



AMAFCA Flex Viewer Using RIAs For GIS Web Mapping

ESRI International Users Conference

July 15, 2010

**Albuquerque
Metropolitan
Arroyo
Flood
Control
Authority**

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**Kevin Troutman
AMAFCA**

**Robert Royall
AMEC Earth & Environmental**

Outline

- About AMAFCA
- Types of facilities
- History of GIS at AMAFCA
- Use of GIS at AMAFCA
- Development of the web GIS application
- Demonstration of the web GIS application
- How the application is used

AMAFCA

- 5 Member Board of Directors
 - Nonpartisan
 - Districts established in 2002
- 22 total employees
 - 11 engineers and staff
 - 11 maintenance crew



About AMAFCGA

- \$10 million in construction annually
 - Funded through bonds
- Approximately \$3 million in operating funds
 - Excluding debt service and contingency reserves
- Funded entirely by property tax



Area Served

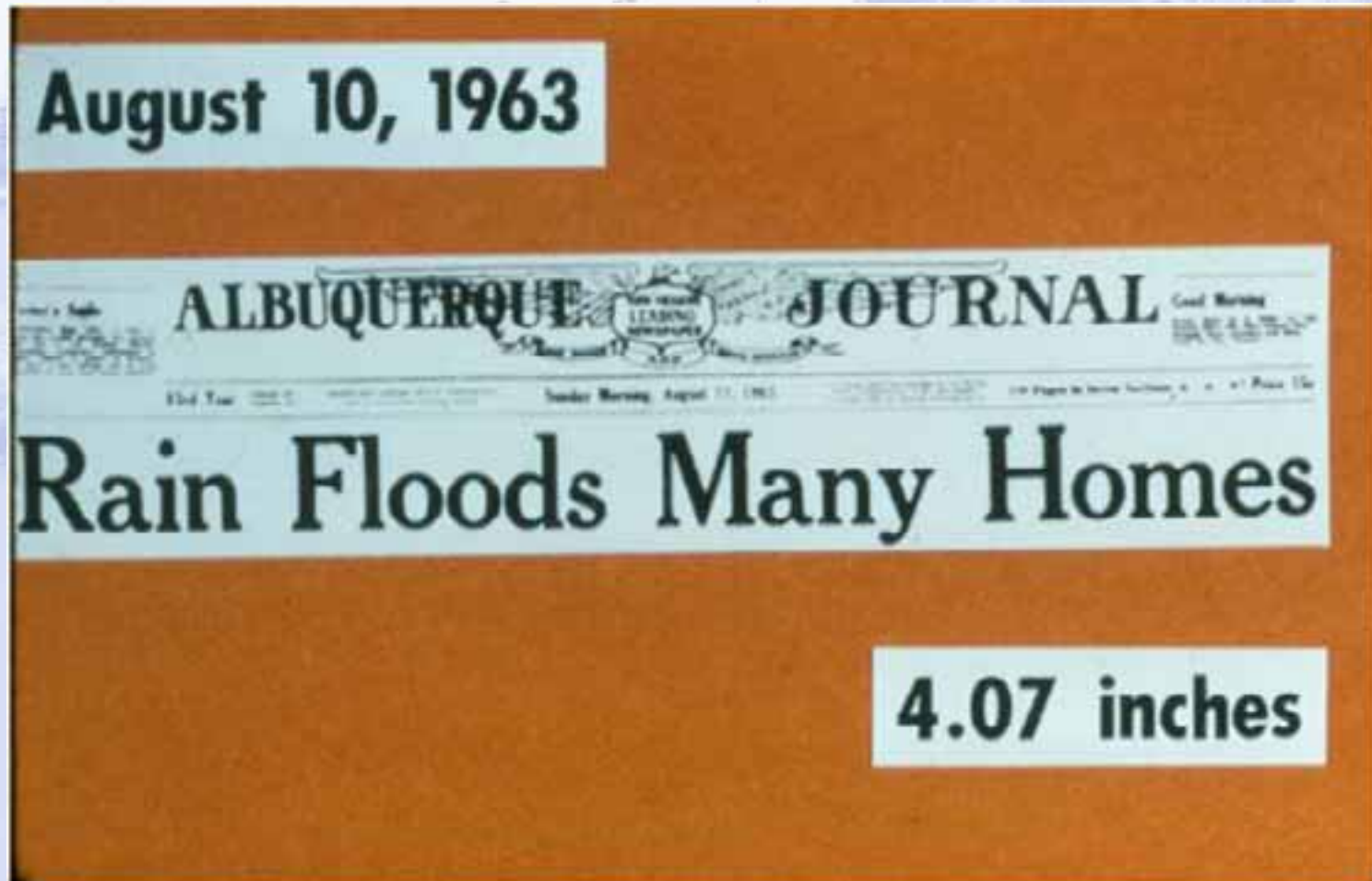
- City of Albuquerque
- Village of Los Ranchos de Albuquerque
- Portions of Bernalillo County
- Portions of Rio Rancho
- Diverse watershed
 - Elevation from 10,000 ft to 4,900 ft
- Population ~600,000



Founding of AMAFCGA

- Formed in 1963 by the New Mexico State Legislature
 - 72-16 NMSA – Arroyo Flood Control Act
- Local sponsor and maintenance agency for USACE Diversion Projects in Albuquerque
 - Federal flood reduction funding 1958-1963
- Agency would be dissolved if first bond election failed

2 Weeks Before 1st Bond Election



Flood Damage In 1963



First Two Projects

- USACE project
- Two separate diversion channels
- Protect river valley
- Divert runoff from the higher terrain



North Diversion Channel

- 9 Miles of concrete channel
- Completed in 1969
- Drains most of eastern Albuquerque
 - More than 90 sq mi
 - Peak flow 12,300 cfs
 - 8/14/1980
 - Rio Grande
 - 500-4000 cfs



South Diversion Channel

- 5 miles rip rap lined channel
- 1 mile concrete channel
- Completed in 1972
- Joins Tijeras Arroyo



AMAFCA Since 1969

- 50 miles of improved channels
- 70 miles of natural arroyos
- 14 miles of underground conduit
- 36 flood control dams
- 16 miles of dam embankment



Facility Types – Concrete Channel



Facility Types – Soft Side Channel



Facility Types - Dams



Facility Types – Natural & Artistic



Facility Types – Water Quality



Facility Joint Use



AMAFCA GIS Timeline

- GIS position created in 2001, filled July 2002
 - Split between GIS and engineering duties
- ESRI ArcGIS license purchase – September 2002
- AMAFCA GIS needs assessment – May 2008
 - Develop plan for further GIS implementation
- Full time GIS position created in July 2008
- RFP for GIS professional services – September 2008
- GIS contract with AMEC January 2009
 - Web development

AMAFCA GIS

- Facilities inventory & Land Management
 - Channels, dams
 - Maintenance responsibilities
 - Entry points
 - Monitoring locations
 - Right-Of-Way
 - Easements
 - Licenses & agreements



AMAFCA GIS

- Project planning
 - Cooperative interagency projects
 - Project schedule every 2 years
 - Cost estimates
 - Drainage master plans



AMAFCA GIS

- Exhibits
 - Board of Directors meetings
 - Public meetings
 - Interagency agreements, RFP, bid advertisements, specification books, construction plans



Web Application Development

- Needs assessment
 - February – May, 2008
 - 3 year development plan
 - High priority placed on development of web application
- Request for proposals
 - September 2008
 - Contract January 2009
- Initial data collection, digitization, mxd development
 - February – May, 2009

Application Goals

- Data Viewer
 - Replace existing PDF maintenance map
 - Make simple exhibits
 - Show planned projects
- Spatially referenced documents
 - Access plats and plans from features
 - Digital archive for documents
- Develop off-site
 - Allow time to update hardware

Application Development

- 1st web application
 - ArcGIS Server – minimal enhancement
 - Primary focus on data conversion
- 2nd web application
 - Flex API
 - Two separate sites – public and password protected
- 3rd web application
 - Custom interface
 - Custom tools

Demonstration



Benefits Seen

- Speed
 - Application responds quickly, even using imagery
- Access
 - Public access to existing projects and planned projects
 - Allows public to identify an area in need of maintenance
 - Linked from main website
- Additional opportunities
 - Multi-agency collaborative efforts
 - Storm water specific

Current Uses

- Public information
 - Ownership or maintenance questions
 - Complaints
- Internal research
 - Real Estate
- Meetings
 - Show projects
 - Annotate the map



Future Enhancements

- Additional tool development
- Multi-agency information
 - More storm water data
- Educational information
 - YouTube links
- Maintenance file access
- Emergency operation plan access
- Stream flow data
 - Need additional gage locations

Contact Information

- **Kevin Troutman**
 - AMAFCA
 - ktroutman@amafca.org
 - 505-884-2215

- **Robert Royall**
 - AMEC
 - robert.royall@amec.com
 - 505-821-1801

- Site accessible from amafca.org or arcgis.com

