Expected Improvements

The Arizona Department of Transportation told us that the new culverts (shown in photo above) planned for the Union Pacific Railroad at the Flowing Wells Wash are under construction and will be completed in spring 2016. This improvement should reduce the depth of flooding upstream of the railroad embankment at the wash.

Following this improvement, the Ruthrauff Basin Team will prepare new FEMA floodplain maps, which are expected to reduce the size of the mapped FEMA 100-year floodplain.

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.

Evan Canfield, PhD, PE, Project Manager for the District *evan.canfield@pima.gov*

John Wise, PE, Project Manager for Stantec *john.wise@stantec.com*

Past and Upcoming 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.

Project Website

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

PIMA COUNTY

CITY OF TUCSON FOUNDED 1775

Ruthrauff Basin Management Plan

Project Update – November 2015

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.

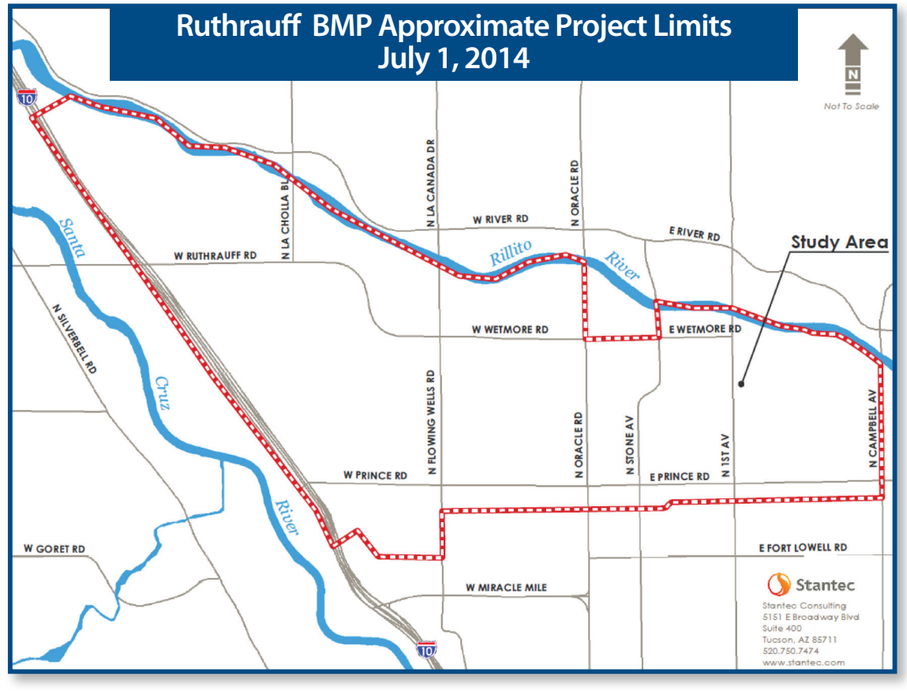
Project Description

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:

A meeting to present preferred alternatives will be held near the completion of the project in fall 2016.



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.

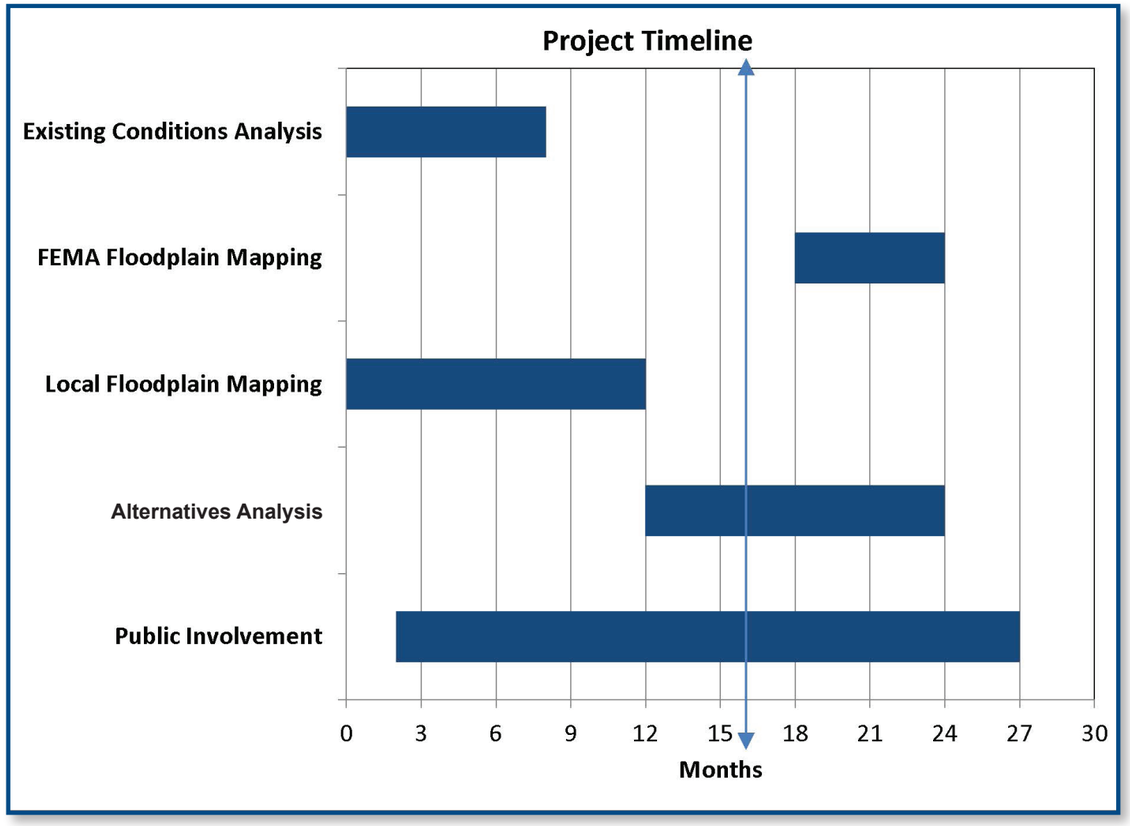
Public Involvement: Stakeholder meetings will be held throughout the duration of the project. In addition, there will be two public meetings

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.



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Weighting of Drainage Alternatives

A two-dimensional flood mapping of the floodplains on the Ruthrauff basin confirmed that shallow flooding would be widespread throughout the basin in a 100-year flood. In such an event, nearly 1/3 of the basin would experience some ponded water. Most of the ponded water would be 0.2 to 0.5 foot deep. Generally speaking, the flow velocities in the project area are low, however there are a few defined channels in the basin with higher velocities.

On June 9, 2015, a workgroup of 25 stakeholders met to develop metrics to help prioritize alternatives. The workgroup used multiple criteria in assessing the weighted measures in the table below.

Summary of Highest Rated Criteria from Workgroups

	Weight	Most Important	2nd Most	3rd Most
Public Safety	**30%**	Identify Maintenance Needs	Provide Usable Floodplain Maps and Data	Design Drainage for All Weather Access
Implementation	**23%**	Optimize Stakeholders' Support	Minimize Complexity of Regulatory Compliance	Optimize Multiple Funding Sources
Environmental Sustainability	**20%**	Maximize use of renewable water and minimize use of potable water resources	Promote systems with adaptability and resilience	Mitigate the urban heat island effect
Economic Vitality	**17%**	Leadership - meeting objectives of all stakeholders (regional, county, city, community)	Economic value of beneficial sustainable impacts (for example evaluate alternatives with business case evaluator)	Quality of Life - enhance community growth and development
Community	**10%**	Maximize community connectivity, access and use of multi-modal transportation	Optimize beneficial use of land	Compatibility with known community or neighborhood values, goals and plans within the Study Area

Over the next year the project team will evaluate drainage alternatives using these criteria, to select preferred alternatives and provide an implementation plan.