, and 22 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Piute County	2.1%	0.7%	0.0%	0.0%	40.0%
2	Wasatch County	1.6%	0.7%	0.0%	5.6%	3.5%
3	Davis County	1.2%	1.3%	2.9%	0.0%	1.8%
4	Salt Lake County	0.8%	2.0%	0.8%	1.7%	0.7%
5	Box Elder County	0.6%	0.7%	0.4%	2.4%	1.5%
6	Iron County	0.9%	0.8%	1.6%	0.0%	1.9%
7	Weber County	0.9%	0.8%	0.9%	0.0%	1.8%
8	Uintah County	0.3%	0.5%	0.6%	0.0%	2.9%
9	Daggett County	0.0%	0.5%	3.0%	0.0%	0.0%
10	Washington County	0.6%	0.9%	0.6%	1.5%	0.0%
	• State Average	0.8%	0.7%	1.0%	0.7%	0.7%

Greatest growing operational risk by category

- **Residential: Piute County, 2.1%**

Greatest growing risk to property owners with 3 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Salt Lake County, 2.0%**

Greatest growing risk to commutes and transportation with 147 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Daggett County, 3.0%**

Greatest growing risk to businesses with 1 additional commercial building at risk of water reaching their building in 30 years.

- **Social: Piute County, 40.0%**

Greatest growing risk to government, education or social facilities with 2 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Wayne County, 9.1%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

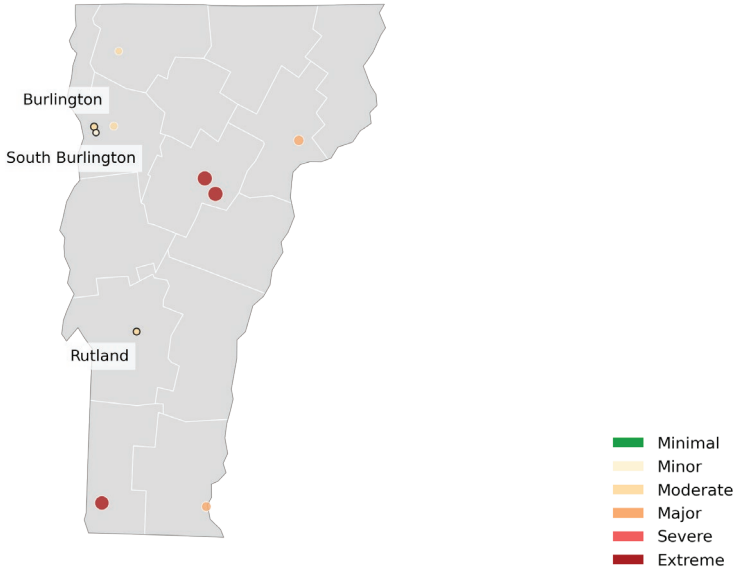
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Vermont

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Vermont, there are 26,565 residential properties, 7,030 miles of roads, 3,613 commercial properties, 273 infrastructure facilities, and 408 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Vermont, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Bennington	40.5%	49.8%	83.6%	100.0%	72.7%
2	Barre	29.2%	48.2%	79.2%	100.0%	89.3%
3	Montpelier	30.6%	52.4%	84.1%	100.0%	76.9%
4	St. Johnsbury	15.3%	40.1%	38.4%	42.9%	16.0%
5	Brattleboro	10.7%	36.2%	30.7%	28.6%	29.0%
6	Essex Junction	3.7%	15.5%	14.3%	66.7%	28.6%
7	St. Albans	10.6%	18.8%	15.8%	75.0%	5.9%
8	Burlington	4.4%	15.7%	12.7%	54.5%	3.8%
9	Rutland	12.3%	17.0%	15.9%	11.1%	7.9%
10	South Burlington	3.1%	11.1%	8.0%	15.4%	5.0%
	• State Average	14.5%	29.9%	30.4%	39.5%	30.1%

Highest proportion of operational risk by category

- **Residential: Bennington, 40.5%**

Greatest risk to property owners with 1,013 out of 2,499 residential properties at risk of water reaching their building.

- **Roads: Montpelier, 52.4%**

Greatest risk to commutes and transportation with 42 out of 80 miles of roads at risk of becoming impassable.

- **Commercial: Montpelier, 84.1%**

Greatest risk to businesses with 190 out of 226 commercial buildings at risk of water reaching their building.

- **Social: Barre, 89.3%**

Greatest risk to government, education or social facilities with 25 out of 28 at risk of becoming inoperable.

- **Infrastructure: Montpelier, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 7 out of 7 at risk of becoming inoperable.

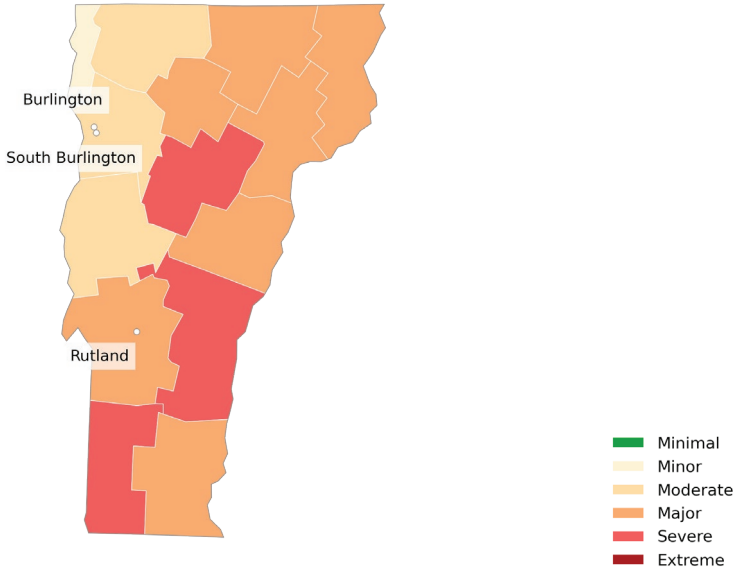
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Vermont

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Vermont, Bennington County has the largest number of properties currently protected with community flood mitigation projects or structures with 1,059 out of 20,217 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Washington County	20.9%	34.6%	59.8%	61.3%	60.4%
2	Windsor County	23.1%	38.5%	53.5%	48.6%	49.7%
3	Bennington County	25.8%	35.4%	54.0%	43.2%	40.0%
4	Windham County	18.8%	36.3%	36.2%	44.6%	38.3%
5	Essex County	19.2%	30.9%	34.4%	53.8%	30.8%
6	Orange County	18.6%	35.0%	35.3%	47.8%	31.7%
7	Caledonia County	16.5%	30.5%	31.2%	40.5%	25.9%
8	Lamoille County	13.5%	27.1%	34.6%	40.0%	28.8%
9	Rutland County	15.8%	32.1%	21.9%	41.4%	21.7%
10	Orleans County	12.2%	23.2%	23.0%	34.3%	17.2%
	• State Average	14.5%	29.9%	30.4%	39.5%	30.1%

Highest proportion of operational risk by category

- **Residential: Bennington County, 25.8%**

Greatest risk to property owners with 2,680 out of 10,376 residential properties at risk of water reaching their building.

- **Roads: Windsor County, 38.5%**

Greatest risk to commutes and transportation with 1,125 out of 2,924 miles of roads at risk of becoming impassable.

- **Commercial: Washington County, 59.8%**

Greatest risk to businesses with 721 out of 1,205 commercial buildings at risk of water reaching their building.

- **Social: Washington County, 60.4%**

Greatest risk to government, education or social facilities with 87 out of 144 at risk of becoming inoperable.

- **Infrastructure: Washington County, 61.3%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 38 out of 62 at risk of becoming inoperable.

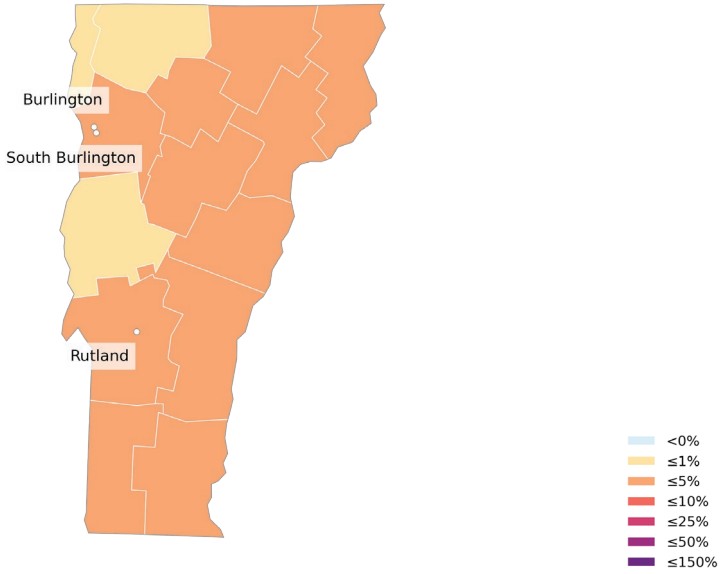
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Vermont

As severity and frequency of flood events in Vermont increase over the next 30 years with a changing environment, an additional 450 residential properties, 89.0 miles of roads, 45 commercial properties, 3 infrastructure facilities, and 4 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Orange County	0.3%	0.4%	0.7%	2.2%	1.6%
2	Bennington County	0.4%	0.5%	0.3%	2.3%	0.0%
3	Washington County	0.2%	0.3%	0.3%	1.6%	0.0%
4	Essex County	0.6%	0.6%	1.0%	0.0%	0.0%
5	Caledonia County	0.3%	0.3%	0.4%	0.0%	1.2%
6	Addison County	0.2%	0.3%	0.4%	0.0%	0.9%
7	Lamoille County	0.2%	0.3%	0.9%	0.0%	0.0%
8	Windsor County	0.3%	0.5%	0.6%	0.0%	0.0%
9	Rutland County	0.5%	0.5%	0.3%	0.0%	0.0%
10	Grand Isle County	0.7%	0.4%	0.0%	0.0%	0.0%
	• State Average	0.2%	0.4%	0.4%	0.4%	0.3%

Greatest growing operational risk by category

- **Residential: Grand Isle County, 0.7%**

Greatest growing risk to property owners with 23 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Essex County, 0.6%**

Greatest growing risk to commutes and transportation with 6 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Essex County, 1.0%**

Greatest growing risk to businesses with 2 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Orange County, 1.6%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Bennington County, 2.3%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

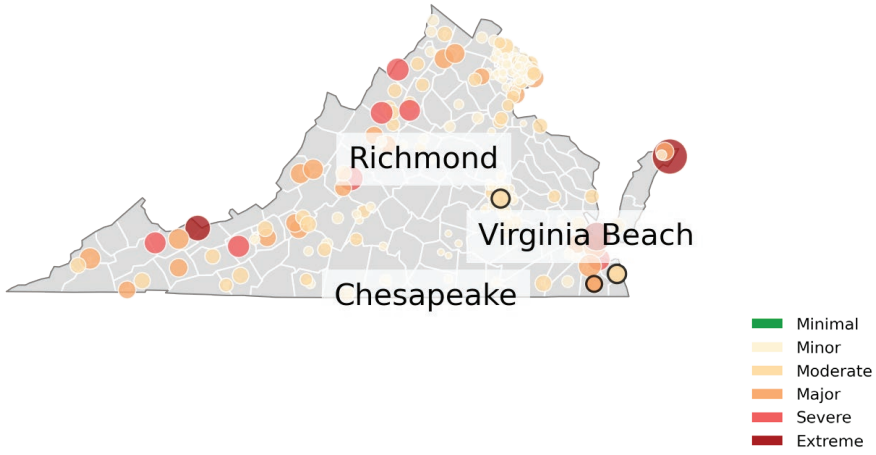
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Virginia

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Virginia, there are 239,569 residential properties, 58,958 miles of roads, 17,704 commercial properties, 829 infrastructure facilities, and 1,362 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Virginia, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Chincoteague	98.7%	97.3%	99.3%	100.0%	100.0%
2	Poquoson	78.4%	84.2%	72.0%	66.7%	84.6%
3	Bridgewater	40.6%	45.4%	63.3%	75.0%	71.4%
4	Buena Vista	41.2%	50.8%	75.0%	66.7%	40.0%
5	Bluefield	29.5%	42.1%	72.0%	50.0%	53.8%
6	Basye	7.9%	24.5%	30.8%	50.0%	100.0%
7	Norton	33.9%	44.0%	37.4%	83.3%	12.5%
8	Richlands	33.7%	45.5%	33.3%	60.0%	36.4%
9	Pulaski	11.9%	30.5%	53.9%	75.0%	36.8%
10	Hampton	33.4%	47.9%	28.7%	61.1%	31.5%
	• State Average	9.8%	24.7%	16.3%	27.4%	12.5%

Highest proportion of operational risk by category

- **Residential: Chincoteague, 98.7%**

Greatest risk to property owners with 2,565 out of 2,600 residential properties at risk of water reaching their building.

- **Roads: Chincoteague, 97.3%**

Greatest risk to commutes and transportation with 102 out of 105 miles of roads at risk of becoming impassable.

- **Commercial: Chincoteague, 99.3%**

Greatest risk to businesses with 152 out of 153 commercial buildings at risk of water reaching their building.

- **Social: Chincoteague, 100.0%**

Greatest risk to government, education or social facilities with 11 out of 11 at risk of becoming inoperable.

- **Infrastructure: Chincoteague, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 12 out of 12 at risk of becoming inoperable.

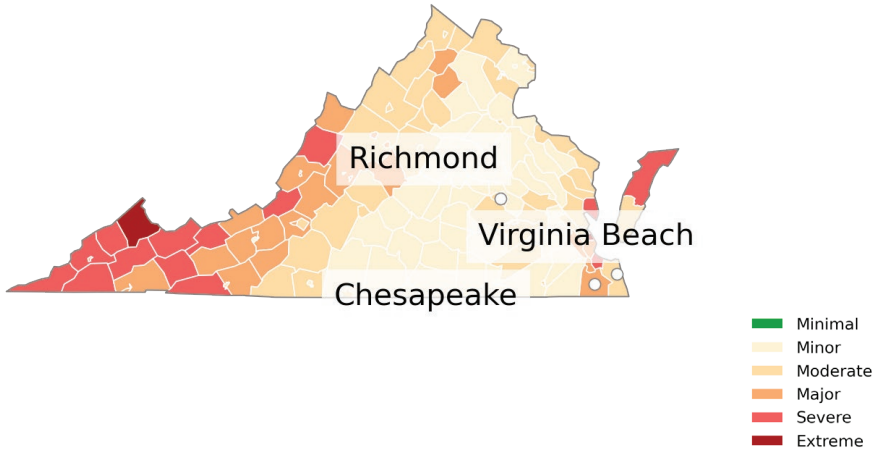
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Virginia

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Virginia, Buena Vista city has the largest number of properties currently protected with community flood mitigation projects or structures with 1,434 out of 6,472 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Poquoson city	78.4%	84.2%	72.0%	66.7%	84.6%
2	Buchanan County	66.2%	50.8%	77.6%	82.6%	81.0%
3	Buena Vista city	41.2%	51.0%	75.0%	66.7%	40.0%
4	Bland County	38.7%	47.0%	54.4%	45.5%	56.3%
5	Tazewell County	35.6%	47.5%	49.3%	54.5%	43.4%
6	Mathews County	43.6%	45.0%	40.5%	45.5%	50.0%
7	Norton city	33.9%	44.0%	37.4%	83.3%	12.5%
8	Russell County	30.2%	47.9%	51.5%	47.6%	29.2%
9	Smyth County	34.5%	50.6%	41.6%	44.0%	35.2%
10	Wise County	35.0%	40.6%	40.6%	58.6%	27.9%
	• State Average	9.8%	24.7%	16.3%	27.4%	12.5%

Highest proportion of operational risk by category

- **Residential: Poquoson city, 78.4%**

Greatest risk to property owners with 3,488 out of 4,449 residential properties at risk of water reaching their building.

- **Roads: Poquoson city, 84.2%**

Greatest risk to commutes and transportation with 81 out of 97 miles of roads at risk of becoming impassable.

- **Commercial: Buchanan County, 77.6%**

Greatest risk to businesses with 83 out of 107 commercial buildings at risk of water reaching their building.

- **Social: Poquoson city, 84.6%**

Greatest risk to government, education or social facilities with 11 out of 13 at risk of becoming inoperable.

- **Infrastructure: Waynesboro city, 85.7%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 6 out of 7 at risk of becoming inoperable.

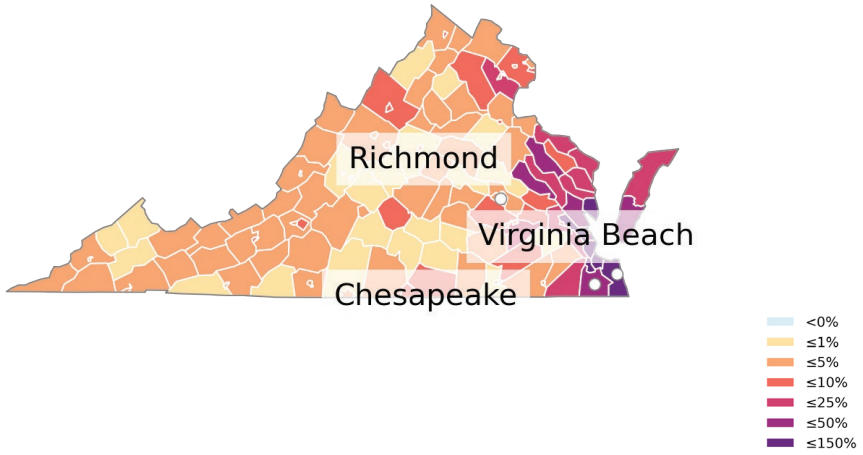
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Virginia

As severity and frequency of flood events in Virginia increase over the next 30 years with a changing environment, an additional 96,970 residential properties, 3,503.0 miles of roads, 3,714 commercial properties, 106 infrastructure facilities, and 378 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Norfolk city	55.3%	43.5%	43.7%	22.6%	47.6%
2	Portsmouth city	36.3%	32.1%	41.0%	16.3%	33.9%
3	Hampton city	33.7%	28.3%	27.2%	13.9%	30.9%
4	Poquoson city	21.2%	15.7%	27.1%	33.3%	15.4%
5	Mathews County	25.7%	23.9%	23.8%	9.1%	29.2%
6	Virginia Beach city	15.2%	17.6%	15.9%	14.3%	13.4%
7	York County	14.6%	9.0%	13.9%	28.0%	8.0%
8	Chesapeake city	10.3%	12.0%	8.0%	16.3%	6.9%
9	Gloucester County	8.4%	7.6%	6.0%	12.5%	6.1%
10	King William County	3.4%	1.5%	9.8%	8.6%	5.4%
	• State Average	4.0%	1.5%	3.4%	3.5%	3.5%

Greatest growing operational risk by category

- **Residential: Norfolk city, 55.3%**

Greatest growing risk to property owners with 29,568 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Norfolk city, 43.5%**

Greatest growing risk to commutes and transportation with 600 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Norfolk city, 43.7%**

Greatest growing risk to businesses with 1,058 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Norfolk city, 47.6%**

Greatest growing risk to government, education or social facilities with 141 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Poquoson city, 33.3%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 1 additional facility at risk of becoming inoperable in 30 years.

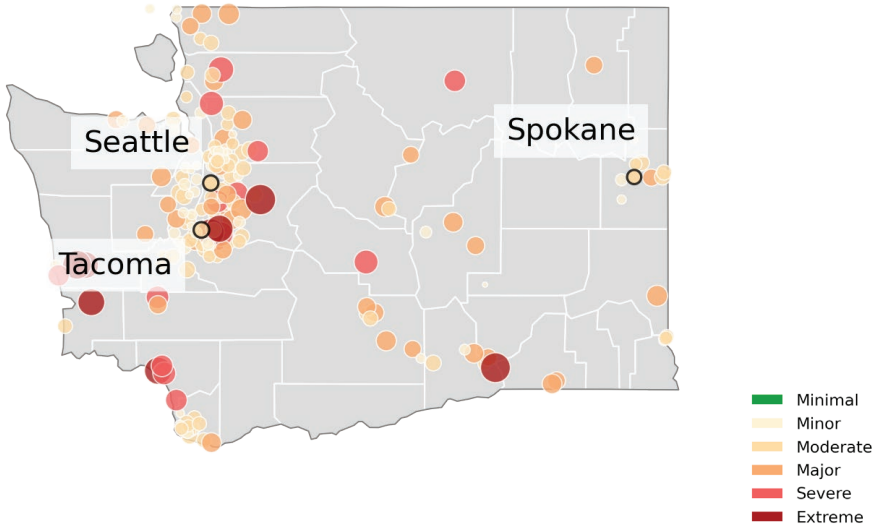
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Washington

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Washington, there are 305,396 residential properties, 50,325 miles of roads, 28,742 commercial properties, 1,077 infrastructure facilities, and 2,055 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Washington, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Fife	99.9%	86.5%	98.5%	100.0%	100.0%
2	Finley	89.2%	89.7%	92.2%	100.0%	100.0%
3	Longview	88.0%	83.8%	99.6%	94.1%	94.6%
4	North Bend	81.1%	79.8%	87.8%	100.0%	100.0%
5	Pacific	91.0%	85.8%	99.3%	100.0%	66.7%
6	Toppenish	100.0%	93.2%	100.0%	50.0%	90.9%
7	Sedro-Woolley	72.9%	79.0%	94.7%	100.0%	72.7%
8	Hoquiam	90.2%	75.0%	95.7%	62.5%	85.2%
9	Centralia	76.9%	74.8%	83.6%	60.0%	94.6%
10	Aberdeen	64.2%	65.7%	89.1%	66.7%	90.0%
	• State Average	15.1%	29.1%	31.6%	33.6%	22.4%

Highest proportion of operational risk by category

- **Residential: Toppenish, 100.0%**

Greatest risk to property owners with 1,825 out of 1,825 residential properties at risk of water reaching their building.

- **Roads: Toppenish, 93.2%**

Greatest risk to commutes and transportation with 38 out of 40 miles of roads at risk of becoming impassable.

- **Commercial: Toppenish, 100.0%**

Greatest risk to businesses with 215 out of 215 commercial buildings at risk of water reaching their building.

- **Social: North Bend, 100.0%**

Greatest risk to government, education or social facilities with 18 out of 18 at risk of becoming inoperable.

- **Infrastructure: College Place, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 5 at risk of becoming inoperable.

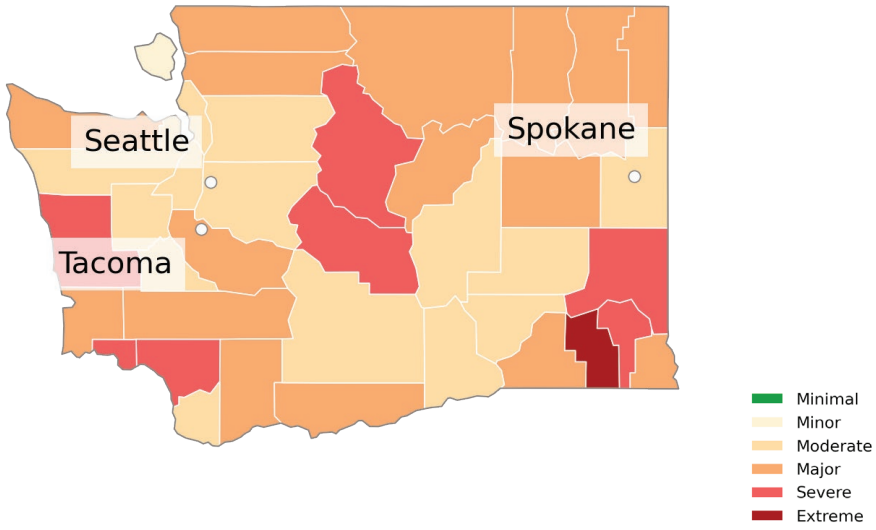
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Washington

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Washington, Cowlitz County has the largest number of properties currently protected with community flood mitigation projects or structures with 21,008 out of 56,300 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Columbia County	76.5%	52.4%	79.7%	56.5%	70.8%
2	Kittitas County	47.9%	34.7%	54.7%	57.4%	69.6%
3	Cowlitz County	51.2%	26.3%	70.5%	58.6%	56.9%
4	Garfield County	55.1%	39.1%	50.0%	37.5%	66.7%
5	Walla Walla County	51.7%	48.2%	48.1%	45.8%	50.5%
6	Grays Harbor County	41.0%	33.1%	69.4%	35.9%	62.6%
7	Whitman County	17.6%	61.4%	71.4%	53.8%	25.5%
8	Chelan County	29.0%	32.7%	56.2%	57.9%	36.8%
9	Pacific County	34.1%	28.0%	63.6%	36.8%	41.8%
10	Skagit County	26.5%	40.9%	55.2%	44.2%	36.3%
	• State Average	15.1%	29.1%	31.6%	33.6%	22.4%

Highest proportion of operational risk by category

- **Residential: Columbia County, 76.5%**

Greatest risk to property owners with 991 out of 1,296 residential properties at risk of water reaching their building.

- **Roads: Whitman County, 61.4%**

Greatest risk to commutes and transportation with 2,192 out of 3,571 miles of roads at risk of becoming impassable.

- **Commercial: Columbia County, 79.7%**

Greatest risk to businesses with 228 out of 286 commercial buildings at risk of water reaching their building.

- **Social: Columbia County, 70.8%**

Greatest risk to government, education or social facilities with 17 out of 24 at risk of becoming inoperable.

- **Infrastructure: Cowlitz County, 58.6%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 51 out of 87 at risk of becoming inoperable.

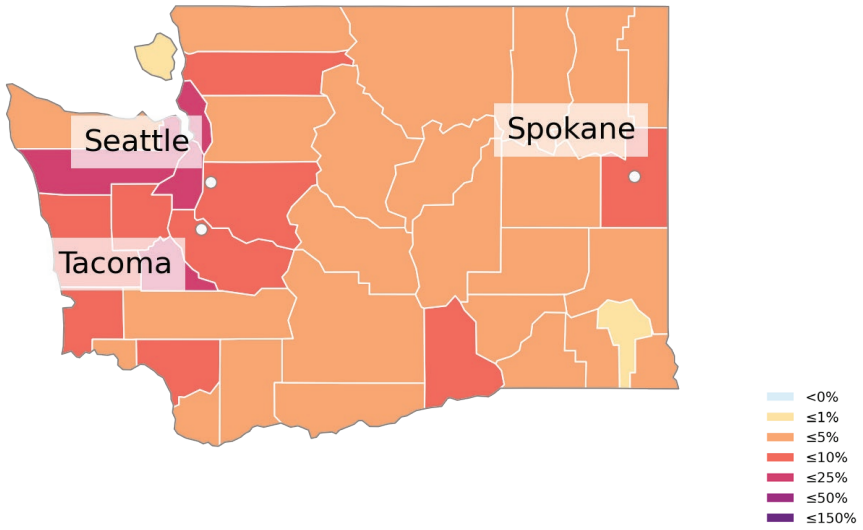
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Washington

As severity and frequency of flood events in Washington increase over the next 30 years with a changing environment, an additional 15,549 residential properties, 1,393.0 miles of roads, 1,631 commercial properties, 101 infrastructure facilities, and 147 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Pacific County	5.5%	1.4%	6.7%	0.0%	16.5%
2	Jefferson County	1.1%	0.8%	12.9%	2.1%	7.7%
3	Kitsap County	1.0%	1.6%	4.2%	5.3%	2.7%
4	Thurston County	0.7%	1.1%	3.7%	7.0%	1.9%
5	King County	0.5%	1.0%	2.7%	8.6%	1.4%
6	Cowlitz County	0.8%	0.7%	1.7%	1.1%	9.0%
7	Wahkiakum County	9.7%	1.4%	1.6%	0.0%	0.0%
8	Pierce County	0.7%	1.1%	2.0%	7.8%	0.9%
9	Walla Walla County	1.3%	0.6%	1.1%	2.1%	4.1%
10	Mason County	1.8%	1.3%	2.4%	1.3%	1.5%
	• State Average	0.8%	0.8%	1.8%	3.2%	1.6%

Greatest growing operational risk by category

- **Residential: Wahkiakum County, 9.7%**

Greatest growing risk to property owners with 145 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Skagit County, 1.7%**

Greatest growing risk to commutes and transportation with 55 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Jefferson County, 12.9%**

Greatest growing risk to businesses with 43 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Pacific County, 16.5%**

Greatest growing risk to government, education or social facilities with 13 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: King County, 8.6%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 48 additional facilities at risk of becoming inoperable in 30 years.

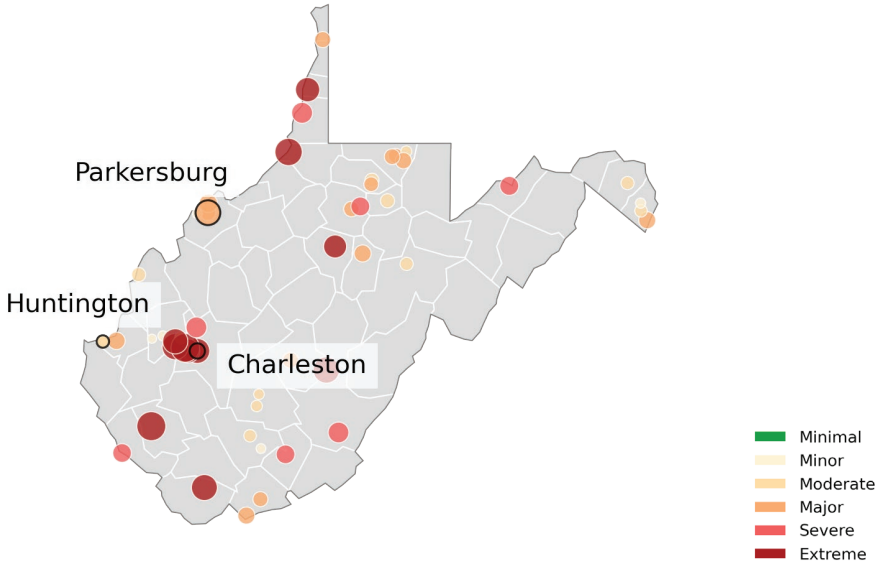
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
West Virginia

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In West Virginia, there are 128,067 residential properties, 50,284 miles of roads, 11,072 commercial properties, 1,107 infrastructure facilities, and 968 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in West Virginia, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Dunbar	80.8%	75.8%	95.7%	100.0%	88.9%
2	Mount Gay-Shamrock	59.5%	74.3%	100.0%	100.0%	100.0%
3	St. Albans	64.6%	71.9%	96.5%	100.0%	75.0%
4	New Martinsville	67.5%	77.8%	84.7%	83.3%	85.7%
5	Weston	54.8%	70.8%	94.4%	100.0%	66.7%
6	Richwood	48.8%	59.6%	70.4%	100.0%	100.0%
7	Nitro	73.3%	74.2%	96.7%	50.0%	62.5%
8	Wheeling	58.1%	61.5%	83.2%	71.4%	80.3%
9	Charleston	43.4%	55.0%	90.2%	82.5%	69.2%
10	Welch	60.2%	64.9%	89.3%	75.0%	50.0%
	• State Average	28.3%	45.8%	37.2%	51.0%	36.4%

Highest proportion of operational risk by category

- **Residential: Dunbar, 80.8%**

Greatest risk to property owners with 2,218 out of 2,746 residential properties at risk of water reaching their building.

- **Roads: New Martinsville, 77.8%**

Greatest risk to commutes and transportation with 51 out of 66 miles of roads at risk of becoming impassable.

- **Commercial: Mount Gay-Shamrock, 100.0%**

Greatest risk to businesses with 5 out of 5 commercial buildings at risk of water reaching their building.

- **Social: Richwood, 100.0%**

Greatest risk to government, education or social facilities with 6 out of 6 at risk of becoming inoperable.

- **Infrastructure: Dunbar, 100.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 7 out of 7 at risk of becoming inoperable.

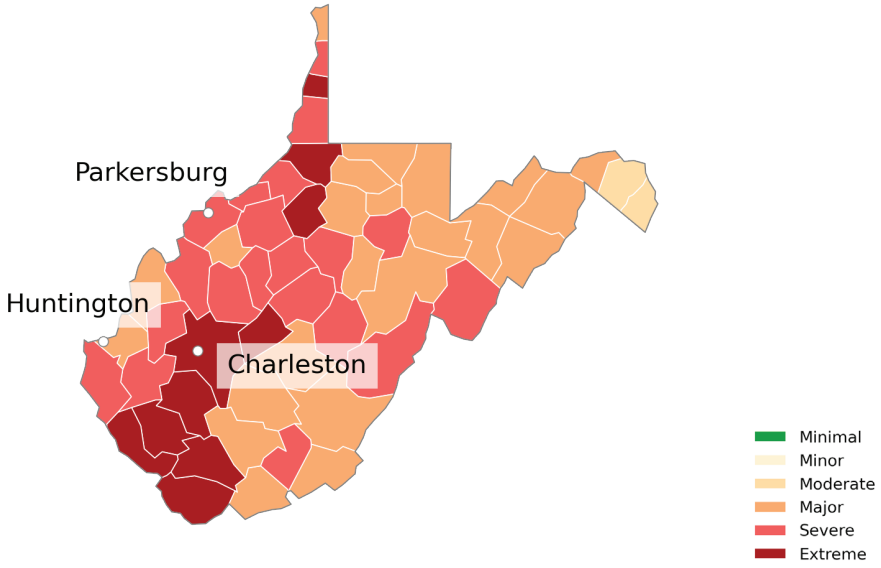
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
West Virginia

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In West Virginia, Cabell County has the largest number of properties currently protected with community flood mitigation projects or structures with 10,806 out of 50,297 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Logan County	70.3%	69.7%	88.9%	78.4%	73.9%
2	McDowell County	64.1%	60.4%	87.9%	85.4%	71.2%
3	Boone County	64.4%	67.7%	67.3%	75.0%	79.4%
4	Wyoming County	66.2%	61.5%	85.7%	76.7%	62.5%
5	Kanawha County	52.6%	60.4%	86.7%	76.4%	71.1%
6	Wetzel County	60.0%	50.4%	59.2%	77.4%	84.2%
7	Mingo County	52.0%	68.4%	48.7%	64.4%	75.8%
8	Wayne County	51.2%	61.1%	58.3%	57.3%	61.4%
9	Ohio County	46.2%	43.6%	72.7%	57.1%	64.6%
10	Pleasants County	44.0%	46.0%	35.7%	84.2%	60.0%
	• State Average	28.3%	45.8%	37.2%	51.0%	36.4%

Highest proportion of operational risk by category

- **Residential: Logan County, 70.3%**

Greatest risk to property owners with 799 out of 1,137 residential properties at risk of water reaching their building.

- **Roads: Doddridge County, 70.3%**

Greatest risk to commutes and transportation with 962 out of 1,369 miles of roads at risk of becoming impassable.

- **Commercial: Logan County, 88.9%**

Greatest risk to businesses with 16 out of 18 commercial buildings at risk of water reaching their building.

- **Social: Wetzel County, 84.2%**

Greatest risk to government, education or social facilities with 16 out of 19 at risk of becoming inoperable.

- **Infrastructure: McDowell County, 85.4%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 41 out of 48 at risk of becoming inoperable.

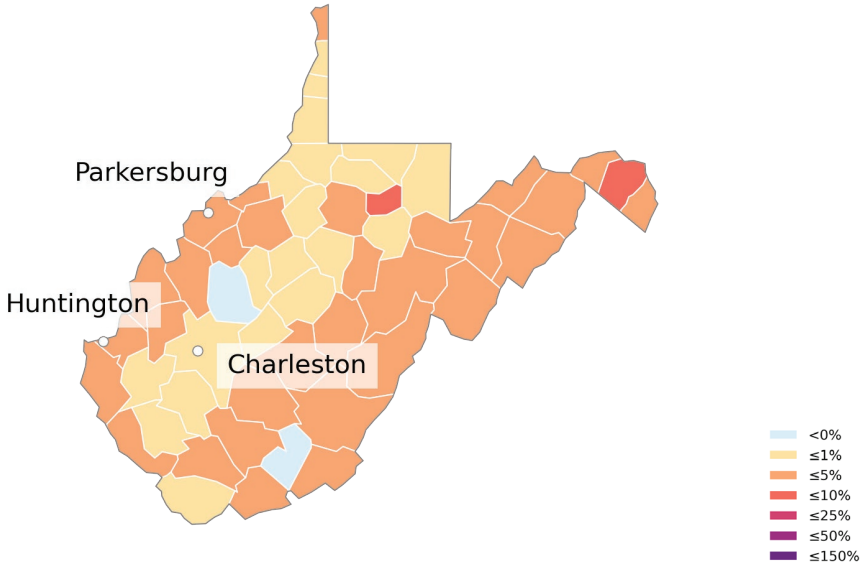
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
West Virginia

As severity and frequency of flood events in West Virginia increase over the next 30 years with a changing environment, an additional 1,821 residential properties, 394.0 miles of roads, 163 commercial properties, 14 infrastructure facilities, and 8 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Wirt County	1.0%	0.3%	5.0%	0.0%	8.3%
2	Cabell County	1.6%	0.8%	4.3%	1.7%	1.0%
3	Jefferson County	0.2%	0.4%	0.7%	5.8%	0.0%
4	Logan County	0.4%	0.2%	5.6%	0.0%	0.0%
5	Randolph County	1.2%	0.5%	0.9%	2.9%	0.0%
6	Hardy County	0.6%	0.5%	0.0%	3.4%	0.0%
7	Mineral County	0.3%	0.4%	0.7%	2.4%	0.0%
8	Wayne County	0.9%	0.2%	0.3%	2.4%	0.0%
9	McDowell County	0.3%	0.3%	3.0%	0.0%	0.0%
10	Boone County	0.2%	0.3%	0.0%	0.0%	2.9%
	• State Average	0.4%	0.4%	0.5%	0.6%	0.3%

Greatest growing operational risk by category

- **Residential: Cabell County, 1.6%**

Greatest growing risk to property owners with 417 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Cabell County, 0.8%**

Greatest growing risk to commutes and transportation with 15 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Logan County, 5.6%**

Greatest growing risk to businesses with 1 additional commercial building at risk of water reaching their building in 30 years.

- **Social: Wirt County, 8.3%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Jefferson County, 5.8%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 3 additional facilities at risk of becoming inoperable in 30 years.

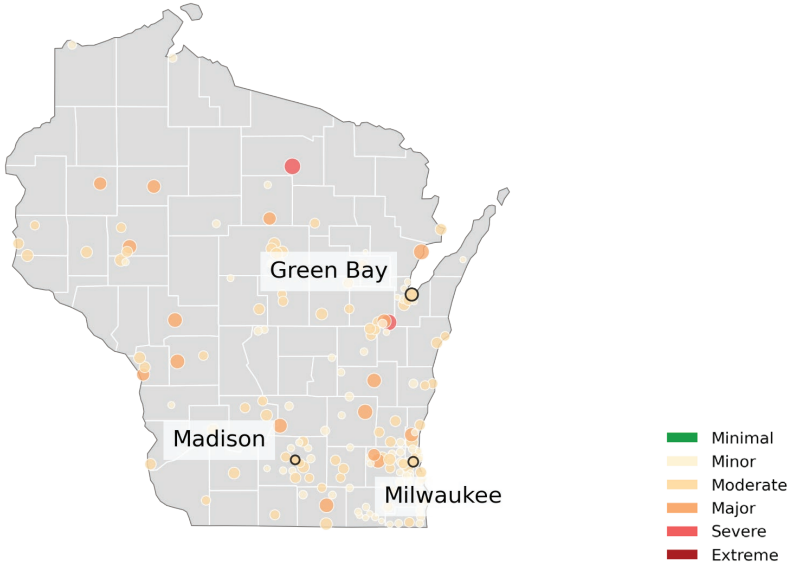
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Wisconsin

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Wisconsin, there are 169,082 residential properties, 35,754 miles of roads, 23,391 commercial properties, 758 infrastructure facilities, and 1,294 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Wisconsin, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Oconto	65.1%	55.0%	65.3%	75.0%	57.1%
2	Rhinelander	30.9%	38.6%	50.5%	42.9%	61.9%
3	Lake Wisconsin	41.4%	34.1%	41.7%	100.0%	0.0%
4	Fond du Lac	32.7%	34.7%	39.0%	30.0%	71.6%
5	Black River Falls	8.7%	22.7%	29.6%	66.7%	64.3%
6	Mayville	14.0%	29.0%	46.2%	50.0%	50.0%
7	Sparta	21.5%	28.8%	27.6%	62.5%	43.5%
8	La Crosse	36.9%	43.0%	31.3%	47.8%	22.8%
9	Kaukauna	7.6%	18.0%	26.0%	82.6%	43.3%
10	Merrill	21.8%	33.4%	41.6%	44.4%	25.0%
	• State Average	9.9%	20.8%	15.6%	22.6%	15.2%

Highest proportion of operational risk by category

- **Residential: Oconto, 65.1%**

Greatest risk to property owners with 994 out of 1,528 residential properties at risk of water reaching their building.

- **Roads: Oconto, 55.0%**

Greatest risk to commutes and transportation with 39 out of 71 miles of roads at risk of becoming impassable.

- **Commercial: Oconto, 65.3%**

Greatest risk to businesses with 115 out of 176 commercial buildings at risk of water reaching their building.

- **Social: Fond du Lac, 71.6%**

Greatest risk to government, education or social facilities with 53 out of 74 at risk of becoming inoperable.

- **Infrastructure: Mequon, 83.3%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 5 out of 6 at risk of becoming inoperable.

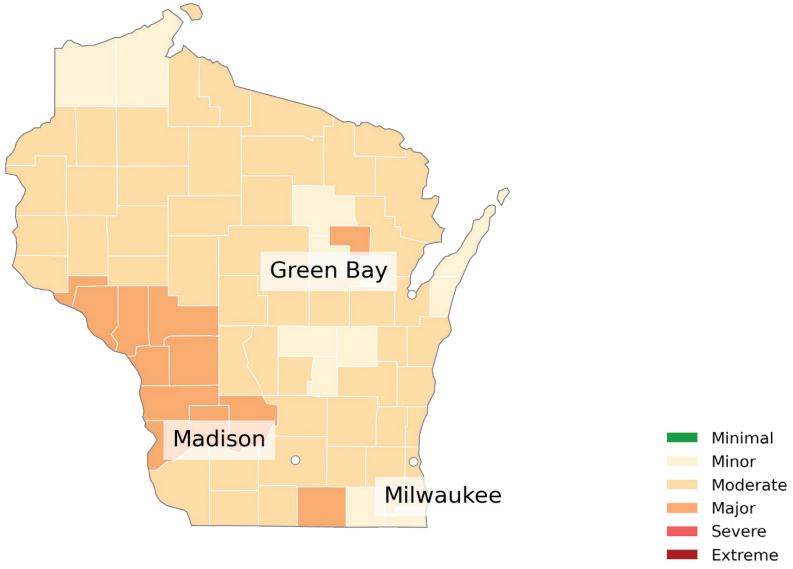
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Wisconsin

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Wisconsin, Richland County has the largest number of properties currently protected with community flood mitigation projects or structures with 476 out of 20,387 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Trempealeau County	27.2%	43.1%	40.0%	39.5%	32.8%
2	Buffalo County	21.0%	37.2%	29.2%	52.6%	37.8%
3	La Crosse County	26.8%	34.1%	31.2%	45.1%	23.5%
4	Richland County	30.4%	47.9%	37.7%	20.0%	13.8%
5	Juneau County	20.8%	32.5%	24.2%	34.0%	26.2%
6	Pepin County	15.9%	29.9%	29.0%	22.2%	38.1%
7	Monroe County	17.7%	32.5%	24.4%	35.4%	23.1%
8	Crawford County	25.7%	35.7%	21.2%	25.9%	21.1%
9	Sauk County	15.9%	30.1%	24.2%	34.0%	20.9%
10	Rock County	9.8%	20.0%	19.9%	27.7%	44.4%
	• State Average	9.9%	20.8%	15.6%	22.6%	15.2%

Highest proportion of operational risk by category

- **Residential: Richland County, 30.4%**

Greatest risk to property owners with 1,597 out of 5,245 residential properties at risk of water reaching their building.

- **Roads: Richland County, 47.9%**

Greatest risk to commutes and transportation with 706 out of 1,474 miles of roads at risk of becoming impassable.

- **Commercial: Trempealeau County, 40.0%**

Greatest risk to businesses with 232 out of 580 commercial buildings at risk of water reaching their building.

- **Social: Rock County, 44.4%**

Greatest risk to government, education or social facilities with 136 out of 306 at risk of becoming inoperable.

- **Infrastructure: Menominee County, 66.7%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 4 out of 6 at risk of becoming inoperable.

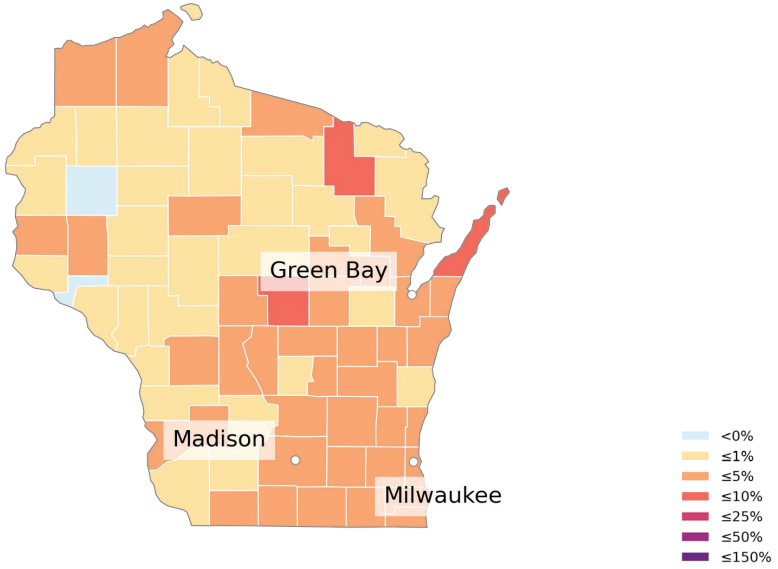
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Wisconsin

As severity and frequency of flood events in Wisconsin increase over the next 30 years with a changing environment, an additional 4,079 residential properties, 572.0 miles of roads, 431 commercial properties, 7 infrastructure facilities, and 23 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Jefferson County	0.2%	0.3%	0.4%	4.2%	0.8%
2	Waushara County	0.4%	0.6%	0.5%	3.1%	0.0%
3	Portage County	0.4%	0.5%	0.5%	2.7%	0.0%
4	Columbia County	0.4%	0.5%	0.5%	2.0%	0.8%
5	Sauk County	0.4%	0.4%	0.4%	2.0%	0.8%
6	Dane County	0.3%	0.5%	0.6%	0.6%	1.5%
7	Kenosha County	0.4%	0.4%	0.6%	0.0%	0.8%
8	Waukesha County	0.2%	0.5%	0.2%	0.9%	0.2%
9	Juneau County	0.5%	0.5%	0.9%	0.0%	0.0%
10	Rock County	0.4%	0.6%	0.5%	0.0%	0.3%
	• State Average	0.2%	0.3%	0.3%	0.2%	0.3%

Greatest growing operational risk by category

- **Residential: Fond du Lac County, 0.6%**

Greatest growing risk to property owners with 179 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Green Lake County, 0.7%**

Greatest growing risk to commutes and transportation with 8 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Juneau County, 0.9%**

Greatest growing risk to businesses with 6 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Dane County, 1.5%**

Greatest growing risk to government, education or social facilities with 10 additional facilities at risk of becoming inoperable in 30 years.

- **Infrastructure: Jefferson County, 4.2%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 2 additional facilities at risk of becoming inoperable in 30 years.

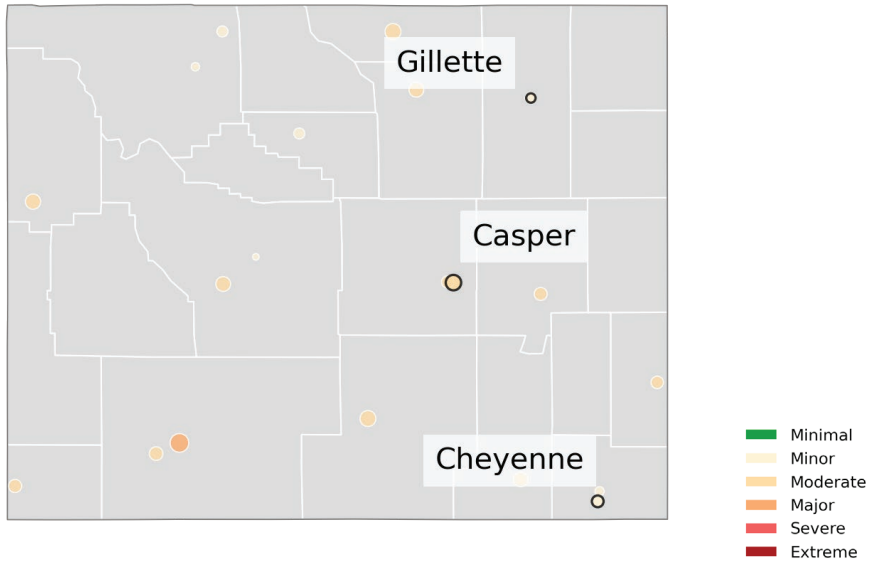
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

City Details
Wyoming

Flooding can impact day to day life within a community, cut off access to utilities, emergency services, and transportation, and may impact the overall economic well-being of an area. In Wyoming, there are 27,103 residential properties, 34,082 miles of roads, 3,348 commercial properties, 213 infrastructure facilities, and 246 social facilities with operational flood risk* today. The following pages provide an overview of some of the most at risk communities in Wyoming, additional information for each neighborhood, zip code, city, and county can be found at FloodFactor.com.

Municipality risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in municipality with operational risk

Rank	Municipality	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Rock Springs	17.5%	28.7%	55.7%	33.3%	52.6%
2	Sheridan	22.2%	28.3%	43.6%	57.1%	27.8%
3	Lander	24.3%	27.4%	45.1%	33.3%	40.7%
4	Jackson	41.8%	37.1%	28.2%	0.0%	22.4%
5	Casper	18.2%	30.8%	25.1%	41.2%	13.1%
6	Rawlins	18.0%	25.8%	28.8%	37.5%	7.1%
7	Laramie	25.3%	26.4%	24.8%	20.0%	18.5%
8	Evanston	12.9%	24.2%	30.1%	16.7%	10.5%
9	Torrington	25.6%	27.2%	12.5%	0.0%	23.1%
10	Worland	15.2%	19.1%	37.2%	16.7%	0.0%
	• State Average	16.3%	22.1%	23.2%	31.6%	21.4%

Highest proportion of operational risk by category

- **Residential: Jackson, 41.8%**

Greatest risk to property owners with 1,134 out of 2,715 residential properties at risk of water reaching their building.

- **Roads: Jackson, 37.1%**

Greatest risk to commutes and transportation with 25 out of 68 miles of roads at risk of becoming impassable.

- **Commercial: Rock Springs, 55.7%**

Greatest risk to businesses with 309 out of 555 commercial buildings at risk of water reaching their building.

- **Social: Rock Springs, 52.6%**

Greatest risk to government, education or social facilities with 20 out of 38 at risk of becoming inoperable.

- **Infrastructure: Sheridan, 57.1%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 4 out of 7 at risk of becoming inoperable.

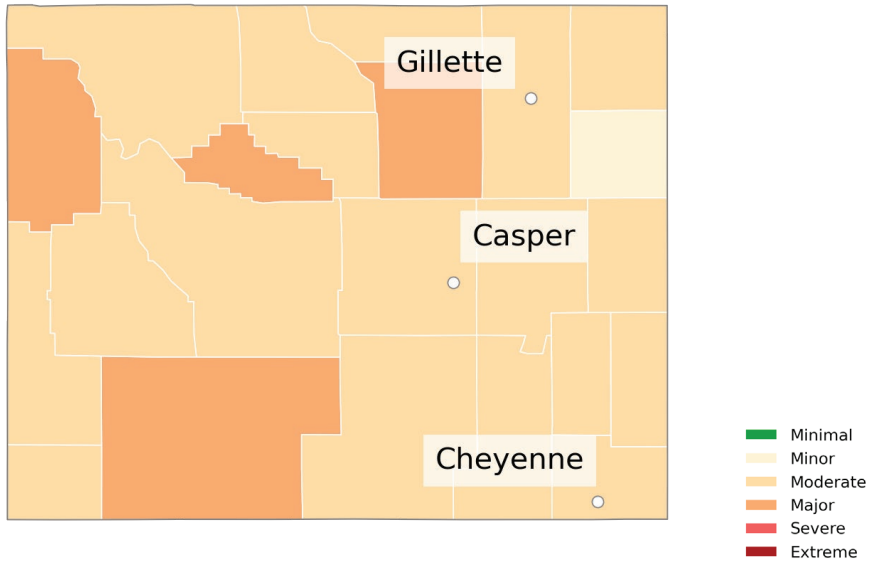
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

County Details
Wyoming

Understanding the number of facilities or roads at risk and the severity of flood risk can help communities better prepare for and limit damage as well as help lower insurance costs. In Wyoming, Sheridan County has the largest number of properties currently protected with community flood mitigation projects or structures with 9,238 out of 17,107 properties protected.

County risk over 30 years

Based on proportion and severity



Greatest proportion with operational risk today*

% in county with operational risk

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Hot Springs County	34.0%	27.2%	55.9%	80.0%	41.2%
2	Teton County	44.5%	38.0%	28.0%	53.3%	41.1%
3	Johnson County	10.4%	19.1%	17.7%	66.7%	44.4%
4	Sweetwater County	15.3%	21.8%	44.8%	32.0%	35.3%
5	Big Horn County	28.7%	19.6%	38.0%	25.7%	35.3%
6	Sheridan County	23.1%	23.9%	36.7%	27.3%	25.4%
7	Albany County	23.8%	22.6%	24.5%	34.3%	25.4%
8	Lincoln County	23.0%	28.6%	24.4%	34.9%	18.8%
9	Carbon County	19.8%	22.5%	30.0%	30.0%	26.1%
10	Crook County	15.9%	24.1%	17.8%	50.0%	19.2%
	• State Average	16.3%	22.1%	23.2%	31.6%	21.4%

Highest proportion of operational risk by category

- **Residential: Teton County, 44.5%**

Greatest risk to property owners with 2,604 out of 5,852 residential properties at risk of water reaching their building.

- **Roads: Teton County, 38.0%**

Greatest risk to commutes and transportation with 975 out of 2,566 miles of roads at risk of becoming impassable.

- **Commercial: Hot Springs County, 55.9%**

Greatest risk to businesses with 152 out of 272 commercial buildings at risk of water reaching their building.

- **Social: Johnson County, 44.4%**

Greatest risk to government, education or social facilities with 8 out of 18 at risk of becoming inoperable.

- **Infrastructure: Hot Springs County, 80.0%**

Greatest risk to critical infrastructure (utilities, emergency services, etc) with 4 out of 5 at risk of becoming inoperable.

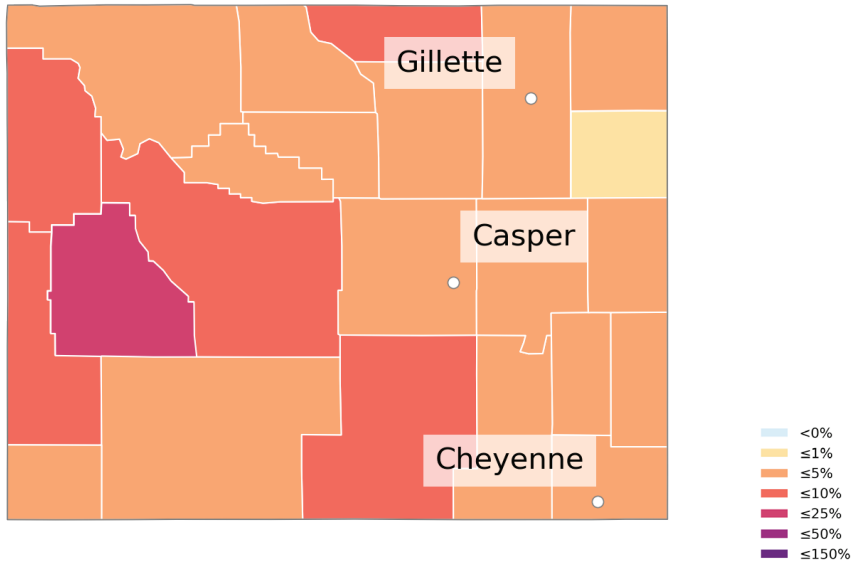
*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.

Change by County
Wyoming

As severity and frequency of flood events in Wyoming increase over the next 30 years with a changing environment, an additional 1,123 residential properties, 883.0 miles of roads, 161 commercial properties, 4 infrastructure facilities, and 5 social facilities will be at risk of becoming inoperable.*

Change in risk over 30 years

Based on proportion and severity



Greatest growth in operational risk, 2021-2051

% increase in proportion with operational risk over next 30 years

Rank	County name	Residential properties	Miles of roads	Commercial properties	Infrastructure facilities**	Social facilities+
1	Teton County	2.7%	1.5%	3.3%	3.3%	0.9%
2	Washakie County	2.7%	0.5%	7.3%	0.0%	0.0%
3	Uinta County	0.5%	0.5%	0.6%	6.3%	0.0%
4	Johnson County	0.2%	0.4%	0.3%	0.0%	5.6%
5	Natrona County	0.9%	0.7%	1.3%	2.6%	0.8%
6	Carbon County	1.0%	0.6%	0.8%	0.0%	2.2%
7	Lincoln County	1.6%	0.9%	1.8%	0.0%	0.0%
8	Park County	0.6%	0.8%	0.6%	0.0%	1.4%
9	Hot Springs County	1.3%	0.5%	1.5%	0.0%	0.0%
10	Sheridan County	0.7%	0.4%	1.5%	0.0%	0.0%
	• State Average	0.7%	0.6%	1.1%	0.6%	0.4%

Greatest growing operational risk by category

- **Residential: Teton County, 2.7%**

Greatest growing risk to property owners with 160 additional residential properties at risk of water reaching their building in 30 years.

- **Roads: Teton County, 1.5%**

Greatest growing risk to commutes and transportation with 39 additional miles of roads at risk of becoming impassable in 30 years.

- **Commercial: Washakie County, 7.3%**

Greatest growing risk to businesses with 26 additional commercial buildings at risk of water reaching their building in 30 years.

- **Social: Johnson County, 5.6%**

Greatest growing risk to government, education or social facilities with 1 additional facility at risk of becoming inoperable in 30 years.

- **Infrastructure: Uinta County, 6.3%**

Greatest growing risk to critical infrastructure (utilities, emergency services, etc) with 2 additional facilities at risk of becoming inoperable in 30 years.

*Operational risk denotes when a facility is flooded to the point where it can no longer function as intended or becomes unsafe. These thresholds vary depending on infrastructure type, see methodology for each as well as overall risk definition.
**The infrastructure category includes airports, fire stations, hospitals, police stations, ports, power stations, superfund/hazardous waste sites, water outfalls and wastewater treatment facilities.
+The social category includes government buildings, historic buildings, houses of worship, museums and schools.
Locations with fewer than 10 miles of roads, 1,000 residential properties and 5 social, commercial, and infrastructure facilities are excluded from tables.