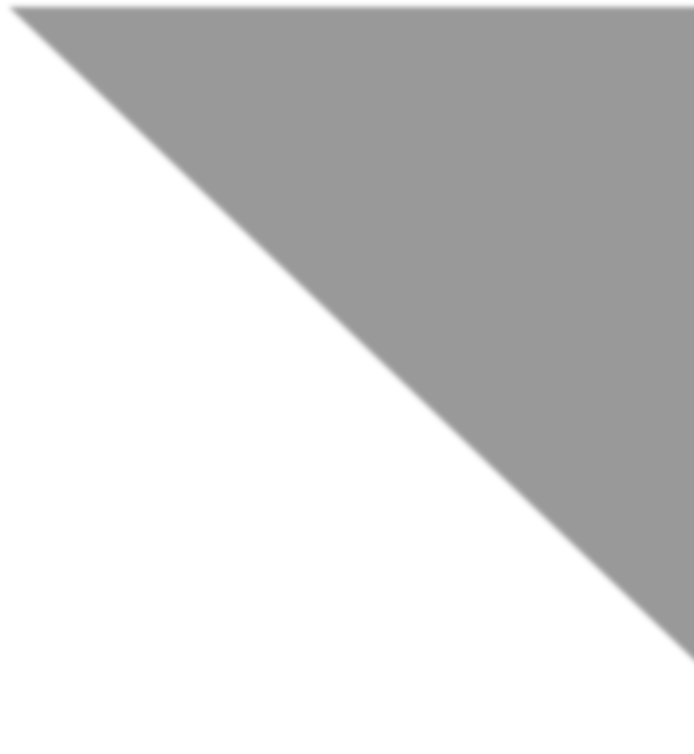
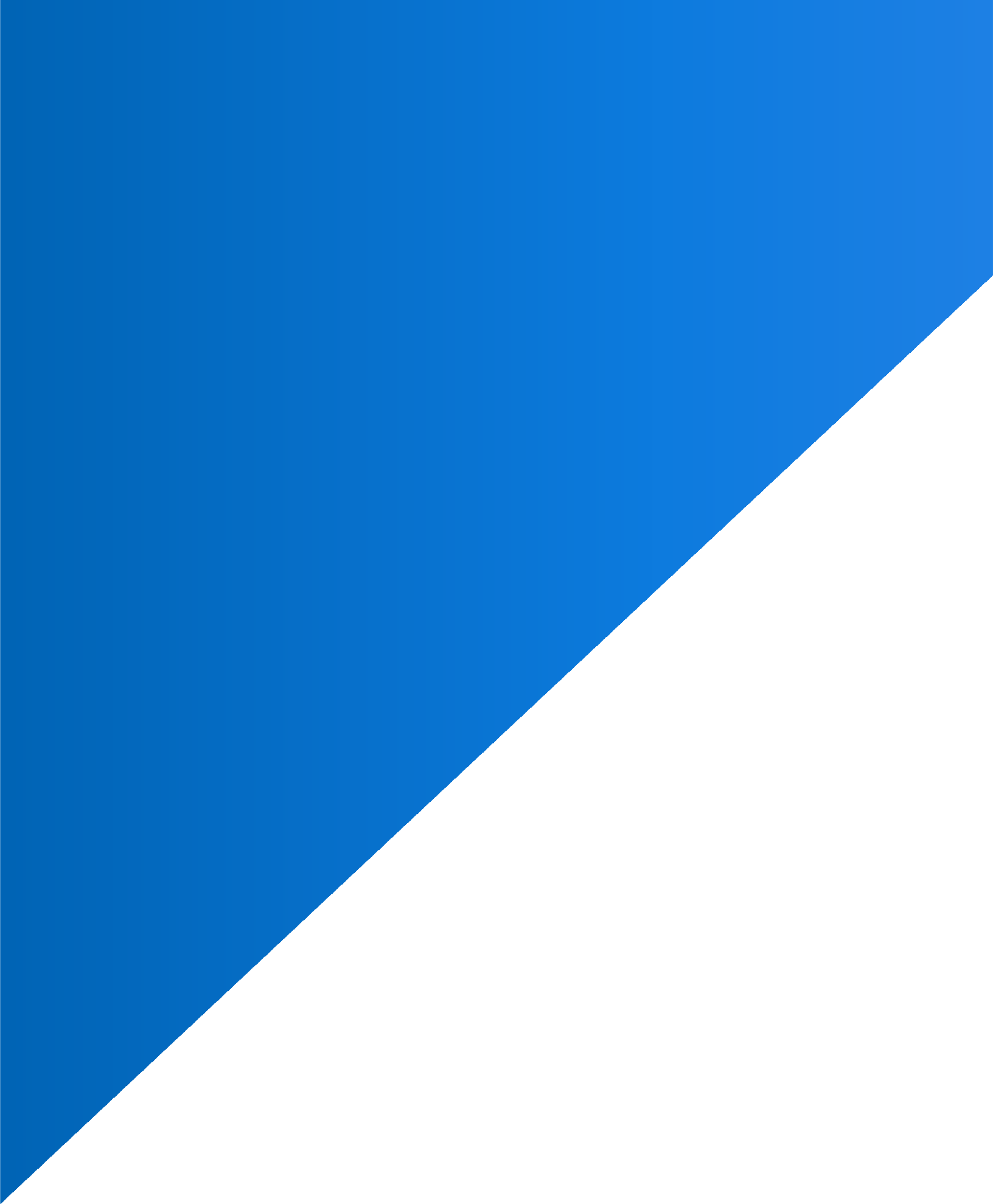
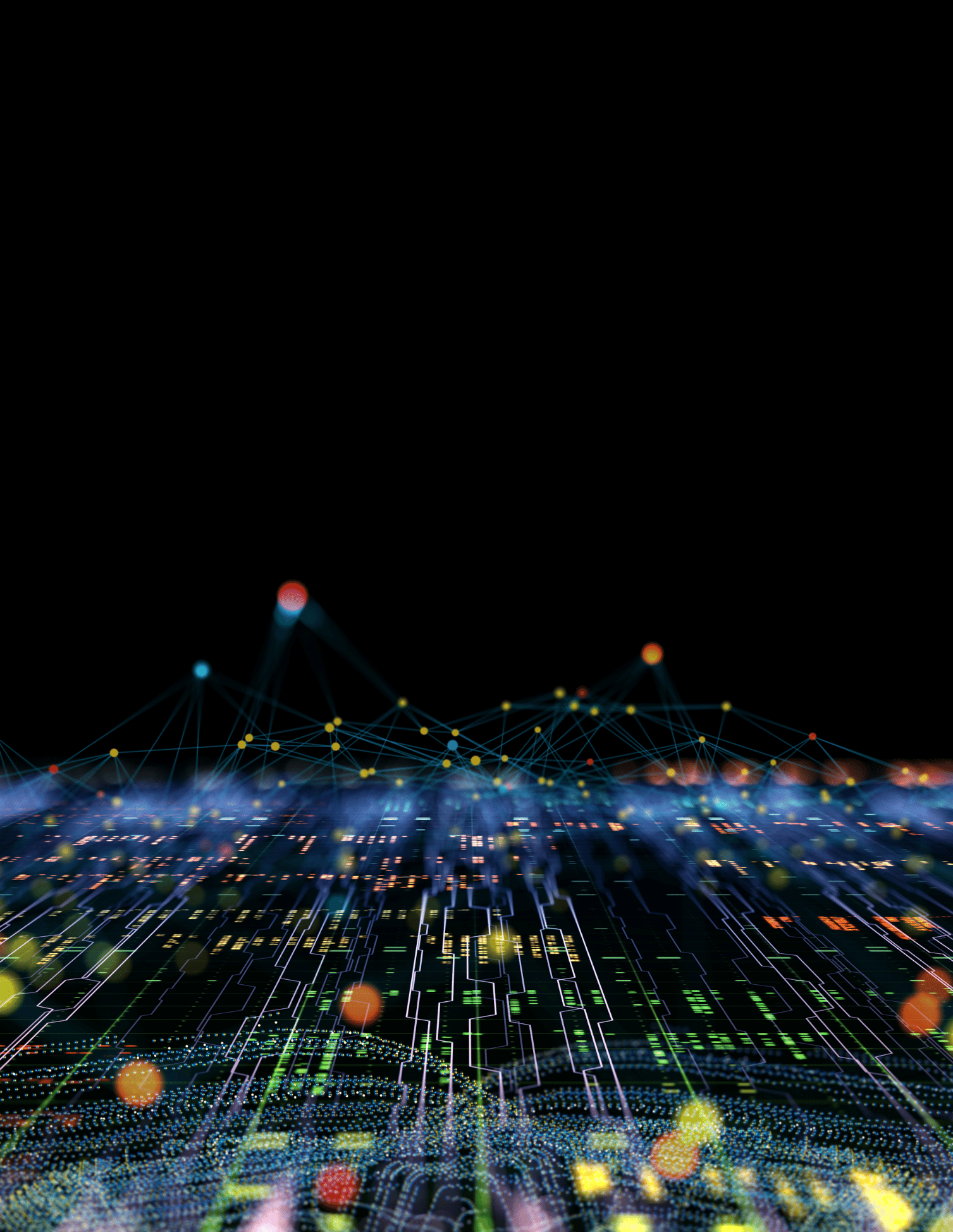
Climate and Natural Disaster Risk RFI Response for FHFA

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**Questions**

**I. Identifying and Assessing Climate and Natural Disaster Risk**

1. How should FHFA define climate and natural disaster risk?

Climate risk could be defined as "the physical, financial and socioeconomic risks associated with the short-term and long-term changes to a region caused by new and more frequent occurrences of natural disasters related to climate change as well as changes in the environment unrelated to natural disasters."

Natural disaster risk could be defined as "a sudden or expected catastrophic natural event causing widespread damage to property or life as well as associated physical, socioeconomic or environmental systems."

1. What are the climate and natural disaster risks to the regulated entities, including long- and short-term risks, and how might such risks change over time? To what extent, if any, could such risks now or in the future impede the ability of each regulated entity to operate in a safe and sound manner, fulfill its statutory mission, or foster liquid, efficient, competitive, and resilient national housing finance markets?

As noted above, climate risk is broader and includes, but is not limited to, natural disaster risk. For example, climate risk could include rising sea levels, extensive droughts, or rising heat levels that make hurricanes more frequent and intense. Each of these risks needs to be evaluated by the GSEs and the FHLBs. Specifically, the rising sea levels may result in expanding flood insurance requirements, extensive droughts may require mandated fire insurance, and increased hurricane risk may require stronger wind and flood building codes. In addition to these risk mitigants, loans in these areas may require guaranty fee or loan-level pricing adjustments to account for the additional credit risk.

Additionally, the GSEs need to be aware of "adverse selection" for the loans located in higher-risk areas. For example, as climate risk and natural disaster risk continue to rise, portfolio lenders may look to offload those loans and put them in mortgage-backed-securities (MBS), thus transferring the credit risk. This may result in the GSEs having a higher percentage of loans in higher-risk areas.

1. What methodologies, datasets, variables, assumptions, future climate scenarios, and measurement tools are used to measure and monitor climate risk to the national housing finance markets? Describe any gaps in available data that limit the ability to measure such risks. How could such data gaps be resolved?

Historically, natural disaster datasets have only been available at the county level. FEMA has led the effort to provide disaster data to various stakeholders. This high-level form of disaster data identifies general disaster impact areas and does not pinpoint which specific properties may have been more susceptible to damage.

Property-specific disaster data are now more readily available. Pre-disaster models show each natural disaster's anticipated path and the expected local areas, neighborhoods, and properties most at risk. Spatial mapping allows immediate views as to the Core of each disaster and estimates the Buffer area outside of the Core that identifies additional properties that may need to be evaluated once the properties inside the Core have been assessed (see page 2 of Veros' "[Natural Disaster Impact Report – 2020 Year in Review](https://go.veros.com/hubfs/Veros_White_Papers/2020%20Natural%20Disaster%20Impact%20Report_Fin.pdf)" for a visual and definition of both the Core and Buffer areas). Satellite imagery and photos for pre and post-disaster are vital to obtaining immediate intelligence on properties. These views can identify property damage as well as confirm properties unaffected by the disaster.

It is recommended that FHFA familiarize itself with property-specific natural disaster datasets that are now available. Additionally, FHFA may want to lead an effort to create a national real estate disaster database that centralizes all disaster information, thus enabling each natural disaster to be tracked and recorded. This disaster database will allow entities to quickly act on disasters at the property level, increasing the efficiency to contact homeowners for safety, damage assessment, loan payment options, and restoration plans.

With climate change resulting in more frequent and intense natural disasters, it is more important than ever to collect data to enhance current and future analytics. By collecting disaster data over time, companies will have the ability to score the disaster risk for specific properties nationwide (e.g., wildfire, earthquake, hurricane, flood, and wind risk). Similar to flood maps, disaster data aggregators will have the ability to create fire and hurricane zones. The mortgage industry needs to have the ability to plan for an event, monitor properties within the event, prioritize borrower outreach and inspections post-event, and streamline the restoration/recovery process. Disaster data is now available to perform those types of activities.

4. What risk management strategies or approaches—including but not limited to those related to pricing, insurance, credit risk transfers (CRT), loss mitigation, and disaster response—do industry participants use to address climate and natural disaster risk?

One of the key elements of managing Natural Disaster Risk is understanding, at the parcel level, the extent of damage to the property. This will enable aligning resources (e.g., servicers, appraisers, and property inspectors) to the areas and properties most affected by the disaster. Currently, the industry relies on county-level data provided by FEMA for disaster data. Disaster data aggregators now can identify the specific properties with the highest probability of damage. For example, in the Veros' "[Natural Disaster Impact Report – 2020 Year in Review](https://go.veros.com/hubfs/Veros_White_Papers/2020%20Natural%20Disaster%20Impact%20Report_Fin.pdf)", Veros breaks down the counties affected by natural disasters and shows the number of properties likely affected within the event Core and Buffer as well as the properties that were likely not affected at all. It isn't uncommon that only 5-10% of properties within a specific county are affected by a disaster. Eliminating the need to focus on 90% of properties within an affected county enables industry stakeholders' precise actions when a disaster strikes. This efficiency results in expedited contact to borrowers most in need, cost savings by eliminating unnecessary property inspections/appraisals, and starting the restoration/rebuilding process as early as possible.

Here's a case study demonstrating the value of parcel-level data access post-natural disaster:

The Woolsey fire ignited on November 8, 2018, and burned 96,949 acres of land crossing the boundary between Los Angeles and Ventura Counties in California.

A Veros client had 1,800 portfolio properties in the FEMA designated area of the fire. The client conducted property inspections on each of those properties. Comparing Veros’ parcel-level Disaster Data to the 1,800 inspections, Veros determined that only 12 of the client's properties were directly impacted by the fire. The client confirmed the results and could have saved 99.33% on their inspection fees if they would have leveraged the property specific data.

Over the long term, collecting, storing, and analyzing parcel-level disaster data will result in better flood maps, fire maps, and other data used by the GSEs. This data can be used for more precise guaranty fee adjustments, enhanced credit policies, and (potentially) more extensive MBS disclosures.

1. How, if at all, should FHFA incorporate into its assessment of the regulated entities' climate and natural disaster risk the potential for abrupt repricing of real estate properties exposed to acute natural hazards?

FHFA should focus on both the long-term effects of climate change (to institute more precise pricing adjustments and credit policies) and short-term impacts of specific natural disasters (to concentrate efforts on the borrowers/properties most in need.) The loan level disaster data is a foundational piece of each of those efforts. Additionally, managing the risks associated with both climate change and natural disasters will provide FHFA and the GSEs the analytics to prevent "adverse selection", or giving other market participants the ability to transfer this risk to the GSEs without any higher-risk fee adjustment.

6. With respect to the foregoing questions, FHFA invites interested parties to submit any studies, research, data, or other qualitative or quantitative information that supports a commenter's response or is otherwise relevant to the regulated entities' climate and natural disaster risk.

Veros is including the links to two whitepapers that highlight the impact of various natural disasters that occurred in 2019 and 2020. The disasters include hurricanes, tornados, floods, earthquakes, and wildfires. These studies show how Veros can move from county-level FEMA information to parcel-specific data for improved analytics and more precise stakeholder action.

2019 Study

[***https://go.veros.com/hubfs/Veros\_White\_Papers/2019\_Natural\_Disaster\_Impact\_Report\_Final.pdf***](https://go.veros.com/hubfs/Veros_White_Papers/2019_Natural_Disaster_Impact_Report_Final.pdf)

2020 Study

***<https://go.veros.com/hubfs/Veros_White_Papers/2020%20Natural%20Disaster%20Impact%20Report_Fin.pdf>***

**II. Enhancing FHFA's Supervisory and Regulatory Framework**

11. What risks to the regulated entities' critical service providers and other third parties— including but not limited to mortgage servicers and insurers—should FHFA consider when assessing each regulated entity's management of climate and natural disaster risk?

Servicers play a significant role regarding natural disasters and need to know which loans/properties are specifically impacted by the disaster. As stated previously, it isn't uncommon where only 5-10% of properties within a specific county are affected by a disaster. Eliminating the need to focus on 90% of properties within an affected county enables precise actions by industry stakeholders, like servicers, when a disaster strikes. This efficiency results in expedited contact to borrowers most in need, cost savings by eliminating unnecessary property inspections, and starting the restoration/rebuilding process as early as possible.

Similarly, originators need to know, at the property level, whether they have loans in their production pipeline that have a high probability of damage resulting from a natural disaster. Knowing which loans to target will enable originators to immediately contact the most at-risk borrowers to confirm their safety, reduce costs related to unnecessary property inspections or new appraisals, and determine what, if anything, is needed to close the loan.

21. What specific issues or topics should FHFA consider for future research on climate and natural disaster risk to the regulated entities and the national housing finance markets?

See the responses to questions 3 and 4.

22. What data or housing market information would be beneficial for FHFA to make available, to the extent permitted by privacy considerations, to researchers and other interested parties to support the assessment of climate and natural disaster risk to the regulated entities or the national housing finance markets?

There are many segmented data sources that exist today regarding natural disasters. Centralizing that data (property-specific information, shapefiles, fly-over imagery, etc.) and making it available to industry stakeholders for research would significantly enhance risk analytics and modeling.

See the response to Question 4 for more detail.

23. What factors should FHFA consider in determining whether to formally participate in or informally partner with organizations or groups focused on climate and natural disaster risk management?

FHFA should work with organizations that have proven parcel-level data, analytics, and technology results to focus on the creation of a centralized source of “truth” for disaster information. This should include pre-disaster, *immediate* post-disaster (each hour it takes to gather post-event data means a delayed response to people impacted), and the longer-term post-disaster data. This data could help pinpoint potentially affected properties from a specific disaster as well as enable planning for potential future disasters.

24. Are there existing or potential government agencies or programs that FHFA could partner with to enhance the Agency's supervision and regulation of climate and natural disaster risk to the regulated entities?

The following agencies have an interest in climate change and natural disasters. Collecting, analyzing, and sharing climate/disaster data will be very beneficial to each entity:

* Housing and Urban Development (HUD)
* United States Department of Agriculture (USDA)
* Veterans Affairs (VA)
* Bureau of Indian Affairs (BIA)
* National Aeronautics and Space Administration (NASA)
* Environmental Protection Agency (EPA)
* Federal Emergency Management Agency (FEMA)
* U.S. Geological Survey (USGS)
* National Oceanic and Atmospheric Administration (NOAA)
* Small Business Administration (SBA)