



# Ruthrauff Basin Management Plan

## Project Update – December 2014

### Expected Improvements

The Arizona Department of Transportation (ADOT) recently told us that the new culverts planned for the Union Pacific Railroad at the Flowing Wells Wash (shown in photo above) are anticipated to be installed in January or February of 2015. 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.

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### 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. The meeting summary is available under the "Public Involvement" tab on the project website: <http://webcms.pima.gov/cms/One.aspx?portalId=169&pageId=158694>
2. A Private Sector Stakeholder Meeting was held on Oct. 23, 2014, at the Ellie Towne Flowing Wells Community Center.
3. An open house on the project will be held Dec. 4, 2014, from 6 to 7:30 p.m. at the Ellie Towne Flowing Wells Community Center. A second open house will be held following the development of proposed alternatives.



### 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

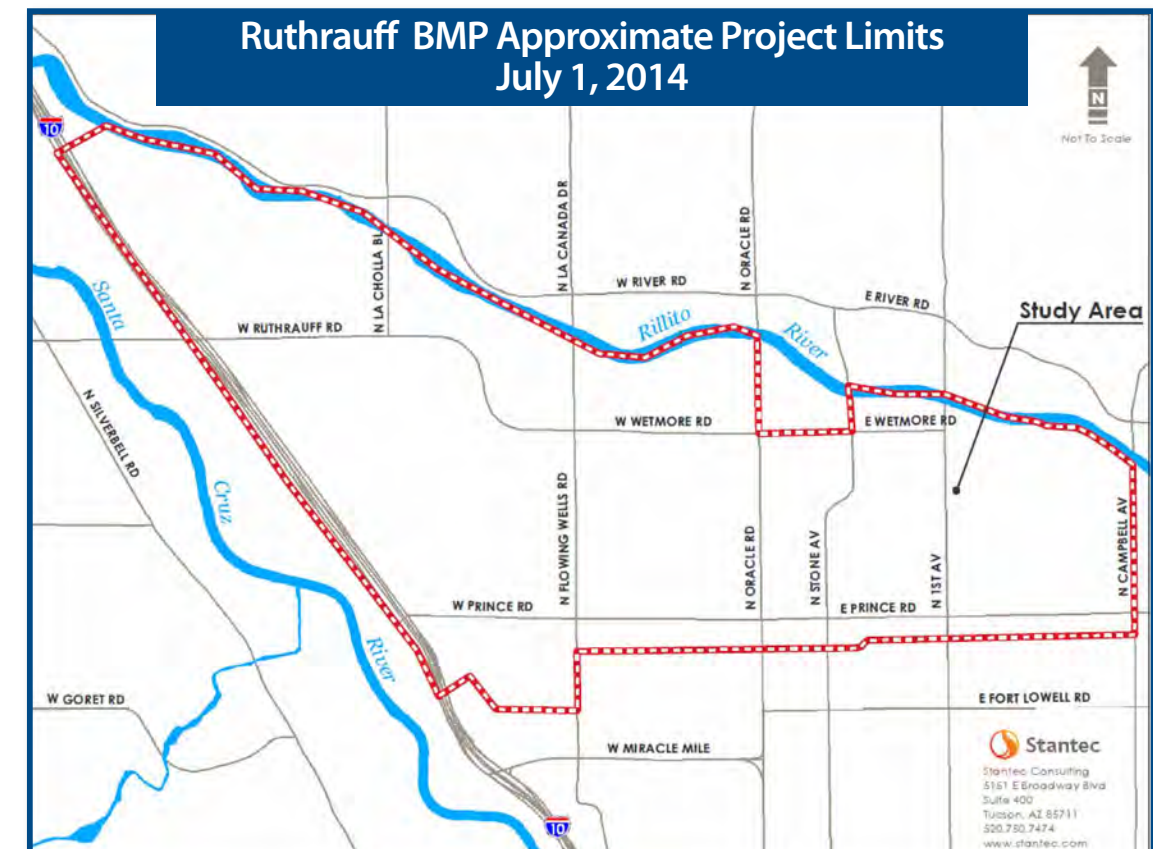
The Pima County Regional Flood Control District is undertaking this project in partnership with the City of Tucson. The project area includes several small watersheds that drain north to the Rillito River as well as the Ruthrauff Wash, which drains into the Santa Cruz River. The area is subject to frequent 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:

An open house will be held on Thursday, Dec. 4, from 6 to 7:30 p.m. at Ellie Towne Flowing Wells Community Center.





## 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.

**Alternative Analysis and Recommended Solutions:** Alternative analysis for the General Study Area is to identify flood hazard solutions based on the data gathered and produced during the previous elements effort.

Develop structural and non-structural alternative solutions for mitigating the floodplain and erosion hazards identified in the existing conditions analysis, including cost effectiveness, and recommend an alternative for each flood hazard.

### Two Types of Local Floodplains will be Mapped:

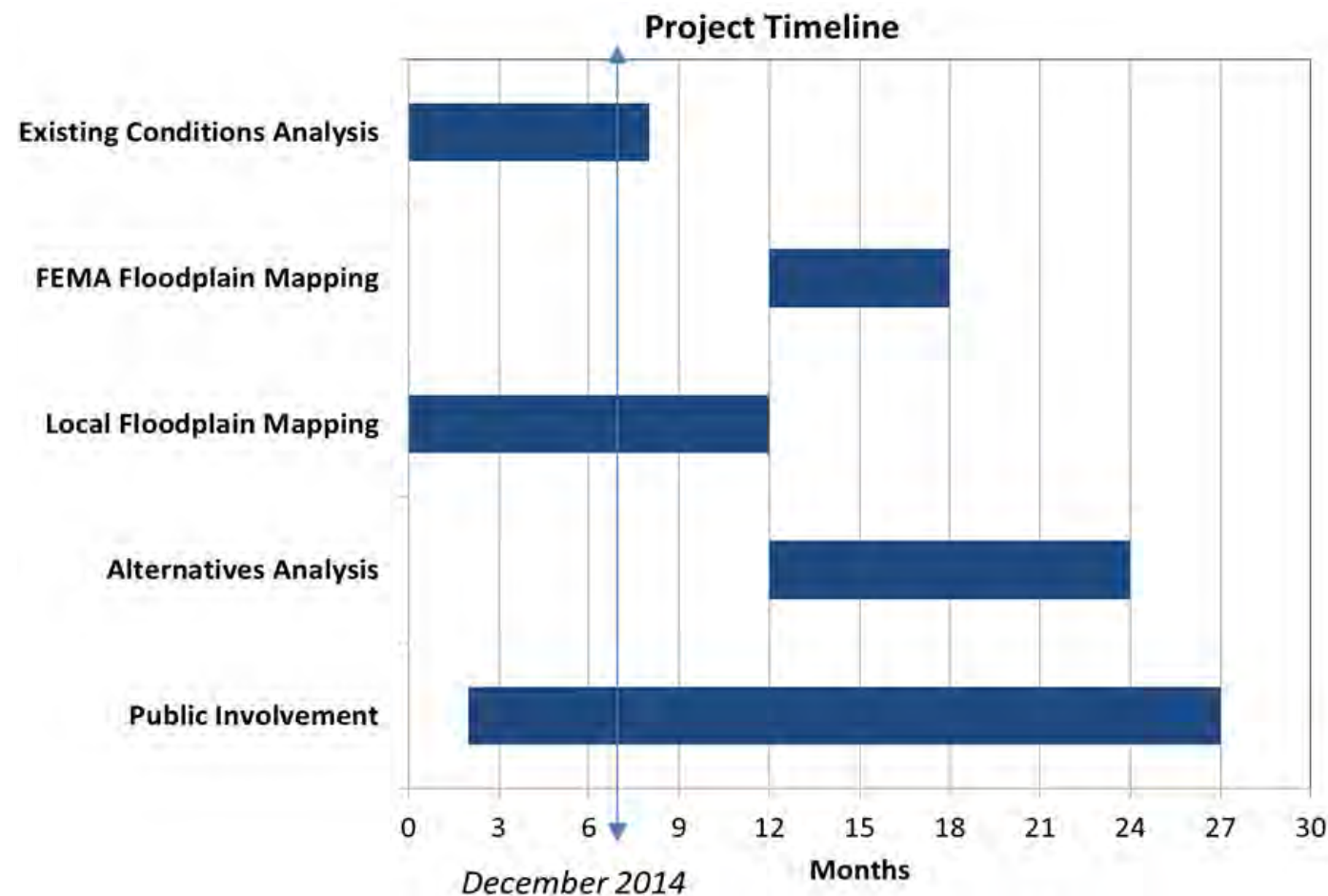
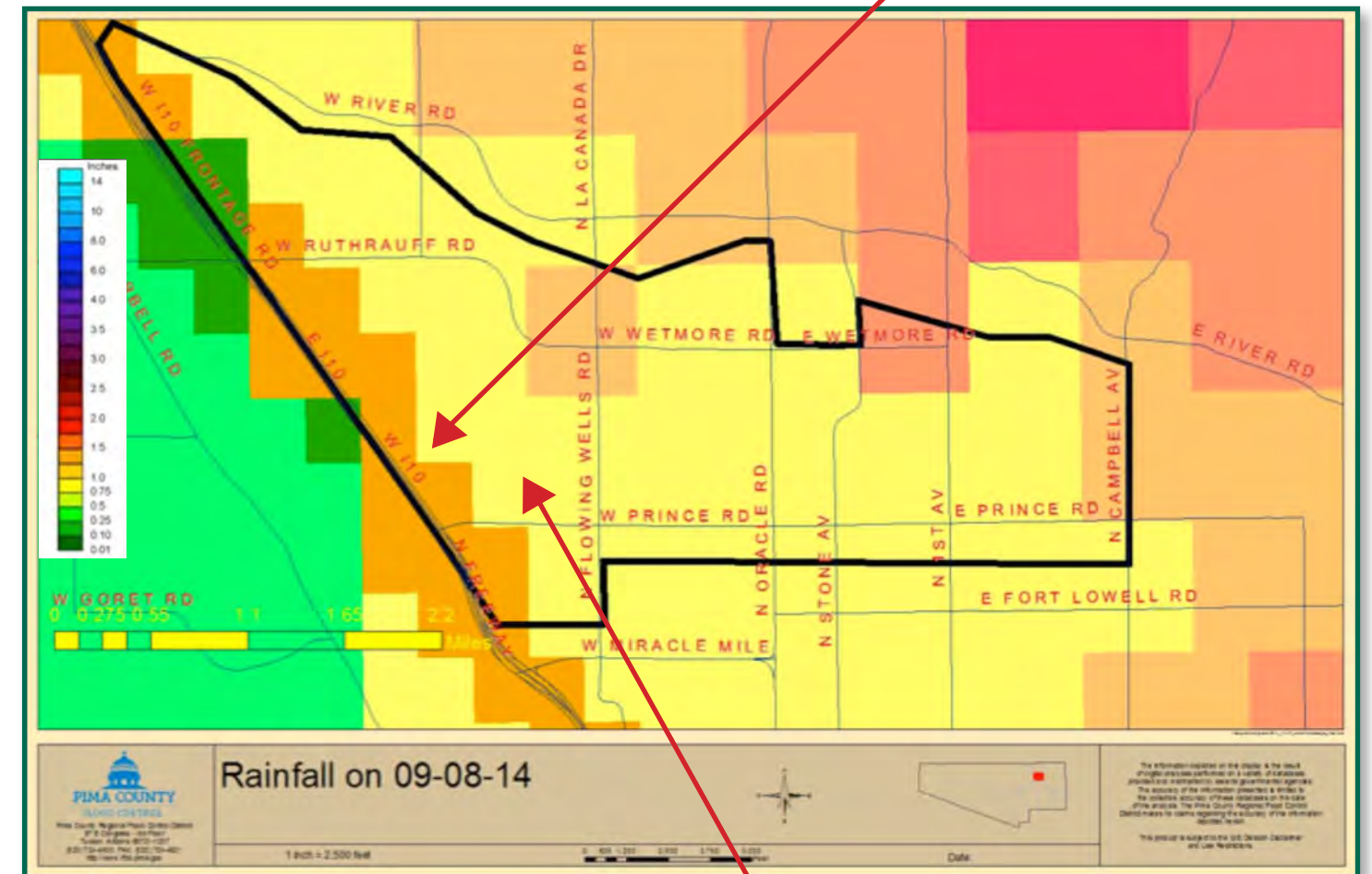
Because much of this area experiences sheet flooding, it is an ideal area for mapping using a grid-based approach, which is a relatively new technology. The grid-based maps show how water flows more accurately than the approach used in the current floodplain maps.

- **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.

**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.

## September 8, 2014, Flood Event

On Sept. 8, 2014, the remnants of hurricane Norbert caused flooding and rainfall throughout the Tucson area. The project team visited the area during the event and took the photos below. The Ruthrauff basin had 1.22 inches of rain at La Cholla and the Rillito, and 1.14 inches at La Cholla and Ruthrauff. Mapping of rainfall depths using radar below\*\* showed greater depths to the east. The District's rainfall data is near-real time and is available at <http://alert.rfcd.pima.gov/>



\*\*The experimental graphic depicting Radar Estimated Precipitation for the 24 hour period is generated by the National Weather Service from radar data. It should be used only as a generalized indication of where the heaviest precipitation has occurred. Radar data is courtesy of NOAA/NOS nowCOAST.

