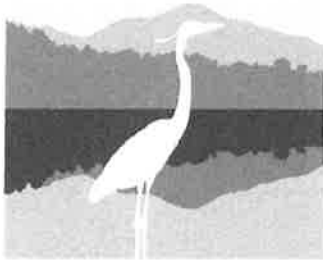


# FLOOD PREVENTION AND PROTECTION

## What Is A Floodplain?



## THE TOWN OF CORTE MADERA

MARIN COUNTY CALIFORNIA

### Corte Madera Flooding?

Corte Madera has experienced extreme flooding in the recent past. The photo below is from an event in 1982 that caused extensive flooding in low-lying areas.



### Your property lies within a floodplain

Based on our records, your property is located within a FEMA-designated Special Flood Hazard Area (SFHA), more commonly referred to as the "floodplain". Corte Madera Municipal Code Chapter 16.10 sets out the requirements for all new construction and renovations to existing structures within the SFHA.

Corte Madera has many low-lying areas that are adjacent to creeks, waterways, or the bay. The portions of these areas that experience flooding during major storm events are considered "floodplains". The floodplains and wetlands around town form a complex and dynamic physical and biological system. They provide fish, wildlife, and plant habitat; facilitate the recharge of groundwater; and provide water quality benefits by acting as natural filters for runoff. The wetlands east of Hwy. 101 help prevent flooding by depressing storm surges and wave run-up, thereby mitigating the impact on our protective levee system. Please do your part to help us protect and maintain these wetland areas as they are vital to both the ecosystem and flood protection within our town

## What Are The Flooding Risks in Corte Madera?

Flooding within the Town of Corte Madera is caused by three sources: extreme high tides, storm water runoff, and inadequate storm drainage infrastructure. Floodwaters can spread over many blocks, reaching depths of up to two or three feet. This can lead to flooding of parked vehicles, garage areas, basements, and lower floors of structures.

The Town has experienced several flood events in the past. The most notable occurred in 1982 and 1998. These events coincided with El Nino years, when long duration storms, coupled with high tides, caused flooding within the lower parts of town. The Madera Gardens, Marina Village and Mariner Cove subdivisions experienced widespread flooding and caused significant damage. As a consequence of these events, Corte Madera passed a Storm Drainage Special Tax in 1998 which

expires in 2018. This is replaced by renewal of the 1/2 cent sales tax at a 3/4 cent rate which will allow the Public Works Department to install and improve many storm water pump stations and storm drain pipelines throughout the Town. This has prevented a recurrence of the flooding that we experienced in those early years. However, the threat of flooding remains.

While your property may not have flooded in the past, FEMA still considers your property at risk if the elevations near your home put you in the floodplain. And even if you have raised your home, your property remains within the floodplain and may require flood insurance (though at a discounted rate). For properties outside the floodplain, intense storms can cause localized flooding.

So no matter where you live, it is important to be prepared and to protect yourself.

## How Can I Find More Information?

Your first step should be to check your level of potential flooding hazard. Flood Insurance Rate Maps (FIRM), which delineate areas subject to "special" flood hazard, are available on-line at the FEMA website. You can also stop by the Public Works Department, and we'll help to determine if your property is within the floodplain. Areas designated as zone "AE" and "VE" are within the Special Flood Hazard Area, and have the potential for flooding during a 100-year storm.

The Public Works Department maintains a selection of informational handouts prepared by FEMA that can answer questions about flood insurance and flood protection.

Residents can also schedule an appointment with a Public Works representative to

discuss flood risks and potential ways to prevent flood damage. We can even come out and visit your property to give site-specific information. Please call the Department at (415) 927-5057.

### Web Resources

Town of Corte Madera

[www.townofcortemadera.com](http://www.townofcortemadera.com)

FEMA FloodSmart

[www.floodsmart.gov](http://www.floodsmart.gov)

Marin County Storm-water Pollution Prevention Program

[www.mcstopp.org](http://www.mcstopp.org)



## What Can I Do To Protect Our Floodplains and Wetlands?

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Because much of the floodplain in Corte Madera has been built out with homes and businesses, it is critical to protect what remains. The Town's efforts to maintain and preserve our floodplains and wetlands depend on your cooperation and assistance. Here is how you can help.

### Drainage Maintenance

- Do not dump or throw anything into ditches, canals or streams. If your property borders a waterway, do not place yard waste or anything else that might end up in the waterway after a storm.
- If your property is next to a ditch or stream, please keep the banks clear of brush and debris. Corte Madera Municipal Code Section 9.33.100 asks property owners to maintain and protect watercourses adjacent to their property
- If you see dumping or debris in ditches or streams, contact the Public Works Department at (415) 927-5057.
- Please be sure to move your car on street sweeping days. The sweeping schedule for your neighborhood can be found at this website: <http://www.millvalleyrefuse.com/street-sweeping/corte%20madera> Street sweeping is also performed before & after storm events.

### Permits Required

- Always check with the Public Works Department before building or grading on your property. A permit is likely required to ensure that projects do not cause problems on other properties.
- If you see construction or grading without a Town permit posted, contact the Building Department at (415) 927-5062.
- Improvements or repairs to any structure within the floodplain requires a **Floodplain Development Permit**. If the value of the proposed work equals or exceeds 50% of the depreciated value of the existing structure, additional requirements will apply to the project (these requirements also apply to the repair of any damage due to a fire or natural disaster). Homeowners might also consider raising the elevation of the structure (above the FEMA base flood elevation) to protect the home and its contents from future flooding.

### How You Can Help

Here are some ways that you can help yourself, your neighborhood, and the Town:

- Adopt a storm drain inlet near your property. Cleaning debris and fallen leaves from the gutter near an inlet will prevent potential blockages.
- Avoid installing driveway ramps across gutters, as this will impede the flow of storm water.
- Call the Town if you see a drainage inlet that is clogged or not functioning.
- Move your car on street sweeping days so that the gutters can be cleared.

## How Can I Stay Safe During a Flood Event?

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- **Be Prepared.** Build an emergency supply kit, have a family emergency plan, and store important objects and papers in a safe place.
- **Do not walk through flowing water.** Drowning is the number one cause of flood deaths, and currents can be deceptive. If you walk in standing water, use a pole or stick to ensure that the ground is still there.
- **Do not drive through a flooded area.** More people drown in their cars than anywhere else. Don't drive around road barriers; the road or bridge may be washed out.
- **Stay away from power lines and electrical wires.** Electrical current can travel through water and lead to electrocution. Report downed power lines to PG&E or the Public Works Department.
- **Turn off your electricity.** Don't use appliances or motors that have gotten wet unless they have been taken apart, cleaned, and dried.
- **Look out for animals, especially snakes.** Small animals that have been flooded out of their homes may seek shelter in yours. Use a pole or stick to poke and turn things over and scare away small animals.
- **Look before you step.** After a flood, the ground and floors are covered with debris including broken bottles and nails. Floors and stairs that have been covered with mud can be very slippery.
- **Be alert for gas leaks.** Use a flashlight to inspect for damage. Don't smoke or use candles unless you know the gas has been turned off and the area has been ventilated.

## How Can I Prevent Flood Damage To My Property?

If you know a flood is coming, you should move valuable contents to higher ground, and consider shutting off the gas and electricity. It is unlikely that you will get much warning, so a detailed checklist prepared in advance would help ensure that you don't forget anything.

To fully prevent flooding of a structure, some form of "flood-proofing" is required. These can include:

- Elevating the structure above flood levels.
- Re-grading of the property to move flood waters away from the

structure, or constructing a small floodwall or earthen berm.

- Waterproof the walls of the structure and place watertight closures at doorways (this method is only recommended for commercial structures, and if water will be less than two feet deep).

More information about these methods is available from the Public Works Department. Please note that any alteration to your building or land requires a permit. Even re-grading or placing fill within your property requires a permit.

### Don't Wait

Waiting for the next flood to buy insurance protection is a bad idea. Typically there is a 30-day waiting period before newly obtained flood coverage takes effect. Contact your insurance agent for more information about rates and coverage, and be sure to mention the Town's NFIP number 065023.

## What About Flood Insurance?

Homeowner's insurance policies do not cover damage from floods. But the National Flood Insurance Program (NFIP) allows the purchase of a separate flood insurance policy. If you don't have flood insurance, talk to your insurance agent, and be sure to reference **NFIP 065023**. This insurance is backed by the Federal government and is available to everyone, even for properties that have been flooded.

Flood insurance is required for properties located in the floodplain, and where the structure has a federally-backed mortgage. The map on the next page shows the flood zones in Corte Madera.

Some people purchase flood insurance because their bank has required it when obtaining a mortgage or home improvement loan. Usually these policies just cover the building's structure and not the contents. Due to the type of flooding that occurs in Corte Madera, there is usually more damage

Flood insurance is mandatory if you live in a high-risk area and have a mortgage from a federally regulated or insured lender.

to furniture and contents than there is to the structure itself. If you have insurance, review the amounts and make sure that your contents are covered.

Preferred Risk Policies (PRP) can be obtained for structures located in the "X" zone. These policies have substantially lower rates, and allow for future "grandfathering" should your flood zone change.

The NFIP is a federal program, and Congress made some changes to the system in 2012 that were later repealed in 2014. This has led to some confusion among lenders, insurance agents, and policy holders. FEMA is your best source for the latest information on changes to the flood insurance system. More information can be found at the NFIP website [www.floodsmart.gov](http://www.floodsmart.gov)

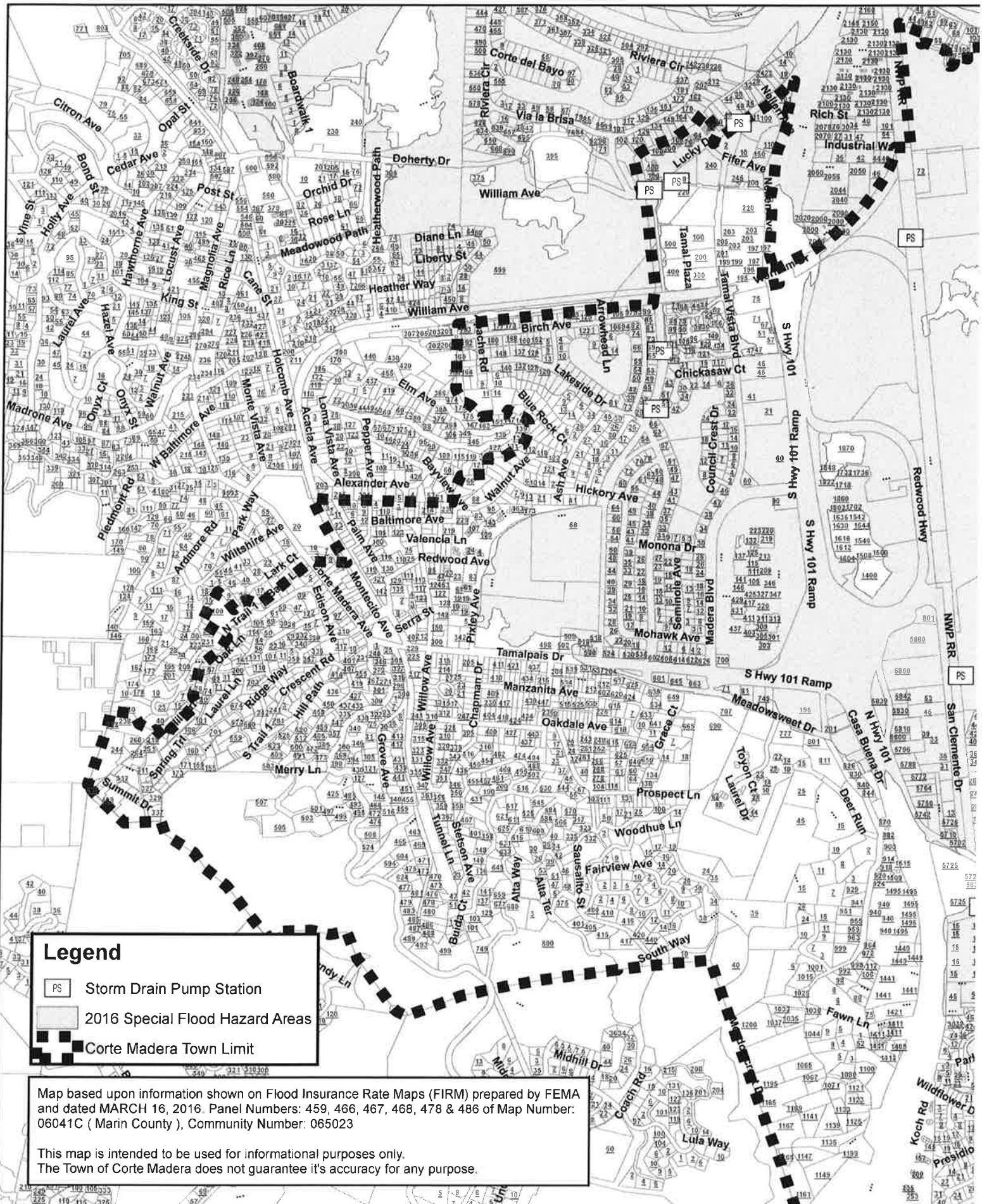
In an effort to reduce flood insurance rates for our residents, the Town of Corte Madera participates in the FEMA Community Rating System (CRS). **The Town has reached a CRS Class 7, which translates to a 15% savings on all flood insurance rates for residents.** Be sure to ask your insurance agent to use our NFIP No. 065023 when renewing or purchasing a flood policy.

### NOTICE TO LENDING INSTITUTIONS AND REAL ESTATE AND INSURANCE AGENTS

The Town of Corte Madera will provide you with the following information upon request:

- The location of a property in relation to the Special Flood Hazard Area (SFHA) as shown on the current Flood Insurance Rate Map (FIRM) of the Town.
- Additional flood insurance data for a site, such as the FIRM zone and the base flood elevation, if shown on the FIRM.
- Handouts on the flood insurance purchase requirement that can help people who need a mortgage or loan for a property in the SFHA.

When making an inquiry, please provide the street address and, if available, the subdivision, lot and block number. Call us at 415-927-5057 or visit the Public Works Department located at 300 Tamalpais Drive. There is no charge for this service. The Public Works Department also maintains records of FEMA Elevation Certificates and LOMCs issued since 1999.

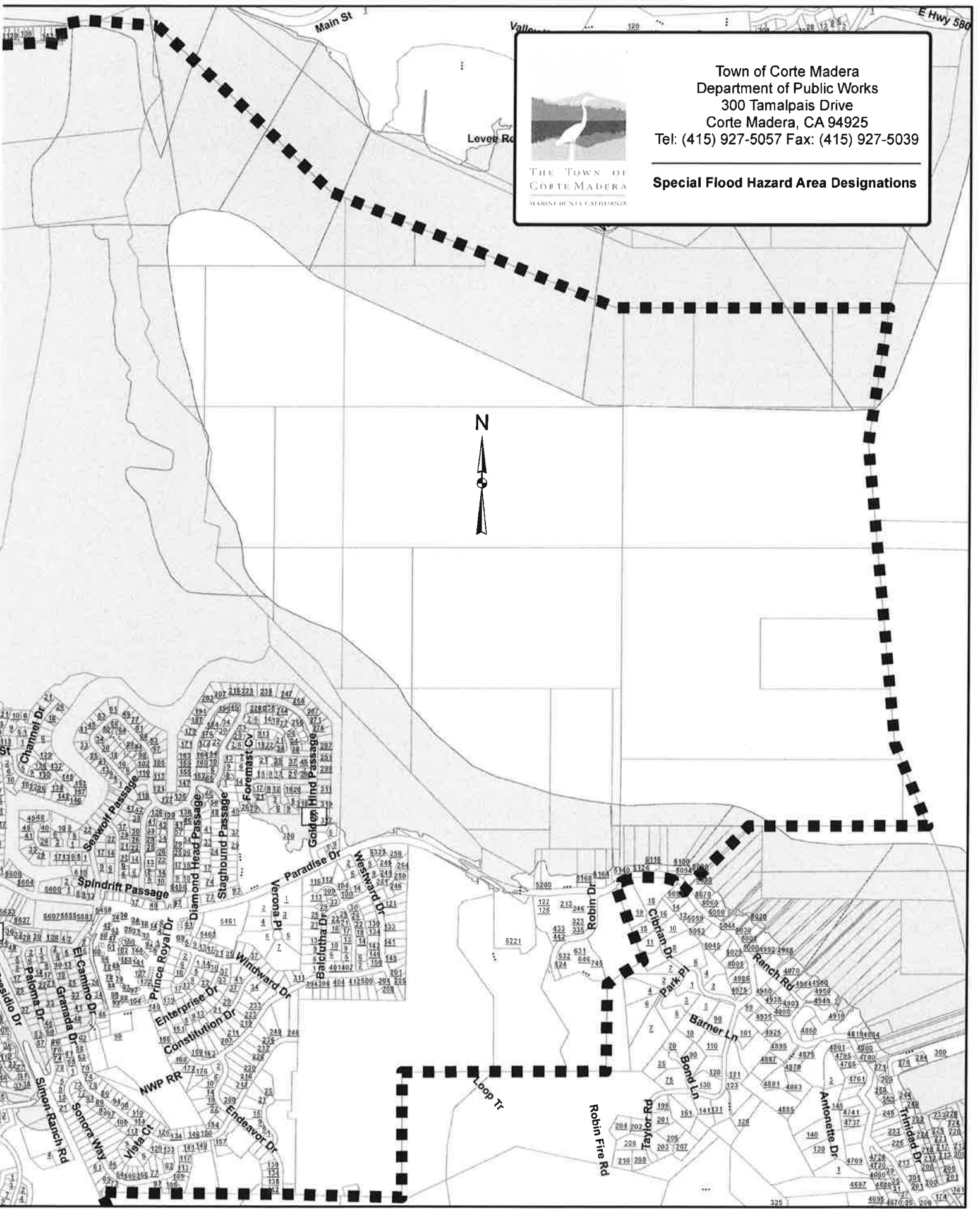


**Legend**

- PS Storm Drain Pump Station
- 2016 Special Flood Hazard Areas
- Corte Madera Town Limit

Map based upon information shown on Flood Insurance Rate Maps (FIRM) prepared by FEMA and dated MARCH 16, 2016. Panel Numbers: 459, 466, 467, 468, 478 & 486 of Map Number: 06041C ( Marin County ), Community Number: 065023

This map is intended to be used for informational purposes only.  
The Town of Corte Madera does not guarantee it's accuracy for any purpose.



THE TOWN OF  
CORTEZ MADERA  
MARINA DEL SUR CALIFORNIA

Town of Cortez Madera  
Department of Public Works  
300 Tamalpais Drive  
Cortez Madera, CA 94925  
Tel: (415) 927-5057 Fax: (415) 927-5039

**Special Flood Hazard Area Designations**

## Did You Know?

All FEMA flood elevations are based on the NAVD 88 datum. This datum conforms to heights shown in typical tide tables (MLLW). So if the FEMA base flood elevation is 10 feet, the tide elevation would also be 10 feet.

Some maps in town use an older elevation datum called NGVD 29. To convert elevations from this old datum to the new one, add 2.69 feet.

## How Can I Get Information During An Emergency?

Flooding is not the only emergency situation that can confront our Town. Fires, earthquakes, landslides, and other natural disasters can affect your home. Residents will be notified of imminent threats to life or safety through the following means:

- Wireless Emergency Alerts (WEA) system
- Emergency Alert System (EAS)
- **AlertMarin** Local Alerting System

Residents who rely on VOIP or mobile phones are urged to sign up for the **AlertMarin** program to ensure they receive local notifications of imminent hazards. Alerts from this system are sent to landline phones, VOIP phones, mobile phones (voice and text), and email addresses. Residents can opt-in to receive these alerts by visiting:

<http://www.AlertMarin.org>

## What Can I Do If My Property Is Located In The Floodplain?

To assist residents with the impacts of the new FIRM, the Town can provide the following services:

- Assist property owners with LOMCs, and suggest possible avenues for minimizing flood insurance costs.
- Assist with "Out-as-Shown" LOMA submissions for parcels where the structure is only partially within the SFHA.
- Assist in the preparation of "Elevation Certificates" which can be used to lower flood insurance premiums.
- Assist with PRP (Preferred Risk Policy) requests to insurance providers.

Elevation Certificates in particular can be an important tool in evaluating the risk at your property in

regards to the Base Flood Elevation (BFE). An Elevation Certificate is prepared by a licensed Land Surveyor, and documents the critical elevations on your property that determine the flood insurance requirements and rates.

Knowing your building's elevation compared to the estimated height floodwaters will reach in a major flood helps to determine your flood risk and the cost of your flood insurance. An Elevation Certificate also documents the elevation of your building for the Town when evaluating future building permits.

More than 20 percent of flood insurance claims come from people outside of mapped high-risk flood areas.

## How Does San Francisco Bay Influence Coastal Flooding?

There are several types of flooding in our community that can be directly influenced by conditions within the San Francisco Bay

- **King Tides:** King tides are abnormally high predictable astronomical tides that occur approximately twice per year within San Francisco Bay. King Tides are the highest tides that occur each year and typically exceed 7 feet Mean Lower Low Water (MLLW).
- **Extreme High Tides:** When Pacific Ocean storms coincide with high tides, storm surge due to meteorological effects can further elevate San Francisco Bay water levels to produce extreme high tides.
- **El Niño:** During El Niño winters, atmospheric and oceanographic conditions in the Pacific Ocean produce severe winter storms that impact the San

Francisco Bay region. Pacific Ocean storms follow a more southerly route and bring intense rainfall and storm conditions to the Bay area. Tides are elevated by approximately 0.5 to 1.0 feet above normal along the coast and wind can elevate water levels even further locally

- **Wind Wave Events:** Strong winds due to Pacific Ocean storms or strong thermal gradients produce strong winds that blow across the Bay. When the wind blows over long reaches of open water large waves can be generated that impact the shoreline and cause damage.

These influences are of primary concern to the San Francisco Bay Area Coastal Study. The new data, and the maps generated by this data, will account for all of these potential impacts on our community.

## What Are My Options To Appeal A SFHA Determination?

Any property with a federally-backed loan or mortgage is required to carry flood insurance if that property is located within a Special Flood Hazard Area (SFHA). Determining if your property is within the SFHA is usually left to the lender providing the loan or mortgage. According to FEMA, the Lowest Adjacent Grade (LAG) determines whether a structure is located within the SFHA.

If you would like to dispute the finding of this determination, there are several avenues open to you:

- Letter of Determination Review (LODR): Request FEMA to review and verify that your structure's location on the FIRM, as determined by your lender, was correctly identified.
- Letter of Map Amendment (LOMA): Submit to

FEMA an Elevation Certificate and application showing that the Lowest Adjacent Grade for your structure is at or above the base flood elevation.

- Out-As-Shown LOMA: Submit a figure and application to FEMA that clearly shows the entire structure located outside the flood zone boundary.
- Letter of Map Change - fill (LOMR-F): Submit an application and Elevation Certificate to FEMA that shows the use of fill to raise the ground level of a property.

The Public Works Department can offer advice about which of these procedures might be of most help. Please note that Elevation Certificates require the services of a licensed land surveyor.

## How Has The Town Prepared For Flood Events?

The Town uses funds from the Measure F sales tax augmentation to provide improvements to the flood control infrastructure. The Flood Control Board, consisting of appointed members from the public, make recommendations on key projects to pursue and coordinate with staff on the management of our flood control systems. Some recent projects completed using these tax funds are:

- Harbor and Echo Storm Drain Improvements: install grated curb drains and other storm drain improvements at specific locations.
- San Clemente Pump Station Repair: repair and servicing for one of the three pumps at this station.
- Marina Village Pump Station Outfall Gate Screen Repair: replacement of outfall gate screens at this pump station.

Several projects are in the design stage, and will be implemented in the near future using Measure F funds. These projects include:

- Marina Village Levee Enhancement: repair and enhance the existing earthen levee separating Marina Village from the Corte Madera Marsh.
- Coordination with state and local communities and agencies to identify and mitigate potential risks from sea level rise.
- Shorebird Marsh Pump Station Improvements: replace the grates, grate frame, and pump enclosure

In addition, the Town has a flood control maintenance budget that funds all repairs, maintenance, and cleaning activities for the existing storm drain infrastructure. Typical work includes:

- Operating and maintaining pump stations
- Cleaning catch basins and outfalls
- Repairing storm drain pipes and culverts
- Maintaining lagoons and canals

### Flood Board

The Town of Corte Madera created the Flood Control Board in the wake of a devastating flood that occurred in 1998. The Flood Board consists of seven members of the public appointed by the Town Council, and members serve a two year term. The board advises the Town Council on matters concerning flooding in Corte Madera and ways to provide flood protection for the Town. Public meetings are held in the Council Chamber on the second Monday of each month, and agendas are posted prior to meetings.





THE TOWN OF  
CORTE MADERA  

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MARIN COUNTY CALIFORNIA

300 Tamalpais Drive  
Corte Madera, CA 94925

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## Corte Madera - Flood Protection and Prevention

- Know the Flooding Risks in Corte Madera
- Understand Floodplains and Flood Hazard Maps
- Learn How to Obtain Flood Insurance
- Help Protect Your Property from Flooding
- Keep Up on Flood Control Projects within the Town



**FloodSmart.gov**  
The Official site of the NFIP