Financial Impact of Weather

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Severe weather and climate events have immediate and long-term effects. In this resource guide, we provide Post articles, resources and an activity to examine the economic impact and potential for assistance after natural disasters.

Floods moved through California. Snowstorms hit Oregon. Hailstorms struck Colorado and Minnesota. Severe storms crossed the middle of America. Oklahoma and states south experienced tornados from January through March. Georgia had freezing temperatures in March. Later in Spring Missouri and Arkansas flooded. All occurred in the first six months of 2017. According to the National Centers for Environmental Information, nine of these were billion-dollar weather and climate disasters.

In August Montana’s eastern prairie lost 425 square acres of meadows and wheat grasses and many cattle were killed in a multimillion-dollar fire. Lightening had struck a state experiencing the driest period in 110 years. Questions were raised about federal assistance to these independent ranchers.

As hurricane season brought hits to American territories and states, the damage to life and property continued to mount. As did questions of insurance, state and federal response, and priorities to repair public facilities and infrastructure while addressing daily human need.
U.S. 2017 Billion-Dollar Weather and Climate Disasters

In 2017 (as of July 7), there have been 9 weather and climate disaster events with losses exceeding $1 billion each across the United States. These events included 2 flooding events, 1 freeze event, and 6 severe storm events. Overall, these events resulted in the deaths of 57 people and had significant economic effects on the areas impacted. The 1980–2016 annual average is 5.5 events (CPI-adjusted); the annual average for the most recent 5 years (2012–2016) is 10.6 events (CPI-adjusted). During the first half of 2017 (January-June), the U.S. experienced a rapid succession of disaster events, which follows the near-record number of billion-dollar disasters that impacted the U.S. in 2016.

Assignment: Disaster Update

The NOAA map denotes billion-dollar weather and climate disasters through June 2017. Do research. What additional severe weather and climate disasters took place in 2017? Locate them on the maps. Summarize the damage.
On Sept. 8, 1900, a hurricane drove 15 feet of storm surge over the thriving city of Galveston, Tex., maximum elevation 8.7 feet. At least 6,000 people were killed in what remains the deadliest natural disaster in U.S. history. Most of them had less than a day’s warning that a storm was approaching and had no inkling of its power.

I thought of that when I read a report by the Associated Press as a storm of similar intensity rolled over the coast of Cuba and headed toward Florida. The AP quoted a businessman from St. Petersburg, Fla., who was irritated that Hurricane Irma was headed toward his town and not toward Miami as predicted. “For five days, we were told it was going to be on the east coast, and then 24 hours before it hits, we’re now told it’s coming up the west coast,” the man complained. “As usual, the weatherman, I don’t know why they’re paid.”

Arguably, they’re paid for the thousands of lives they may have saved by sounding warnings that the people of Galveston never received. Thanks to radar and satellites and weather planes and forecasting supercomputers — to name only a few of the advances of the past century — the world watched for days as Irma whirled steadily westward across the Atlantic Ocean, a slow-motion bowling ball headed for the pins. The speed of its winds, the spread of its bands, the pressure...
in its eye were tracked like vitals in an intensive care unit.

But I don’t imagine the grumpy businessman was alone in his exasperation. Our growing knowledge of the world has given us more of everything — except happiness. As 21st-century heirs to the Enlightenment, we know an awful lot. We know how to edit a gene. We know how to convert millions of simultaneous messages — conversations, texts, memes, movies — into packets of ones and zeros and speed them from tower to tower to another person’s hand. We know how to convert the energy of sunlight into a ride in the car.

Yet we still don’t know everything. In the case of Irma, meteorologists and their computers could read the air currents across a hemisphere and forecast the storm’s eventual collision with an air mass that would push it sharply to the north. What they could not predict five days in advance, the hole in their knowledge, was the precise spot above Earth where the collision would occur.

The range of possibilities always included coordinates that would paint a target on St. Pete, but the models suggested for several days that Miami was the more likely landfall. One could choose to marvel at the overall accuracy of the forecast or grumble about its imperfection. The difference is largely a matter of temperament.

Something similar is driving our cultural split over the science of global warming. Humans know much more today than they did a century ago about the heat-trapping effects of certain gases in the atmosphere — enough to say with assurance that too great a saturation would have catastrophic effects. But no honest scientist could claim perfect knowledge of the precise impacts on our complex climate of each incremental increase in greenhouse gases. So we have arguments over the accuracy of models and mistrust over deltas of change.

In medicine, speaking generally, our knowledge is more advanced and useful in diagnosing illness than in curing it. In communications, we’ve raced ahead in our ability to make connections while we’ve lagged in the struggle to make good use of them. In politics, we’ve become more adept at driving factions apart while gaining little in our aptitude for bringing them together.

Ancient humans had a dismally scant knowledge of the workings of creation. The power to foretell the arrival of a storm would have been supernatural to them — much less the ability to repair a living heart or to put moving images of tiny people inside a box. But they were precocious in this regard: One creation story after another foretold the persistent fact of modern life that knowledge is imperfect and often unsettling. In the Hebrew Bible, for example, the forbidden fruit grows on the Tree of Knowledge — in this case, knowledge of good and evil. That knowledge, according to John Milton, “brought Death into the World, and all our woe.”

I’m not saying, nor was Milton, that ignorance is bliss. The doomed residents of Galveston mutely attest to the value of knowing more rather than less. But across the Caribbean, throughout Florida, in sodden Houston and shaken Mexico and elsewhere in this world of death and woe, nature is reminding us of all we have yet to learn — and all that is beyond our paltry control.
Knowing the Natural World

As a Washington Post columnist, David Von Drehle gives his opinion. “Irma reminds us of all we don’t know about the natural world,” the online headline to the September 10, 2017, column indicates his topic. Read the column and answer the following questions.

1. The lede begins David Von Drehle’s column with a description and facts.
   a. What took place in Galveston in September 1900?
   b. What idea is communicated in this lede?

2. Von Drehle presents several contrasts between 1900 weather forecasting and today’s warnings. Select three of them and indicate why they are considered improvements.

3. Von Drehle uses metaphors. Identify three of them. What purpose do they serve?

4. “Yet we still don’t know everything” begins paragraph five and indicates a transition.
   a. In this paragraph, what does he state we could know?
   b. In this paragraph, what does he state we could not know?

5. Paragraph seven presents a key concept. Summarize the concept using the structure presented in paragraph five — the idea of what we know contrasted to what we don’t know.

6. Von Drehle introduces a simile in paragraph three. Identify it. In paragraphs eight and nine, he returns to the medical image. What idea is presented through the extension of the image?

7. In paragraph nine, Von Drehle takes his readers back much further than 1900.
   a. What literary allusion does he make?
   b. How does this relate to the thesis of the essay (column)?

8. To what current events do the following allude:
   a. Across the Caribbean
   b. Throughout Florida
   c. Sodden Houston
   d. Shaken Mexico

9. According to David Von Drehle to what do recent natural disasters remind humans?

10. Agree, disagree or qualify your agreement with Von Drehle’s thesis. In your response include an example from current events and a literary allusion or metaphor.
An Integrated Curriculum For The Washington Post Newspaper In Education Program

Should they go back?

In this, the cruelest season of storms that anyone alive has known, entire islands, such as Barbuda, have been wiped clear. There’s no power across Puerto Rico, and it probably won’t fully return for months. Dominica is devastated, with no commerce and hardly any usable homes. St. John and St. Martin — playgrounds for the affluent and homelands for the descendants of slaves, adventurers and colonizers — have been boomeranged back to a time before luxury resorts and timeshare condos.

The storms pushed the islands back to the primitive, basic state that made the sandbars of the Caribbean so alluring to European empires, pirates and tourists for half a millennium.

Investors, governments, visitors and the people who have called these islands home for generations now wonder: Has something elemental changed? Might paradise turn uninhabitable? Is it time to go?

Devastation is part of the natural cycle of life in the islands. During the past four decades, the region has been hit by more than 200 major storms, which killed more than 12,000 people and caused nearly $20 billion in damage, according to an International Monetary Fund study. About 1 percent of the Caribbean’s gross domestic product is wiped out every year.

“Storms shape the history of these places,” said Joshua Jelly-Schapiro, a geographer and author of Island People: The Caribbean and the World. “And people have been leaving these islands for decades,” heading for New York, London, Paris and other more stable places in countries that once colonized the Caribbean …

BY ANTHONY FAIOLA, SAMANTHA SCHMIDT, MARC FISHER

Hurricanes kill and destroy. Things small and large — toys and family photos and entire buildings — vanish in torrents of water and gusts of wind.

“Eden is broken,” Dominica Prime Minister Roosevelt Skerrit said at the United Nations after Hurricane Irma. “To deny climate change … is to deny a truth we have just lived.”

The tragedy storms wreak was powerful enough that William Shakespeare heard about it in England. “The sea that roar’d to us,” Prospero said in The Tempest, “did us but loving wrong.”

Hurricanes can also revive and renew. Crops come back stronger than before. Storms also cement the bonds of people who share the intimate spaces of islands, which are, as Jelly-Schapiro put it, “both a world apart and connected to everywhere by the sea.”

Storms drive people out. “Hurricanes have been an important aspect of migration in the Caribbean at least since the late 19th century,” said Yale historian Stuart Schwartz, author of Sea of Storms, a history of hurricanes. People leave because they are dispirited or because the storm destroys their livelihood, wiping out sugar plantations or gutting resort hotels.

“Puerto Rico was already in an out-migration crisis before the storms,” Schwartz said. The island lost 10 percent of its population in the past two years, mainly because of deep financial woes. “This could make it much worse.”…

While $48 million already has flowed from an 18-nation insurance consortium to seven island governments to jump-start the buildback, the region’s U.S. territories, Puerto Rico and the U.S. Virgin Islands, were in financial distress even before the storms. Now, their paralyzing debt crises have been compounded by a near-halt in commerce.

The World Bank has encouraged island nations to build in resiliency — put much of the electrical network underground, invest in drainage systems, pass stricter building codes, rebuild hospitals so they can double as storm shelters. On islands that have taken such steps, recent storms have caused far fewer deaths than strong hurricanes did in the past, Sayed said.

“The whole thing is about cost-benefit analysis,” said Saurabh Dani, a disaster-risk-management specialist at the World Bank. “The social and economic cost of trying to recover from a devastating storm makes you realize that it might be worth the cost” to invest in expensive precautions such as moving electrical wires from overhead poles to underground trenches.

Major storms can paralyze production in agriculture and industry for years, Schwartz said, but “hurricanes bring benefits too — eliminating insects, renewing fields.” The difference between long-term devastation and quick recovery depends on “the willingness of the government to spend on preparation,” he said. “One dollar spent in preparation is worth four in recovery.”

Gaston Browne, prime minister of the former British colony of Antigua and Barbuda, views the storm as an opportunity. From the ruins of his country’s smaller island, he wants to build a Barbuda powered only by solar energy. Telephone lines could go underground. Houses and the hospital could be rebuilt to withstand monster storms. …

To read the entire October 1, 2017, article visit http://www.washingtonpost.com/sf/national/2017/09/30/stormislands1001/?hpid=hp_hp-top-table-main_stormislands709pm%3Ahomepage2Fstory&utm_term=.42f945c83872

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Massive wildfires turned prairies to ash, leading Montana’s cowboys to weigh federal help

By Tim Craig

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SAND SPRINGS, Mont. — In this part of Montana’s rugged eastern prairie, Erwin Weder and the other ranchers and cowboys are not used to feeling kicked around. But as Weder drives his pickup truck onto a bluff to gaze out over “Big Sky Country,” he feels a bit defeated.

Hundreds of miles of meadows and scrub grass that feed tens of thousands of beef cattle are gone, replaced by the charred soil and smoldering prairie dog burrows that the state’s largest wildfire in nearly three decades has left behind. But after the massive multimillion-dollar firefight, another battle has emerged in the wide open spaces where there is often distrust of the government: What should the federal role be in helping Montana’s livestock industry respond to, and recover from, the blaze.

The Federal Emergency Management Agency (FEMA) originally rejected Montana’s request for assistance, a process that ranchers say left them feeling forgotten and misunderstood by Washington. Now, many in this deeply conservative region are weighing their wariness about bureaucrats against their need for help.

“We lost 70 percent of our grass, which means 70 percent of our revenue,” said Weder, 41, who is trying to locate hundreds of cattle that scattered as the massive wildfires turned prairies to ash.
flames tore across his 65,000-acre ranch. “I don’t think people truly understand what an acre of grass is worth to us ... and the millions of dollars that will be lost over the next few years.”

Local officials across the United States worry that it is becoming more difficult to secure help from FEMA for all sorts of natural disasters. Since January, members of Congress and state officials have protested initial FEMA denials following a tornado outbreak in Louisiana, flooding in North Carolina, and snowstorms in Pennsylvania and Oregon.

The Trump administration has been hinting that it might limit federal spending on disaster relief and preparation, and FEMA is considering whether to draft regulations to shift more responsibility for rebuilding to the states. The creation of “disaster deductibles” — which states would have to exhaust before FEMA offers federal assistance — was first proposed under the Obama administration.

The new administration says it is following established criteria for responding to disasters, and it has not indicated clear standards for when it plans to step in with disaster assistance, especially in cases that affect relatively localized areas. President Trump’s proposed 2018 budget includes more money for disaster assistance but reduces preparedness grants by $667 million, something that has sparked dismay among state officials. In March, Trump also proposed an 11 percent cut to FEMA’s 2017 budget to help fund construction of his proposed border wall. But after denying a wave of disaster assistance requests earlier this year, FEMA has recently begun reversing some of those initial findings, including a recent announcement that it would send aid to Oregon to help it recover from a series of snowstorms.

Trump recently went to FEMA headquarters and vowed that the agency would “quickly” and “effectively” respond if a hurricane strikes the United States this year, but states remain unclear what help they’ll get and when they’ll get it.

FEMA Administrator William B. “Brock” Long said in a recent interview that agency grant funding for disaster preparedness has been trending down since 2010, reflecting a philosophical question: Should the federal government fully sustain programs at the state level or should the federal funding “serve as a catalyst”?

Long said he believes that preparedness, response and recovery are a shared responsibility and that states should have “rainy day funds to support their localities when the federal government support’s not coming to town.”

“We can’t afford to completely sustain or supplement programs through federal grants alone,” Long said. “This is a partnership. We have to have an honest conversation with states, with state and local governments, as to what is the
right balance for sustaining programs in responding and recovery.”

In Sand Springs, where ranchers sometimes must drive an hour to reach their neighbors, FEMA faces new conflict over the value of the grass that nurtures the nation’s food supply.

The value of a disaster can’t be summed up in property damage here, a highway outpost that consists of a post office, church, general store and a one-room school with three students. The real cost of the fire is measured in the loss of meadow and wheat grasses that sustain an estimated 50,000 cows.

The Lodgepole Complex fire scorched 425 square miles, about twice the size of Chicago. It ranks as the third-largest fire in the settled history of the northern Rocky Mountain region, according to the U.S. Fish and Wildlife Service.

After a lightning storm sparked the blaze July 19, FEMA’s initial denial of the state’s general request for disaster assistance while the fire was raging angered local officials, who viewed it as another disconnect between Washington and the heartland. They argue that too much federal money goes to populated areas even though Montanans pay their taxes, too.

“The federal government needs to understand, not everything comes from the city,” said Teddy Robertson, a commissioner in Garfield County, which includes Sand Springs and has the third-lowest population density of any county in the continental United States. “To have FEMA turn us down, it was like a slap in the face that we don’t matter.”

Montana’s congressional delegation pressured FEMA to reverse its decision, and the agency says it agreed to compensate the state through its Fire Management Assistance Program four days later. The federal agency said in a statement that “there have not been changes to FEMA policy in regards to federal assistance or reimbursement for disaster related expenses.”

FEMA’s fire assistance program reimburses states for 75 percent of the costs associated with battling wildfires. State and county officials estimate they’ve spent about $9 million extinguishing the Lodgepole blaze, which was brought under control July 29.

Bruce Suenram, Montana’s deputy fire and aviation chief since 2009, said this is the first time he can recall that Montana had to aggressively push for FEMA firefighting assistance.

“It would certainly be beneficial to us all if we had more specific criteria that we knew we had to meet, so we don’t waste each other’s time,” he said.

W. Craig Fugate, who served as FEMA administrator during President Barack Obama’s second term, said he suspects Montana struggled to get its request approved because the fire “didn’t threaten enough homes.” He added that ranchers and farmers are considered businesses and typically are not eligible for FEMA assistance.
“I was always amazed by how many people decide, as a business, that I have this loss and that I want someone else to pay for it — and from this part of the world, that doesn’t like red tape and doesn’t like a lot of things until they need something,” said Fugate, who added that states would do more to mitigate risk if they had to shoulder a greater share of disaster recovery costs.

Now that the firefighting funding has been sorted out, it is unclear what the federal government will do in terms of helping to restore the grasslands and assisting the businesses and people that rely on them. Local ranchers here say they could face an especially dire situation if the drought persists into next year because the scorched prairie can only rejuvenate if it gets much-needed rain.

Before declaring a fire emergency, FEMA evaluates threats to property and “critical infrastructure”; availability of resources and potential for “major economic impact.”

In Garfield County, where 1,300 residents are scattered across an area nearly twice the size of Delaware, local officials say it isn’t easy to document the full scope of a disaster. When there’s a major fire here, residents respond with their own water and pumper trucks to battle it, making it difficult to track expenses.

Residents say it could take weeks or months to determine how many cattle were killed in a fire so large it took helicopters three hours to fly around its perimeter.

“It’s hard to assess value, with boots on the ground, when you have more cows than homes,” said Anne Miller, a Garfield County official who is helping to coordinate relief efforts. “You are not just pulling home values and land records.”

Sen. Jon Tester (D-Mont.) was initially irate over FEMA’s stance but later credited Long, the FEMA administrator, for realizing “that lots of people’s life support was burning up.” But Tester, a fifth-generation wheat farmer, said broader discussions are needed about how FEMA values disasters that don’t involve loss of life or buildings, especially as it relates to the impact of climate change.

In northeastern Montana, July was among the warmest months on record and the first seven months of the year the driest period in 110 years, according to the National Weather Service.

“I think there needs to be a realization by this president, climate change is real, and our fire season is getting longer and more intense,” Tester said.

That’s trouble for ranchers, who rely on paychecks that come once a year. Cows spend all summer munching on grass while raising calves. After the fall roundup, calves are separated from their mothers and are sold for about $1,000 each. That payday depends largely on whether mother cows can find enough grass or hay to keep nursing.

Relying on the federal government is at odds with the culture here, especially in a county where 91 percent of voters supported Donald Trump at the polls in November. As Weder put it, “Most here would rather starve than be on welfare.”

Travis Brown, who owns the L.O. Cattle Co. in Sand Springs, easily recites the family motto about why his great-grandfather moved to the region from Texas around 1918: “To carve out a ranch from the sheer force of work and will.”

Brown, 33, owns about 1,300 cattle on 93 square miles of ranchland that gradually slopes up from creek beds into foothills marked by remnants of original homesteader settlements. With antelope and mule deer leaping through his fields, he and his border collie, Gert, spent much of the week after the fire just trying to find his cows.

Generally, Brown said, it requires about 40 acres of grassland to sustain one cow and calf for a year. When that grass disappears, ranchers must purchase hay, and a lactating cow can eat 20 to 40 pounds of it each day. At $150 per ton of hay, that can work out to more than $2,000 per day in unexpected costs for his herd.

“We are all asking, ‘What are we going to feed these cows?’ ” said Brown, who lives on the ranch with his wife, the area’s only dentist. “And if we mishandle this recovery period, we could do longer-term damage to the land.”

To the unease of some environmentalists, the federal government has offered up one short-term solution: Allowing affected ranchers to move their cattle into the 1.1 million-acre Charles M. Russell National Wildlife Refuge, one of the nation’s largest, north of here along the Missouri River. Paul Santavy, the refuge’s manager, said the Interior Department approved emergency regulations allowing grazing there — at a monthly fee of $29 per cow-calf pair — until November.

“People said, ‘We are not looking for a handout. We just need help and somewhere to put our cows’ … and we have the ability to do that,” Santavy said, adding that biologists expect no environmental disruption to the refuge.

Matthew Bliss is rounding up his cattle to transport them to the refuge, which he says will cost him about $60,000 in grazing fees. Without the service, Bliss said he would have to jam his herd into a feedlot, where they would stand largely stationary or be sold off prematurely.

“We are gracious for the help because, right now, my cows are just not happy,” Bliss said. Asked whether he would also welcome other federal help, Bliss bent his head down toward his dashboard. “Well,” he said, before an extended pause, “we like to do our own thing. … We already feel they do enough.”
Want to be mad about government insurance? Be mad about the program that will be critical after Harvey.

by Philip Bump

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There are three ways in which climate change will continue to make storms like Hurricane Harvey more disastrous, in the way that a basement full of gasoline cans will make a house fire worse.

The first is that scientists expect that climate change will increase the number of heavy precipitation events. Rainstorms will be more severe. More rain will fall, flooding places like Houston.

The second is that ocean temperatures are warmer, and warmer water helps build the strength of hurricanes.

The third is that warmer water also takes up more volume — meaning that oceans are rising even before you consider the increase in ocean levels that follows from the melting of onshore glaciers. Higher ocean levels make flooding more common and mean higher surges when storms push water inland.

This last point, about the increased likelihood of flooding, is not a secret and it is not a theory. Flooding on the coasts is more common now than it was in the past and sea levels in those places are higher than they used to be.

Flooding is one of the most common causes of billion-dollar events — natural disasters that do $1 billion or more in damage. Flooding has been an expensive problem long enough that, decades ago, private insurers generally stopped offering flood insurance for homes. So the government stepped up, creating the National Flood Insurance Program to provide insurance to homeowners in areas prone to flooding. Private insurers cover the homes, but the bills are ultimately paid by the federal government. People who couldn’t be insured for flood damage before can under the NFIP, a program managed by Federal Emergency Management Agency.

But there’s a problem. As more people have moved into flood-prone areas and climate change has
increased the likelihood of flooding, 
the NFIP has been overwhelmed by 
severe weather events.

From 1978 to 2004, the program 
generally took in more in payments 
than it paid out in losses.

Then, in 2005, Katrina hit. Losses 
for which NFIP was responsible that 
year neared $18 billion — an amount 
equal to all of the premiums paid 

Then, in 2012, Sandy hit. Losses 
neared $10 billion. The cost of losses 
in the years of Katrina and Sandy 
combined equals nearly half of all 
of the premiums paid from 1978 to 
2016.

Then, in 2016, there was a slew 
of major floods, four of which were 
billion-dollar events. NFIP was 
overwhelmed.

Bolstering the NFIP became a 
big political fight in the wake of 
Hurricane Sandy. A small part of it 
was about the location of the storm, 
battering Democratic northeastern 
states. (Sixty-seven Republicans, 
including current House Speaker Paul 
D. Ryan (R-Wis.) voted against an 
NFIP funding bill in January 2013.)

Most of it, though, was real concern 
about the failure of the program to 
pay its own bills. The NFIP is $24.6 
billion in debt.

That problem, though, comes 
down to politics.

The Government Accountability 
Office describes the problem with 
the NFIP as follows: “Since the 
program offers rates that do not fully 
reflect the risk of flooding, NFIP’s 
overall rate-setting structure was not 
designed to be actuarially sound in 
the aggregate, nor was it intended 
to generate sufficient funds to fully 
cover all losses.” In other words, the 
NFIP charges less than it needs to.

There are two reasons for that.

The first is that FEMA dragged 
it feet on updating its maps to 
reflect the current threat posed from 
flooding. For years, the agency relied 
on decades-old maps created before 
the advent of new technological 
tools that would allow for better 
measurement. As such, people in 
areas at risk of significant flooding 
paid premiums based on an out-of-
date estimate of how much risk of 
flooding existed. That is: They paid 
less than they should have. (The 
flood map for New Orleans had been 
last updated 20 years before Katrina.)

Some people in areas that were likely 
to flood weren’t identified as living 
in flood-prone regions at all, so they 
didn’t have any insurance at all.

When FEMA started updating 
those maps several years ago, the 
reaction was predictable (and was why 
they weren’t eager to do the updates 
in the first place). Premiums for 
many people went up, and they didn’t 
like that. That includes a lot of people 
who live on expensive properties 
near the ocean, who had an outsized 
ability to influence the politics. The 
NFIP is meant to be a backstop 
for people at risk of flooding, but 
because it’s a government program 
it’s also subject to the vagaries of 
political influence. And there’s not 
much that is less politically popular 
than having the government tell you 
that you need to pay more money 
when nothing you see around you 
suggests anything has changed.

The NFIP is already baking in 
future problems along these lines. 
For the most part, the new FEMA 
flood maps don’t account for the 
effects of future changes to the 
climate. (New York City, near the 
Sandy epicenter, requested that 
FEMA’s new maps include future 
projections.)

“The floods of 20 years ago are 
not as bad as the floods are going to
be 20 years from now,” Michael Gerrard, director of Columbia Law School’s Sabin Center for Climate Change Law told PBS’s “Frontline” in 2016. “But [the maps] only look at historic experience.”

The flood insurance program is due to expire this year. A bill to reauthorize the program was introduced in the Senate last month; Harvey’s arrival — and its landing in a Republican state with a lot of political clout — is expected by some to prompt approval.

Last month, President Trump rescinded an executive order signed by his predecessor that those receiving federal funds for building consider the future effects of flooding in their construction plans.

“Taxpayers have been made to shell out hundreds of billions of dollars in disaster-related spending over the past decade, including more than $136 billion for just the two years from 2011 to 2013,” an analyst from a conservative think tank said in a statement about the decision. “By contrast, evidence shows that every $1 spent on disaster mitigation can save $4 in post-disaster recovery and rebuilding costs.”

As James Surowiecki noted for the New Yorker in the wake of Sandy, though, politics makes that bad economic trade-off preferable. One study, he wrote, “found that voters reward politicians for spending money on post-disaster cleanup, but not for investing in disaster prevention, and it’s only natural that politicians respond to this incentive.”

They will probably continue to do so.
Who Will Pay What Where and When Natural Disaster Strikes

Where you live influences the weather you experience, especially severe weather conditions. Natural disasters include floods, forest fires, earthquakes, tsunamis and tornadoes. It is important to prepare for natural disasters: building to the most demanding codes, identifying flood zones and other severe-weather-prone areas, buying food and emergency supplies, and knowing where to take shelter.

Once the weather has passed, what do you do? Who can help address the damage to personal and business property? What insurance coverage is available for people who live in your community?

What do you know about each of these areas that can impact your finances and living conditions for years?

**Individual**
- To whom can homeowners turn when natural disaster hits?
- To whom can renters turn when natural disaster hits?
- Is there insurance available for the contents as well as one’s home structure?
- What type of content insurance is available (i.e., plumbing and electrical, appliances, furniture, art and clothing)?
- Does the form of natural disaster matter?
- How do you determine if you should purchase insurance?

**State Government**
- What state agencies exist to assist residents in your community when natural disasters occur?
- Do state and local governments remove debris from flooding at no or reduced cost?

**Federal Government**
- Name the federal agencies that are charged with aiding citizens when natural disasters occur. Include the kind of aid each provides.
- Name the federal agencies that are charged with aiding businesses during times of natural disaster. Include the kind of aid each provides.
- Does it make a difference if businesses are headquartered in another state or country?

**Insurance Companies**
- Select an insurance company available to citizens in your community.
- What coverage is available to homeowners for damages to their homes caused by natural disasters?
- What coverage is available to homeowners for the contents of their homes caused by natural disasters?
- What coverage is available for renters for damages to the contents of their rental homes?
- What kind of coverage is available to small businesses for damage resulting from natural causes?
- What kind of coverage is available to corporations for damage caused by natural causes?
- Do insurance policies include the cost of debris removal?