

100-Year Flood Risk Map Information Sheet and FAQs

December 2024 Update

Background

To improve information available to the public about flood risk from stormwater in the City and County of San Francisco, the San Francisco Public Utilities Commission (SFPUC) has developed a 100-Year Storm Flood Risk Map (Flood Map). The Flood Map shows which parcels are within 100-Year Storm Flood Risk Zone and are likely to experience deep and contiguous flooding during a 100-year storm. The Flood Map, updated in December 2024, now also shows **flood elevations**. Refer to the **Key Definitions** section to further understand these terms.

Purpose

The purpose of the Flood Map is to inform existing and future property owners and tenants about flood risk on San Francisco properties to give them opportunities to take steps to protect their property and belongings from stormwater flood risk.

It also helps property sellers and landlords follow state and local laws. Property sellers and landlords can use the Flood Map to determine and disclose flood risk at the point of sale and develop new leases in a manner consistent with state law, which requires sellers and landlords to disclose natural hazards, including flood risk. Since 2019, San Francisco law requires sellers or landlords of property in San Francisco to disclose to buyers or tenants if the property is within the 100-Year Storm Flood Risk Zone (Flood Risk Zone) shown on the SFPUC's Flood Map. The law does not require disclosure of flood elevations. Flood elevations are provided on the Flood Map for additional information, to inform actions that property owners and tenants may wish to take to protect their properties and belongings against flooding and minimize potential impacts.

ADDITIONAL QUESTIONS?

Contact us at (415) 554-3289 or
rainreadysf@sfgov.org

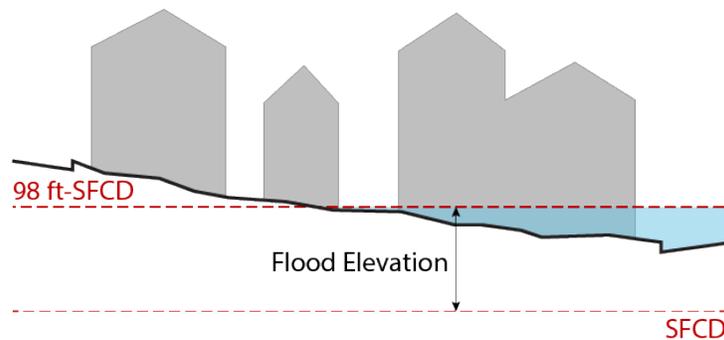
Visit our webpage at:
www.sfpuc.gov/learning/emergency-preparedness/flood-maps

Key Definitions

100-year storm is used by climatologists, hydrologists, and civil engineers to describe an intense storm event that statistically has a 1 percent probability of occurring at a particular location in a given year. Despite this statistical likelihood, such intense storms can and do occur more frequently, sometimes within just a few years of each other or even within the same year.

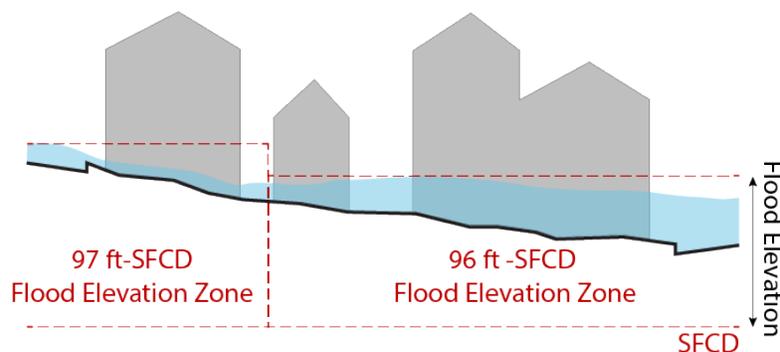
Deep and contiguous flooding means flooding that is at least 6 inches deep, spanning an area at least the size of half an average city block.

Flood elevation refers to the height (rounded to the nearest foot) that stormwater flooding is likely to reach during a 100-year storm, measured from the San Francisco City Datum (SFCD) (see below).



Illustrative example of how flood elevations are measured

Flood elevation zone refers to a zone, or area, with a single, uniform flood elevation (parcels may have multiple flood elevations and hence contain multiple flood elevation zones).



Illustrative example of Flood Elevation Zones

Key Definitions Continued

A **Datum** is an abstract coordinate system with a reference surface (such as sea level) that serves to provide known locations to begin surveys and create maps. Datums create reference points for floodplain maps, property boundaries, construction surveys, levee design, or other work requiring accurate coordinates that are consistent with one another. San Francisco's City Datum provides a reference level of zero elevation for vertical measurements. More information on the SFCD can be found on the [San Francisco Public Works webpage](#).

Frequently Asked Questions

What type of flooding is shown on the Flood Map?

The Flood Map shows flood risk due to stormwater runoff. It does **not** show flood risk from other causes, such as water coming in from the San Francisco Bay, the Pacific Ocean, or lakes, including the effects of inundation from future sea-level rise. The Flood Map also does not show the depth of flooding from existing ground surface level (such as depth of flooding from the street level) or the historical record of flooding at a given location. Instead, the flood elevation zones on the Flood Map represent the elevation of simulated flooding as measured from the SFCD. Property owners and other users of the Flood Map should be aware that areas outside of the 100-Year Storm Flood Zones may experience shallow or more localized flooding in a 100-year storm, or deeper flooding in storms larger than a 100-year storm.

What are the potential impacts of flooding on properties in the 100-Year Storm Flood Zones?

The Flood Map shows parcels that are likely to experience at least 6 inches of flooding during the 100-year storm.

The impacts of flooding depend on the individual characteristics of each property. For example, if a building has steps up to an elevated door, floodwater may not enter the building via that door. However, if a building has a door at street level, has foundation cracks, a garage at or below street level, or a sanitary sewer system with no backflow preventer, significant floodwater could enter the structure.

Which properties are included in the 100-Year Storm Flood Zones?

There are about 2,100 parcels in the 100-Year Storm Flood Zones shown on the Flood Map (this figure represents approximately 1 percent of parcels citywide). Approximately half of these are residential parcels; the rest are a combination of commercial, industrial, and public parcels. Many of the properties in the 100-Year Storm Flood Zones are built along historical waterways that used to be creeks or wetlands.

Frequently Asked Questions Continued

Why do I need to know if my property is subject to flooding during a storm that has only a 1 percent chance of occurring in a given year?

100-year storms have occurred in San Francisco neighborhoods in the past decade and have the potential to occur every year.

Sellers of properties and landlords in the Flood Risk Zone must provide a disclosure of the flood risk, see the question “**I own or am leasing a property in a Flood Risk Zone, what are my disclosure responsibilities?**” for more information.

You can take steps to reduce flood risk at your property, see the question “**What steps can I take to reduce flood risk at my property?**” for more information.

What steps can I take to reduce flood risk at my property?

In addition to **purchasing flood insurance**, many San Francisco residents have taken advantage of SFPUC’s various resources to help them prepare and better protect their properties from intense rain events, including the following resources that you can learn about at sfpuc.gov/RainReadySF:

- If you are a property owner whose home or business has been subject to flooding from the combined sewer system or public right-of-way as a result of heavy rains, apply for a [Floodwater Grant](#). This grant can provide up to \$100,000 to implement projects to reduce the risk of damage from flooding on your property.
- Report issues such as flooding, clogged catch basins, sewer backups, and displaced manhole covers to [San Francisco’s customer service online portal](#) or by calling 3-1-1.
- **Help out** by joining our [Adopt a Drain](#) and [Rain Guardians](#) programs.
- Monitor the weather reports and elevate belongings in your garage and any low-lying areas on your property if you live in a flood-prone area.
- Pick up [sandbags](#) from SF Public Works.

Can I purchase flood insurance for my residence or property?

Yes. San Francisco participates in the National Flood Insurance Program (NFIP), which is administered by the Federal Emergency Management Agency (FEMA). The program provides federally backed flood insurance for homeowners, renters, and businesses in all areas of San Francisco. Flood insurance under the NFIP provides coverage for flood damage to buildings and contents and can be purchased through many private property and casualty insurance companies. As with any other type of insurance, it is important to know what a policy does and does not cover. For additional information on flood insurance for renters or homeowners, including how to buy it and how much it should cost, visit the FEMA webpage at floodsmart.gov or call 1-800-427-4661.

Frequently Asked Questions Continued

I own or am a landlord leasing a property in a Flood Risk Zone, what are my disclosure responsibilities?

Pursuant to Article 51 of the San Francisco Police Code, sellers of properties like yours in the Flood Risk Zone must provide a prospective buyer with a specific written disclosure before (1) transfer of title and/or (2) execution of a real property sales contract. The Code requires landlords to provide the same disclosure to prospective tenants before executing a lease. However, you do not need to disclose the flood elevations for your property.

What are the requirements beyond property disclosure upon sale or rental? Can you direct me to any specific planning/architectural requirements?

There is no requirement in the San Francisco Building Code regarding flood-resilient design.

What is the relationship between the City's Flood Map and the FEMA map?

The SFPUC's Flood Map shows flood risk from stormwater only. It does not include flood risk from other sources, such as inundation from the San Francisco Bay or Pacific Ocean.

The FEMA map shows flood risk from open waterbodies and waterways. In San Francisco, these include the San Francisco Bay and Pacific Ocean. FEMA maps do not show flooding from stormwater in San Francisco because most of San Francisco's historical creeks and waterbodies have been paved over and are no longer considered open waterways. Instead, stormwater typically flows in the sewer system and roadways.

Because the flooding identified in the SFPUC and FEMA maps comes from different sources, in most areas the Flood Risk Zones do not overlap. There are a few areas near the shoreline of San Francisco where SFPUC's Flood Risk Zones overlap with the FEMA-designated floodplains. The Base Flood Elevations identified by FEMA are also not related to the flood elevation zones illustrated on the SFPUC's Flood Map. The two maps use different datums and are not directly comparable.

For more information on the FEMA Preliminary Flood Insurance Rate Maps please see <https://onesanfrancisco.org/San-Francisco-Floodplain-Management-Program>. You can also search FEMA's downloadable map products from their website.

For information on flood risk from sea-level rise, please see the Sea-Level Rise Guidance (<https://onesanfrancisco.org/node/827>).

Frequently Asked Questions Continued

What units are the flood elevations measured in?

The flood elevations are measured in feet relative to SFCD, also known as San Francisco Old City Datum. SFCD provides a reference level of zero elevation for vertical measurements. The difference between SFCD and the newer City and County of San Francisco 2013 North American Vertical Datum of 1988 (CCSF-VD13) varies across the city, but SFCD also is estimated by subtracting 11.35 feet from CCSF-VD13. Additional information about this conversion from CCSF-VD13 to SFCD can be accessed on the [San Francisco Public Works webpage](#).

Do the flood elevations account for future climate change-induced storm events?

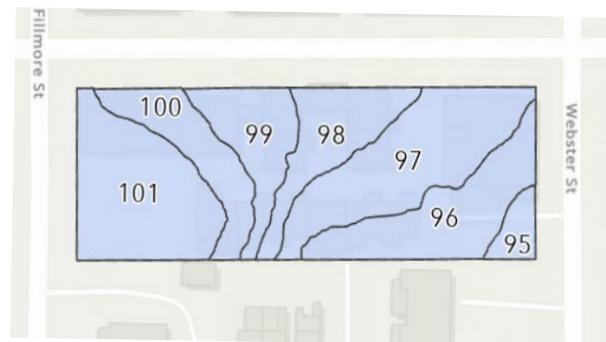
No. The flood elevations do not account for future climate change-induced storm events. They only account for the current 100-year storm, which is based on historical records.

Do the flood elevations account for freeboard?

No, the flood elevations do not account for “freeboard.” According to FEMA, freeboard is a factor of safety usually expressed in feet above a flood level for purposes of floodplain management. Freeboard tends to compensate for the many unknown factors that could contribute to flood heights greater than the height calculated for the 100-year storm.

A range of flood elevations can be seen on some parcels on the map. What does this mean?

The flood elevation zones are generated using information from the hydrologic and hydraulic computer model simulation of a 100-year storm, a ground surface digital elevation model created from 2010 LiDAR data, and information about existing City-owned infrastructure. Ranges in ground elevation and flood depth during a 100-year storm may contribute to one parcel having multiple flood elevation zones. The image on the right shows an example of a parcel with multiple flood elevation zones, ranging from 95 to 101 feet-SFCD.



Frequently Asked Questions Continued

I believe my property was incorrectly included in a 100-Year Storm Flood Zone. Is there a process for review of the final map's inclusion of my property?

The SFPUC has established a parcel review process through which parcels will be assessed and, if justified, removed from the Flood Risk Zone shown on the Flood Map. Only a full parcel can be removed from or added to the map, not just a building or structure in the parcel. A parcel owner would undertake the process to remove the parcel from the Flood Risk Zone and be relieved of the associated disclosure requirement. If a parcel is removed from the Flood Risk Zone, it is no longer displayed on the map and the disclosure ordinance would not apply. However, the removal of a parcel from the Flood Risk Zone does not mean the property is no longer at risk of flooding.

Owners of parcels included in the Flood Risk Zone may request a review if one or both of the following parcel review rules and removal criteria apply:

- Parcel ground elevations (not buildings or units) are entirely above the 100-year storm flood elevation.
- Barriers (e.g., walls or solid fences) on the parcel reroute stormwater from the entire parcel so that no part is within the 100-year storm flood extent.

The process for reviewing and removing a parcel from the Flood Risk Zone is as follows:

- The property owner must first submit the [parcel review request](#) form to SFPUC.
- SFPUC staff will then perform a preliminary review and do a site visit to the parcel to determine whether additional data are needed.
- The parcel owner will need to accommodate and assist SFPUC in these review efforts by providing SFPUC with access to the parcel for site inspections and/or surveys.
- Once all necessary site assessments are completed, SFPUC will determine whether one or more of the removal criteria have been satisfied. SFPUC will send the parcel owner a written notice of its parcel determination.
- The map will be updated on an annual basis to incorporate and reflect all property review determinations that have been made.

Who regulates the Flood Map?

SFPUC develops the 100-Year Flood Risk Map. SFPUC's Hydrologic and Hydraulic computer model calculates flood depths and adds them to the ground elevations. Then, the model interpolates the 100-year flood elevations from these data points within the 100-year flood risk zone.

Frequently Asked Questions Continued

How did the SFPUC develop the Flood Map?

- SFPUC staff used a hydrologic and hydraulic computer model to simulate a 100-year storm and the estimated resulting flooding. This sophisticated computer model uses information about the SFPUC's sewer collection system (drains, pipes, pump stations, and other infrastructure), topography, and buildings to map where surface water and/or flooding is expected under various storm scenarios.
- SFPUC staff then drew boundaries around those parcels and properties affected by "deep and contiguous" flooding, which is defined as flooding that is at least 6 inches deep, spanning an area at least the size of half an average city block.
- Finally, SFPUC staff developed flood elevation zones for the parcels within 100-Year Storm Flood Zones.

Where can I find information on the historical shoreline, creeks and waterbodies?

The San Francisco Estuary Institute, <https://www.sfei.org/>, completed a study in 1998 on the historical hydrology of the Bay Area called Hidden Nature. Please visit their project webpage to further explore the ecological history of San Francisco, <https://sites.google.com/sfei.org/hidden-nature-sf>.

If you are interested in accessing the Geographical Information System (GIS) layers, please visit their data library, <https://www.sfei.org/ea-1998#sthash.c3CmNQL0.dpbs>.

Have Additional Questions?

If you have additional questions, please contact us at (415) 554-3289 or rainreadysf@sflower.org.

Si necesita asistencia en español llame al 415-554-3289.

如果您需要中文協助，請致電415-554-3289。

Kung kailangan ninyo ng tulong sa Filipino mangyaring tumawag sa (415) 554-3289.

For additional information and to utilize a searchable version of this map visit: <https://sfpu.org/learning/emergency-preparedness/flood-maps>