



## EXECUTIVE INSIGHTS

# Estimating Hurricane Ian's Impact on Construction Demand in Florida

Hurricane Ian, which hit Southwest Florida in September 2022, caused a devastating loss of life and the dislocation of hundreds of thousands of Floridians. It was the fifth-strongest hurricane to make landfall in the mainland U.S., heavily impacting population-dense counties such as Lee, Collier, Charlotte and Sarasota. With Category 4 winds and a destructive 10-to-15-foot storm surge reaching far inland, damage to homes and communities came not only from wind and rain but also flooding. On average, Hurricane Ian is estimated to have caused \$50 billion-\$75 billion worth of insured damages and may ultimately be the costliest storm in state history.

With communities still mourning casualties and facing mass dislocation as a result of the storm, the responsibility to prioritize rebuilding falls on companies and individuals that will drive the reconstruction of homes, businesses and infrastructure to clear a path toward recovery.

## Assessing the situation

Generally, reconstruction costs can be much higher than the headline insured estimated figures for a storm like Ian, due to uninsured damages, reconstruction premiums and other factors.<sup>1</sup> L.E.K. Consulting calculates that the \$50 billion-\$75 billion in estimated damages may total roughly \$50 billion-\$80 billion in reconstruction value over the next five years and up to \$60 billion-\$110 billion in total rebuild value.<sup>2</sup>

In total, L.E.K. estimates that Hurricane Ian could add growth to existing construction demand, with variation depending on rebuild scenarios and the products and services

involved. On top of that, Florida construction companies will be addressing the incremental construction demand unrelated to Ian.

### Forecasting the type of construction

The first construction efforts prioritized after a storm like Ian tend to be infrastructure-based, repairing or rebuilding railways, roadways, causeways and other structures that enable the transportation of people and supplies. We expect to see the same prioritization in this case.

Here, the majority of new construction activity is expected to be concentrated on coastal locations,<sup>3</sup> which saw the most damage due to the combination of high-strength winds and extreme storm surge. Not only did Ian cause immense structural damage — more than 5,000 homes<sup>4</sup> and almost 300 businesses in Lee County alone were completely destroyed, requiring a total rebuild — but satellite images show it also may have even changed Florida's coastline.<sup>5</sup> An additional consideration regarding coastal reconstruction is that many homeowners will choose premium construction, as did homeowners after Hurricane Michael in Mexico Beach, Florida, which saw the average home price rise from \$271,000 in 2019 to \$453,000 in 2021,<sup>6</sup> although some of this increase in price is due to the general increase in housing prices. At the same time, some new construction demand in the most extreme-weather-prone areas may be tempered by a higher rise in insurance costs.

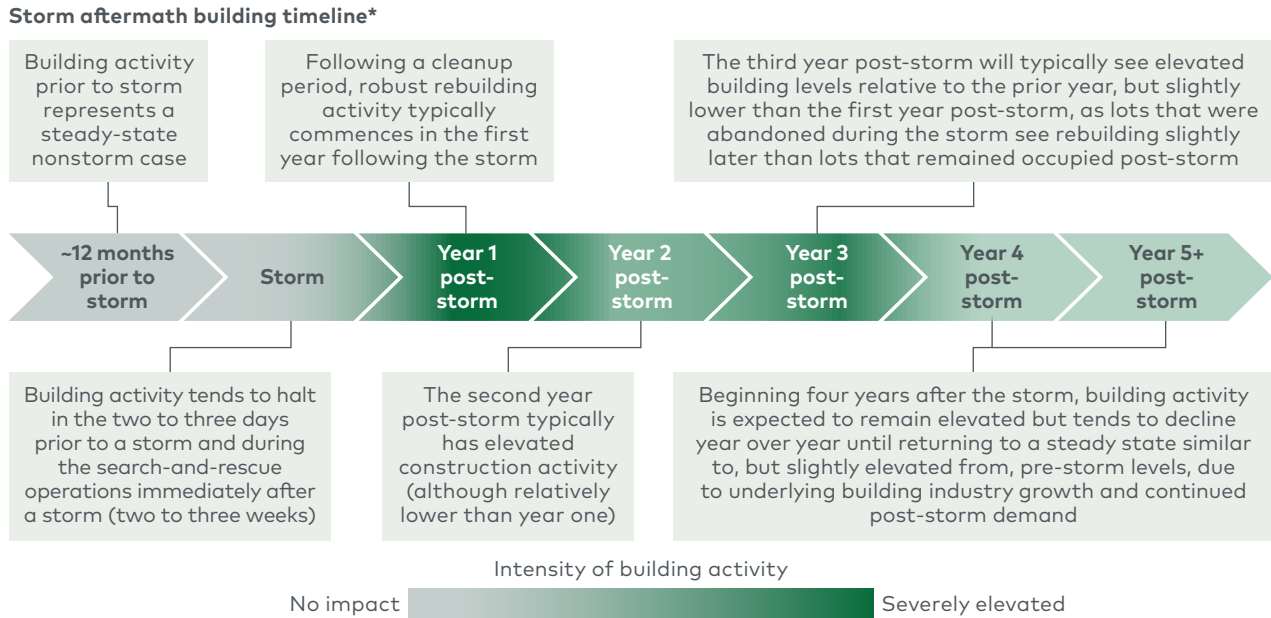
Though inland locations like Cape Coral sustained less damage from Hurricane Ian than coastal locations such as Fort Myers Beach, they were hit hard by flooding from the storm surge and rainfall.<sup>7</sup> After experiencing multiple feet of standing water for nearly a week after the storm, these locations are expected to see a large amount of construction needs to repair or rebuild existing structures. The widespread lack of flood insurance held by inland property owners may tip construction needs away from rebuilds and toward "remove and replace".

### Calculating construction timing

The experiences from prior storms can inform recovery timelines for Hurricane Ian (see Figure 1).

- **Initial demand and six-month surge:** There are certain needs that occur immediately after a hurricane, such as debris cleanup, search and rescue, and restoration of utilities. After these priorities are addressed, the state will see a high-demand period of construction activity at about the six-month mark — in this case, March 2023.
- **First-year high:** Construction demand can be expected to be at its highest level in the first year after a storm, after the four-to-six-month cleanup period. After the similar hurricanes Harvey and Irma, residential building permits saw a jump in the short-term "catch-up"

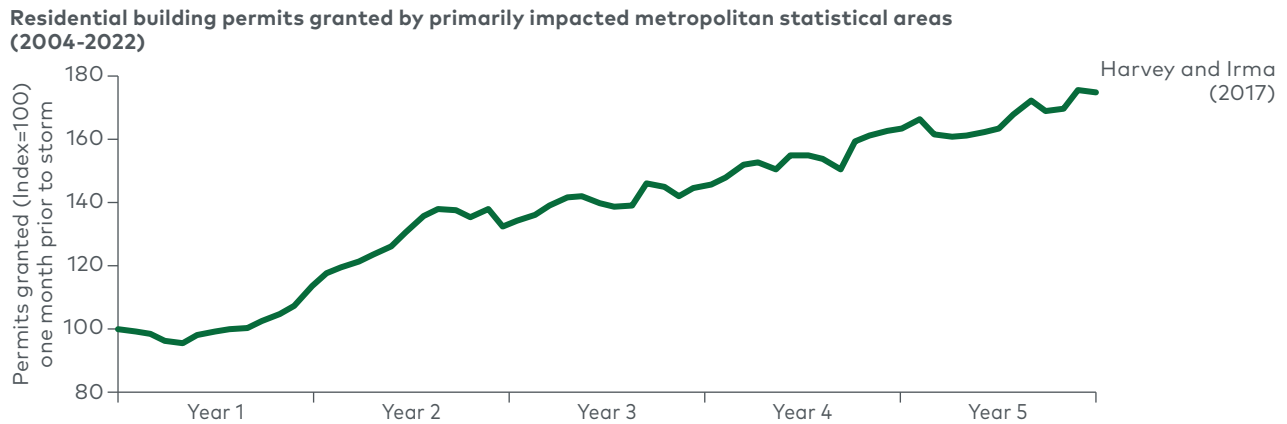
**Figure 1**  
Construction timing after a storm



\*Based on analysis of prior storms of similar magnitude to Hurricane Ian  
Source: L.E.K. interviews, research and analysis

period before growing significantly (see Figure 2). Permits for Hurricane Ian are already being expedited to speed up recovery.

**Figure 2**  
Residential building permit growth after analogous storms



Source: National Association of Home Builders, John Burns Real Estate Consulting: US Remodeler Index, October 2022, U.S. Census Bureau, Texas Real Estate Research Center at Texas A&M University, L.E.K. research and analysis

- **Elevated demand for two to three years:** The second year after a storm will typically have elevated building activity that is only slightly less than the first year. In year three, building levels will rise again relative to year two, but will still remain lower than year one. This

comes as lots and properties that were abandoned immediately following the storm start to see activity, sometimes at the hands of new owners. It can also be expected that a portion of homeowners and business owners will choose to take insurance payouts and sell without rebuilding.

- **Settling into a new normal:** After year three, building activity should decline to a revised steady rate that is slightly elevated from pre-storm levels. This may last up to 10 years post-storm due to underlying building industry growth, continued post-storm demand and shortages of building materials and labor.
- **Long-term growth:** Market participants forecast that 70%-80% of construction will be completed within the first five years, with demand remaining above pre-Ian levels for the next five years. Elevated construction demand can reach the 10-year mark due to some late progress pushed out as a result of volume, limited labor supply and supply chain delays.

Particular to Hurricane Ian, supply chain efficiency and labor constraints are also expected to affect the timeline of construction demand. Supply chain shortages are actually improving — a recent survey found that 67% of remodelers now see some improvement on product lead times<sup>8</sup> — so the greatest impact we expect to see in this case will come from labor shortages. The industry was already experiencing a shortage of labor prior to Ian; Florida saw a 22% increase<sup>9</sup> in construction starts between June 2021 and August 2022, while the number of seasonally adjusted employed construction workers only increased 3.3% (totaling 593,800).<sup>10</sup>

Hurricane Ian will likely drive further demand for labor that may be difficult to fulfill, not only adding to potential delays in reconstruction but also cost, as wage growth for construction workers in Florida had already been outpacing the national average (9% versus 4% annually, respectively, between 2017 and 2022). Firms that are able to source labor from outside the state may be better positioned to meet the construction demand.

### Determining building product needs

For the first few months post-storm, the prioritization of cleanup will mean a high demand for plywood, generators, batteries and window grills to aid in initial recovery.

Different sources of damage will cause a rise in demand for different materials. To address wind damage, builders will need items like shingles and roofing items as well as power tools and chainsaws, while flood damage will require drywall, fans, scoop shovels and flooring items. Items like fans, scoop shovels and chainsaws typically see an initial spike followed by a drop-off a few months post-storm. Companies should also expect to see a higher demand for impact-

resistant shingles, windows and doors as residents choose to upgrade protections for their properties.

Longer-term demand will remain for products involved in rebuilding, such as flooring, power tools, shingles and roofing, with longer stretches of demand for restoration materials like drywall, lumber, siding, doors, roofing, windows and power tools (nonexhaustive).<sup>11</sup>

High demand for these products may last up to 10 years following a storm; for example, data from the Thomas Index<sup>12</sup> shows long-term buyer interest in search terms like doors (1,200% increase from pre-storm levels), drywall (400% increase) and plywood (400% increase).

Other construction and building service providers, depending on the nature of the service, can expect to see an increase in demand throughout this period.

### Updating codes

Historically, the Florida Building Commission has implemented more stringent guidelines after each major hurricane, with implications for product needs. For example, the state has high requirements for storm shutters, which were written into the first edition of the Florida Building Code, and the guidance has since become stricter.

Roofing requirements have also increased over time, including new requirements for asphalt and metal shingles. (The building code requires that an entire roof be brought up to code<sup>13</sup> when over 25% of the roof area requires replacement, which will drive incremental shingle demand.) The most recent, seventh, edition of the code includes changes for updated wind load requirements and roofing updates that make structures more wind- and water-resistant, so demand for more specific products related to these changes should be expected.

Market participants also expect upcoming changes to the Florida Building Code to improve flood resiliency, thanks to the extensive damage from storm surges associated with Hurricane Ian. This will bring in heightened demand for a variety of specific materials.<sup>14</sup> For example, we expect a footage increase in the required height for buildings, to raise them higher above the base flood, which would require more concrete, steel beams, lumber and hydraulic jacks.

However, these changes are not expected to be seen immediately; the need for testing and a lengthy approval process mean changes prompted by Hurricane Ian will most likely be added to the ninth or 10th edition of the code.

## Calculating material need

To efficiently provide for the rebuilding of communities in Florida affected by Hurricane Ian, manufacturers, distributors and service providers will all need to map the likely level and timing of demand. But how to best do that?

Most importantly, providers will need to estimate the market needs that include incremental construction demand, the number of properties damaged by the storm and the weighted average material needed to meet the incremental demand.

When it comes to products and materials, we must consider that availability will be dictated by storm-related delivery delays as well as consumer behavior and contractor needs.

Property damage can cause demand knock-on effects, and it is key to understand the purchasing response by both individual consumers and professionals to get a sense of overall demand. For example, L.E.K. found that only 42% of homeowners who purchased a generator had actually experienced a power outage and 47% purchased one as a preventive measure, influenced by caution due to power outages around them. (The remaining 11% purchased a generator as a replacement.)

The timing of demand may also be affected by a partial pull-forward of future sales; for example, a damaged 20-year-old product would see an early replacement instead of the purchase planned for a few years down the road. In other cases, the storm can be expected to generate new needs, perhaps for certain services, that are separately generated and not pulled forward.

## Looking ahead

Systematically analyzing the impact that hurricanes have on construction demand will remain important each season as the country continues to face storms and construction companies plan how to best help communities rebuild. Especially on the Gulf Coast, where populations are growing — from 1990 to 2008, population density increased by 32% in Gulf Coast counties compared with 17% in Atlantic coastal counties<sup>15</sup> — most coastlines lie less than 10 feet above sea level. With increasingly unpredictable hurricane behavior due to climate change, these communities will need efficient construction support to both prepare for and recover from future storms.

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## Endnotes

<sup>1</sup>Total losses are expected to be higher than insured damages due to a variety of factors, including accounting for uninsured damages, the upgrading of properties exceeding their original value, inflation and labor/material shortages. As many Floridians do not have any flood insurance, uninsured losses may be greater than in historical storms.

<sup>2</sup>L.E.K. arrived at this reconstruction value by performing the following adjustments to insured damages (supplemented by primary interview input):

- Scaling up insured damages to include uninsured damages to arrive at total loss
- Applying a percentage to total losses to arrive at structural damage
- Applying a rebuild premium to account for elevated cost of reconstruction
- After arriving at the total reconstruction value, applying a factor to account for the reconstruction value to be replaced over the next five years

<sup>3</sup>Time.com, "Many Floridians Hit Hardest by Hurricane Ian Can't Afford to Rebuild." <https://time.com/6223550/hurricane-ian-recovery-florida-too-expensive/>

<sup>4</sup>Eenews.net, "Weak Florida planning law boosted Ian's destructive power." <https://www.eenews.net/articles/weak-florida-planning-law-boosted-ians-destructive-power/>

<sup>5</sup>Gardenandgun.com, "How Ian Changed the Coastline of Southwest Florida." <https://gardenandgun.com/feature/how-ian-changed-the-coastline-of-southwest-florida/>

<sup>6</sup>Wsj.com, "Florida Coastal Living Reshaped by Hurricane Housing Codes." <https://www.wsj.com/articles/florida-coastal-living-reshaped-by-hurricane-housing-codes-11666019241>

<sup>7</sup>Arcgis.com, "Lee County Hurricane Ian Damage Assessments." <https://experience.arcgis.com/page/landing>

<sup>8</sup>Businesswire.com, "John Burns Real Estate Consulting. US Remodeler Index, October 2022." [https://mms.businesswire.com/media/20221111005117/en/1633947/1/Public\\_-\\_QR-Burns-US-Remodeler-Index\\_](https://mms.businesswire.com/media/20221111005117/en/1633947/1/Public_-_QR-Burns-US-Remodeler-Index_)

<sup>9</sup>Constructiondive.com, "Texas, Florida boost construction starts in the South." <https://www.constructiondive.com/news/texas-florida-boost-south-construction-starts/>

<sup>10</sup>Bls.gov, "Economy at a Glance." <https://www.bls.gov/eag/eag.fl.htm>

<sup>11</sup>Supplychaindive.com, "Hurricanes Irma and Harvey put the construction supply chain to the test." <https://www.supplychaindive.com/news/hurricane-construction-supply-chain-Lowes-Home-Depot-agility/505167/>

<sup>12</sup>Thomasnet.com, "3 Ways to Find Suppliers and Get Quotes." <https://www.thomasnet.com/>

<sup>13</sup>Baycountyfl.gov, "Florida building code, 6th Edition Shingle Roofing." <https://www.baycountyfl.gov/DocumentCenter/View/3297/Shingle-Roofing-Codes-Florida-Building-Code-6th-edition>

<sup>14</sup>Bwhouseraising.com.au, "What Materials Are Used for Raising a House." <https://www.bwhouseraising.com.au/news/what-materials-are-used-for-raising-a-house/>

<sup>15</sup>U.S. Census Bureau 2010



## About the Author



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Paul Bromfield is a Managing Director based in L.E.K. Consulting's New York office. Paul is a member of the firm's Industrials practice, with a specialized focus on the building and construction industry. With more than 20 years of experience, he has a strong record of helping companies accelerate growth and drive major change, including product and service innovation, multichannel strategy, digital acceleration, and diversification through M&A and new ventures.

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