REDWOOD

TRUST

October 31, 2022

Federal Housing Finance Agency
Office of the Director
400 7th Street, S.W., 10th Floor
Washington, D.C. 20219

RE: FHFA Request for Information – Fintech in Housing Finance

Dear Director Thompson,

Redwood Trust, Inc. (NYSE: RWT) ("Redwood", "we" or "our") is pleased to participate in the FHFA's request for information (the "RFI") related to fintech in housing finance. Since its founding in 1994, Redwood has been a leader in the United States' housing finance industry. Redwood is a leading specialty finance company focused on several distinct areas of housing credit. Over our 25+-year history, Redwood has built a reputation for excellence in evaluating and investing in housing credit, with a deep and experienced team. We have also become one of the nation's largest non-bank, non-agency issuers of consumer and investor mortgage loan securitizations through our Sequoia (prime jumbo) and CAFL (single family residential) securitization platforms.
The foundation of our company is captured by our corporate mission, which is to make quality housing, whether rented or owned, accessible to all American households. Our business occupies a unique position in the housing finance value chain, providing liquidity to growing segments of the U.S. housing market not well served by government programs. Expanding access to housing entails both consumer and investor loan solutions, and we believe no other firm offers the same breadth of solutions as Redwood. Our aggregation, origination and investment activities have evolved to incorporate a diverse mix of residential and investor assets, including multi-family.

Redwood's business is organized into three primary segments:

- Our Residential Mortgage Banking segment is an aggregation platform focused on purchasing primarily prime jumbo residential mortgage loans from a large cohort of mortgage loan originators. These loans are held for subsequent sale or for securitization through our Sequoia (SEMT®) platform, as further described below. Since Redwood's founding, we have purchased over $70 billion in loans, with $12.8 billion purchased in 2021 alone.
- Our Business Purpose Mortgage Banking segment, operating as CoreVest American Finance Lender, LLC ("CoreVest"), is one of the nation's leading direct lenders to single-family and multi-family housing investors. CoreVest was founded in 2014 and has since funded more than $16 billion in loans representing 125,000 housing units. CoreVest is the largest issuer of business purpose mortgage-backed securities, having issued over $6 billion across 22 securitizations through our CAFL™ platform.
- Our Investment Portfolio focuses on mortgage loans and other real estate- related assets sourced through our Residential Mortgage Banking and Business Purpose Mortgage Banking segments and from third parties.

Additionally, in 2021, we launched RWT Horizon®, our home-grown venture investment arm, through which we invest in early-stage fin-tech and prop-tech companies strategically aligned with our business across the lending, real estate, and financial technology sectors. Given our positioning in the market, we believe we can make a difference by investing in and partnering with these companies to have a positive impact on our industry and make progress toward advancing our mission. Through Q3 2022, we have invested over $25 million in 24 portfolio companies.

In carrying out our business, Redwood relies on advanced, technology-enabled solutions to serve our customers and counterparties accurately, efficiently and at scale, and to provide greater transparency and insight to investors in our securitizations. For instance, in our residential business, we launched our first application (available here) in 2020 to deliver near real-time data to the mortgage loan originators that sell jumbo mortgage loans to us. Our Residential Mortgage Banking business is currently focused on integrating blockchain technology into all aspects of its operations and, in an industry first, in 2021, we launched a blockchain reporting framework for loans securitized in Sequoia transactions (available here). We strive to serve as a resource to investors and the businesses we transact with as they consider the benefits of adopting technology into their business models. Our recently published white papers discussing potential use cases for blockchain (available for review here) and tokenization technology (available for review here) reflect our perspective on the role technology may play in our industry's future and are intended to advance the industry's dialogue on these topics.

Our business purpose lending platform also heavily relies on data. We believe we operate more efficiently and effectively than our competition because our processes to source, process and close loans are technology-led and are on a single operational platform. Our front-end marketing is incredibly data driven, which has enabled us to grow our market share and scale in a highly fragmented market, while creating operating leverage. Our single operational platform is an end-to-end system that we are expanding on, and innovating in, every day to address both our needs and the needs of our borrowers – we have real-time portals that have improved the customer experience and resulted in a high borrower retention, or repeat customer, rate.

Participants in the housing finance sector have the opportunity to make a positive impact on the American economy and the lives and dreams of the families we all serve. We believe financial technology offers tools to improve the sector and all its component parts and are grateful for the opportunity to offer our perspective on certain of the questions in the RFI. We look forward to continuing the dialogue with the FHFA and Office of Financial Technology.

A.1. How do primary and secondary mortgage market participants define fintech in the housing finance sector? What key factors should be considered?

While we support the efforts made thus far to make the loan origination process more efficient, we agree with the observation in the Request for Information that "the process for a consumer to obtain a single-family home remains fertile ground for improvement."[1] We believe there is much work that can be done by technology in stages beyond the origination process; we therefore believe that fintech should be conceived of and defined broadly when applied to the housing finance ecosystem.

With over 25 years' experience in the secondary market, we are familiar with some of the inefficiencies affecting the way loans are purchased and sold after the point of origination, and believe technology may offer opportunities for system wide improvement. As the FHFA considers how to scope the concept of fintech vis a vis the housing finance market, we believe a key factor for consideration includes the opportunity to address challenges facing the secondary market and we encourage the FHFA to include technologies that target these challenges when defining fintech as it relates to the housing sector. For example, we believe processes and applications designed to address the following inefficiencies may improve the market and would benefit the mortgage finance ecosystem as a whole:

- "**mortgage tech**" products that (i) reduce reliance on manual and duplicative processes such as capturing and sharing loan information, (ii) allow parties to efficiently share loan level information and documentation such as due diligence reports, collateral and credit files, and (iii) increase trust in the loan purchase and sale process through data validation processes and techniques
- "**proptech**" products that (i) decrease the costs of building or lending to home builders, (ii) improve homeowners access to non-traditional forms of debt, equity, or grant financing, (iii) empower homeowners to tap into the equity they have already built and (iv) eliminate the friction in the overall home buying process

A.2. How could FHFA facilitate adoption of "responsible innovation"?

While it is notoriously fragmented, the mortgage industry is also extremely interconnected. Integrating new technology into this complex silo-ed, yet interconnected, system offers the opportunity to, among other things, benefit the entire system by increasing standardization of processes, data and documentation across the agency and non-agency markets. While key differences exist between the two markets, greater alignment among agency and non-agency participants could level the playing field and make a meaningful difference in the process for borrowers in all market sectors.

We view "responsible innovation" as being comprised of two complementary components: first, the responsibility to innovate to drive the market towards greater efficiencies and lower costs and second, the need to innovate responsibly in a manner that promotes a level playing field industry-wide. We will examine each of these components in turn.

At its core, innovation in housing finance needs to have robust buy-in among market participants and foster trust in the accuracy of the information, and we believe the FHFA can support this by encouraging widespread adoption and a measure of appropriate standardization. By way of example, the inefficiency of current antiquated processes for collecting, inventorying, storing, shipping and re-checking loan collateral documents or re-diligencing loans that have already been through diligence can hold up deadlines and interfere with parties' ability to transact seamlessly and in a cost-effective manner. We believe that encouragement of broad adoption of innovating improvements to these processes will

[1] FHFA Request for Information, page 7

generate greater buy-in among market participants and, we believe, ultimately benefit both borrowers and market participants through the creation of more consistency in the application process and the opportunity for time saving efficiencies and reduced documentation costs in all parts of the housing finance ecosystem.

Innovating responsibly, on the other hand, is important for ensuring that innovation facilitates improvements (rather than disruptions) across the established housing finance ecosystem. We believe that innovating responsibly can be achieved by the FHFA through (i) the encouragement of inclusive participation among participants in all sectors of the housing finance ecosystem in open dialogue and discourse in real time regarding the effects of new innovation and (ii) an adoption approach focused on incremental improvements to existing processes. By encouraging inclusive market participation and advocating for the adoption of innovation on an incremental basis, we believe that the FHFA will be helping to ensure that smaller market participants are not marginalized and any unintended consequences downstream can be identified and remedied promptly and effectively, such that any positive benefits experienced as a result of innovation adoption by participants in one sector of the market (for example, the agency market) will likewise be shared amongst participants in other sectors (for example, the private label securitization market) as well. Further, we believe that such efforts by the FHFA will provide market participants with the opportunity to vet innovative changes over time in a way that is safe and additive to their ability to collect relevant information, thereby promoting wider adoption and greater market participation across the housing finance ecosystem.

A.3. What factors currently impede the adoption of fintech and innovation in the primary and secondary housing finance sector? Are there specific challenges related to privacy laws, industry standards or current practices?

The housing finance sector is widely regarded as fragmented, with few dividing lines as entrenched as those between agency and non-agency loans. Different processes, standards and requirements for agency and non-agency loans are well known impediments to the housing finance sector's ability to maximize efficiencies. To accommodate the idiosyncratic markets that cater to agency and non-agency loans, a proliferation of counterparties and vendors are active in the space, each offering products that are uniquely tailored for successful adoption by only a limited number of market participants. This bespoke approach to product design, coupled with a lack of established industry standards, has entrenched fragmentation in the space and precludes the potential for achieving interoperability of processes, systems and information across the housing finance ecosystem. Traditionally, borrowers have ultimately paid the price for the market's failure to both achieve standardization of data and processes and take advantage of economies of scale. As the housing finance market seeks to integrate fintech into the existing ecosystem, we believe this fragmentation and the correlated inefficiencies thereof prevent thought leaders in the space from effectively acting as incubators or accelerators for new technology. In addition, the prohibitive costs associated with diligencing new fintech vendors with limited track records, updating legacy systems and switching to new fintech products or platforms, together with a lack of insight from regulators regarding the acceptability of such new fintech products and platforms, further interfere with these efforts.

At Redwood, we are committed to finding ways to nurture the integration of technology into the housing finance sector. Working directly with technology companies, we work to connect potential solutions with known problems to drive change in the industry. A major challenge we face in this effort is that, as a participant in the non-agency market, our business represents a small portion of the industry. Because of the idiosyncratic processes that govern the origination and trading of prime jumbo and business purpose loans – the loans at the core of our business – it is difficult for the agency market to leverage the technologies and tools developed for non-agency products and participants, thereby limiting the application of such technologies and tools to the narrow non-agency sector of the market. This inability to apply technological improvements consistently across the larger housing finance ecosystem reduces incentives for fintechs to dedicate funds and workflows towards creating process improvements in the narrower non-agency sector in the first place

Some of technology's greatest innovations have harnessed the power of market leading visionaries to develop a product that can be scaled for mass adoption; fragmentation in the housing finance sector limits potential scalability, and may discourage thought leaders from developing products and solutions that benefit the market as a whole. Absent a set of standardized products that considers the needs of the housing finance ecosystem as a whole, widespread adoption of fintech innovation will continue to face headwinds.

B.1. What kind of fintech activities have the greatest potential to positively impact the housing finance sector? Describe several situations in which a product or service has been or could be used, the factors considered in determining importance and associated impacts.

We believe focusing on two thematic categories would be of particular benefit to market participants systemwide: (1) data capture of borrower credit information and related documentation and (2) consistent processes and requirements for digital versions of collateral documents. We will examine each of these in turn.

Obtaining an accurate picture of a prospective borrower's creditworthiness and the current, real value of the mortgaged property is critical in both the primary and secondary market, as this information provides the foundation for matching the borrower with appropriate loan products, evaluating the borrower's mortgage application and anticipating the future likelihood of timely payments being made. Efficiently capturing this information and recording it in a way that facilitates prompt, secure sharing with other counterparties would positively impact all parties involved in the loan origination and sale process; in particular, impediments faced by borrowers from underserved areas may be alleviated if this information could be automatically obtained, processed, recorded and shared among participants in the housing finance market. Within the data capture space, the following areas of opportunity could benefit from fintech activities:

- **Borrower income and asset information**: Under existing processes, if lenders do not use automated integrated tools with the IRS or banks, then tax filings and bank statements must be printed, scanned and manually uploaded. The data in the documents is then extracted, digitized and processed separately by each of the parties that needs to evaluate it to perform their review function. These challenges could be addressed through technological innovation by fintechs that is designed to (i) facilitate evaluation of credit attributes via artificial intelligence, (ii) incorporate blockchain technology into proprietary loan origination systems or (iii) create trusted electronic means for third parties (such as banks, employers or the IRS) to provide needed supporting information to originators. Widespread adoption of uniform procedures and tools to automatically integrate data sources with the systems and processes used by parties for loan origination would save time, reduce the risk of transcription errors and ensure information is delivered in a consistent format.
- **Collateral valuation data**: Enhancements to the process of obtaining information to support the value of the mortgaged property though artificial intelligence or electronic surveillance may expedite the often-lengthy process of conducting an appraisal. Full appraisals, for example, may require a vendor to enter a home and can take one to three months to complete depending on volume, during which time the loan approval process is unable to move forward. Technological tools to obtain accurate valuation data would allow parties to confidently evaluate the loan on a more consistent and efficient timeline, while removing one source of significant delay facing many borrowers. Automated tools will likely require a level of customization for certain such as

prime jumbo loans, where enhanced or upgraded features and improvements, both inside the home and to the exterior of property are key to correctly determining the current, real value of the underlying property.

The ability to view, execute and acknowledge documents electronically has made the loan application and underwriting process significantly more convenient and less costly for certain borrowers. The origination process for many loans, however, still requires in-person closings involving live "wet" signatures and a physically present notary. Even in the most efficient circumstances, in-person closings require a borrower to coordinate logistics (like travel, time off work and childcare) to accommodate in-person attendance, while also increasing the likelihood of administrative error occurring (like signatures being missed or hard copy pages being inadvertently misplaced or not scanned) during preparation of the final closing document set. As became apparent during the COVID-19 pandemic, healthcare concerns may pose additional challenges for borrowers in the loan application process. Software applications that exist today to verify the authenticity and security of e-signatures will no doubt improve and evolve in the future, together with the document execution process generally. These tools help parties in contexts outside mortgage loan origination feel comfortable relying on e-signatures as part of the ordinary course of business.

Widespread, consistent adoption of electronic signature processes, eNotes, remote online notaries, eNotary services and other services that encourage acceptance of electronic closing processes by lenders and borrowers would significantly benefit the housing finance ecosystem, including as follows:

- borrowers would benefit from a faster and more convenient, contactless application process
- originators would benefit from more efficiently run closings that do not require scheduling required parties and obtaining space to meet in person
- secondary market participants would benefit from eNotes that are permanently digitally stored and immediately available to provide to prospective purchasers

B.3. What are the typical drivers of repetitive requests to borrowers or reevaluation of underwriting information by the lender in the mortgage process, and what opportunities exist to automate process?

Processing a loan can take 30-45 days or longer, depending on borrower response and vendor turn times. Non-agency loans face even lengthier processing times. A primary driver for this delay is the inefficient process for obtaining borrower credit and asset information. As detailed in our response to Question B.1, this data is of utmost importance in the evaluation of a prospective borrower's creditworthiness but is reliant on processes that are often manual, redundant and prone to error. For example, manually scanning dozens of pages of paystubs, tax filings and bank statements introduces the opportunity for critical pages to be skipped, files to not be properly associated with the loan application and optically scanned data to be processed incorrectly by a recipient. While these are serious challenges that delay the completion of the underwriting process and increase origination costs, the greater impact to the borrower may well be in the time and effort required to address and resolve piecemeal requests for credit information. When issues like missing pages from a tax filing or bank statement are identified by a lender, it falls to the borrower to locate and provide these documents for a second or even third time. Automation of credit and asset documentation requests offers tremendous potential to decrease these delays, improve efficiencies and limit borrower interactions. For example, a tool that automatically flags all missing or incomplete items during a loan's processing phase would help ensure a borrower gathers all of the component parts required to complete the credit package for the loan application up front rather than piecemeal over time as various parties complete their limited review of specific component parts.

F.2. What are some topics for a housing finance-focused "tech sprint" and how could FHFA encourage participation?

Manual processes, duplicative workstreams, reliance on antiquated technologies and high costs associated with switching to new platforms are some of the challenges facing the housing finance ecosystem today that cause loan origination processes to take longer, cost more and be exasperatingly confusing to borrowers. From a borrower's perspective, duplicative requests for information, delayed timelines and a general lack of understanding of the products being offered and the terms being agreed to make the process of buying a home particularly daunting.

Further, many consumers are not familiar with products beyond traditional fixed rate mortgage loans, such as bank statement loans, first lien/home equity combination programs and home equity investments ("HEI"), or do not know where to find resources to help them fully understand these products. For example, HEI products are often not on the radar of the average first time homebuyer, even those these products have historically been a good fit for borrowers that are first time homebuyers, including those with relatively lower FICO scores that also require down payment assistance.

As detailed above, we believe technology may offer the tools necessary to increase process efficiency and documentation accuracy throughout the mortgage loan supply chain while simultaneously reducing barriers to home ownership in underserved communities through consumer finance education. While it is important to develop comprehensive solutions to these challenges over time, we believe that focusing on targeted practical solutions to specific identified challenges such as the ones described above that will move the needle forward in the housing finance ecosystem *today* are attainable first steps towards this broader goal.

To create meaningful impact in the housing finance ecosystem by targeting the challenges described above, we believe that a housing finance-focused tech sprint focused on one or more of the following topics would support the FHFA's goals to improve efficiency, reduce costs and serve underserved markets and populations within the housing finance ecosystem:

- **Practical applications of technology to incrementally improve the housing finance ecosystem**. Suggested topics for even more targeted tech sprints in this area could include:
    - borrower income and asset automation throughout the origination process (including the request for, recording of and dissemination of such information)
    - remote online notary and eNotary services, and appropriate regulatory and procedural safeguards for these products
    - standardization of appraisal calculation that reduces reliance on an individual appraiser's idiosyncratic valuation techniques
- **Products and tools aimed at expanding consumer education to connect consumers with the mortgage products that are the best fit for that consumer**. Suggested topics for even more targeted tech sprints in this area could include:
    - making consumer finance education in the form of practical consumer applications or personal finance calculators more accessible

Redwood's corporate mission is to make quality housing – whether rented or owned – accessible to all American households. We believe that encouraging a collaborative discussion on the topics suggested above could help facilitate positive changes relating to transparency and affordability in the housing finance market. In facilitating these tech sprints and other forums for collaboration, discussion and debate, we are including a wide variety of perspectives and market participants to ensure the needs of all aspects of the housing finance sector are taken into account. Some ideas to encourage participation include:

- **Extending invitations and welcoming voices from both the agency and non-agency market**. With decades of experience in the non-agency sector operating a prime jumbo residential mortgage loan aggregation platform and business purpose loan originator, Redwood is positioned at the crossroads of many different channels of housing finance, with visibility into the origination, document verification and diligence, and resale processes. Because of our strategic position in the mortgage loan ecosystem, we are well situated to take a holistic view to identify opportunities to apply new technologies to the housing finance system, making sure that the introduction of new solutions, ideas or products in one area (like origination) will not create unintended challenges elsewhere (such as securitization or secondary market trading).
- **Signaling to market participants that ideas generated as a result of the tech sprint will help inform FHFA decision-making going forward**. As the FHFA and other regulators focus on ways to support integrating technology into the mortgage finance ecosystem, allowing participants to voice suggestions and concerns may increase adoption levels as the initiative progresses to real world applications.
- **Connecting participants from start-ups and emerging companies with experienced members of the housing finance ecosystem**. Industry participants (such as Redwood) that do not have a limited focus on improvement to one targeted area of the mortgage origination supply chain but rather have a strategic focus on improving processes in the housing finance ecosystem generally could also be engaged to participate in a tech sprint as a coach, advisor or sounding board throughout the sprint or as an evaluating expert on the Demonstration Day. Members of the housing finance ecosystem focused on venture capital initiatives could likewise be engaged in this manner.