

## Things to remember:

Measure the distance from ground to HWM line.

- Unit of measurement: feet, inches
  - Ex: 2' 6"
  - *Note: Do not use percentages, i.e. 2.5'*

Take a photo of the HWM with the FEMA app.

- Use a white board or write on a piece of paper "HWM <feet, inches>"
  - Ex: HWM 2'6"
- Include the white board/paper in the photograph.
- Include a mark as to where the HWM is located. Typically, the HWM photographs include something pointing to the HWM (e.g. flag, ruler, or hand pointing to the HWM).

Enter the following information in the text description for the photo:

- "CAP PHOTO, HWM <feet, inches>"
  - Ex: CAP PHOTO, HWM 2'6"
- quality and type of HWM (i.e., seed, mud, debris, etc.)



## Safety first!

Under no circumstances are Civil Air Patrol members to put themselves in harm's way in order to locate or record HWMs.

### Members under the age of 18:

FEMA prohibits submission of photos/text descriptions by anyone under the age of 18. However, your assistance with locating, measuring, and marking high water marks and water wreck lines is essential to the mission. If you find an HWM, have someone 18 or older take the photo – this person does not have to be a member of Civil Air Patrol!



*Photos courtesy of Civil Air Patrol and FEMA.*

*For more information, contact your local Squadron Commander or Public Affairs Officer.*

# CAP and the FEMA App

[Quick Start Guide](#)

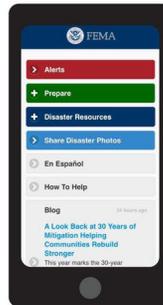


## Mission: Assist FEMA with post-flooding data collection



### Step 1: Download the app.

The app can be downloaded from the Apple App Store for iPhone, Google Play for Android, or directly from [fema.gov/mobile-app](http://fema.gov/mobile-app).



- ⚡ Receive **real-time alerts** from the National Weather Service for up to five locations nationwide.
- ✓ Learn **emergency safety tips** for over 20 types of disasters, including earthquakes, fires, hurricanes, tornadoes and more.
- ✚ Locate open **emergency shelters** in your area and find **disaster recovery centers** where you can talk to FEMA in person.
- ↔ Toggle between **English** and **Spanish**.

## High Water Marks (HWMs)

Gathering photographic evidence of High Water Marks helps FEMA to establish the extent of flood or flash-flood impacts.

High Water Marks (HWMs) are physical marks resulting from floods and flash-floods that designate the location and elevation of flood water from a storm event.

They can be used to create flood depth grids, and they are commonly used as validation and calibration points within a hydraulic engineering model.

### Step 2: Ensure GPS is functional on your smartphone.

The data you collect is automatically tagged with GPS coordinates.

### Step 3: Gather your supplies.

- 6 ft+ measuring tape
- small white board/paper and marker
- flagging/marking tape and tacks/staple gun

### Step 4: Collect data.

Use the “SHARE DISASTER PHOTOS” feature in the app to upload photos.

## Types of HWMs

**Mud or silt lines** – line of sediment that are suspended in the water and left on trees, structures, streambanks, or buildings

**Debris lines** - lines or piles of debris such as leaves and sticks that are left on land

**Debris snags** - debris left in trees or shrubs

**Wash lines** - lines where soil has been washed away from banks that are bare of vegetation, typically in arid regions

**Eroded banks** - where the top of the erosion area approximates the highest water level

**Seed lines** - lines of seeds, fibers, and other minuscule debris that were floating on the water and subsequently left on trees or structures

