



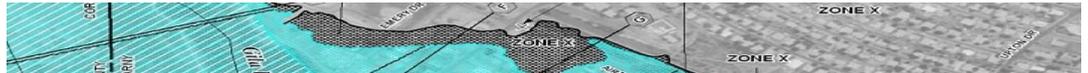
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### Your Property May Be In or Near a Special Flood Hazard Area (SFHA)

This newsletter is sent annually to residents who own structures that are in or near areas subject to flooding as identified by the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps. FEMA defines special flood hazard areas as land areas ("the floodplain") that have a one percent (1%) annual chance of being inundated by floodwaters.

Knowing your flood risk is the first step to being prepared when future floods occur. The Pinal County Flood Control District invites you to learn more about these maps and your specific risk of flooding by contacting us at 520-866-6411 or by filling out a flood information request form online at: <http://pinalcountyaz.gov/Departments/PublicWorks/FloodControlDistrict/Pages/FloodInfoRequest.aspx>. If you have Google Earth installed on your computer, you can easily download the map information by going to FEMA's Mapping Information Platform at: <https://hazards.fema.gov/femaportal/wps/portal/NFHLWMSkmzdownload>



### Floodplains Explained

One way to define such floods is by their likelihood, or probability, of happening each year. For example, a person living on the edge of the 100-year floodplain has a one percent (1%) chance of flooding every year. The risk for flooding increases as he or she moves closer to the stream centerline and deeper into the 100-year floodplain. Over a 30 year period, a 100-year flood has a 26% chance of occurring. A 500-year flood has a 0.2 percent chance of happening every year.

#### Terminology

**Ephemeral Stream** - A stream that flows only briefly during and following a period of rainfall in the immediate locality.

**Watershed** - The area of land that includes a particular stream and all the rivers, streams, etc., that flow into

### Are You Ready for Monsoon Season?

Flooding may occur at any time, with little or no warning. Monsoon season is especially boisterous though significant storms and floods have occurred in other times of the year. In Arizona, monsoon season runs from June 15th through September 30th. This period of time is ripe for sudden thunderstorms, dust storms, and significant flash flooding.

Preparing for monsoon season is something that everyone should participate in. Preparedness begins with planning ahead. During the monsoon season be sure to watch the current weather forecasts and plan your daily activities accordingly. It also pays to make notes of where the known flash flood areas are so that you will be prepared to change your route or delay an outing if needed. For more information on Monsoon Safety, please visit <http://www.monsoonsafety.org/>

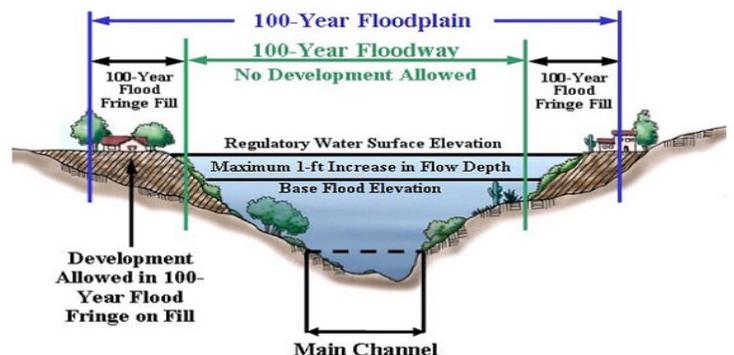
Every family should also prepare a family disaster supply kit in the event of severe weather conditions. The disaster supply kit should contain essential items such as non-perishable food, water, a basic first-aid kit and clothing, to sustain a family for up to three days since electric power, gas and water services may be interrupted.



Dust Storm Near Casa Grande, Pinal County

For more information on what should be in your disaster supply kit, visit FEMA's website at: <http://www.ready.gov/basic-disaster-supplies-kit>

It is important to note that floodplains, as defined on FEMA's Flood Insurance Rate Maps, show flooding from the 100-year and sometimes the 500-year floods when caused by significant rainfall in the watershed. The maps do not take into account flooding from local sources such as roadside ditches or storm sewers. In addition to this, FEMA's maps do not show areas susceptible to flooding from more frequent storm events, such as one caused by small local storms.



## Floods Happen In Pinal County

Pinal County is no stranger to rain and floods. Our climate and unique landscape makes us susceptible to both, especially when we least expect it. In fact, in some areas of the county in 1983, floods resulting from Tropical Storm Octave measured far beyond the estimated 100-year flood. This storm was particularly significant in that it caused more than \$45 million dollars in damage (U.S. Army Corps of Engineers, 1994). Significant floods have also occurred in Pinal County in 1993, 2004, 2012, 2014, and even as recently as 2016.



*Flooding within the City of Maricopa, October, 1983. Today, the City of Maricopa is home to nearly 45,000 residents. Today, much of the City remains within the Special Flood Hazard area.*



*Eastern Pinal County, August 2014*

Even small storms can produce flooding that endangers people, property, and structures. In 2014, County staff conducted over 150 site visits to residences and businesses to investigate flooding and issues with drainage. Just over 20% of the properties visited had experienced flooding within or adjacent to a structure which ultimately required significant clean up or repair. Of those who experienced flooding within their homes, only three of the structures were actually shown to be in a Special Flood Hazard Area according to FEMA's maps.

In January 2016, Pinal County crews had to shut down a portion of Hunt Highway in San Tan Valley due to flooding. This location had been closed in previous storm events in 2012, 2014, and 2015 as well.

Arizona City is one area when floods have occurred more frequently in recent years. Arizona City is located within the area historically known as the Santa Cruz Flats. Records from the Federal Emergency Management Agency (FEMA), the National Oceanic and Atmospheric Administration (NOAA), The U.S. Army Corps of Engineers (USACE), and various other media sources indicate that significant flooding has occurred in this area at least 24 times since 1887. Due to the incidents of flooding, Pinal County recently completed the construction of a 40 acre detention basin downstream of the community and has plans to construct more improvements on the upstream side in the future.



*Arizona City, July 2014*

## Insure Your Property Against Flooding

One of the easiest ways to financially protect yourself from a flood is to get flood insurance (don't forget contents coverage either). Flood insurance is also available to people renting homes located within the floodplain. And remember, most



homeowner's insurance policies don't cover any damages resulting from a flood. Government grants to help recover from a flood are not always available, and if they are it's usually in the form of a loan that you must repay. Only flood insurance will cover the cost of recovering after a flooding disaster.

Flood Insurance is sold through the National Flood Insurance Program and can be obtained from most insurance companies. Contact your insurance agent today or visit: <http://www.floodsmart.gov/> for more information.

## Build Responsibly: Floodplain Development and Permit Requirements

The Pinal County Flood Control District strives to ensure safe building in flood hazard areas. By following some simple guidelines and respecting our environment and the property rights of others, we can build homes and structures that survive the rain storms while reducing our susceptibility to flooding. Our goal is to minimize the loss of life and property from flooding by regulating floodplain development and adhering to the provisions of the law. This is why development within a floodplain requires a Floodplain Use permit. Here are some useful tips if you are considering a construction project in the floodplain:

- Before investing money in plans or building materials, contact us at 520-866-6411 or [floodcontrol@pinalcountyaz.gov](mailto:floodcontrol@pinalcountyaz.gov) and find out what conditions may need to be met for your specific project.
- New structures must be elevated to at least one foot above the floodplain elevation at the location of your proposed building. The floodplain elevation is also referred to as the "base flood elevation" and is sometimes shown on the Flood Insurance Rate Maps. Depending on your location within the floodplain, the floodplain elevation could be anywhere from a few inches to several feet deep.
- An addition or improvement to an existing building that is located in a floodplain may be allowed if the cost of the improvements are less than 50% of the market value of the existing building, not including the value of the land. It may also be allowed if you can show that the current structure already meets Pinal County's floodplain regulations.

For more information on applying for a floodplain use permit, visit our website at: <http://pinalcountyaz.gov/Departments/PublicWorks/FloodControlDistrict/Floodplain/Pages/Apply.aspx>

## Changes to the National Flood Insurance Program

In recent years Congress has been busy modernizing the National Flood Insurance Program in an effort to make the program fiscally sound. There are several changes that have already been made that homeowners should be aware of.

For older buildings that were constructed prior to existence of the first Flood Insurance Rate Map for the area (called pre-FIRM buildings), annual rate increases will be placed on the insurance policies until those rates reflect the full-risk rate. Primary residences could see

### Definitions

**Subsidized Rates:** Insurance rates for Pre-FIRM and grandfathered buildings

**Full-risk Rates:** Rates for buildings that are elevation-rated and reflect the true flood risk

**Non-primary Residence:** A building that will be lived in for less than 50% of the policy year by the policy holder.

increase of 15-18% per year while non-primary residences will see increases of up to 25% per year. Full-risk rates are reached when the insurance premium paid reflects those based on an elevation certificate. Speak with your insurance agent to get details on how much your premiums will increase by and when your rates will reflect the true flood risk.

In addition to rate increases for pre-FIRM buildings, annual surcharges have been added to all flood insurance policies. For primary residences the surcharge is \$25 per year. For all other buildings (non-primary and businesses) the surcharge is \$250 annually. For more information on recent changes to the National Flood Insurance Program, visit FEMA's website at: <https://www.fema.gov/flood-insurance-reform>

## Septic Systems and Floodplains

Did you know that septic systems located within flood prone areas can cease to function during and after a flood? When a drain field has been super-saturated by rain or by rising flood waters, soil infiltration rates may be significantly reduced. Tanks that aren't properly sealed may also be infiltrated by runoff that can cause clogging of the leach lines. In either case, the first indication that there is a problem is usually that toilets no longer flush properly. Raw sewage may also back up into shower and bath drains first since they are usually located at the lowest points in the building. Here are some common steps you can take to reduce or eliminate problems associated with a flooded septic system:

- Install a backflow preventer on the pipes leading to the septic tank so sewage cannot backup into your home during a flood.
- Seal all access holes and clean-outs which could allow floodwaters to enter the tank.
- Construct a small mound of soil above the leach field to direct rainwater and surface runoff away from the area.

For more information about this topic, check out the Environmental Protection Agency's Website at: <https://www.epa.gov/ground-water-and-drinking-water/septic-systems-what-do-after-flood>

## Flood and Storm Warning

Pinal County depends on the National Weather Service (NWS) for flood warning and other weather related warnings/notifications. If flooding or a storm is anticipated, the flood warning will be broadcast through television, radio and internet services. Residents should tune to their local stations to listen for advisories, watches, and warnings. You can also subscribe to email or SMS weather alert service in order to receive local information about inclement weather. The NWS has a great webpage listing several free subscription services. Visit their page at: <http://www.weather.gov/subscribe>

Pinal County maintains a network of stream, precipitation, and weather stations which are used by the National Weather Service (NWS) to increase the accuracy of their weather forecasts and predictions. The stream gauges are used in conjunction with other data, such as RADAR estimated rainfall, to help the weather service issue accurate flood warnings to residents. Pinal County's stream and precipitation data can be viewed live at our new Automated Local Evaluation in Real-Time (ALERT) viewer: [http://app1.pinalcountyyaz.gov/alert\\_viewer/alert\\_viewer.html](http://app1.pinalcountyyaz.gov/alert_viewer/alert_viewer.html)

<b>WARNING</b> A warning is issued when a hazardous weather or hydrologic event is <b>occurring, imminent or likely</b> . A warning means weather conditions pose a threat to life or property. People in the path of the storm need to <b>take protective action</b> .
<b>WATCH</b> A watch is used when the <b>risk of a hazardous weather or hydrologic event has increased significantly</b> , but its occurrence, location or timing is <b>still uncertain</b> . A watch means that hazardous weather is possible. People should <b>have a plan of action</b> in case a storm threatens and they should listen for later information and possible warnings especially when planning travel or outdoor activities
<b>ADVISORY</b> An advisory is issued when a hazardous weather or hydrologic event is <b>occurring, imminent or likely</b> . Advisories are for <b>less serious conditions than warnings</b> , that cause significant inconvenience and if caution is not exercised, could lead to situations that may threaten life or property.
<b>OUTLOOK</b> An outlook is issued when a hazardous weather or hydrologic event is <b>possible</b> in the next week. Outlooks are intended to <b>raise awareness</b> of the potential for significant weather that could lead to situations that may threaten life or property.

## Flood Safety: Don't Cross Flooded Roadways

We're sure you've heard the phrase "Turn around. Don't Drown" before and, in Pinal County, this couldn't be more applicable. Did you know that eighteen percent of flood fatalities in the US in 2012 occurred when people walked into flooded areas? Forty percent of flood related deaths occurred when people drove their vehicles into flooded streets.

The danger is not always obvious, but the risk of crossing a flooded roadway is clear. It only takes six inches of flowing water to knock over an adult and cause the loss of control of a vehicle. A foot of water can cause many vehicles to float and only two feet of water can carry a vehicle away.



*Pinal County, 2008*

## Manufactured Homes in Floodplains

One of the most common floodplain use permit that Pinal County issues is for the installation of new or replacement manufactured homes. There are many requirements for manufactured home installations and the permitting process typically involves the Pinal County Building & Safety Department, the Pinal County Flood Control District, and the Arizona State Office of Manufactured Housing. Installers and/or property owners will need permits from all three of these agencies to successfully place a new or replacement manufactured home. In addition to this, many installations will require that the foundation be designed by a registered professional engineer to meet the requirements of the Pinal County Floodplain Ordinance as well as state law. Some typical requirements for a manufactured home installations include, but may not be limited to:



- Elevating the home such the bottom of the lowest horizontal structural member (bottom of the frame) is at least one foot higher than the base flood elevation
- Elevating the air conditioning unit (and other attached utilities) such that it is located at least one foot higher than the base flood elevation
- The home should be oriented parallel to the direction of the flood flow
- Homes should meet the minimum erosion hazard setback from the wash/channel. Typically this is set at fifty feet however; it may be possible to reduce the setback with an engineer's analysis
- Skirting needs to be break-away (non-structural) or have the flood venting installed at a rate of one square inch of net opening for every square foot of enclosed space. The bottom of the flood vents can be no higher than one foot above the adjacent grade.
- Be careful of inadvertently creating a basement under your home. FEMA considers a basement to be anything that is subgrade on all four sides. If the crawlspace is below the exterior grade of the home it may be considered a basement which can result in significantly higher flood insurance premiums. If the foundation plans show that a basement is being proposed, they will be returned for correction.
- Provide a pre-construction and post-construction elevation certificate prepared and sealed by a registered land surveyor or registered professional engineer

For more information on Manufactured Home installations in floodplains or about the permitting process, visit Pinal County's webpage at: <http://www.pinalcountyz.gov/PublicWorks/FloodControl/Pages/FloodplainPermit.aspx>

## Grandfathered Flood Insurance Explained

Think you might be paying too much for Flood Insurance? FEMA has three ways to obtain reduced (subsidized) flood insurance. Speak with your insurance agent to see if you are eligible for one of these three options:

### Continuous Coverage Provision

When a flood insurance policy is obtained before the effective date of a new Flood Insurance Rate Map (FIRM), the prior flood zone and base flood elevation can be used for rating as long as continuous coverage is maintained. Residents who currently have a preferred risk policy (PRP) will be eligible for a standard zone X flood insurance policy (sometimes called standard grandfathered policy) if the Flood Insurance Rate Maps change and they are placed into a higher risk zone. The standard zone X flood insurance policy can be half the cost of a normal policy for someone who builds in a floodplain. These lower rates will be locked in until the insurance policy is canceled or the home is substantially damaged or improved.

### Built in Compliance Provision

In many cases, a property owner can also get the grandfathered insurance rates anytime; even several years after the new maps become effective. The property owner will need to show that the structure was built in compliance with the Flood Insurance Rate Map (FIRM) in effect at the time of its construction. However, this *does not* apply to pre-FIRM homes. In most of Pinal County, homes built before August 15<sup>th</sup>, 1983 are considered pre-FIRM and by definition were not built in compliance with a Flood Insurance Rate Map. To lock into a standard X rate pre-FIRM homes should get coverage before new maps become effective to utilize the continuous coverage provision for grandfathering.

### Newly Mapped Into the SFHA Provision

When newly mapped into a Special Flood Hazard Area (SFHA), the home owner has a year after the map's effective date to purchase flood insurance at the rates available from the previous map. However, premiums may increase up to 18 percent each year until it reaches the full actuarial rate for the flood zone they have been mapped into. If a house is pre-FIRM, the homeowner can still take advantage of the newly mapped program after the maps have become effective during that first year. Homeowners should speak with their insurance agents about their current and future flood insurance premiums to ensure that they are getting the best possible rate.



City of Maricopa, 2002

For more information on grandfathered flood insurance, check out FEMA's fact sheet at: <https://www.fema.gov/media-library/assets/documents/16686>

For more information on the Newly Mapped in the SFHA provision, check out FEMA's fact sheet at: <https://www.fema.gov/media-library/assets/documents/104200>

## Protecting Your Property from Flood Hazards

After learning about your flood risk and obtaining flood insurance, there are several ways that you can protect your property from flooding. The Pinal County Flood Control District recommends the following tips:

- Although not always practical, consider raising the existing buildings above the anticipated or predicted one hundred year flood depth at the property. Elevating structures is the best way to prevent flooding.
- Obtain a floodplain use permit to re-grade your lot to help drain runoff away from the buildings. This works best on large lots, if flood waters aren't too deep and if the changes will not affect other properties. In many cases the services of a Registered Professional Engineer may be needed in order to ensure that the grading work will function as intended.
- Keep natural watercourses clear. Don't dump trash, fill material, or excess vegetation in the watercourse. Not only is this illegal, it also increases your risk of flooding. Materials dumped in washes can constrict flows raising flood heights and increasing flood velocities. Loose debris can also be washed downstream where it can block culverts and cause damage to public infrastructure.
- Consider flood proofing your structures. Waterproof your walls and install watertight enclosures over entry ways. In anticipating of flooding, you can even install temporary doorway gaskets or shields to prevent the passage of water into your home. This method is not recommended for houses with basements or if flood waters will exceed two feet in depth.
- Locate electrical panel boxes, air conditioning units, furnaces, water heaters, and appliances such as washers/dryers in areas that are less likely to flood. Some of these items can be easily elevated on a raised platform to protect them from flooding.



*Eloy, Pinal County*



*Elevated Air Conditioner  
Eloy, Pinal County*

For more information about protecting your property from flood hazards, visit FEMA's website at: <http://www.ready.gov/floods> or see *FEMA Publication P-312, Homeowners Guide to Retrofitting—Six Ways to Protect Your House from Flooding*—<http://www.fema.gov/media-library/assets/documents/480>.

**Concerned About Flooding on Your Property?** The Pinal County Flood Control District currently has four Certified Floodplain Managers (CFM®) on staff with a combined total of 30 years of experience in the floodplain management field ready to assist you. We can answer questions, provide building advice, and perform field inspections to investigate flooding problem areas.

## Protecting Natural Floodplains



*McClellan Wash, Pinal County*

Floodplains are a natural part of the ecosystem and serve many functions. In addition to providing a habitat to many of Pinal County's native plant and animal species, floodplains also have direct benefits to humans. The vegetation often found in floodplains can act as a natural means

of erosion control holding the soil in place and stabilizing the topography of the land. Natural floodplains also absorb more flood water than barren land does thus reducing the impact to downstream property. So, how can you do your part to help protect and preserve Pinal County's Natural floodplains? Here are some tips:

- Use low impact building techniques that avoid the destruction of natural lands.
- Consider building outside of the floodplain.
- Manage your storm water to prevent oils and chemicals from entering the floodplain.
- Keep natural watercourses clear of trash and litter. Don't dump within a floodplain.
- Protect existing native vegetation to enhance the natural function of the floodplain.

For more information on the natural and beneficial functions of floodplains, here is a link to an article prepared by the Association of State Floodplain Managers (ASFPM): [http://www.floods.org/PDF/WhitePaper/ASFPM\\_NBF](http://www.floods.org/PDF/WhitePaper/ASFPM_NBF)

## Contact Information

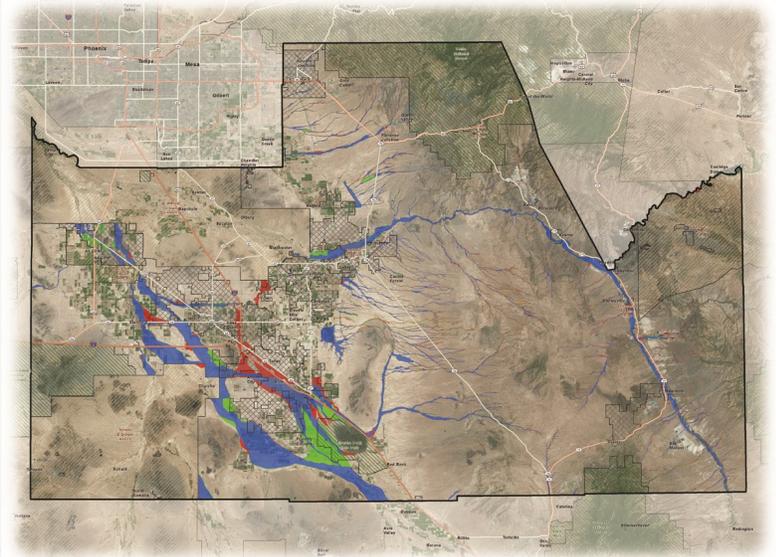
Pinal County Flood Control District  
31 North Pinal Street, Building F  
PO Box 727  
Florence, AZ 85132

Phone: 520-866-6411  
Contact Center: 520-509-3555  
Toll-Free: 888-431-1311  
Fax: 520-866-6511  
Email: [FloodControl@pinalcountyaz.gov](mailto:FloodControl@pinalcountyaz.gov)

Web: [www.pinalcountyaz.gov](http://www.pinalcountyaz.gov)

## Floodplain Facts and Figures

- Flooding is the most common and widespread natural disaster occurring in all 50 states. In the past 5 years alone, all 50 states have experienced flooding.
- 90% of all presidential-declared U.S. natural disasters involve flooding.
- A home that is located in a one hundred year floodplain has a 26% chance of being flooded during a 30 year mortgage.
- 25% of all flood insurance claims are for properties not located in a Special Flood Hazard Area as shown on the FEMA Flood Insurance Rate Maps.
- Arizona has had over 3,940 flood losses totaling over \$33.2 million in insurance claims since 1978.
- In the United States, floods kill approximately 140 people each year and cause more than \$6 billion in property damage annually.
- As of May 1st, 2015 Pinal County is a participant in the Community Rating System. This means that residents living in the unincorporated areas of Pinal County can receive discounts on their flood insurance policy.
- If you live below a dam or near a levee, you should consider purchasing flood insurance. These manmade structures are no match for Mother Nature. There are more than 25 such structures in and upstream of Pinal County.



Pinal County Flood Control District  
 PO Box 727  
 Florence, AZ 85132

PINAL COUNTY  
 wide open opportunity

Property Owner Name 1  
 Property Owner Name 2  
 Address 1  
 Address 2

Para ver este Boletín en Español, visite la pagina web

<http://www.pinalcountyz.gov/PublicWorks/FloodControl/Pages/home.aspx>