



Company Information:

Highest Ranking Official:
Tim Phillips
Chief Engineer and GM

Contact Person:
Marta Dent
Division Manager, GIS
602-506-4733
mld@mail.maricopa.gov

Type of work:
The Flood Control District’s main products and services include the protection of every resident and visitor from flooding, while minimizing public and private losses due to flooding. This is achieved through a variety of efforts such as floodplain delineations, construction of flood control structures and facilities, regulating development, planning studies and projects, public outreach, flood warning and early detection, and maintenance and operation of completed structures.
Workforce: 199 employees

Testimonial of Value of the AZ State Quality Awards Program

The benefits from the District’s participation in the AQA program are numerous. By focusing on the path we took from the inception of the project to the products we made available to our customers, we realized there was room for improvement. We learned the benefits of stepping back and revisiting the processes we used to improve the products and services we provide.

We are now able to apply what we learned to current and forthcoming projects. This will result in greater efficiency and customer satisfaction.

–Tim Phillips, Chief Engineer and General Manager, Flood Control District of Maricopa County

Highlights of Organizational Process:

Processes:

- Digital aerial photography is a vital component of the business processes at the District. It is used as a tool that provides information about the lay of the land, natural and man made structures, soils, land use and many other parameters that are used for the identification of flood prone areas.
- The procurement process for the digital images includes multiple local, state and federal agencies that pull together their resources to obtain very accurate high resolution images on a yearly basis.
- The key requirements for this process are:
 - Collect digital imagery in a manner that is accurate, timely and with specifications that satisfy the needs of all partners in the process
 - Obtain cooperation from other jurisdictions to cost share in the acquisition of the images

- Ensure the images are delivered in State Plane NAD83, Arizona Central Zone, and International feet.
- Ensure the images are not copyrighted and can be used and distributed without any limitations or restrictions.
- Ensure there is a computer infrastructure that allows the hosting and distribution of the images throughout the organization and through the internet, so images can be deployed properly.

Quality and Performance Results

- Images are checked for correct tonal balances. A good product should have a similar tone throughout the project so features can be picked up by their tonal color characteristics. This makes it easier to select similar features using automated techniques. Checks are also performed for “artifacts” that should not appear on the images and for correct pixel size.
- Images are checked for their positional accuracy. The images provide the base map information that guarantees the location of features. Survey crews provide the information necessary to certify the images are positioned accurately in relation to the surface of the earth. Accuracy has improved from a root mean square error (RMSE) of 58.9 in 1999 to a reduced 2.14 feet in 2005.
- Increased jurisdictional participation in the project has accomplished a decrease in cost for each of the partners in the process. This year the total cost to the county for aerial photography is \$881,000 for a total of 5500 tiles. The average price per tile without partnering with other jurisdictions is \$160.00 per tile. By inviting other communities to pool their resources with the county, the average cost per tile to the county has dropped to \$15.00. The participating jurisdictions are experiencing similar savings in cost.
- Comparing this product with other similar products in the industry available through commercial internet Web applications, the District provides: higher resolution images; flight date information; comprehensive coverage of Maricopa County and portions of Pinal County; inventory of images from multiple years; overlays of additional spatial data such as FEMA floodplain zones; the ability to purchase the image tiles and the ability to locate images by multiple search tools such as entering a parcel number, a street address, a street intersection, and/or township range and section.
- The Web site statistics for the last three years show there is a constant growth in the number of people that are accessing the information on line. The second year the web site experienced a 50 percent increase in the number of visitors when compared to the previous year, and the number of hits doubled during the last year.
- Image quality has improved over the years. The earlier images were collected in black and white and at a 2-foot pixel resolution. Newer images are collected at a 0.32 foot pixel resolution, in color and with an additional near infrared spectrum band.
- The digital photographic data has served its original purpose to aid the District in its mission. The images are now being used for purposes beyond the original intent. Real estate companies use the information to research the latest floodplain information for a given parcel. Citizens applying for building permits (through the Maricopa County Planning & Development Department) are required to have a map of their parcel with the latest aerial photography and are using this resource for that purpose. It is also used by people researching a parcel to determine when a structure was built on a property, and to verify if a building permit was acquired at time of construction. The information is used by 911, Emergency Management, and for a multitude of uses throughout Maricopa County.