Water Conservation and Management Projects
in El Paso County Water Improvement District

Jesus Reyes
General Manager
El Paso County Water Improvement District No. 1

- Irrigation District – 400 miles of canals
- Created in 1917 – Includes international boundary
- Political Subdivision of the State of Texas
- Part of federal Rio Grande Reclamation Project
- Work closely with
  - Elephant Butte Irrigation District
  - Department of Interior - Bureau of Reclamation
  - United States Section of the International Boundary and Water Commission
Purpose of District

• Supply Irrigation Water to Agricultural Lands
• Provide Groundwater Drainage of Agricultural Lands
• Supply Raw Water to Water Treatment Plants
• Provide Agricultural Stormwater Drainage
Pecans
Cotton
Corn and Wheat
Chile and Onions
Hay
5 Major Water Conservation and Drought Mitigation Efforts

- Policy
- Construction
- Information Management
- Automation
- On-Farm
District Efficiency

• Ratio of Water Delivered to Charged to Water Users Diverted from the Rio Grande to Water (full allocation years)
  – District Efficiency = 100 x Delivered / Diverted
  – Municipal (Pipelines) Range from 90 to 96%
  – Surface Irrigation (Open Channels) Range from 40 to 80%

• 1918-1942 <50% (excess water, limited demand)
• 1950-1978 56% (drought)
• 1978-1991 60% (transfer of operation to district)
• 1991-2002 65% (systematic improvements)
• 2002 to Present 72% (drought and modernization)
• 2008 to 2013 75 – 80% (modernization)
Policy

• Rio Grande Project – Operating Agreement
  – Conserved Water Stored in Reservoir for Future Use
  – Minimizes impact of drought on Texas
  – Address Groundwater Depletions in New Mexico

• 24 Hour – 7 Day a Week Operations

• Central Dispatch and District Owned Vehicles

• All Deliveries Metered

• Alcalde required for all small tract irrigations
Construction – Drought and Conservation Projects

• Development of 130 MGD – Supplemental Well Field
• Conversion of Open Channels to Pipeline
  – Expensive
  – Debris and Sedimentation Issue
  – Usually requires safety issue to justify
• Imprevious Lining of Canal
  – EPDM
  – Concrete
• Regulating Reservoirs
  – Federally Authorized Riverside Canal Improvement Project
• Automated Water Control Structures
62 Shallow Alluvium Aquifer Wells
Existing Wells - 1978
80 hp Diesel Powered - $32 acre-foot
Regulating Reservoirs
Riverside Canal – Socorro Pond – 300 acres
Information Management

- In – Vehicle Telemetry and Internet
- Web based – real-time flow information
- Water ordering and water account information
- Collection and metering of water flow information at 40 locations on Rio Grande and Canals
- Improved Drought Analysis and Forecasting
In Vehicle Telemetry and Internet
Anthony Cableway Station – Improved Accuracy
Using Acoustic Doppler Technology
Simplified Access to Telemetry Data

Realtime Telemetry Data

El Paso County Water Improvement District No. 1

Anthony Cableway
Waste Way 32
Rio Grande at Canutillo Bridge
Canutillo Lateral
Montoya Drain
Waste Way 35
Waste Way 36
Waste Way 58
American Canal Heading
American Canal Settling Basin
American Canal Leon Street
American Canal 2nd Street
Franklin Canal Heading
Franklin Canal US of Pendale Rd
Franklin Canal DS of Place Rd
Riverside Canal Heading
Riverside Canal DS of WW #1
Franklin Feeder Canal
Franklin Canal DS of El Paso Chock
Riverside DS of Island Main
Island Main Lateral
San Elizario Lateral
Tornillo Canal
Clair Lateral
Island Feeder Lateral
Franklin Canal DS of Island
Fabens Waste Channel
Fabens Waste Drain
Hudspeth Feeder Canal
Tornillo Drain
Tornillo Waste Way #2

**RG_R_AN_062 Gauge Height in ft**

- 17:45 06/12/08 to 17:45 06/15/08

- 0-4.5 ft

**RG_R_AN_062 Flow in cfs**

- 17:45 06/12/08 to 17:45 06/15/08

- 700-1200 cfs
Automation

- Participant in Texas Water Development Board – Agricultural Demonstration Project
- Automatic Gate Control – American, Riverside, and Tornillo Canal Systems
- Automated Pumping Plant Proposed for Regulating Reservoir
Automation for Flood Control – American Canal Extension
Work on Low Cost Automated Gate – TWDB and HID
On Farm

- Texas Water Conservation Task Force – BMP’s
  - Laser Controlled Land Grading
  - Precision GIS Guided Cultivation
  - Minimum Tillage
  - Concrete Lined Irrigation Ditches
Laser Controlled Land Grading
Minimum Tillage
GIS Precision Agriculture
Concrete Lining of Lateral Canals
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