TURNING INFORMATION CHALLENGES
INTO CLIENT SUCCESS

Service Regulator Application and Data Collection Pilot Results
Northeast Gas Association
Fall Operations Conference
October 5, 2018
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Regulated transmission and distribution utility serving approximately 300,000 electric customers and 79,000 natural gas customers.

Defined service territory of New York State’s Mid-Hudson River Valley, from the suburbs of metropolitan New York City north to the Capital District at Albany.
Service Expertise

Engineering and Records Consulting, Staffing and Technology

**RECORDS COMPLIANCE**
Improving efficiency and reducing risk through better records management and improved records integrity.

**PIPELINE INTEGRITY SUPPORT**
Providing information support for pipeline integrity analyses and initiatives.

**FIELD DATA COLLECTION**
Optimizing field data collection and reporting through process improvement consulting, mobile technology, and project support.

**DATA MIGRATION AND INTEGRATION**
Offering data preparation, validation, and optimization assistance for migration and integration efforts.

**REGULATORY AND LEGAL RESPONSE**
Assisting with the information-intensive requirements of challenging legal and regulatory situations.

Our suite of services is especially relevant for mission-critical initiatives such as Materials Tracking and Traceability, which require advice on what data is required to support recent and impending rules, corresponding improved approaches to data collection, and the integration of legacy data.
Central Hudson
Project History:
Regulatory Request to Track and Trace Service Regulators
Data Collection Process

• Extract meter set data including GPS locations
• Load meter set data into collection application
• Plan daily collection routes
• Collect regulator and meter set data
  – Regulator make/model
  – Regulator vent location and condition
  – Photos of meter set and regulator
• Review and check data
• Determine result
  – Complete – all required data complete
  – Incomplete
    • Could not find/get in
    • Can’t determine regulator make and/or model
    • Photos incomplete or unusable
# Collection Results

<table>
<thead>
<tr>
<th>Location</th>
<th>Flag</th>
<th>Municipality 1</th>
<th>Municipality 2</th>
<th>Municipality 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>New</td>
<td>Red</td>
<td>22</td>
<td>97</td>
<td>347</td>
<td>666</td>
</tr>
<tr>
<td>Visited</td>
<td>Yellow</td>
<td>21</td>
<td>201</td>
<td>0</td>
<td>221</td>
</tr>
<tr>
<td>Complete</td>
<td>Green</td>
<td>21</td>
<td>180</td>
<td>0</td>
<td>201</td>
</tr>
<tr>
<td>Visited, Incomplete</td>
<td>Yellow</td>
<td>0</td>
<td>19</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>QC’ed, Marked Incomplete*</td>
<td>Yellow</td>
<td>1</td>
<td>19</td>
<td>0</td>
<td>19</td>
</tr>
<tr>
<td>Address Research</td>
<td>Orange</td>
<td>1</td>
<td>7</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>
Collection Results

Investigations Completed

- 17% Incomplete
- 83% Complete
Collection Results

Make & Model

- American B42R
- Schlumberger B42R
- Actaris B42R
- Itron B42R
- American S102
- Fisher S102
- Sprague 1813
- Singer 1813
- American 1813
- American 1813C
- Recollect
- Recollect - American
- Recollect - Fisher
- QC Research
- QC Research - American
- QC Research - Fisher
## Maintenance and Repair Discovery

<table>
<thead>
<tr>
<th>Maintenance Call Ins</th>
<th>Municipality 1</th>
<th>Municipality 2</th>
<th>Municipality 3</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screen Condition – Open, Damaged</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>Meter Not Registering</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Tighten Fitting</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
Photo Array

1. Location Verification
   Request Meter Number info from Customer Service

2. Meter/Regulator Relationship
   Full frame to show relationship

3. Make/Model-Front
   Take at 90 degree angle

4. Make/Model-Back
   Take back side and front side to determine model

5. Regulator Size
   In and Out Pipe – quality photo of the threads ID size

6. Vent Direction
   Take at 90 degree angle to show direction

7. Vent Condition
   Selfie Mode works best to take vent condition photo

8. Additional Photos - Markings
   Additional photos taken of markings help determine make, model, size
Pilot Survey Results

• Rate of collection is a key metric to drive future estimates
  – Achieved 6 meters per hour on outside meters
  – Achieved 3 meters per hour on inside meters
• Expect modest collection rate increases with mild weather
• Achieved first visit completion rate of 83%
• Need to understand the make-up of future populations to identify possible new impacts
• Size teams to maximize supervisor positions
• Explore data validation strategies to reduce downtime when finding locations

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Application Demo, Enhancement Ideas and Lessons Learned
Service Regulator Mobile Application

- **Leak Number:** 0
- **Street:** All
- **City:** All
- **Location:** All
- **Status:** All

**Meters:**
- **Meter No:** 40045894, **Street:** 161 JEFFERSON HTS
- **Meter No:** 30031811, **Street:** 46 S JEFFERSON AVE, CATSKILL
- **Meter No:** 20012881, **Street:** 110 WILDWING PARK EXT
- **Meter No:** 20014753, **Street:** 19 ELY ST
- **Meter No:** 20012681, **Street:** 21 LANDON AVE
- **Meter No:** 20052214
Service Regulator Web-Based Portal

![Image of a web-based portal interface showing a table of service regulator information with columns for object, status, inspection date, entity ID, service type, meter number, address, city, location, operation status, and comments.]
Application Enhancement Ideas

- **Crew Tracker and Work Reassignment**
  - Utilize app presence for time tracking and location assignments
  - Push re-check assignments to closest crew member
  - Simplify or eliminate manual time sheet verification.

- **Safety and Accountability**
  - Automatically track and record crew and lead locations at configurable intervals (every 1 to 15 minutes).
  - Ensure crews are safe in working environment through visualization of their location on map.
Other Enhancement Ideas

- **Photo Array Requirements**
  - Auto label photos and load to tagged description
  - Business logic that identifies not enough photos or incorrect type
- **Workflow Enhancements**
  - Add additional distribution system elements to maps
  - Maintenance Integration
    - Push notification to Maintenance Work Management System to create a work order ticket for AOC
  - Capture address updates or customer name changes
  - Update meter set GPS location
  - Regulator change out procedure – move prior records to “historical” status, add current record
Lessons Learned

• Cold weather is hard on electronic devices
• Maintaining batteries with constant use is difficult
• Customer and public interactions take time
• Different service areas require more/less time
  – Dense residential
  – Large parcels
  – Commercial/retail
• GPS points alone can be difficult to follow
  – Data clean-up and verification can save time
• Many homes and structures do not have numbers
• Allow for name changes and address updates
Lessons Learned

• A team supervisor position is essential
  – Pick up emerging issues to allow collectors to continue
  – Manage the planning and work assignments
  – Deliver back-up equipment

• Daily route planning is crucial
  – Understanding a route v. locations
  – Are meter reading routes still available?

• Radio communication would be easier than phones

• Include a street view from mapping source to identify locations

• Quality Control is more time consuming than typically estimated

• Training for taking photos is important
  – Understand the focal range of the device
  – Quality over quantity
  – Selfie mode for underside of vents

• Have a backup collection system in place
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