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 AMAFCA

- $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
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

August 10, 1963

ALBUQUERQUE JOURNAL

Rain Floods Many Homes

4.07 inches
Flood Damage In 1963

Downstream side of Hahn Arroyo crossing at Washington, NE. Wall extended entire length of this yard, at Delamor & Washington. (8-13-63)
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

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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

- **1\textsuperscript{st} web application**
  - ArcGIS Server – minimal enhancement
  - Primary focus on data conversion
- **2\textsuperscript{nd} web application**
  - Flex API
  - Two separate sites – public and password protected
- **3\textsuperscript{rd} 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
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- Site accessible from amafca.org or arcgis.com