West Harris County Regional Water Authority (WHCRWA)
Utilizes Advanced Internet GIS for Water Distribution Decision Support

Presented by:

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Presentation Agenda:

- WHCRWA
- Purpose & Functionality
- Architecture
- Database
- GIS Map
- Water Management Tools
- Easement Acquisition Tools
- Q&A

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WHCRWA

- Created in 2001 – HB 1842 approved in 77th Texas Legislature
- Primary Purpose:
  - Acquisition of surface water for residential, commercial and industrial uses
  - Reduction of groundwater withdrawals; 30% by 2010 goal met, 60% by 2025, 80% by 2035
  - Conservation, preservation, protection, recharge and prevention of waste of groundwater for control of subsidence in western Harris County
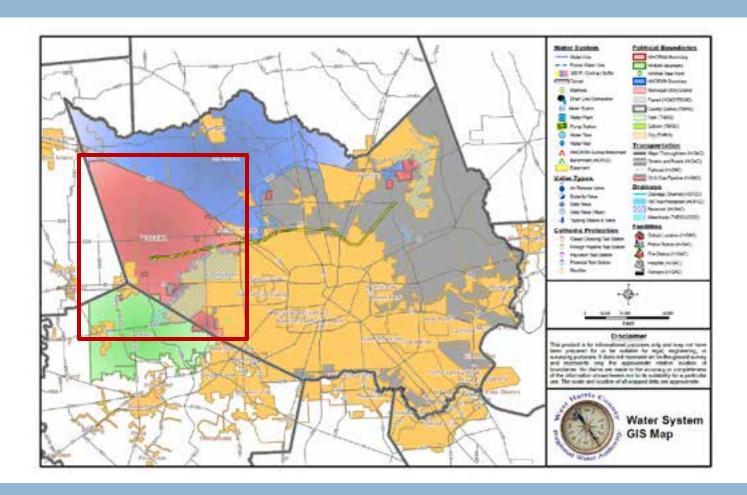
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WHCRWA

- Groundwater conversion to surface water distribution from the City of Houston / Lake Houston
  - Dannenbaum Engineering is the design and construction Program Manager overseeing the following projects:
    - **2010 CIP Projects** - Pump Station and Water Line distribution completed and in operation
    - **Second Source Water Line** – Preferred alternative route, environmental clearance and easement acquisition underway for 40 miles of up to 96" pipe from the City of Houston's Northeast Water Purification Plant (NEWPP) to the WHCRWA region
    - **2025 CIP Projects** – Design and Easement Acquisition underway
    - **2035 CIP Projects** – Planning in consideration

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Region

Purpose & Functionality

- Created for Program Management decision support
  - Provides PgM team, Board members, water operators, maintenance personnel and water authority attorneys with easy access to data…
    - **Existing Tools**
      - Water System GIS Map
        - *Linked access to documents:*
          - Design and as-built drawings
          - Valve specifications
          - Cathodic Protection descriptions
          - Survey monument descriptions
          - Easement descriptions
      - Program Management Tools:
        - Water Management
        - Easement Acquisition
    - **New Development**
      - Easement Encroachment Management
      - GIS Integration with Hansen Asset Management System
        - Analyze and report repair trends including manufacturers, contractors, etc.
        - Navigation to assets and field data entry forms

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Architecture

- ArcGIS Server 10.1
- C# / .NET Platform
- Adobe Flex (Flash) Viewer
- ArcSDE / MS SQL Server 2012 RDBMS

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Database

- Contract has Water Line

- Water Line has Documents, Maintenance, Valves, Cathodic Protection, Manholes, Drain Line Connections

- Valves (for example Valve Documents and Maintenance
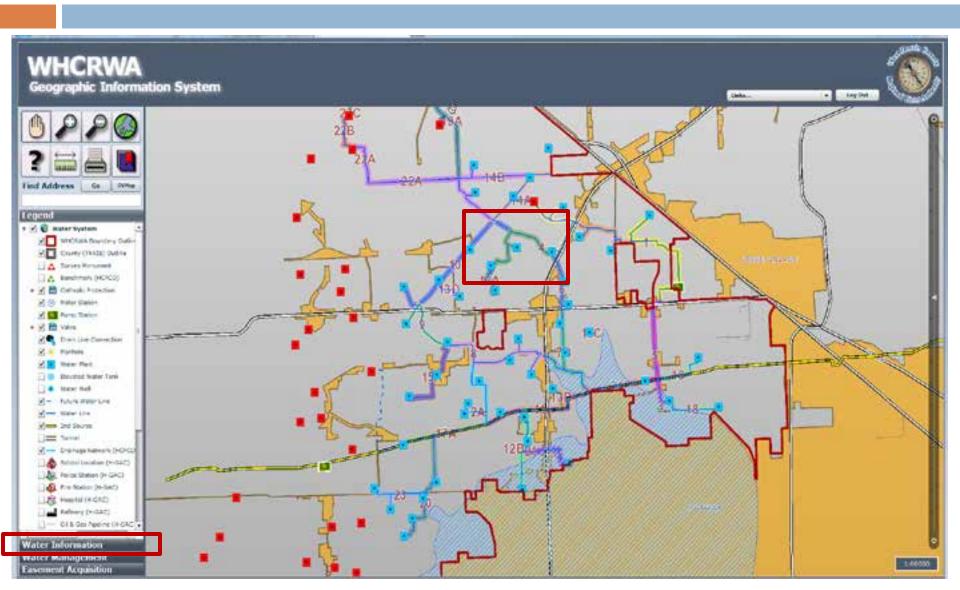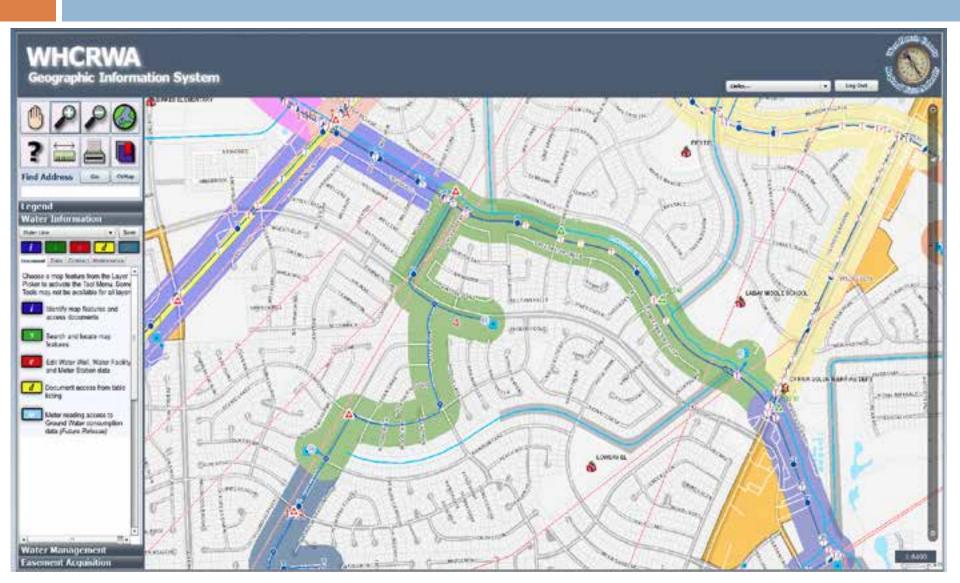
Front Page - Secure Access

GIS Map

Print Map Sheets

Bookmarks

Water Information Portal

Contract No. 4

Identify Features

Access Documents

Access Asset Data

Access Contract Data

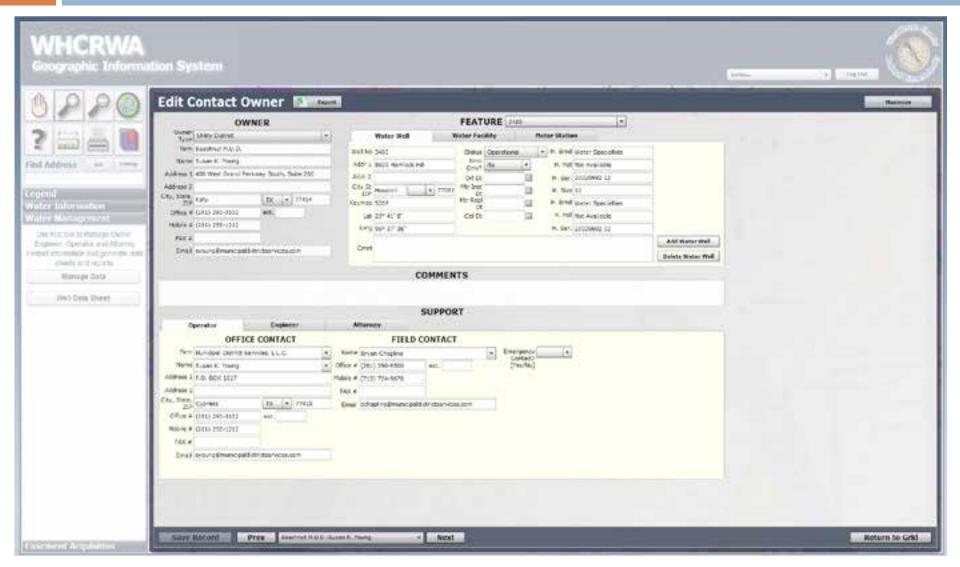# Access Maintenance Data (Future)
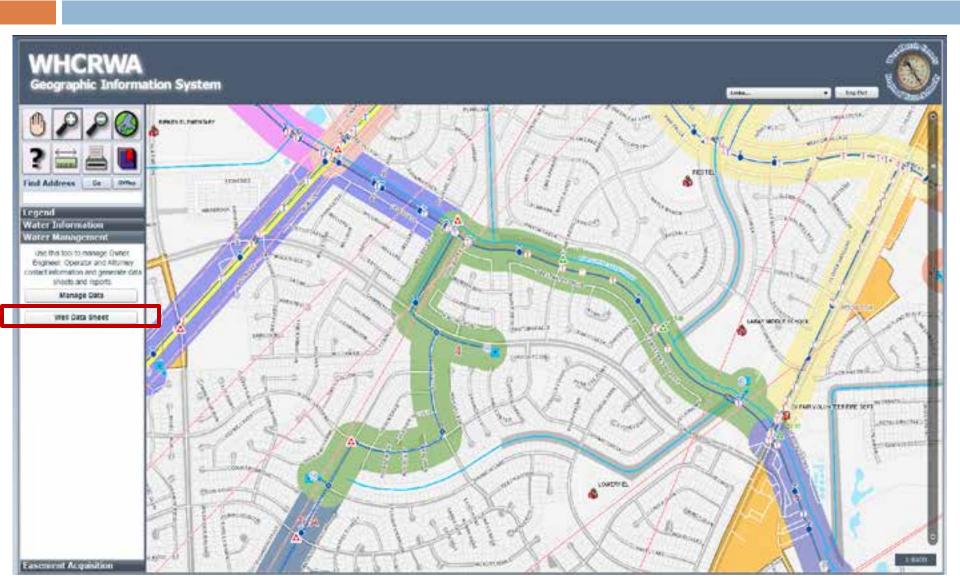
Water Management Tools

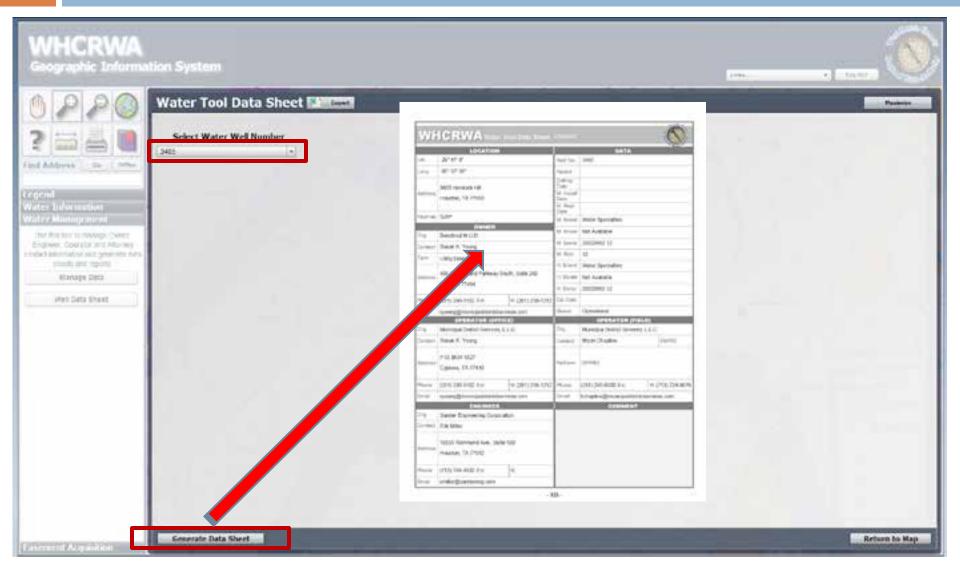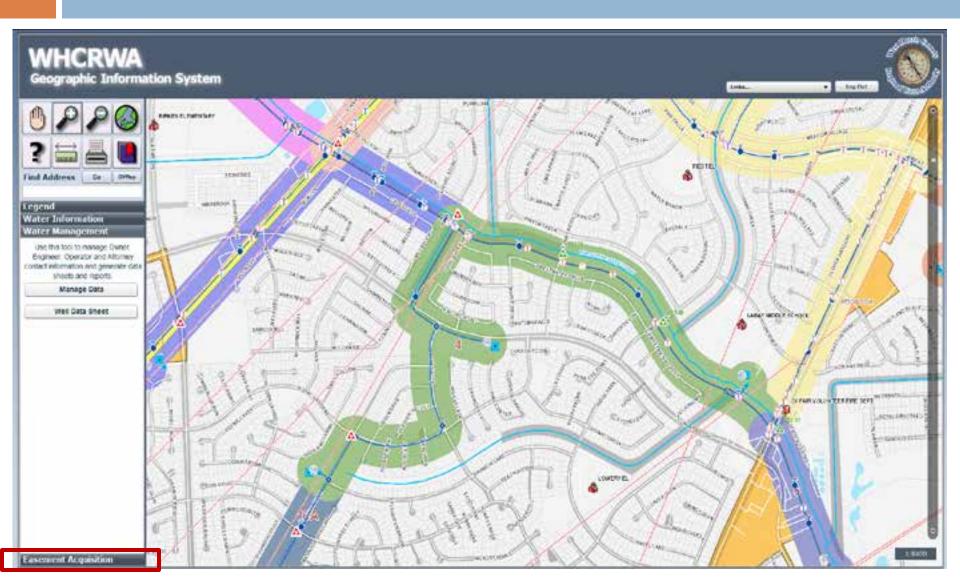# Manage Data

Owner Grid

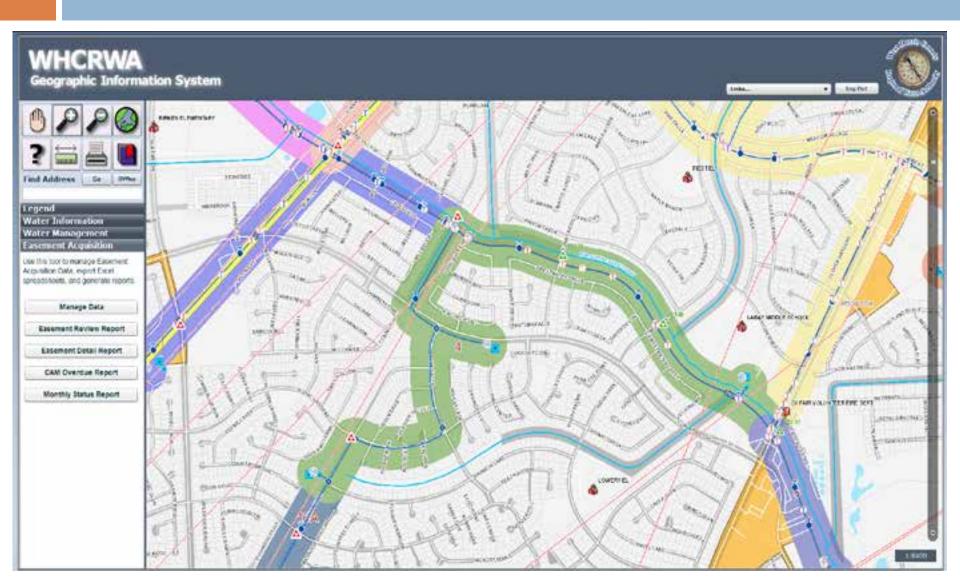# Edit Owner Grid
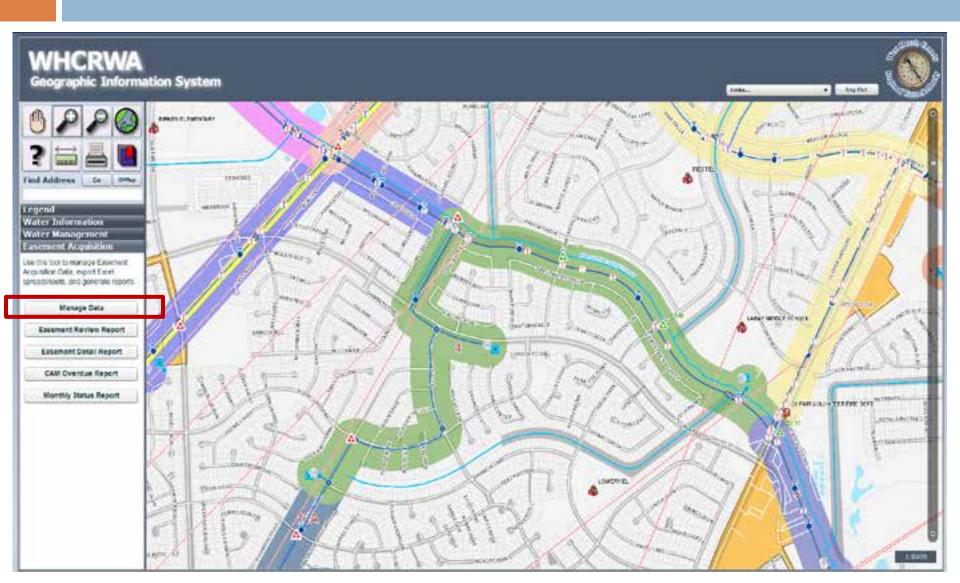
Access Well Data Sheets

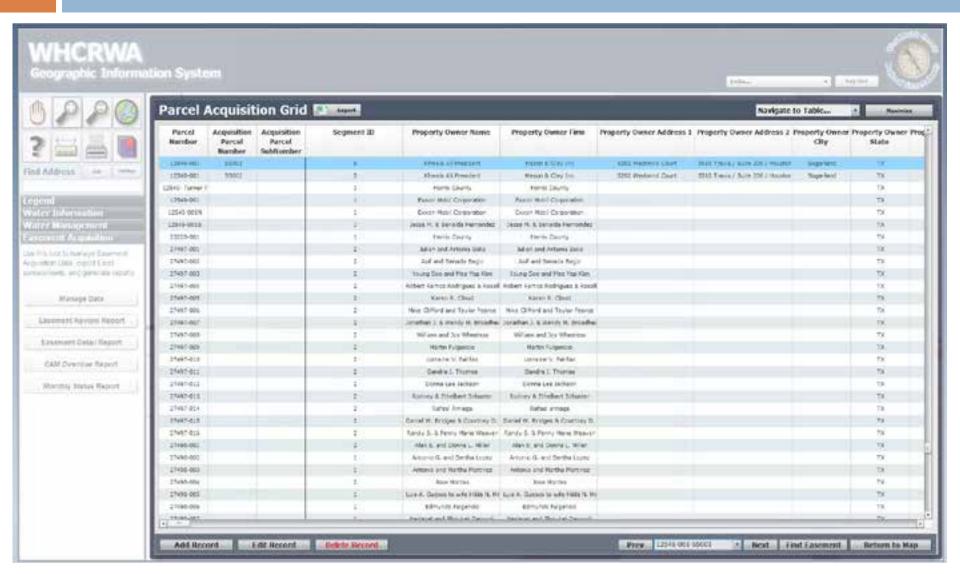# Find Well Number

Easement Acquisition Tools

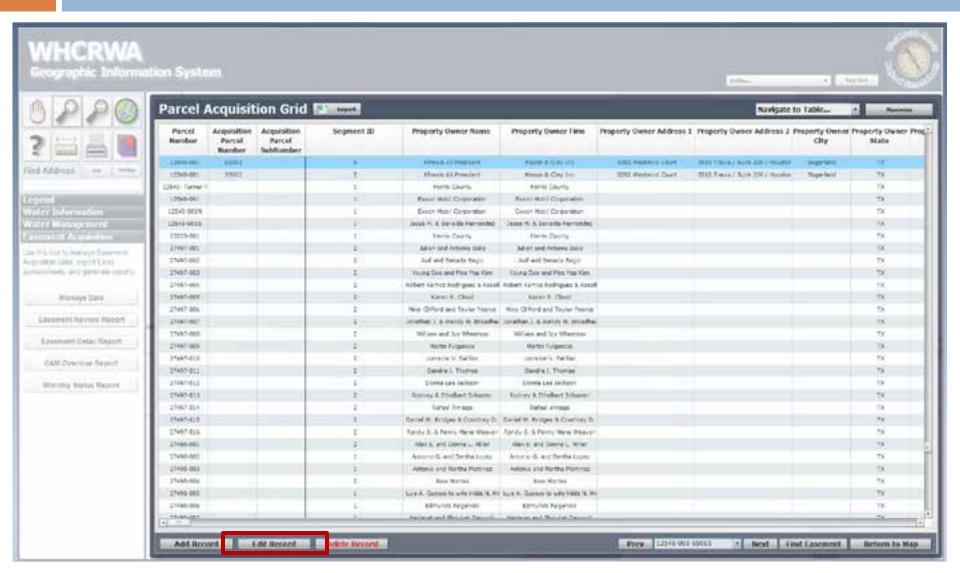# Easement Acquisition Tools
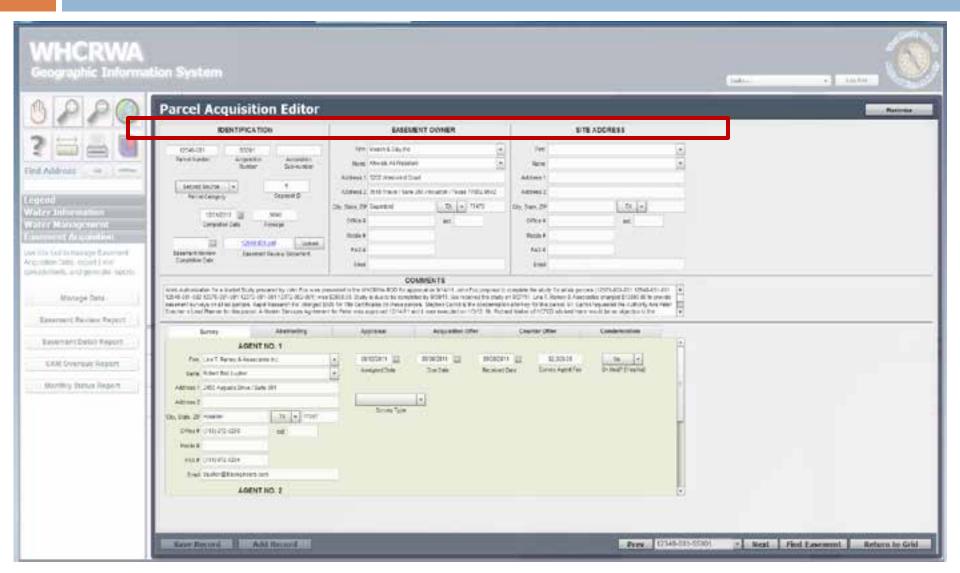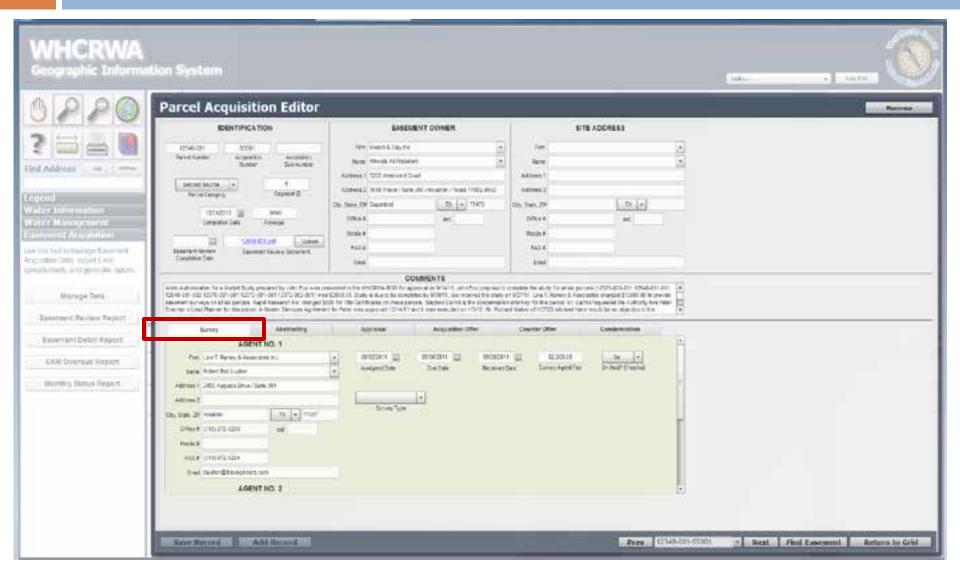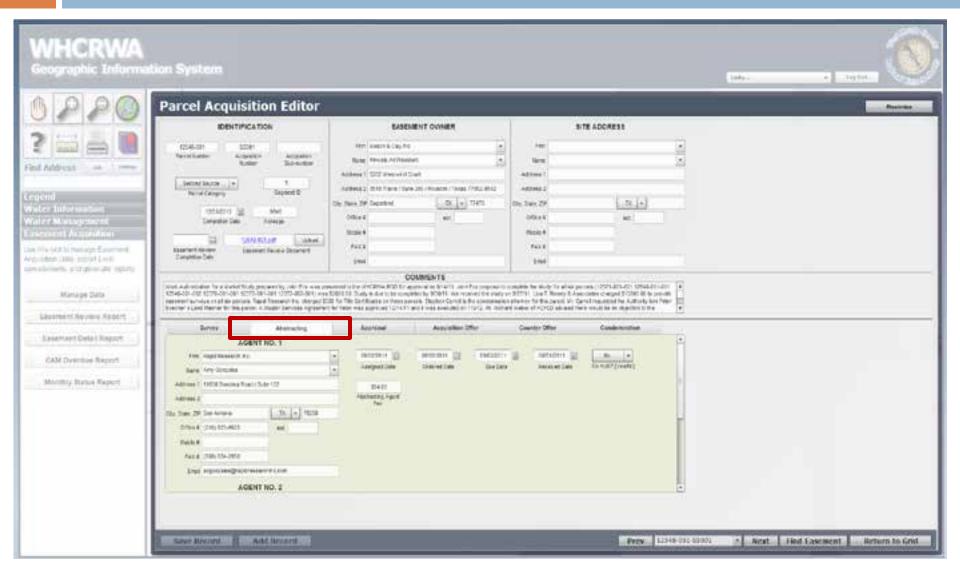
Manage Data

Acquisition Grid
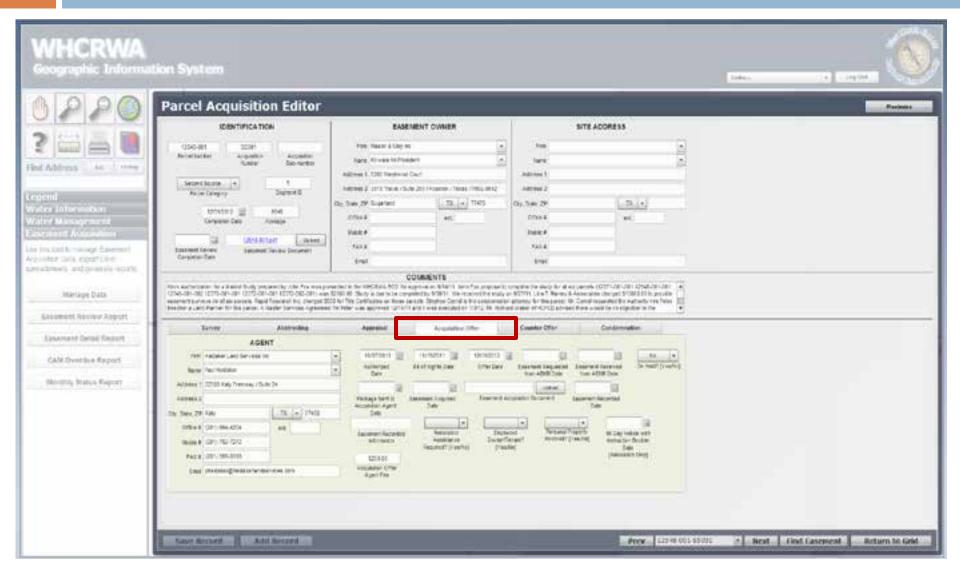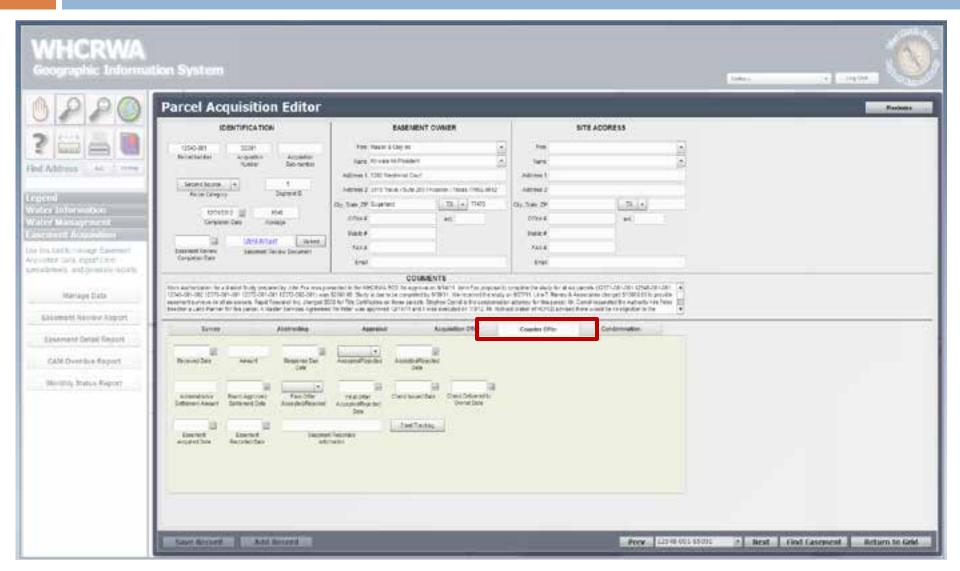
Edit Record
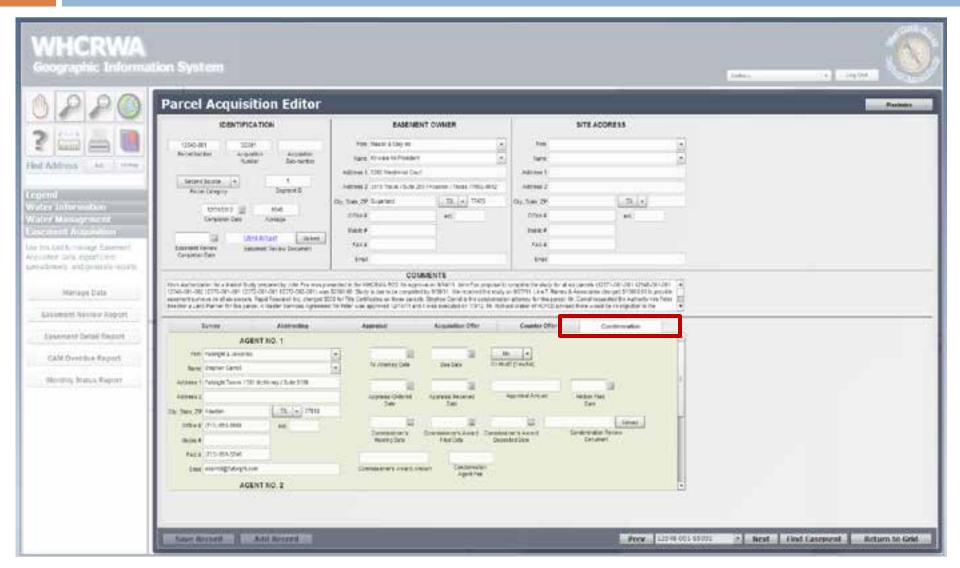
Identification/Ownership/Location

Survey

Abstracting

Appraisal
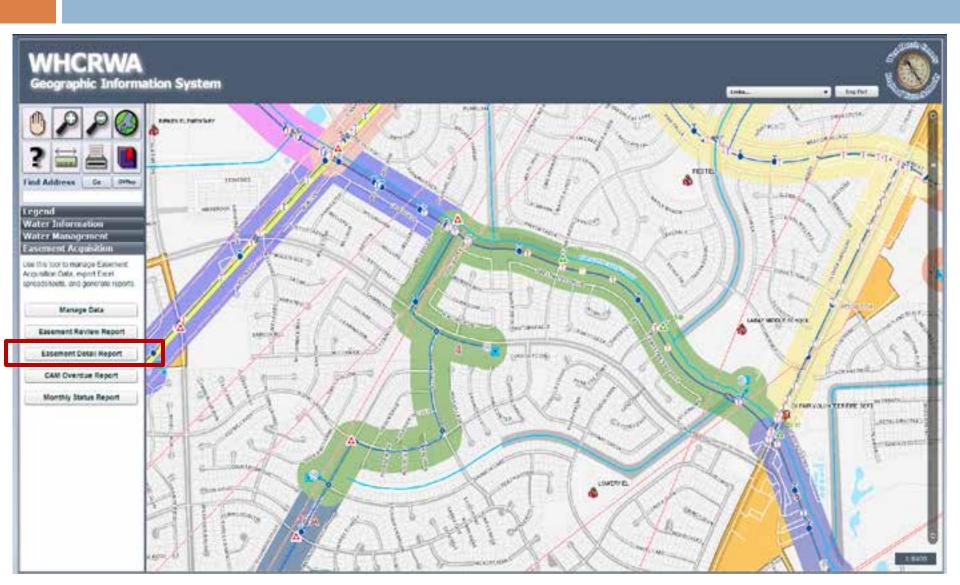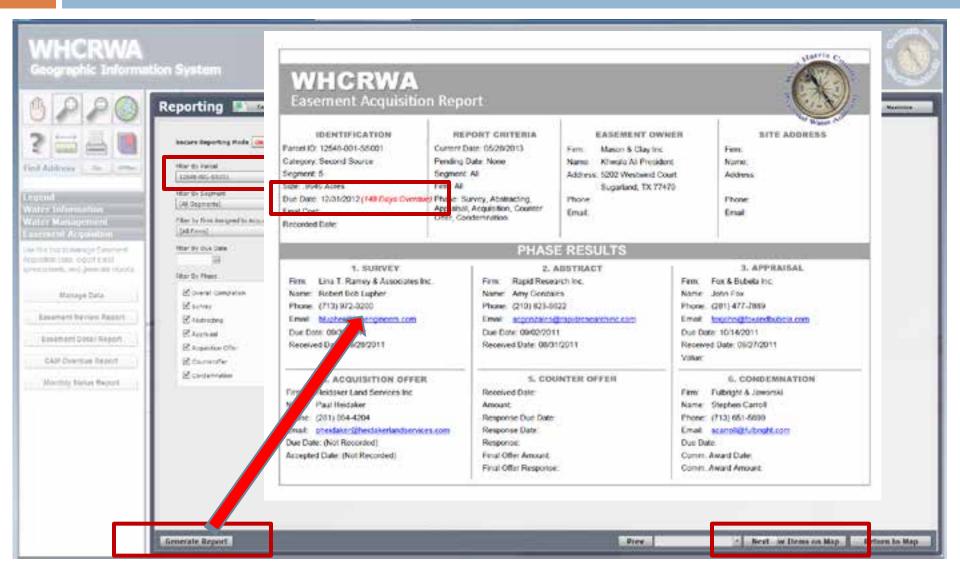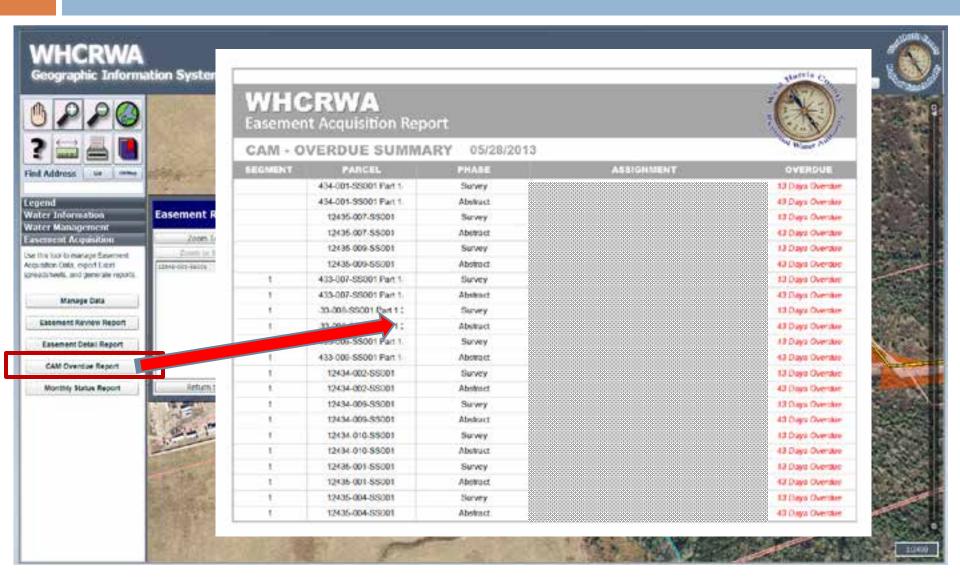
Offer

Counter Offer
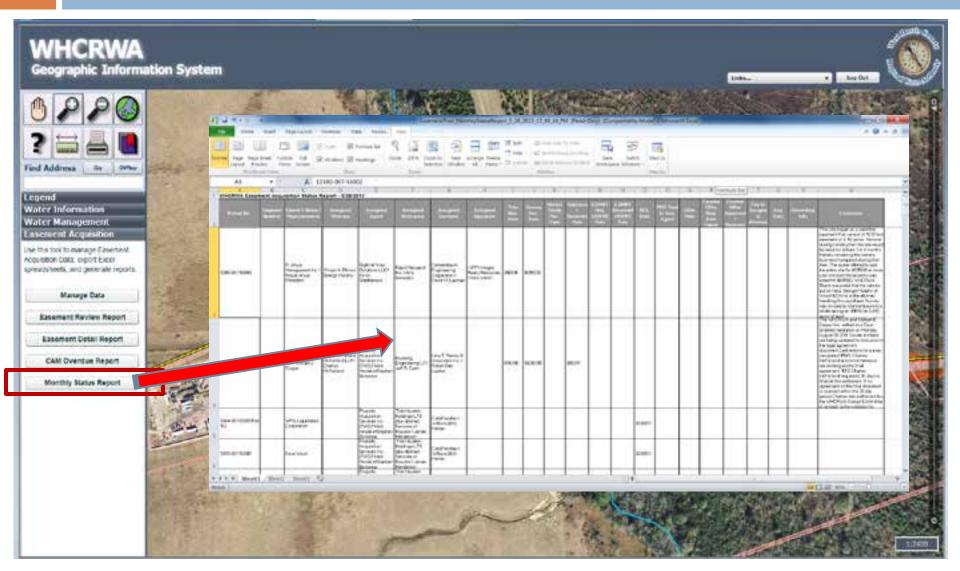
Condemnation

Detail Report

Detail Report

CAM Overdue Report

Monthly Status Report

Lessons Learned

1. Allow end users to have input into system requirements

   Understand user's needs… capture support

2. Keep application designs **_SIMPLE_** *and* **_EASY_** *to* **_USE_** *and* **_MAINTAIN_**

   Users often abandon new technologies for more familiar manual methodologies

3. Develop solid design specification documentation that will guide the developer to build exactly what the user base needs

   Not what the developer or GIS Analyst believes is needed… intuitive easy to operate… not encrypted with multiple activity layers to accomplish a single function

4. Set up a mirrored test environment that matches production

   Isolated staging system for testing and recovery activities

5. Apply regression testing techniques to test the entire application for new bugs introduced during code enhancement and modifications

   New code creates new problems elsewhere… be sure to catch all before releasing enhancements to the user base

Q&A

Thank You:

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http://www.whcrwa.com/

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