

ABS Research

Natural Disaster Retrofitting Is Likely to Drive PACE Growth

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Morningstar Perspective

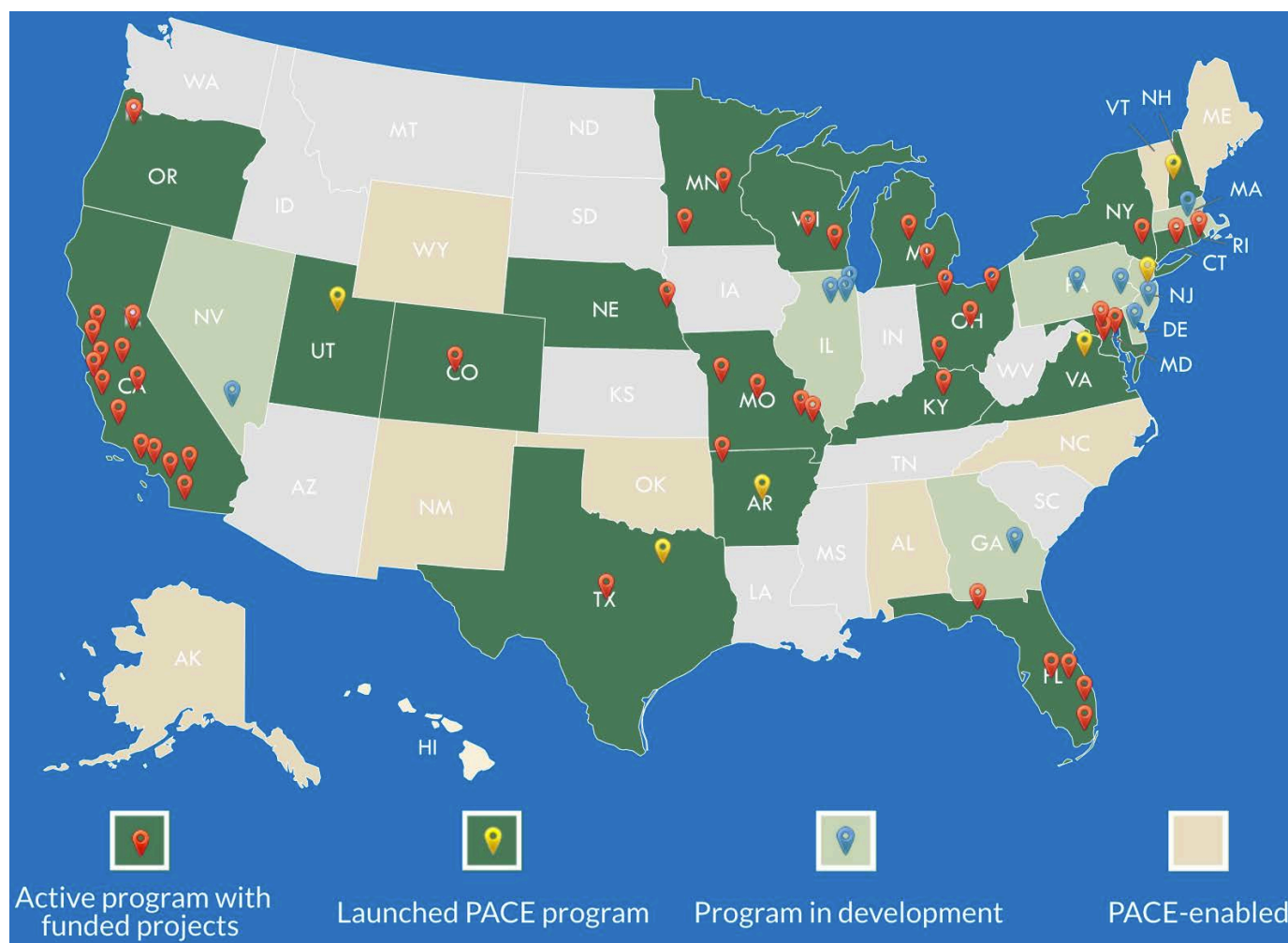
While much attention has been devoted to energy efficiency and energy renewal efforts, including solar panels, many property assessed clean energy financings in both California and Florida have also been dedicated to increasing resiliency to hurricanes, floods, and earthquakes. Given the increase in natural disasters—including 2017 hurricanes Harvey, Irma, and Maria—it is not surprising that property owners have migrated their building enhancement efforts toward wind, flood, and seismic resiliency. Hurricane Florence's arrival last week is yet another example of the significant challenges ahead for property owners. In addition, state legislation supporting updating building codes to help minimize damage in the event of a powerful storm or earthquake may also be serving as a catalyst for these renewed efforts. Morningstar Credit Ratings, LLC believes this natural disaster retrofitting will likely be a driving force behind PACE origination growth in coming years.

More States Adopt PACE Legislation

Commercial PACE programs have been proliferating this year as more states pass legislation enabling the financing program, which allows property owners to make energy efficiency, energy-renewal, and water-conservation upgrades, as well as improvements to mitigate for wind, flooding, and seismic damage without a significant initial outlay of funds. This year, Pennsylvania, Illinois, and Utah have each passed legislation either enabling or expanding the use of C-PACE programs. Pennsylvania's PACE legislation was adopted this year, while Illinois adopted it in August 2017 and recently expanded the availability of PACE by enabling the Illinois Finance Authority to issue PACE assessments in August 2018. Similarly, Utah took PACE legislation a step further by implementing a statewide district, expanding upon the 2013 legislation that enabled municipalities and counties to originate PACE assessments.

Likewise, residential PACE legislation has also been progressing, with wider adoption by states. Minnesota's R-PACE program had been suspended but was recently reinstated in May 2018, reportedly with more consumer protections. According to PACENation, an industry not-for-profit organization dedicated to advancing PACE programs, PACE-enabling legislation has been approved in 36 states and in Washington, D.C. Active R-PACE programs currently exist in only three states, California, Florida, and Missouri while C-PACE programs are more widely used across municipalities and counties, with funded projects across 20 states and D.C.

Active PACE Programs and PACE-Enabled States



Source: PACENation

Although R-PACE originations in California have slowed this year, most likely because of increasing consumer protections and the implementation of ability-to-pay requirements, C-PACE volume overall has picked up. According to PACENation, there have been

roughly \$712 million in cumulative C-PACE financings through mid-September, nearly doubling the prior year-end level. Of the total amount financed, approximately 7% of the improvements have been to increase resiliency. Most of that, however, is because of the \$40 million Seton Medical Center financing in California, the largest C-PACE origination closed to date. Nonetheless, R-PACE cumulative originations, totaling \$5.17 billion through the same period, dwarf that of C-PACE.

Natural Disasters Have Become More Commonplace

Over the past several years, the occurrence of natural disasters has increased, with hurricanes alone causing colossal damage in the hundreds of billions in dollars. In 2017, a record three Category 4 hurricanes struck the United States. According to the National Oceanic and Atmospheric Administration, the cumulative cost of massive weather-related storms totaled \$306.2 billion in 2017, nearly a 43% increase over the prior record of \$214.8 billion reported in 2005. Hurricane Katrina, which occurred that year, ranks as the highest damaging tropical cyclone, with approximately \$161 billion in estimated damages, followed by Hurricane Harvey with roughly \$125 billion. Hurricane Maria, wreaking havoc last year, racked up \$90 billion in damages, compared with Hurricane Sandy in 2012, which cost \$71 billion, and Hurricane Irma at \$50 billion. While it's too soon to estimate the total damages, Hurricane Florence is yet another reminder of the devastation that these tropical storms can bring, especially regarding flooding.

The Top Five Costliest U.S. Hurricanes

Name	Year	Cost
Katrina	2005	\$161 Billion
Harvey	2017	\$125 Billion
Maria	2017	\$90 Billion
Sandy	2012	\$71 Billion
Irma	2017	\$50 Billion

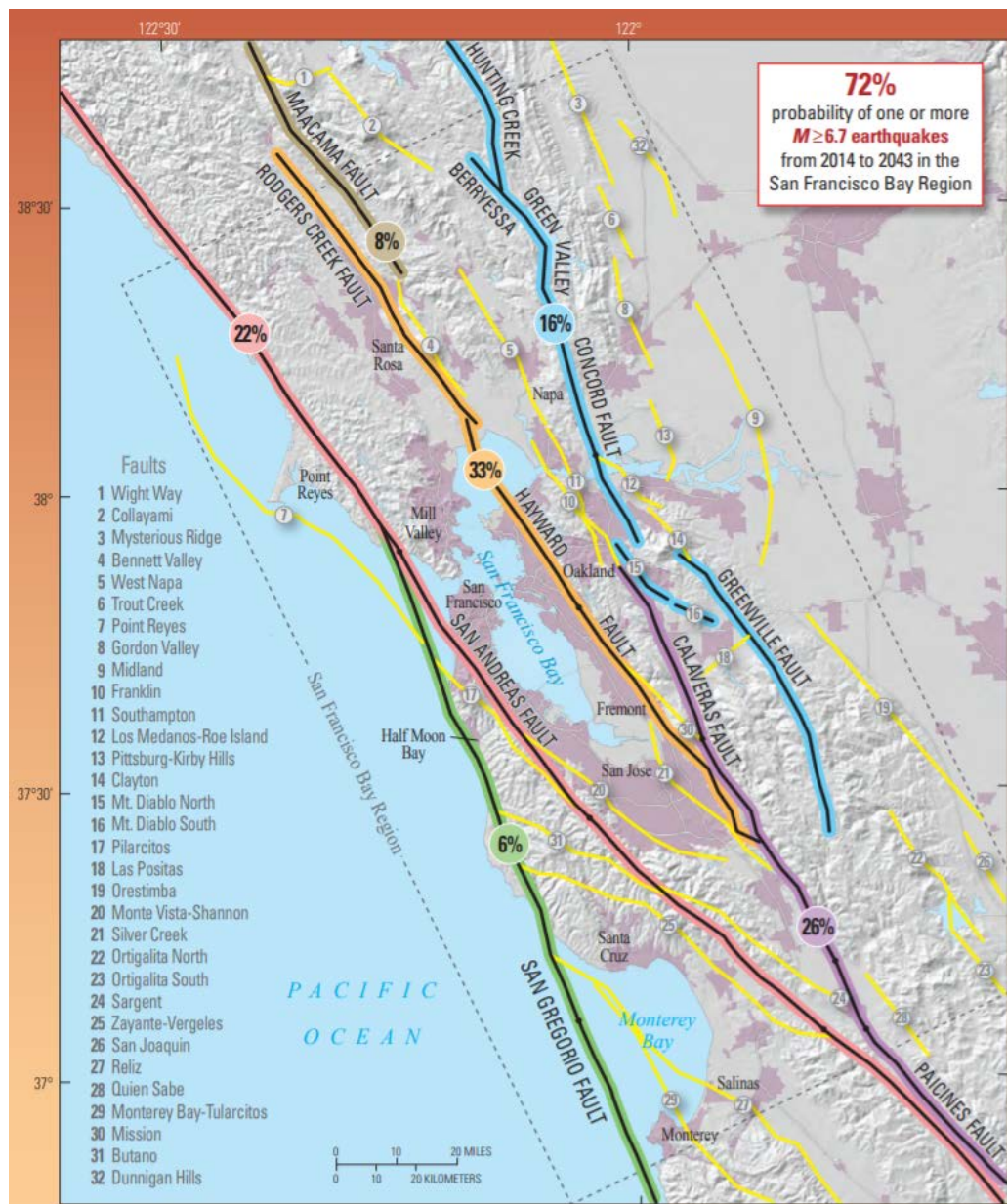


Source: National Oceanic and Atmospheric Administration

Meanwhile, seismic activity also remains a concern, particularly across California. According to the U.S. Geological Survey, a federal agency that tracks earthquake activity, the state has experienced over 7,000 earthquakes with a magnitude of 1.5 or greater in the past year alone. More recently, a 4.4 magnitude earthquake struck Southern California on August 28, but fortunately there were no

reported injuries or damages. The last major earthquake to hit California with severe damage was in 1994, registering 6.7 in magnitude and eliciting \$15 billion in damages. According to the 2014 Working Group on California Earthquake Probabilities, there is a 72% probability of at least one earthquake with a magnitude of 6.7 or greater striking the San Francisco Bay area by 2043.

Earthquake Outlook for the San Francisco Bay Region 2014-2043



Source: U.S. Geological Survey

Legislation May Be a Catalyst to Future PACE-Funded Retrofits

The Los Angeles City Council passed [Ordinance #183893](#) in October 2015, which requires select buildings identified by the city's Department of Building and Safety to improve their structures to increase seismic resiliency. Targeted buildings include wood frame and non-ductile concrete structures deemed to be at risk from an earthquake. The latter are typically older concrete buildings that were constructed before the 1980s and did not use a comprehensive framework of steel bars as reinforcements.

Once a property owner receives an order from the DBS indicating that the building is potentially at risk for seismic damage, the owner must provide documentation regarding the building's structural analysis and its adherence to minimum earthquake standards within three years to help the DBS determine the level of risk. For property owners that received those orders shortly after the passing of the ordinance, that three-year deadline is looming. While they have 10 years to file a permit for the retrofit or demolition, property owners may look to PACE programs to finance such upgrades because the significant costs can be distributed over a five- to 30-year period.

In addition, the recent proliferation of wildfires in the western U.S. increases the likelihood of more stringent fire-protection building standards. According to the California Department of Forestry and Fire Protection, 2018 California wildfires have devastated over 1.3 million acres, and legislators are looking for ways to promote fire resiliency measures. For example, California state Sen. Hannah-Beth Jackson proposed the Wildfire Safety Finance Act in February 2017, amending [Senate Bill 465](#) to allow community facilities districts to use PACE as a financing alternative for fire hardening efforts. Previously, the bill enabled PACE financing to apply to energy efficiency and water conservation efforts. The amendment to include wildfire safety improvements passed both houses of the California legislature on Aug. 31. The bill has been presented to the governor and will become law upon the governor's signature and certain other amendments to the California Financial Code taking effect before January 1, 2019.

Across Florida, numerous disaster prevention initiatives, including "Get Ready, Florida" and "Be Ready Florida," are dedicated to encouraging property owners to take proactive measures against major weather disasters. The goal is to arm property owners with information that can help them mitigate the destruction of life and property. These initiatives could also spur development of solar storage to supply energy following a natural disaster and the loss of more traditional sources of power. In addition, seawall coverage is another storm damage mitigation measure that PACE legislation could get extended to cover in the future. Storm resiliency is clearly on the minds of property owners in these vulnerable areas. According to Ygrene Energy Fund, Inc., a major PACE originator, over 75% of its total number of PACE-financed projects in Florida have been attributed to hurricane protection, including high-impact windows and doors, as well as wind resistant roofing.

Likewise, the Texas General Land Office published a disaster recovery plan earlier this year in the aftermath of Hurricane Harvey, including a needs assessment that addressed resiliency solutions and mitigation needs. In the study, the GLO emphasized its commitment to “rebuilding while prioritizing resiliency.” While Texas’ [House Bill 3187](#) currently pertains only to assessments for water and energy improvements, other states may follow in the footsteps of California by enabling PACE to serve as an additional financing alternative to help in resiliency rebuilding efforts.

Resiliency Efforts Are Likely to Spur PACE

In response to natural disasters, property owners face the challenge of not only rebuilding but also acting proactively to avoid repeat damage in the event of yet another extreme weather occurrence or an act of God. Morningstar expects to see wider use of PACE programs as more states enact PACE legislation and property owners seek to make their buildings more resilient, spurred either by efforts to take steps to prevent loss of life and property or to adhere to newly enacted building codes. In either instance, this natural disaster retrofitting will likely drive PACE growth in coming years.

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