MEMORANDUM

Date: July 16, 2021

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

From: C.H. Huckelberry  
County Administrator

Re: Example of Floodprone Land Acquisition to Mitigate Future Flood Damages Related to Watershed Wildfires

In 2003, after the Aspen Fire, significant flood flows occurred on the Cañada del Oro (CDO) watershed. At that time, a number of homes were inundated and significant private and public property damage occurred as a result of wildfire watershed flooding. The County then spent approximately $4.8 million of flood control district funds and $3 million of FEMA grant funding was used to acquire 75 properties and relocated residents out of the hazardous floodway of the CDO Wash. These acquisitions occurred using Regional Flood Control District (RFCD) funds earmarked for floodprone land acquisition.

The estimated flood volume from the event in 2003 after the Aspen Fire was 7,000 cfs (cubic feet per second), or a 25-year storm, after rainfall of only 1.25 inch occurred over the upper CDO Watershed. Had the County not acquired the properties and relocated residents, these same properties and residents would now be subject to increased flooding from the 2020 Bighorn Fire.

On July 14, 2021 the upper burned watershed of the CDO experienced 0.5 to 1.7 inches of rainfall over a two-hour period. Approximately two hours later, the RFCD stream gage at Lago del Oro Parkway and Golder Ranch Road indicated peak flood discharges of 1,500 cfs. This is anticipated to be a minor amount of discharge on the CDO Wash. A 100-year flood discharge on the CDO would be rated as 11,900 cfs.

Flood water from this 2021 event over the Bighorn Fire burn scar overtopped the bank of the existing CDO wash and inundated certain areas. Just based on this minor flood volume and the information of the RFCD, over 60 residential structures would have been impacted by these floodwaters had they remained. However, they were removed in 2003 through acquisition. Therefore, property damage, injury and risked lives has been significantly mitigated. This is an example of RFCD investments to mitigate future flood damages and risk of injuries to persons and property.

The Governor and State Legislature recently appropriated $100 million in funding for various State agencies due to fire emergencies occurring throughout the State. In 2003, the County spent local RFCD monies for this flood mitigation. I have asked our RFCD to compile
The Honorable Chair and Members, Pima County Board of Supervisors
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information related to our activities as a case study for the justification for funding to flood control districts throughout the State where there has been severe wildfire watershed damage where funds can be made available to a flood control district for the purpose of floodprone land acquisition to remove persons and property from potential severe flood damage due to wildfires and the resulting flood and debris flows that occur post-fire. It is far cheaper to pay the cost of land and property acquisition than to continually pay for repetitive losses.

CHH/anc

Attachment

c: Jan Lesher, Chief Deputy County Administrator
Carmine DeBonis, Jr., Deputy County Administrator for Public Works
Francisco García, MD, MPH, Deputy County Administrator & Chief Medical Officer, Health and Community Services
Yves Khawam, PhD, Assistant County Administrator for Public Works
Shane Clark, Director, Office of Emergency Management and Homeland Security
Suzanne Shields, Director, Regional Flood Control District
Andy Dinauer, Deputy Director, Regional Flood Control District
Eric Shepp, Deputy Director, Regional Flood Control District
DATE: July 15, 2021

TO: C. H. Huckelberry  
County Administrator

FROM: Suzanne Shields, P.E.  
Director

SUBJECT: Upper Cañada del Oro Wash Flows

The Cañada del Oro (CDO) watershed experienced forest fire damage during the 2003 Aspen and 2020 Bighorn fires. Shortly after the Aspen Fire, there was widespread flooding along the upper CDO Wash in Catalina (see attached 2003 photos). As a result of the flood, the Regional Flood Control District (District) reached out to the residents that were flooded and acquired their properties and structures using the District’s Floodprone Land Acquisition Program. A total of 75 properties were acquired and residents were relocated out of the hazardous floodway of the CDO Wash.

We again anticipate increased runoff and flooding from the 2020 Bighorn Fire burn scar. On July 14, 2021, the upper burned watershed of the CDO Wash experienced 0.5 to 1.77 inches of rain over a two-hour period. Approximately two hours later, the District’s stream gage located at Lago del Oro Parkway and Golder Ranch Road indicated a flood peak of 1,500 cfs (see 2021 photos). At this flow rate, the floodwater overtopped the bank (see attached map showing the area of inundation). Based on our 2003 information on the location of structures, 60 residential structures could have been impacted by floodwater. The 2003 acquisition and relocations reduced the risk to lives and property post-Bighorn Fire.

The District and the National Weather Service continue to closely monitor storms and potential flooding risks due to the 2020 burn intensity maps.

Please let me know if you have any questions.

SS/tj

Attachments

c: Jan Lesher, Chief Deputy County Administrator  
Carmine DeBonis, Jr., Deputy County Administrator – Public Works  
Yves Khawam, PhD, Assistant County Administrator – Public Works  
Shane Clark, 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
Canada del Oro Wash Flooding in 2003 Post Aspen Fire
Canada del Oro Wash at Golder Ranch Road on July 14, 2021
Canada del Oro Wash at Golder Ranch Road on July 14, 2021
The information depicted on this display is the result of digital analyses performed on a variety of databases provided and maintained by several governmental agencies. The accuracy of the information presented is limited to the collective accuracy of these databases on the date of the analysis. The Pima County Regional Flood Control District makes no claims regarding the accuracy of the information depicted herein.

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7/15/2021

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2021 CDO Flow, 2002 Ortho Image

1 inch = 1,498 feet