Lee Moore Wash
Basin Management Study
Summer 2008

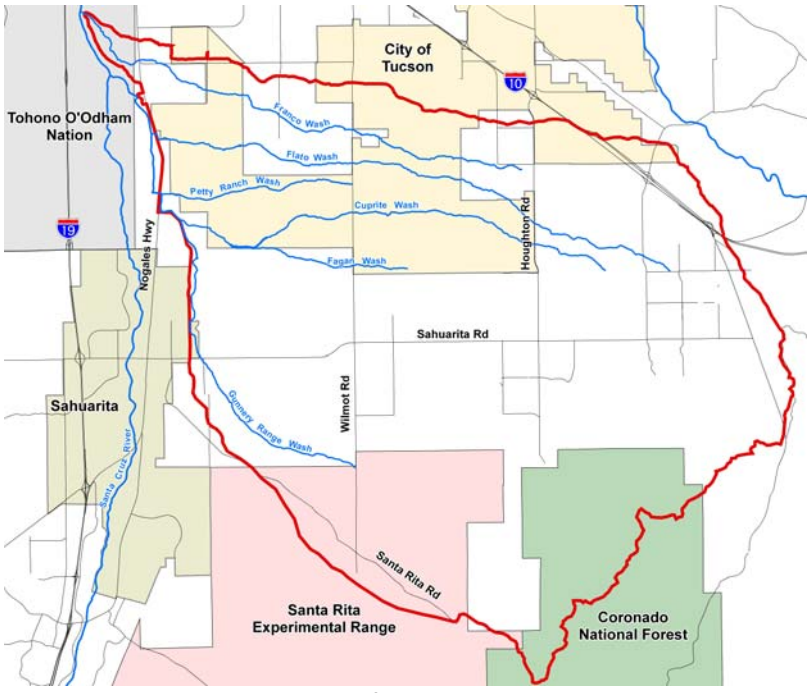
Project Overview and Status:

Pima County Regional Flood Control District is conducting the Lee Moore Wash Basin Management Study (LMWBMS) to identify the drainage and flooding hazards within the watershed and develop alternatives to address those hazards. A Basin Management Study is a comprehensive study that estimates flood and erosion potential for a watershed, maps watercourses, identifies existing and potential problems and develops preliminary solutions and standards for sound floodplain and stormwater management.

To date we have collected data, identified known flooding hazards and mapped floodplains. This included researching historical flooding data and current land-use plans, as well as gathering information from stakeholders and the public.

The project team then formulated a range of structural and non-structural alternative solutions to reduce or eliminate flooding hazards. These will be presented to stakeholders and the public for their input and they will also be evaluated by the project team using a set of project specific performance criteria. After considering the input from the stakeholders and public and evaluating these alternatives they will be refined to develop a set of recommended alternatives.

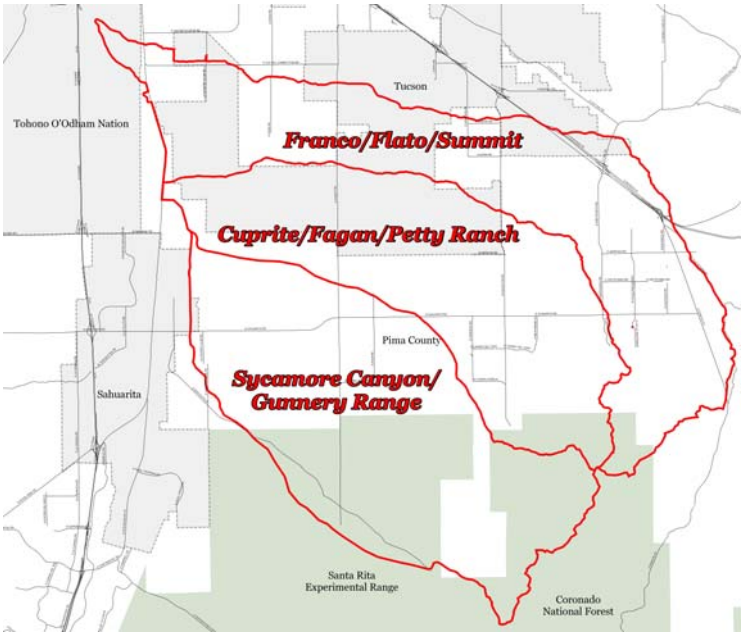
When the study is completed, the District will have a comprehensive floodplain management approach to reducing flood and erosion hazards. Once implemented, the strategies in the plan will reduce damages to property or loss of life from drainage issues and stormwater flooding. This phase of the project will be completed in the winter of 2008/09.



Project Area

Project Area:

The total project watershed is approximately 213 square miles, including parts of unincorporated Pima County, City of Tucson, Town of Sahuarita, Coronado National Forest, and Arizona State Trust Lands.



Planning Areas:

In order to effectively manage the large study area, the LMWBMS study area is divided into four planning areas. The planning areas are defined by the current and proposed land uses, the types of flooding problems in the area, sub-watershed boundaries, and the 100-year floodplain limits. The planning areas are described below.

Area-Wide Lee Moore Wash Watershed

The Lee Moore Wash watershed is situated in the southeast portion of the Tucson basin, with headwaters situated in the Santa Rita Mountains. The watershed is comprised of eight sub-watersheds characterizing the three general planning areas described below. Drainage patterns trend west-northwesterly to the Lee Moore Wash channel situated along the western extent of the study area. The Santa Cruz River floodplain borders the western boundary of the Lee Moore Wash watershed.

Franco/Flato/Summit Area

The Franco, Flato and Summit watersheds represent the northernmost portion of the project, and generally exhibit the most topographically defined watershed area, allowing floodplain mapping using one-dimensional HEC-HMS and HEC-RAS hydrologic/hydraulic modeling techniques. This area encompasses the most developed watersheds within the project, with additional development planned in the near future.

Cuprite/Fagan/Petty Ranch Area

The Cuprite, Fagan and Petty Ranch watersheds represent the central portion of the project, and are characterized predominantly by poorly defined watershed boundaries and distributary flow networks. Thus, hydrologic and hydraulic evaluations for floodplain mapping within this area was performed using two-dimensional FLO-2D modeling techniques. There is existing development within the central portion of the area, generally situated along the Sahuarita Road corridor.

Sycamore Canyon and Gunnery Range Area

The Sycamore Canyon and Gunnery Range watersheds represent the southernmost portion of the project, and similar to the Cuprite/Fagan/Petty Ranch area, are characterized predominantly by poorly defined watershed boundaries requiring the use of the two-dimensional FLO-2D modeling for floodplain mapping. This area also displays some limited existing development, again centered along the Sahuarita Road corridor. A significant portion of the upstream area is comprised of the Santa Rita Experimental Range, Coronado National Forest, and/or other federal holdings. Much of the downstream area is situated within the Town of Sahuarita Air Force Range planning area.

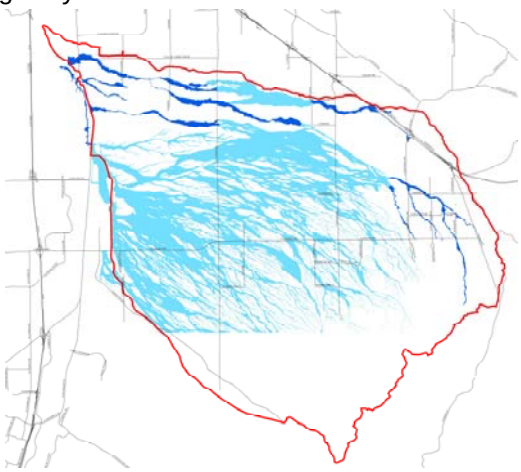
Flooding and Erosion Issues:

Area-Wide Lee Moore Wash Watershed

Undersized culvert crossings
Roadway flooding
Stock pond failure/downstream flooding potential
Floodplain encroachments/obstructions – walls, fill, debris
Localized erosion/sedimentation – driveways, road crossings, head cutting, channel migration, culverts
Drainage complaints

Franco/Flato/Summit Area

Old Vail Connection access – Franco Wash crossing
Flooding on Franco Wash – Country Club Road to Nogales Highway
Floodplain encroachments/obstructions – walls, fill, debris
Lack of all-weather roadway access
Diversion structures along main branch of Flato Wash
Lack of drainage system in the Summit area
Drainage complaints in developed areas



Mapped Floodplains

Cuprite/Fagan/Petty Ranch Area

Lack of all-weather roadway access
Shallow sheet flooding
Drainage complaints in the Corona de Tucson area
Drainage complaints in the area east of
Wilmot Road/Sahuarita Road intersection

Sycamore Canyon and Gunnery Range Area

Lack of all-weather roadway access
Shallow sheet flooding
Drainage complaints in the area east of Country Club Road/Sahuarita Road intersection
Drainage complaints in the area east of Wilmot Road/Sahuarita Road intersection

Alternatives:

Alternatives were developed to mitigate flooding hazards that are impacting current residents and future land use plans. The flood mitigation alternatives are organized into four general categories, which are Non-Structural, Structural,LMWBMS Guidelines, and No-Action Alternatives.

The proposed alternatives will consider both environmental resources and multi-use opportunities. The alternatives considered and to be evaluated include: flow corridor preservation, rules of development, channels, roadway realignment, culverts, detention basins, floodplain land acquisition, LMWBMS guidelines, floodplain delineation and no-action.

Various alignments are being considered for the structural alternatives. All alternatives are being evaluated by a multi-disciplinary team of professionals including representatives from the City of Tucson, Town of Sahuarita and the State Land Department.

Alternatives evaluations are being developed using objective performance criteria for the five categories of:
- Public Safety and Flood Hazard Mitigation
- Environmental Resources
- Planning/Infrastructure
- Sustainability
- Implementation

After the alternatives evaluations are completed, costs will be applied and the Recommended Alternatives will be developed.

Next Steps:

The LMWBMS team will complete the alternatives evaluation, which will include descriptions, cost estimates, opportunities, and constraints. Each alternative will be evaluated using the performance criteria developed by the study team. Based on the outcome of the evaluation, the study team will conduct a workshop to develop the recommended alternatives, incorporating comments received from the stakeholder/public meetings.
Once the recommended alternatives have been chosen, the Lee Moore Wash study team will further develop the recommended plan. These efforts will include preliminary drawings of the elements of the plan, cost estimates for plan implementation, conceptual drawings of the structural alternatives and proposed multi-use opportunities associated with each alternative. The District will then schedule the final public meetings to present the recommended plan.

Multi-use opportunity examples

Your Input:

This project is strongly supported by the Pima County Board of Supervisors, the City of Tucson and the Town of Sahuarita.

It is important that the stakeholders stay involved in the process as they have valuable knowledge and multiple responsibilities within the watershed that could significantly influence the project's success. We invite and encourage your support of this study. Please stay involved by visiting our website, talking to the study team and attending future stakeholder meetings.

For more information contact:
Bill Zimmerman, Division Manager
Pima County Regional Flood Control District
520.243.1800
bill.zimmerman@rfcd.pima.gov
www.rfcd.pima.gov