



February 26, 2021

Federal Housing Finance Agency
Office of Housing and Regulatory Policy
400 7th Street SW, 9th Floor
Washington, DC 20219

Re: Request for Information on Appraisal-Related Policies, Practices, and Processes

Dear Sir/Madam,

Thank you for the opportunity to comment on the Federal Housing Finance Agency's (FHFA) Request for Information (RFI) on Appraisal-Related Policies, Practices, and Processes. The timing of the RFI is a welcomed opportunity to provide feedback on updating policies at the Enterprises to allow for greater use of technology in the appraisal process. As the real estate market has continued to evolve, so too have services and technology to support a consumers attainment of homeownership. Zillow Group supports modernization efforts that include the evaluation of new tools that can provide more accurate valuations of collateral and conditions on which mortgages are made.

Zillow Group is reimagining real estate to make it easier for consumers to buy, sell, rent or finance their next home with transparency and nearly seamless end-to-end service. Our goal is to create products that help consumers overcome uncertainty, high costs and delays in their real estate transaction experience. We want to give people the power to unlock life's next chapter, and to do so in a way that mitigates bias and lowers barriers to meet all consumers' needs and expectations.

At Zillow Group, the customer is our North Star. As a result, we maintain a culture of focusing on technologies that will provide our customers with the most accurate assessment of their current, future or dream property's value. We value transparency in every aspect of our business, especially when it comes to quality and condition, a shared value in the appraisal process.

Appraisal Modernization and Desktop Appraisals

Zillow Group supports modernizing the appraisal process by utilizing the development of alternatives to address the existing gap between an appraisal waiver and traditional appraisal. For example, we were encouraged by the Data & Done option within Fannie Mae's Value Verify framework, and the associated bifurcation of property data collection from valuation appraisal.



Appraisal bifurcation has a number of important benefits. The division of labor achieved by splitting data collection from valuation allows for the use of new labor pools for straightforward data collection tasks, thus conserving appraisers for tasks that only they can do, either via desktop or in-person appraisal. This, in turn, would allow appraisers to evaluate more homes from any location and ease the burden of travel costs on the appraiser, potentially decreasing scheduling and appraisal time from an average of 8-15 days (according to data from Fannie Mae and Freddie Mac) to 48 hours for a subset of homes.

New, more readily available labor pools for data collection, while still maintaining licensed appraisers for core valuation tasks, would reduce capacity issues in high population areas and address capacity issues in rural markets while providing appraisers the ability and opportunity to specialize in alternative valuation options, if they desire.

In the past, appraisal bifurcation has raised some concerns including 1) the complexity and risk of training and licensing of property data collectors; 2) potential risks from inaccurate data from less regulated property data collectors; and 3) potential degradation of appraisal quality if data collection and valuation are separated.

We believe that there are technology solutions to these concerns. Specifically, we believe that 3D tour technology, which creates a floor plan with highly accurate square footage and detailed imagery of the entire home, can ensure reliable and accurate data collection with only modestly trained personnel. Moreover, we believe that automated valuation models (AVMs) can be better leveraged to understand where substantial valuation uncertainty still exists even in the presence of accurate underlying data (along the lines of Freddie Mac's Automated Collateral Evaluation waiver program which leverages their Home Value Explorer AVM).

3D Technology, 3rd Party Data Collection and Data Standards

The recent advances in 3D Technology enable users to accurately capture the floor plans and square footage of a home with minimal cost and training. Zillow Group has made this technology available to real estate professionals through our 3D Home app (see appendix). Using this technology, a qualified 3rd party, such as a professional real estate photographer or licensed real estate agent, can collect the data needed for a desktop appraisal. We strongly recommend that data collection should be done when the other listing media is captured. 3D tour technology and floor plans ensure that no rooms are missed and allows a trained appraiser to look at the collected data to validate the quality and condition of the property. If further investigation is warranted, an in-person appraisal could be completed. This approach would increase speed and decrease costs for a substantial set of buyers/refinancers.

Zillow Group, in partnership with a leading AMC, has analyzed the capture of collateral with agents trained to capture 3D images and their capture was as accurate as an appraisal sketch. Further, after extensive testing with AMCs, we have high confidence that data collected by independent 3rd party photographers, along with Zillow Group's ability to show where the



listing photos are integrated into the floor plan, reduces the potential for appraisers to receive inaccurate data from a non-appraiser and provides a true understanding of the property's condition and value. Technology ensures data manipulation is minimized when data is captured at the time of listing with time stamps and precise device geolocation.

With the goal in mind of reducing potential data manipulation, 3D captures & floorplans can be compared to listing photos & street views of homes. When the data matches, appraisers can be confident that the 3D capture is of the home they are appraising. Zillow Group's 3D platform eliminates opportunities for data manipulation as the images are captured directly from the camera, processed through Zillow Group's technology and then saved in the cloud.

Standards and training to quantify best practices for the examination of the data that should be done by a qualified party or appraiser could be established. Zillow Group already has standards and training implemented for data capture and welcomes the opportunity to work on standards for a process involving inspectors to validate purchase transactions. Such standards could produce further cost savings in the appraisal process because the data from 3D capture of homes listed for sale could be used in the subsequent desktop appraisal, thus affording the appraiser reliable and accurate data without the need to incur a separate, independent property data collection effort.

Impact of Appraisal Flexibilities

We appreciate the appraisal flexibilities provided by the Enterprises during the COVID-19 crisis. However, we do have some concerns that the reduction of the standard for data collection to a drive-by or by pulling listing photos online creates risks to the Enterprises as they provide for a very limited or biased assessment of quality and condition. Utilizing 3D data captured at list or during refinancing would provide consistent and up to date data to evaluate the property accurately in instances where appraisal flexibilities are justified. The flexibilities provided by the Enterprises highlighted the benefits of a 3rd party capturing quality listing collateral such as photos. Utilizing a single 3rd party to capture data reduces the potential for multiple people to be in the same residence, reducing costs, protecting the health and safety of those involved in the assessment process.

Questions and Answers

Question A1.1: Is there a need to provide new valuation solutions that address industry identified issues of appraiser capacity, turn-times, training, and rural and high-volume market coverage? What are those potential solutions? What are the risks of these policies and the challenges in implementing them?

Technology has changed all aspects of our lives. Zillow Group is reimagining real estate to make it easier for consumers to buy, sell, rent or finance their next home with transparency and nearly seamless end-to-end service. When coupled with digital signatures, remote online



notarization and e-notes, the resulting digitized process reduces paperwork and in-person interactions while decreasing closing times to weeks instead of months.

More people can buy and sell homes each year with certainty by using 3D technology and AVM's, which provides appraisers with updated tools to improve efficiency, decrease costs, and increase the number of appraisals that can be conducted in a day. Zillow Group's 3D technology provides square footage 'estimates' or 'predictions' which can be compared to public records or other appraisal data, to flag for an appraiser that there is an issue or significant mismatch. An appraiser can evaluate a home via desktop in an hour, whereas driving to a home and pulling comps ahead of time could take 2 to 3 hours. Desktop appraisals relying on accurate 3rd party data can create a loan risk at par with traditional appraisals and in most cases will be less risky than the current prevalence of waivers. The benefits of reduced costs, improved turn times, more data capture, and better risk management should drive support for 3D technology and 3rd party data collection. The only way to benefit from these potential efficiencies is to have 3rd party data captured at the time of listing, ideally by a professional photographer who is already capturing photos of the home for the listing. Having appraisers capture this data would eliminate the time saved, continuing the cycle of scheduling and capture after list that currently slows down the industry.

Specific to AVMs, model interpretability and training could be helpful in building adoption and trust within the appraisal community. This is a new and evolving space that requires some measure of technical, statistical and machine learning understanding. To build adoption and trust we propose some form of "verified AVM valuation" in which the input facts are reviewed for accuracy and could include some kind of model explanation for review.

Question A1.2: Are there opportunities for process improvements that allow non-traditional valuation services (inspection-only, desktop, exterior-only) to augment traditional appraisals? Please elaborate on the risks, challenges and benefits. Separately, are there opportunities to improve traditional appraisals to mitigate problems and concerns that have been observed to date?

One of the improvements a desktop valuation provides is solving for incomplete capture. Zillow Group's 3D technology reveals if rooms were omitted and captures the complete general living area and square footage. Completing more appraisals using 3D on desktop would maintain the data standard of a traditional appraisal while reducing turn times and costs.

Another opportunity for improvement that can be solved for with technology includes prioritization. We recommend using AVM derived price and risk scores as inputs into the decision about what type of appraisal to perform to help prioritize the set of properties that receive an in-person appraisal.

Lastly, an area for improvement is withholding the contract price from the appraiser until after initial valuation work is performed would further guarantee independence.



Question A1.3: Do appraisal waivers have a place in Enterprise appraisal policy and process, and if so, for what segment of loans? What are the current risks to Enterprise safety and soundness in how appraisal waivers are offered? Would caps or other limits on their usage be appropriate?

Appraisal waivers certainly have their place, particularly with respect to rate/term refinancing wherein the agency that owns the underlying mortgage already owns the risk. Non cash-out refinances where the borrower has a low loan-to-value ratio should also be low-risk candidates for waivers. Waivers also play a significant role when agencies have had a recent appraisal uploaded. The likelihood of property issues would be mitigated and the “stated value,” that drives the waiver process, would be aligned with the appraisal value, provided there aren’t any underlying issues noted on a given appraisal. Generally, waivers help to speed the mortgage process for consumers by reducing pain and ultimately increasing transactions on an annual basis.

A challenge to using waivers is ensuring they do not exploit the system and leave the Enterprises with a higher risk portfolio than accounted for, and so a minimum data standard should be met. To ensure that minimum data standards are met, we believe that waivers on refinancing are more sensible than waivers on origination/purchases as there is likely to be reliable and accurate valuation data if a home has recently been appraised.

Companies providing home-buying services such as Zillow Offers have entered the market in recent years to provide a more seamless option for selling a home. Through Zillow Offers, customers can sell their house directly to Zillow for a more hassle-free experience on their own schedule. After sale, Zillow makes minor repairs and re-sells the home at market rate. Through this process Zillow is able to collect accurate floor plan information and could work with the Enterprises on a standardized process for approving appraisal waivers when purchasing and reselling homes to benefit the accuracy of the Enterprises portfolio. All of the data required for a 1004 is already captured and could be pre-packaged and submitted to the Enterprises ahead of time in exchange for a waiver for the eventual qualified buyer. In terms of risks involving safety and soundness, iBuyers take on the risk of buying the home, fixing deficiencies and collecting the necessary data for an accurate assessment.

Question A1.4: Would utilizing alternative inspection workforces, such as insurance adjusters, real estate agents, and appraisal trainees assist with addressing appraiser capacity concerns? Are there risks of using third-party non-appraisers? If yes, How?

The technical expertise required to operate, and acquisition cost of, 3D technology have both been greatly reduced, and should lead to greater industry adoption. This should allow for the utilization of alternative inspection workforces. However, alternative inspection workforces in and of themselves won’t change the process, reduce time or lead to more transactions unless a 3rd party is empowered to collect this data. Reducing the friction in the process would enable



more data collection without increasing the burden on the consumer, whether buyer or seller.

Data at list would solve the problem by resetting expectations on how to capture all the necessary data for a 1004 and streamline the process. The internet allowed consumers with internet access to understand the value and availability of homes from anywhere in the world. Internet access to data led to more educated buyers understanding what, when and where they could afford to buy. While the internet didn't drastically expand the volume of transactions for a given year, it did open up the ability for consumers to unlock data in their market that was previously inaccessible to them.

If the industry starts collecting 3D floor plan data at list through a 3rd party they will then be able to use an appraiser's time more appropriately by evaluating homes in person that can't be quantified by 3D tour technology or an AVM. In-person appraisals will still be needed, specifically homes built decades ago that have not been placed on the market until recently. Homes built in the modern era with a more recent appraisal are an ideal subset eligible for desktop appraisals.

Most consumers don't begin to list their home without first checking websites such as zillow.com to utilize AVM's for insight into what their home is potentially worth. The advent of technology in the housing market didn't eliminate the real estate agent, just like 3D data and desktop appraisals will not eliminate the appraiser. Just like consumers were able to get more information in the comfort of their home or office, appraisers will be able to safely, and most importantly, accurately evaluate a subset of homes.

Question A1.5: Is there a need for additional policies and controls to balance potential risks with efficiency benefit from appraisal modernization? If yes, please provide your recommendations.

We recommend FHFA create an advisory committee dedicated to understanding and introducing new technology to work with the Enterprises and the mortgage industry to review how to improve efficiency.

Question A1.6: Do the objectives as outlined for the UAD update and forms redesign meet the current and future needs of the mortgage industry? Are there opportunities for refinements or additions?

The current data standard should be augmented to match the workflow with desktop appraisals. The data collected should only pertain to the home, not the potential buyer/owner. A majority of the data in the 1004 form can be collected via the internet. Appraisers should focus on validating the site, quality & condition as well as attaching the Sales Comparisons that justify their appraised value. We believe the data points collected could be reduced from 150 to below 50.



Question B2.1: How could the Enterprises make additional data available to appraisers while promoting appraiser independence without crowding out other data providers? What additional challenges arise if the enterprises provide data to appraisers?

Making appraisal data available to AVM vendors and appraisers in order to fully unlock the potential of alternative models of valuation should be a priority. The Enterprises could add 3D data to the UAD and encourage 3D data providers to share the data specifically for this purpose. Zillow Group is willing to provide the Enterprises our data for such a purpose. Without access to the Enterprises appraisal datasets there will be limits on the ability of companies to support hybrid appraisals.

Question B2.2: How can the Enterprises improve their collateral tools currently available to lenders?

We suggest the Enterprises accept new data sources, allow for digital data collection and make data transparent by providing it to the industry. Reducing the data points collected from 150 to below 50, especially for desktop appraisals and data collection, would greatly streamline the process. When enough information is transparent and available to make a collateral decision, collection of extraneous information becomes redundant and time consuming. The key improvement would be to reduce data collected to pertinent information that quantifies the value of the asset.

Question B2.5: What are the challenges associated with quality of service, enforcement and consumer protections related to non-appraiser entities providing property inspection data?

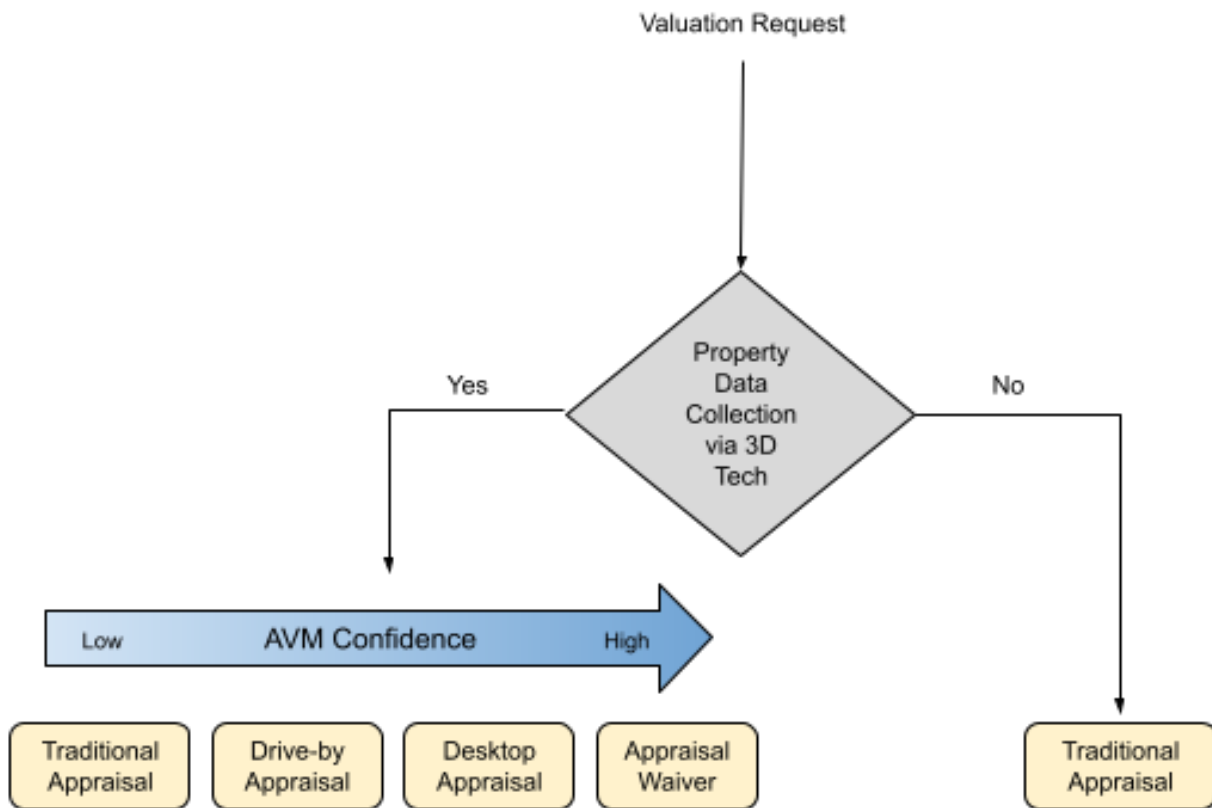
Data captured at list by the same professional who is providing listing content eliminates these concerns. The 3D technology and the recommendation of when to capture significantly increases the reliability and accuracy of collected data, even with modestly trained personnel. The 3D data captured provides appraisers and other QC professionals with visual information as well as measurements to verify our audit any information automatically captured.

Question B2.6: Is there any data or evidence you could share regarding the performance of alternative appraisal solutions versus traditional appraisals?

By offering estimates of valuation uncertainty, AVMs provide a critical measure in determining valuation risk that is not present in traditional appraisals. Using valuation uncertainty as criteria to determine the valuation pathway -- traditional appraisal, desktop or waiver -- can effectively sort valuation work to where it is most needed. Combined with property data collection via 3D technology as shown in the diagram below, valuation confidence would allow for empirically based decisioning about the type of valuation approach to be employed for a particular property. For example, the median absolute percent error of Zillow's Zestimate AVM on homes that are not listed for sale is currently 7.3%. But, if one were to sort all homes by their Zestimate error rate, the median error of the most accurate half of all homes would be 3.4%. In our Zillow Offers



business where we purchase homes directly from home sellers, our offers to sellers are made by pricing analysts performing tasks very similar to desktop appraisal with [results that are within 0.9%, on average](#), of the sale price on homes where a seller declined a Zillow Offer and then went on to sell traditionally. With reliable and accurate data from 3D technology coupled with better estimates of valuation uncertainty from AVMs, there could be substantially more appraisal waivers and desktop appraisals and many fewer full, traditional appraisals.



Question B2.7: Should Enterprise type COVID-19 appraisal flexibilities be part of an updated appraisal process to address disasters and other events to lessen market impacts?

Appraisal flexibilities such as desktop appraisals should certainly be part of an updated process. Home sellers would still need to capture media for their home, so they can be captured at the time of listing. Refi's would be able to capture their home with their cellphone to prove quality and condition, assuming the homeowner had a relatively recent appraisal. This would lead to fewer outliers needing a waiver without capturing the correct amount of data for collateralization.



Question C1.1: What do you envision the impact of appraisal process improvements as described in this RFI to be on the appraisal industry? What impact, if any, has increasing use by the Enterprises of alternative appraisal solutions had on the availability and/or quality of traditional appraisals?

Better data will lead to more efficiency, less waiting and more work for appraisers. Some will stick with the traditional appraisal route and take on the outliers while continuing to serve as experts where technology is unable to assist in the evaluation process. There are appraisers that embrace desktop appraisal, which allow them to appraise more homes without having to travel and even appraise homes during non-business hours. The quality of appraisals should also increase as more data is collected and less stress is induced on the appraiser.

Question C1.2: What would be the impact of appraisal policy and process improvements to the mid or late career appraiser? Do you believe late career appraisers would delay retirement if they could focus on specific valuation services like desktop appraisals? Or alternatively, would late career appraisers cease operations due to technology adoption challenges?

Today, AVM's are commonplace and most consumers don't begin to list their home without first checking websites that utilize AVM's for insight into what their home is potentially worth. The advent of technology in the housing market didn't eliminate the real estate agent, just like 3D data and desktop appraisals will not eliminate the appraiser. Just like consumers were able to get more information in the comfort of their home or office, appraisers will be able to safely, and most importantly, accurately evaluate a subset of homes.

Desktop appraisals would allow mid or late careers appraisers to continue working and increase the number of appraisals completed in a day. If appraisers can use Zillow Group data or their local MLS, they could easily navigate a 3D home and read a floorplan to determine square footage.

Question C1.3: Do you believe appraisal policy and process improvements would have a positive impact on access to credit, including for rural and underserved markets by providing additional valuation services that serve the needs of these markets?

By training 3rd parties to do 3D scans at time of list, we mitigate the shortage of real appraisers and also eliminate the long distances often needed to be traversed for in-person appraisals in rural areas. Also, by eliminating potential biases of human appraisals, there is opportunity to help minority borrowers and homeowners who often face the highest barriers to credit access.

Question C1.4: Is there discrimination in current collateral valuation practices? If you believe there is discrimination, describe the impact. Please provide any relevant data or analyses to support your position. Conversely, are there concerns that alternative or automated solutions could have a discriminatory impact?



Zillow Group's proprietary 3D & floorplan solution could mitigate several sources of bias from the appraisal process. The studies annotated in the RFI referencing bias during an appraisal demonstrates that racially and ethnically identifiable information (interior family photos and possessions) can correlate to lower appraisal values. Our proprietary 3D & floorplan solution eliminates racially and ethnically identifying information by a 3rd party preventing the owners and/or their family photos & possessions from being a part of the valuation, by blurring them out automatically.

Having a 3rd party capture the data needed for an appraisal could mitigate the potential for bias to take place. When the real estate agent is capturing the media to list the home, they could also collect the 3D tour and floorplan data. Because Zillow Group's tools automatically blur out family photos, and since the appraiser has not visited the home, they do not have a chance to form a biased opinion on the race/national origin/gender/sexual orientation of the seller/buyer. Requirements could also be made to protect personally identifiable information of the buyer and seller to eliminate bias.

While AVM's may reflect certain existing market conditions in the sector and underlying data, for example higher average home prices in predominantly white neighborhoods, there is no data or expectation that AVM's are more susceptible to market conditions than a human appraiser. AVM's should follow certain practices to avoid perpetuating bias, including avoiding use of demographic data, personally identifiable information, or potential proxies like school test score data. In addition, AVM's should go through periodic review to ensure that they are not amplifying discriminatory signals in underlying sales data. However, as long as those guardrails are followed, AVM's may be preferable to human review, as bias should be more detectable and easier to rectify if/when it exists vs. retraining appraisers.

Zillow Group appreciates FHFA's consideration of our comments regarding potential improvements to Appraisal-Related Policies, Practices, and Processes. Should you have any questions regarding our comments please contact Ken Wingert, Director of Government Relations at kennethw@zillowgroup.com. Should you have questions around Zillow Group's 3D technology, you can contact Justin Challain, Senior Strategic Partnerships & Initiatives Manager at justinc@zillowgroup.com.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Ken Wingert', with a horizontal line above it.

Ken Wingert
Director of Government Relations
Zillow Group



Appendix:

How Zillow 3D Home Capture Works

For a comprehensive Q&A on Zillow's 3D Technology, visit:

<https://www.zillow.com/z/3d-home/faq/>

Zillow makes 3D capture available to anyone with an iPhone or an Android device. You can capture using your smartphone camera or using your phone and 360 camera.

The 'smartphone only' capture provides a 3D tour, but will not produce a **floorplan**.

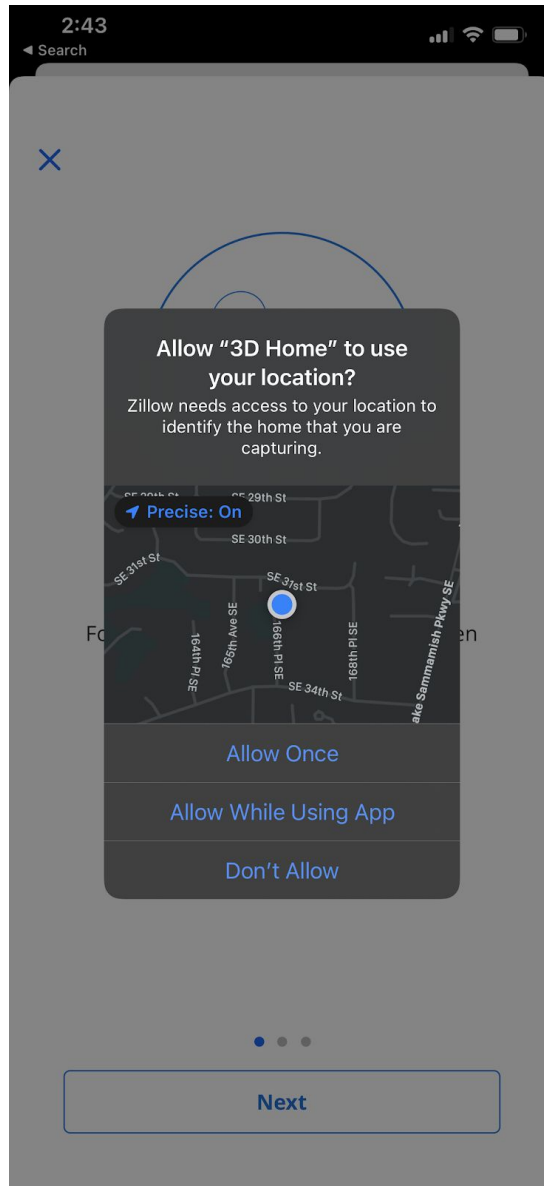
The **floorplan**, a detailed rendering of your home, provides measurements for all rooms (95%+ accuracy validated by leading AMC's). The technology used can provide 3D measurements (height of ceilings, overall cubic feet of a room) as well as measurements like the perimeter of the home.

- Per room dimensions
 - Wall dimensions (95% accuracy, studies available)
 - Cubic feet
 - Height of ceiling
- Interior living area SqFt (finished) (96% accuracy, studies available)
 - Unfinished
- GLA SqFt
- Basement SqFt
- Garage SqFt
- Room Count (total bedrooms & bathrooms)

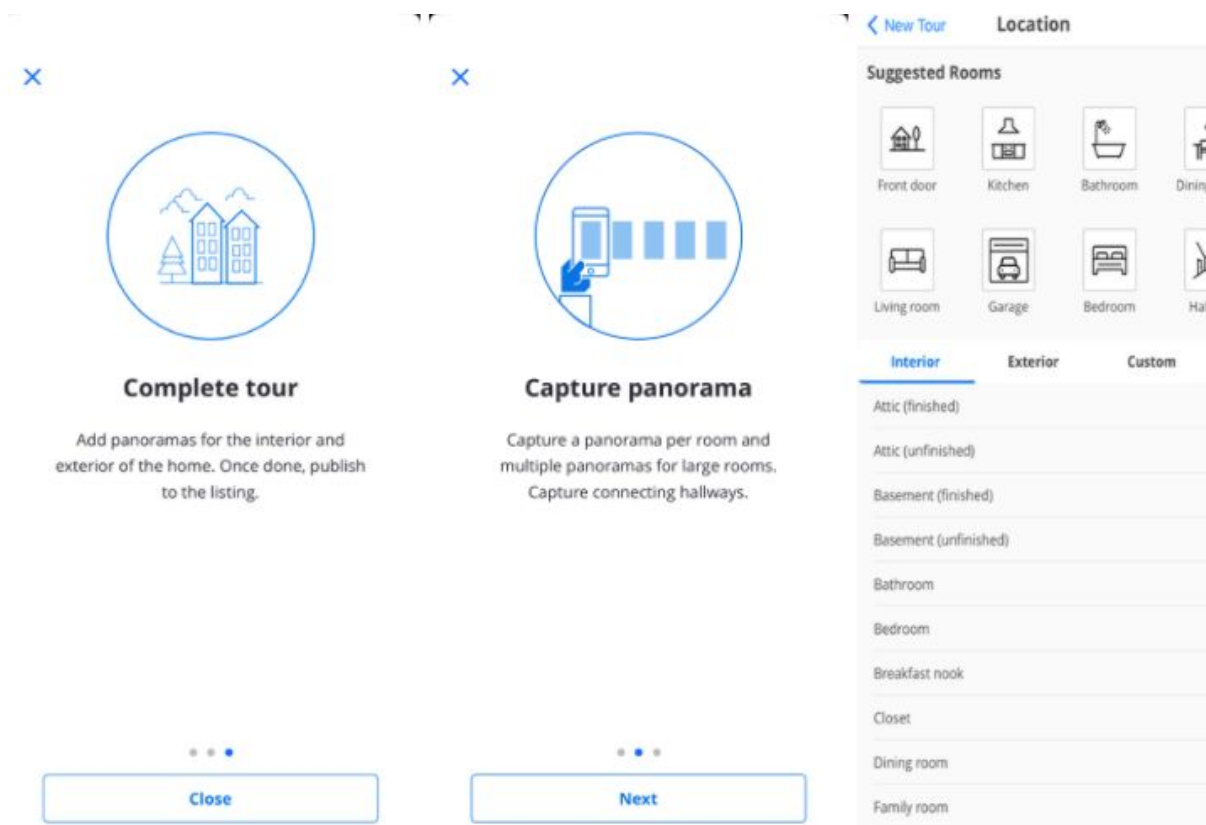
For the purposes of this RFI, the majority of what is referenced is a 3D Home Tour capture that includes a floorplan. To capture a 3D Home tour you will need:

- Zillow app
- 360 degree camera
- Tripod
 - You will keep the tripod at the same height throughout the capture process
- Floor Marker (Zillow provides these, but a standard 8.5x11 sheet of paper works)
 - This is to sync the tripod height to the home for accurate measurements

When you open the app, Zillow will have you confirm which type of camera capture you are using, then using geo location, confirm the home you wish to capture.



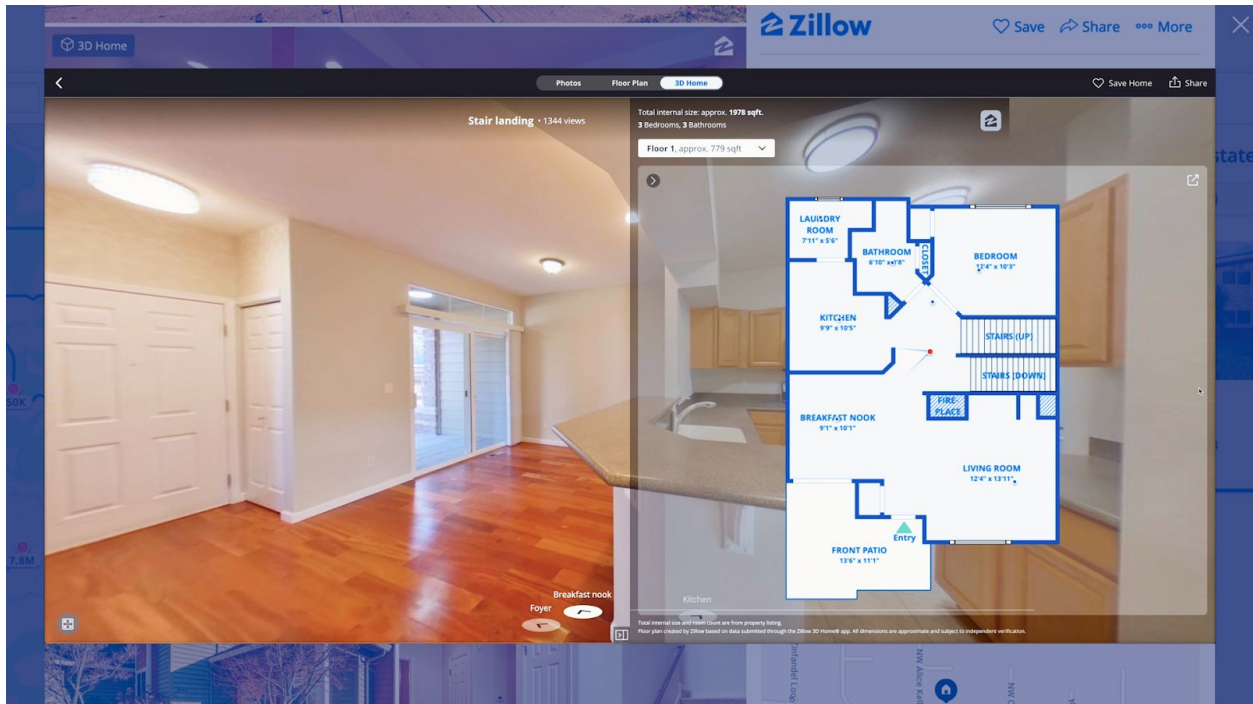
Zillow recommends capturing the entire exterior and interior of the home to provide as much context for the consumer & appraiser as possible. The entire process can be completed in 20-30 minutes for a home in the 2,000 square foot range.



To capture the home you need to set your tripod to a specific height (and keep it at that height). We train agents & photographers to capture a photo in the center of every room, making sure to capture each room in the home (opening closets for measurements and closing them for listing content). Currently, this is the best way to guarantee accurate measurements are recorded. You will also need to put down your floor marker in one of the early interior shots (this can be done later but needs to be done on only one capture).

The data is captured directly in the Zillow app, where the tour is stored and processed. This eliminates the ability to alter the tour. Once the tour is completed, it goes through Zillow's proprietary 3D evaluation process which will produce the floorplan. The images and the 3D tour will be stitched together immediately and be viewable on the app. At this point the capturer of the data can choose to post it to Zillow, Trulia, the MLS or anywhere that they would like. These captures can be saved and only viewable with permission as well as available through an API with controlled access (would be helpful when the tour is only for financing purposes).

The Floorplan produced by Zillow will show any gaps in the data data or rooms that were not captured, making it almost impossible to collect incomplete data on the home.



This image was produced using the 3D Home Tour capture (with floorplan) that shows you where on the floorplan you are looking as you move throughout the tour. This added context eliminates confusion for the consumer and provides greater engagement.