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Insights

CLIMATE CHANGE DUE DILIGENCE FOR REAL ESTATE ACQUISITIONS

Mar 26, 2024

By 2050 rising sea levels will exacerbate episodic storm surges and inundate an estimated 87,000 square kilometers (21.5 million acres) of coastal areas worldwide, exposing $1.7 trillion of real estate to catastrophic damage.[1]While 2050 might seem like the distant future, it is within the time span of a 30-year mortgage issued today. The 20 top major metropolitan areas at greatest risk (ranked by the value of their exposed real estate assets) are Miami (USA), Guangzhou (China), New York–Newark (USA), Calcutta (India), Shanghai (China), Mumbai (India), Tianjin (China), Tokyo (Japan), Hong Kong (China), Bangkok (Thailand), New Orleans (USA), Osaka-Kobe (Japan), Amsterdam (Netherlands), Rotterdam (Netherlands), Ho Chi Minh City (Vietnam), Nagoya (Japan), Qingdao (China), Virginia Beach (USA), and Alexandria (Egypt).

Given the enormity of these mid-term risks, investors should consider the following six things when performing environmental due diligence on a potential real estate investment.

MOVE BEYOND THE TRADITIONAL ENVIRONMENTAL ASSESSMENT

The “All Appropriate Inquiries” standard for Phase I environmental assessments promulgated by the U.S. Environmental Protection Agency[2]and similar standards in effect in other countries look backward at the burden that historic contamination has placed on future property owners. These assessments do not assess climate change risks.

SEA LEVEL RISE AND STORM SURGE

Traditional real estate due diligence in the United States involves scrutiny of flood maps published by the Federal Emergency Management Agency. There is, however, widespread confusion as to what these maps mean and how they are prepared. FEMA maps identify areas within the 100-year and 500-year flood plains based on statistical models from limited past data. According to these maps, over the course of a 30-year mortgage, there is a cumulative 26 percent probability of flooding in the 100-year flood plain and a cumulative 6 percent probability of flooding in the 500-year flood plain.[3]Although these flooding risks are substantial, they don’t tell the whole story.

The U.S. government projects accelerating increases in sea levels, see U.S. Government's Fifth National Climate Assessment.

While federal law authorizes FEMA to take climate change into account when preparing maps, [4]FEMA has not done so. Because climate change is expected to cause sea levels to rise substantially, that deficiency in the FEMA maps is material. An investor should consider the vulnerability of the real estate asset to future flooding risks caused by the combination of sea level rise and potential storm surge events resulting from climate change. A number of resources are now available to assist in doing so. For example, storm surge inundation areas are depicted on the National Hurricane Center's Storm Sturge Risk Maps and NOAA's Coastal Flood Exposure Mapper. In addition, a number of technical consultants are gearing up to advise prospective purchasers on climate risks such as coastal flooding.

DON'T RELY ON FLOOD INSURANCE AS THE SOLE RISK MITIGATION

If real estate is found to be in an area where flooding may be a significant risk, flood insurance may be prudent, but it is no cure-all. Most flood insurance in the United States is made available under the National Flood Insurance Program operated by the federal government. Coverage limits for commercial properties are low: $500,000 for damage to real property and $500,000 for damage to personal property. Additional property damage coverage and business interruption coverage may be available from excess carriers, but premiums are likely to rise over time with the additional flooding risks from rising seas and more intense storms.

Moreover, the National Flood Insurance Program may not be sustainable. In recent years, the program has paid out tens of billions more than it has charged in premiums, providing an enormous subsidy to property owners with real estate in areas susceptible to flood hazards. The continuation of the program is dependent on annual Congressional budget support. Flood insurance exists in other countries as well, but often provides limited coverage.

GREENHOUSE GAS REGULATIONS

Cities across the country are considering regulatory programs to reduce greenhouse gases. Compliance with these regulations may require millions of dollars of capital improvements to older buildings. For example, New York City has enacted a law requiring costly retrofits of many buildings whose greenhouse gas emissions exceed new emission limits.[5] Due diligence for a major real estate transaction should consider the energy efficiency and greenhouse gas emissions of the real estate asset and the capital improvements that may be required under current and future laws.

NEW BUILDING CODE PROVISIONS

Where coastal property is purchased for the purpose of development, care must be taken to determine whether building code requirements designed to address flooding risks have been adopted (or are under consideration). Such requirements have been adopted by several coastal municipalities. For example, in New York City, the Department of Buildings requires new construction to take into account flooding at heights and in areas well beyond those identified in the effective FEMA maps.

TOO HOT TO HANDLE?

Finally, climate change may impact the demand for real estate in metropolitan areas that are projected to experience extraordinary heat levels in the coming years. In 2023, Phoenix hit 110 degrees Fahrenheit (43° C) on 54 days, and the city's summer highs are expected to rise by 7.2 degrees Fahrenheit (4° C) on average by 2100.

The U.S. government projections for the southeast region of the United States are illustrative: they predict substantial increases in the numbers of days in which temperatures exceed 95 degrees Fahrenheit (35° C) by 2050.

By 2100 temperatures in Dallas are projected to be above 95 degrees Fahrenheit (35° C) 133 days per year. A related area of concern is that due to climate change and other factors, metropolitan areas such as Phoenix in the American southwest are likely to experience megadrought conditions and ensuing shortages of water in the years ahead. Real estate values may decline in such areas as populations move elsewhere.

CONCLUSION

The American writer Mark Twain once said, "Buy land, they're not making it anymore," and his advice has proven to be sound because real estate has been a compelling long-term investment over the years, but the time has come to consider the current and impending risks of climate change. These risks are a game changer and should be considered carefully when acquiring or financing a real estate asset.

FOOTNOTES

[1] Kirezci, et al., Projections of global-scale extreme sea levels and resulting episodic coast flooding over the 21st Century, Nature Research 10:11629 (2020). The estimates we present in the text above are mean estimates of coastal flooding beyond present day conditions; a reasonable worst-case scenario would wreak additional damage. The $1.7 trillion figure includes an inflation adjustment from the US$2011 figures used in the article.

[2] 40 C.F.R. Part 312.

[3] $1.00 - 0.99^{30}$ = 26 percent; $1.00 - 0.998^{30}$ = 6 percent.

[4] 42 U.S.C. § 4101b(b)(3)(D).

[5] New York City Local Law 97, enacted on May 19, 2019, as part of the City's Climate Mobilization Act (NYC Admin. Code, Title 28, Chapter 3, Article 320).

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