From Filing Cabinets to Tablets: Migrating to Digital Workflows

Trinity River Authority

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Who Is the Trinity River Authority?

• Created by state legislature in 1955

• Special-purpose district

• Largest wholesale provider of wastewater treatment services in Texas
The Trinity River Basin

- Approximately half of Texas’ population depends on the Trinity River basin for at least part of its water supply.

- Since 1911, more than 24 water-supply reservoirs have been built within the basin.
Main Areas of Focus

- Wastewater Treatment
- Water Treatment
- Reservoir Facilities
- Recreational Facilities
- Tax-Exempt Financing
Lake Livingston Project

- Funded by City of Houston
- Operated by TRA as a Water Conservation Reservoir
- 83,000 acres
Trinity River Authority Permit Department at Lake Livingston

- Onsite wastewater systems within 2000’ of lake shoreline are permitted and inspected
  - Aerobic-2800 systems
  - Conventional-4900 systems
- Shoreline structures-boat docks and piers- 4200 structures
- Small water sales
All Paper and Filing system
Reviewing the Permitting Process

LLP-Septic System Permitting Process

<table>
<thead>
<tr>
<th>Property Owner</th>
<th>Permit Administrator</th>
<th>Area Administrator</th>
<th>Field Inspector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Submits Application Form in person or mail/WEB</td>
<td>Invoice</td>
<td>Starts work</td>
<td>Completed and Licensed</td>
</tr>
<tr>
<td>Creates folder and System Design and Site evaluation Check Form with Applicant info</td>
<td>Letter of Authorization</td>
<td>Creates Final inspection form with Application</td>
<td>Submits License</td>
</tr>
<tr>
<td>Reviews and approves</td>
<td>Final preconstruction approval and</td>
<td>Final approval and signature</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Inspects Property and Plan and approves (Collector APP)</td>
<td>Inspects System during installation (Trimble)</td>
<td>Complete As built drawings (Trimble)</td>
<td>Field card created to pull for annual review (Collector APP)</td>
</tr>
</tbody>
</table>
Teaching Old Dogs New Tricks

- Hands On Training
- Quick How To Reference Sheets
- Follow Up Question and Answer Meetings
- Two Month-Practice Period
Aerobic System Installation
Trimble to Pathfinder

- GPS-ed points are brought into Pathfinder Office and are processed and exported into a shapefile.
- Because the GPS points are captured using WGS84, they have to be projected to NAD83 to match the SDE's coordinate system.
Pathfinder to ArcGIS

- The GPS point shapefile is brought into ArcMap

- Using Load Objects in an Edit session, the points are loaded into the SDE.
Inspection on Septic System
Passed Inspection

Details

10/15/2017 7:00 PM
lat:67.28051493

PARCEL D
FILE NUMBER
FIELD INSPECTOR
TYPE OF INSPECTION
Septic
DATE OF INSPECTION
10/15/2017 7:00 PM
STATUS OF INSPECTION
Complete
PASSED INSPECTION
Yes
COMMENT
X COORD
33.23
Y COORD
42.36
Shoreline Inspection
ArcGIS Online

Field Inspection Report

Report Query

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Search by File Number or Parcel ID</td>
<td></td>
</tr>
<tr>
<td>Inspection Report</td>
<td></td>
</tr>
<tr>
<td>Completed Inspections (Custom)</td>
<td></td>
</tr>
<tr>
<td>Failed Inspections (Custom)</td>
<td></td>
</tr>
</tbody>
</table>

Query criteria

- Date of Inspection is between
  - Sun Apr 01 2018
  - Mon Apr 09 2018

Enter a date range

(Status = 'Complete') AND (PassedInspection = 'No') AND
(InspDate BETWEEN timestamp '2018-04-01 05:00:00' AND
timestamp '2018-04-10 04:59:59')
Challenges

- Working with LLP to learn the new technology
- Original inspection with polygons
  - Multiple inspections for one parcel didn’t work
- External access to the Document Management System
- Document Management System's parcel and file numbers not matching what is in the geodatabase
  - Inspections not able to be done if data in relate tables does not match
- Working with four different counties
  - Parcel IDs could be the same
- Such a large project required many teams working together to accomplish this workflow
  - Inspectors GPSing tanks
  - Office scanning documents
  - IT configuring behind the scenes
  - GIS bringing it all together in a usable format
  - Person championing the GIS technology to their team
Looking Ahead

- Finding a way for citizens of Lake Livingston to apply, pay, and follow their permit application from start to finish.

- Creating a way to automate the audit done by TECQ.

- Tracking shoreline assets

- Creating a Dashboard to allow supervisor to have an instantaneous view of things going on
Questions?