



# Ruthrauff Basin Management Plan

## Project Update – November 2016

### Improvements And Revised Floodplain Maps

The Arizona Department of Transportation has installed new culverts under the Union Pacific Railroad at the Flowing Wells Wash. This improvement will reduce the potential for flooding upstream of the railroad embankment.

The Ruthrauff Basin management plan team has prepared new FEMA floodplain maps that show a substantial reduction in the 1% chance annual flood (often called the 100-yr flood) based on both the drainage improvements at Flowing Wells Wash and improved capability to assess the flood risk in shallow sheet flood areas, such as those that occur in Ruthrauff Basin.

### Project Contacts

Please contact us if you would like more information or have photos or information on flooding or erosion issues within these watersheds that you would like to share with the District.

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### Past Events

1. The Pima County Regional Flood Control District held a Local Government Sector Stakeholder Meeting on July 24, 2014, to review the project and share information on the drainage situation in the watershed.
2. The Pima County Regional Flood Control District sponsored an Open House on December 4, 2014 to describe the project and solicit information from the community on drainage problems in the Ruthrauff Basin.

### Project Website

<https://webcms.pima.gov/cms/one.aspx?portalId=169&pageId=158694>



### Project Location

The Ruthrauff Basin is located in both the City of Tucson and unincorporated Pima County adjacent to Interstate 10 and the Union Pacific Railroad. The Ruthrauff Basin drains into the Santa Cruz River from the east just upstream of the confluence with the Rillito River.

### Project Description

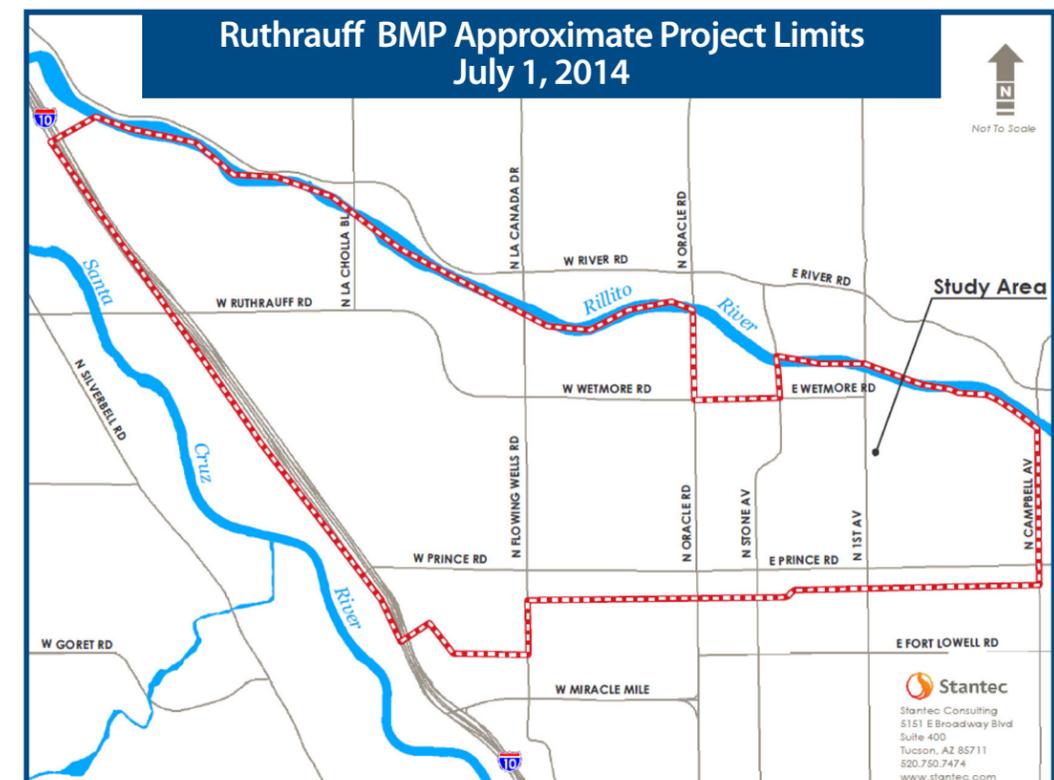
The Pima County Regional Flood Control District is undertaking this project in partnership with the City of Tucson. The project area includes several small watersheds that drain north to the Rillito River as well as the Ruthrauff Wash, which drains into the Santa Cruz River. The area is subject to frequent and substantial sheet flow and ponding of stormwater as a result of the minimal topographic relief and

inadequate drainage structures. Historically, flood flows have ponded on the east side of the Union Pacific Railroad embankment.

This project will develop a Ruthrauff Basin Management Plan that will identify flood hazard areas and drainage problems, and cost-effective solutions to alleviate or manage flooding in the project area.

### What's Next:

Following the November 16, 2016 Open House, the team will finalize the preferred alternatives and develop an implementation plan for adoption of governing bodies.



## Project Elements and Timeline

**Existing Conditions Analysis:** Review previous studies, perform hydrologic and hydraulic analysis that incorporates drainage improvements, and identify areas of drainage and erosion hazards.

**FEMA Floodplains will be Mapped:** The new culvert crossing at Flowing Wells Wash is anticipated to reduce flooding on the Flowing Wells Wash and the FEMA Floodplain, which currently shows water ponding behind the railroad track embankment. Therefore, a new floodplain map for this area will be prepared for approval by FEMA.

**Public Involvement:** Stakeholder meetings will be held throughout the duration of the project. In addition, there will be two public meetings

The project timeline shows the phasing of these elements and the current status.

**Two Types of Local Floodplains will be Mapped:** Because much of this area experiences sheet flooding, it is an ideal area for mapping using a grid-based approach which is a relatively new technology. The grid-based maps show more accurately how water flows than the approach used in the current floodplain maps.

- **Regulatory Floodplains:** Regulatory Floodplains are delineated based on the 1% annual chance flood (100-year) and are used for administering the floodplain ordinance, which is the basis for permitting uses in regulatory mapped floodplains.
- **Floodplains of Problem Storms:** More frequent floods, such as the 10- or 25-year flood, can create problems such as flooding of yards and roadways. Therefore, this study will map these more frequent flows so that solutions can be developed for them.

## Evaluating Drainage Alternatives

On June 9, 2015 a group of 25 stakeholders developed a set of rating criteria to evaluate possible drainage alternatives and determined that multi-benefit evaluation criteria would be weighted as follows:

- Public Safety – 30%
- Implementation – 23%
- Environmental Sustainability – 20%
- Economic Vitality – 17%
- Community – 10%

An Alternatives Working Group of 15 stakeholders met in February, 2016 and evaluated nine problem drainage areas on the basin and identified 46 different possible drainage solutions and seven area-wide alternatives for further evaluation by the Ruthrauff Basin Management Plan team.

The Alternatives Working Group met again on July 28, 2016 and suggested that 18 of these

localized drainage alternatives needed to be further evaluated by evaluating these possible alternatives using hydraulic models, estimating preliminary costs, and scored using the evaluation criteria. In general, these alternatives were:

- 1.) Providing improved drainage through the railroad embankment.
- 2.) Slowing water and reducing flood peaks at multi-use basins.
- 3.) Conveying water in drainage channels.
- 4.) Conveying water in stormdrains.
- 5.) Improving roadways to better convey water.
- 6.) Applying practices across the basin that reduce potential for flooding.

These Draft Alternatives will be presented for discussion at an Open House on November 16, 2016.

