



MEMORANDUM

Date: June 30, 2020

To: The Honorable Chairman and Members
Pima County Board of Supervisors

From: C.H. Huckelberry
County Administrator 

Re: **Bighorn Fire and Flash Flood Preparedness**

Attached is a June 30, 2020 memorandum and supporting materials from the Pima County Regional Flood Control District (RFCD) Director regarding post Big Horn Fire - monsoon flash flood preparedness. The memorandum advises of increased flood risk along tributaries or washes that drain from the Bighorn Fire areas, including the Cañada del Oro Watershed and generally all streams and watersheds on the front face of the Catalina Foothills.

We have advised over 400 individuals of potential flash flooding impacts. They should review their flood insurance policy, develop an emergency response plan and register for the MyAlerts system.

The RFCD, in cooperation with the US Forest Service, will be conducting a watershed assessment and burn damage evaluations to determine increased flood potential of each watershed affected by the Bighorn Fire.

Please review the attached document regarding flood prevention and actions that individuals can take to protect their property that may be at an increased flood risk due to the Bighorn Fire.

CHH/anc

Attachment

c: Carmine DeBonis, Jr., Deputy County Administrator for Public Works
John Voorhees, Assistant County Administrator
Suzanne Shields, Director, Regional Flood Control District
Jeff Guthrie, Director, Office of Emergency Management

DATE: June 30, 2020



TO: C. H. Huckelberry
County Administrator

FROM: Suzanne Shields, P.E.
Director

SUBJECT: Post Big Horn Fire – Monsoon Flash Flood Preparedness Update

On June 15th, I sent you a memorandum outlining a plan to assess the impact of the Bighorn Fire on the Santa Catalina watersheds and potential impacts to downstream areas in Catalina, Town of Oro Valley and watercourses in the Catalina Foothills. This memorandum has been prepared to provide updated information on planning and activities of the Pima County Regional Flood Control District (District) and partners to prepare for potential flash flooding during summer monsoons.

Fire Impacts

As of June 29, 2020, the Bighorn Fire burn footprint is 107,099 acres (see attached map showing the June 29th Bighorn Fire extent and relationship to the Aspen Fire and Bullock Fire). The fire is 45% contained and is still burning along the eastern and southeastern flanks of the Santa Catalina Mountains.

While the full extent of the fire and impacts to the eastern watersheds is not yet known, the areas of known concern for potential increased flooding risk are:

1. The upper Cañada del Oro Watershed including Golder Wash, Steam Pump and Rooney washes for the Catalina community and Town of Oro Valley;
2. Catalina Foothills area from First Avenue to Alvernon Way including Pima, Geronimo, Pontatoc and Finger Rock washes; and
3. Catalina Foothills from Alvernon Way to Kolb Road including Valley View, Ventana Canyon and Esperero washes.

Most of the identified areas are canyon washes and contain few structures. We have reviewed the geologic floodplains and sent out letters to impacted residents providing information on flood insurance, notification from MyAlerts, location of sand bags, and guidance for creation of Emergency Response Plans (see example letters and information). The primary outreach focus has been to property owners with structures likely to be impacted by flooding. Improvements on many impacted properties are well above the floodplain. Thus far, over 400 outreach packets have been mailed.

Maintenance supervisors have inspected publicly maintained washes, channels and culverts to look for any obstructions from vegetation or sediment, and to take immediate corrective action as necessary. Most of the drainage infrastructure including Steam Pump Wash and Rooney Wash had been maintained as part of the spring Pre-Monsoon Maintenance Program. This summer, after each storm, re-inspection and maintenance of drainage facilities will be conducted to control buildup of sediment and debris and control erosion. In addition, District staff are currently looking for private infrastructure that may be impacted and/or need maintenance to prepare for expected flooding.

Outreach letters will be sent to respective HOAs to encourage immediate inspection and maintenance of their private infrastructure.

C. H. Huckelberry, County Administrator

Post Big Horn Fire – Monsoon Flash Flood Preparedness Update

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Evaluating Watersheds and Upgrading ALERT Capabilities

At this point, we are particularly concerned about the potential for flooding and debris flows south of the burned areas along the Catalina Foothills, especially in Pima Canyon, Pontatoc Canyon and Finger Rock Canyon. These canyons are within the Pusch Ridge Wilderness Area and where the County doesn't have any rain or stream flow gages.

Working with the Arizona Geological Survey (AGS) and United States Geological Survey (USGS), we are working to upgrade our emergency flood warning capabilities. Last week the District, in collaboration with the AGS and the USGS, submitted applications for work in the Coronado National Forest relating to post-fire flood monitoring.

The District will be installing two new real-time ALERT rain gages and the AGS will be installing approximately five data logging rain gages, and other scientific monitoring devices in Pima Wash and Finger Rock Wash watersheds. Additionally, reinforcement and repairs will be performed to the USGS and County Streamflow Monitoring sites at the Sabino Creek Dam. Later this week, District staff will begin inspecting and repairing ALERT rain and stream gages in the burn area, as necessary, in areas that the USFS deems safe.

POST-FIRE HYDROLOGIC ASSESSMENT

The USFS's Burn Area Emergency Response (BAER) team has begun post-fire assessment of fire damage. Over the weekend, the BAER team had remote sensing flights done to allow the team to determine burn severity and impacts to soils and vegetation cover. The District will update existing hydrologic and hydraulic maps based on the BAER information. The BAER team also often comes up with storm runoff discharge values after fires using a model called "Wildcat." The post-fire assessment will use burn severity maps to:

- Identify post-fire watershed priorities (which watersheds are the most critical);
- Acquire floodplain hydrology and hydraulic models for fire damaged watersheds;
- Assess percentage increase in discharge associated with post-fire hydrology;
- Identify at-risk structures using existing models (when practicable) and create additional modeling as needed; and
- Identify at-risk access and at-risk public infrastructure;

Please let me know if you have any questions.

SS/tj

Attachments

c: Carmine DeBonis, Jr., Deputy County Administrator – Public Works
Jan Leshner, Deputy County Administrator – Community and Economic Development
John Voorhees, Assistant County Administrator – County Administrator's Office
Jeff Guthrie, Director – Office of Emergency Management
Eric Shepp, P.E., Deputy Director – Regional Flood Control District
Andy Dinauer, P.E., Deputy Director – Regional Flood Control District
Brian Jones, Division Manager – Regional Flood Control District
Lynn Orchard, Chief Hydrologist – Regional Flood Control District



Dear Property Owner,

The Bighorn Fire has increased the risk of flash floods and mudflows in your area. You are receiving this notice because the Pima County Regional Flood Control District is concerned that your property may be at increased risk of flooding.

Pima County residents living adjacent to washes downstream of the Bighorn Fire burn area should be aware of the increased risk of flooding due to the fire and take appropriate steps to mitigate that risk. Loss of vegetation and physical changes to the soil leave burned areas prone to increased runoff and erosion. This combination can cause flash floods and mudflows to flow faster and with more volume than normal flows during a typical monsoon storm. These flows, which can include ash, mud, and vegetative debris, increase flood risk for those who work and live in downstream areas.

The Bighorn Fire has created hazardous flooding conditions for many of the washes that flow from the Coronado National Forest into the Town of Oro Valley and the Catalina Foothills areas. Flash floods may overtop wash channel banks and cause damage in adjacent areas, even beyond the limits of the regulatory flood. See the attached infographic for more information on this flood risk.

After the Aspen Fire on Mt Lemmon in 2003, flash floods and mudflows resulted in at least one reported fatality and caused extensive property damage in watershed areas downstream of the burn area.

What can you do?

Sign up for MyAlerts. The Pima County Office of Emergency Management's MyAlerts (www.myalerts.pima.gov) system allows the Regional Flood Control District to provide near real-time flood alerts to Pima County residents within certain watersheds. Residents who sign up for MyAlerts using addresses within these watercourses will receive messages about flood events in their area. This warning system is the most effective way for the Flood Control District to notify residents about flood events. Due to the increased flood risk associated with the Bighorn Fire, the Flood Control District recommends that you sign up for MyAlerts. Find additional information about the MyAlerts Flood Alert Messaging webpage at www.pima.gov/floodalerts.

Floods are dynamic and this warning system will not be perfect, but is our attempt to provide you an opportunity to protect yourself, your loved ones, and your structure. It is possible that properties that get a warning will not flood, and properties that were not warned are impacted.

Get Flood insurance: Normally, there is a 30-day waiting period from the time that flood insurance is purchased to when it becomes effective. When the risk of flooding increases due to wildfires that occur on federal land, the National Flood Insurance Program provides an exception should your structure get flooded within the 30-day waiting period. Your insurance adjuster will apply for the exception as necessary. See the attached information sheet. The Flood Control District recommends that you acquire flood insurance. The cost does not change due to the fire and you may be surprised how inexpensive it is, especially if your structure is not within a FEMA Special Flood Hazard Area.

Suzanne Shields, P.E., Director

201 N. Stone Avenue, 9th Floor, Tucson, Arizona 85701-1207 • Phone: 520-724-4600 • Fax: 520-724-4621

Protect your structure(s): A common response to the threat of flooding is to protect ones entire property. However, frequently some of that land is necessary to convey flows and obstructing the flow path risks adversely affecting other properties. The best course of action is to identify ways to protect your residence from flood damage. The use of sandbags in the doorways, or small diversions just upstream of the residence is usually the most effective way to protect the residence while leave the rest of the property open to flow. Protecting more than just your structures may cause harm to your neighbors and leave you open to civil lawsuits. It may also be a violation of the Floodplain Ordinance, leaving you open to enforcement action and fines.

Pima County is providing sandbags for impacted residents. They are available at Brandi Fenton Park at the location shown on the map below.



Visit the following web sites for additional information:

Create an Emergency Response Plan –

https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Flood%20Control/Public%20Outreach/emergency-response-plan-guide.pdf (Also available at the links below)

Floods Follow Fires – www.pima.gov/FloodsFollowFires/

Be Flood Safe – www.pima.gov/BeFloodSafe/



FEMA



Preferred Risk Policies: A Small Investment Protects You from a Big Problem.

Get Lower-Cost Flood Insurance for Homeowners and Renters with a Preferred Risk Policy.



Protect the Life You've Built

Flooding can be an emotionally and financially devastating event. It only takes a few inches of water to cause tens of thousands of dollars in damage to your home.

Without flood insurance, most residents have to pay out of pocket or take out loans to repair and replace damaged items. Disaster assistance comes in the forms of loans that must be paid back with interest, and FEMA grants that provide about \$5,000 on average per household. By comparison, the average flood claim in 2017 was more than \$90,000.

Flood insurance reduces the financial burden of a flood event, making it easier to make your house a home again.

PRPs are available in most communities across the country, wherever flood insurance is available to homeowners and renters.



Flood Risk is Real

Every year, thousands of homeowners and renters experience devastating flooding events, even though they don't live near a river or coastline. In fact, floods are the most common and costly natural disaster in the U.S. Despite the risk, only a fraction of residents protect themselves against the cost of flooding by purchasing flood insurance.



Get Flood Insurance Today

There are nearly 70 insurance companies that sell PRPs through the NFIP all for the same low price. It's never too soon to contact an insurance agent. And remember, flood insurance typically goes into effect 30 days after your purchase.

DID YOU KNOW?

- More than 20 percent of flood insurance claims come from outside of high-risk flood areas.
- PRPs can be purchased for as little as \$325 per year.
- Most homeowners insurance doesn't cover flood damage.
- Most homes in moderate and low-risk areas qualify for the National Flood Insurance Program's (NFIP) Preferred Risk Policy (PRP).
- PRPs offer the same quality of coverage as a Standard Flood Insurance Policy (SFIP) and can cover your home and its contents.

About the NFIP

The NFIP aims to reduce the impact of flooding on individuals and communities across the country. It does so by providing flood insurance to property owners like you—who live in communities that adopt and enforce floodplain management standards. These efforts reduce the costs and consequences associated with flooding and help families recover more quickly. For more information about PRPs, call your agent or call the NFIP Help Center at 1-800-427-4661.

Floods follow fires. Wildfires raise your flood risk for years.

Wildfires leave the ground charred, barren, and unable to absorb water. That means even light rain can potentially turn into a financially devastating flash flood or mudflow. Just one inch of floodwater in your home can cause \$25,000 of damage.

But with flood insurance, you have peace of mind knowing that you can recover more quickly. It helps cover the cost of repairing your home and replacing your belongings.

Most homeowners and renters insurance policies do not cover flood damage, and flood insurance policies don't automatically renew. **Call your insurance agent today or learn more at [FloodSmart.gov/wildfire](https://www.floodsmart.gov/wildfire).**



FEMA



Flood After Fire



FEMA



Did you know wildfires dramatically alter the terrain and increase the risk of floods? Excessive amounts of rainfall can happen throughout the year. And properties directly affected by fires and those located below or downstream of burn areas are most at risk for flooding.

1 During normal conditions, vegetation helps absorb rainwater.

2 But after an intense wildfire, burned vegetation and charred soil form a water repellent layer, blocking water absorption.

3 During the next rainfall, water bounces off of the soil.

4 As a result, properties located below or downstream of the burn areas are at an increased risk for flooding.

Degree of Land Slope

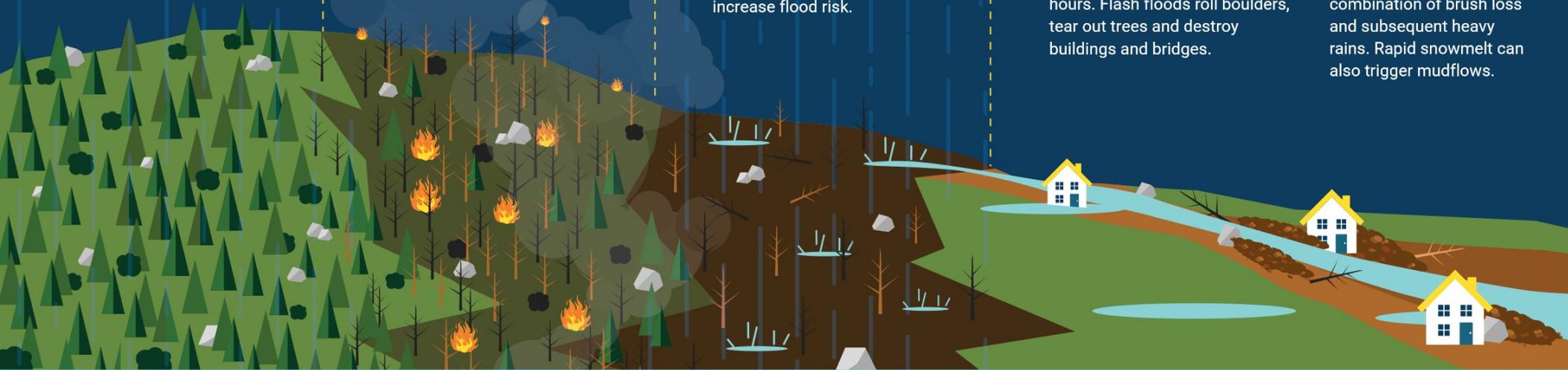
Higher degrees of land slope speed up water flow and increase flood risk.

Flash Floods

Intense rainfall can flood low-lying areas in less than six hours. Flash floods roll boulders, tear out trees and destroy buildings and bridges.

Mudflows

Rivers of liquid and flowing mud are caused by a combination of brush loss and subsequent heavy rains. Rapid snowmelt can also trigger mudflows.



Reduce your risk. The time to buy flood insurance is now. Contact your local insurance agent for more information or visit the National Flood Insurance Program at [FloodSmart.gov/wildfire](https://www.floodsmart.gov/wildfire).



Emergency Response Plan Guide

There are a lot of great examples on the internet to help you create an emergency response plan. We'll highlight a few from respected sources and give you some flood specific tips for you to include in your plan for your home or business. Go to <http://www.pima.gov/FloodAlerts/> for additional resources to help you create your plan.

For Your Home

- Flood waters can arrive very quickly on desert washes, so it's important to have a "Go Kit" handy at all times in case you need to evacuate at a moment's notice. Keep water, shelf stable food, a flashlight, spare phone charger and other essentials in it at all times, then add things like medications to it when you have to evacuate.
- Don't forget to include pet supplies in your Go Kit.
- Establish a family rallying point well outside the floodplain. Make sure there is a safe travel route from your home, work, or school to that location so that everyone can get there.
- Establish a reliable person outside your immediate area for everyone to contact and relay messages through in case phone systems are down or someone's cellphone battery dies. Make sure everyone memorizes the email and phone number of your designated contact person.
- Have sandbags handy. You can also search "sandless sandbags" for other alternatives that may work better for you.

For Your Business

- Have a plan for closing the business down in an emergency.
- Keep a list of employee phone numbers and let them know when not to come to work due to flooding.
- Make sure employees establish safe travel routes to and from work in times of flooding.
- Your plan should include being prepared for employees remaining at work until it is safe to leave.
- Have sandbags handy. You can also search "sandless sandbags" for other alternatives that may work better for you.

Medical Care, Assisted Living, Child Care, Utilities, or other Critical Facility

There are special considerations for medical facilities, assisted living facilities, schools, day care facilities, or other locations considered to be vital in an emergency, like utilities providers.

- If your facility includes individuals who will not be self-sufficient in an emergency (patients, elderly, children), make sure to discuss your plan with the Office of Emergency Management. They will need to know how many people may need assistance and what kind of assistance will be needed.
- Utility companies should have a continuity of operations plan.

Internet Resources

The District recommends looking at each of the resources below and picking one that works best for you.

Ready.gov – <https://www.ready.gov/make-a-plan>

Red Cross – <https://www.redcross.org/get-help/how-to-prepare-for-emergencies/make-a-plan.html>

FEMA – <https://www.fema.gov/media-library/assets/documents/89518>



MyAlerts.pima.gov

During an emergency, urgent messaging is effective only if it reaches you quickly. That's what Pima County's new mass notification system can do.

Our Everbridge system can quickly and reliably push emergency messages to numerous devices, making it the go-to tool for keeping the public informed. Everbridge subscribers receive emergency alerts and information when it counts.

How it works

Go to MyAlerts.pima.gov to create a profile and start receiving notifications. Subscribers can specify how they want to be notified.

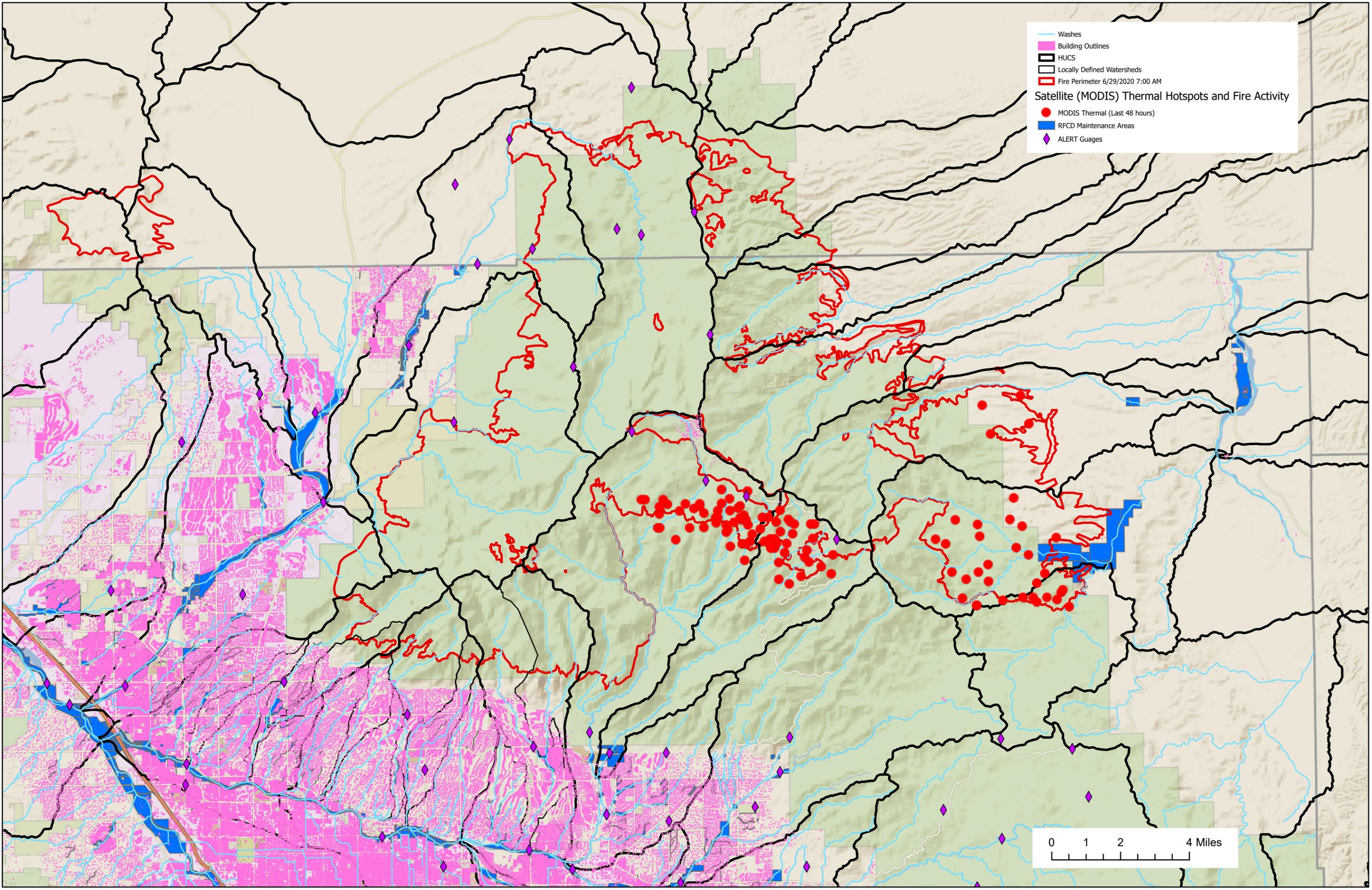
Emergency notifications are issued based on geographic location. The more information included in a profile, the more specific the notifications will be. Messages could warn of potential safety hazards, law enforcement situations or any number of emergency situations.

Information provided is confidential and will not be shared.

To learn more, visit MyAlerts.pima.gov



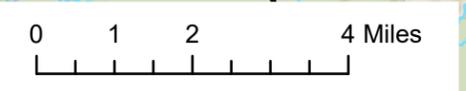
*Signing up for emergency alerts is free, but standard text messaging fees from your cell carrier may apply.

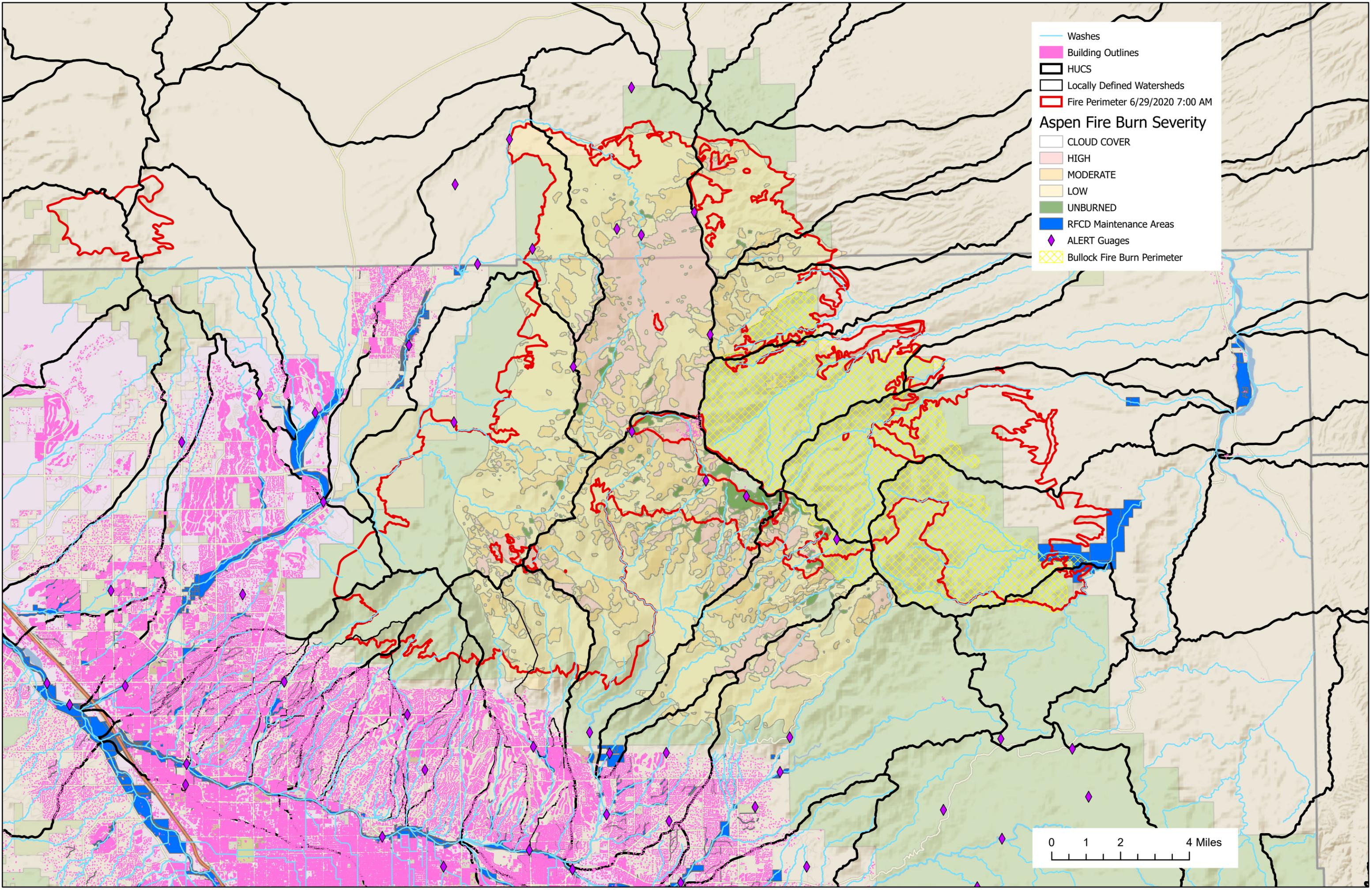


Washes
Building Outlines
HUCS
Locally Defined Watersheds
Fire Perimeter 6/29/2020 7:00 AM

Satellite (MODIS) Thermal Hotspots and Fire Activity

MODIS Thermal (Last 48 hours)
RFCD Maintenance Areas
ALERT Guages





- Washes
- Building Outlines
- HUCS
- Locally Defined Watersheds
- Fire Perimeter 6/29/2020 7:00 AM

Aspen Fire Burn Severity

- CLOUD COVER
- HIGH
- MODERATE
- LOW
- UNBURNED
- RFCD Maintenance Areas
- ALERT Guages
- Bullock Fire Burn Perimeter

