MOBILE DATA COLLECTION, DISTRIBUTION AND COLLABORATION: FROM OFFICE TO FIELD

CEAM 2015 Annual Conference
City of Bloomington, Minnesota
MOBILE DATA COLLECTION, DISTRIBUTION AND COLLABORATION: FROM OFFICE TO FIELD

- Mobile Device Management
- ProntoForms
- Trimble TerraFlex
**City of Bloomington Community**

- Population – 86,319
- Area – 38.42 Square Miles
- Major Employers
  - Mall of America Tenants - 13,000
  - Health Partners - 2,483
  - Bloomington School District - 1,892
  - Seagate Technology - 1,748
CITY OF BLOOMINGTON INFRASTRUCTURE

- 342 Centerline Miles of Roads
- 2,016 Lane Miles of Roads
- 250 Miles of Sidewalk
- 512 Cul-de-sacs
- 358 Miles of Sanitary Sewer
- 260 Miles of Storm Sewer
- 489 Miles of Watermain
MOBILE DEVICE MANAGEMENT

- Key to Successful Mobility Implementation
- Mobile Devices – not just for email
- Data & Device Security
- Data Access/SharePoint
- Application Distribution & Licensing
- Device Monitoring & Control
PRONTOFORMS

- Introduced to Application
  - Wireless Carrier Relationship
- Pilot Project
  - Replace Paper Playground Inspection Forms
- Broadened into Engineering Inspections
  - ADA Sidewalk Ramps (MnDOT Forms)
  - Storm Sewer Inspections
- Integration of Inspection Data into GIS
Conduct upset daily updates with photos, video, and highlight comments.

**Form Information**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Form Name</td>
<td>Construction - Daily Report</td>
</tr>
<tr>
<td>Submitter Name</td>
<td>Charles Wild (<a href="mailto:cwild@bloomingtonmn.gov">cwild@bloomingtonmn.gov</a>)</td>
</tr>
<tr>
<td>Submission Date</td>
<td>Jan 12, 2015 11:56:48 AM CST</td>
</tr>
<tr>
<td>Server Receive Date</td>
<td>Jan 12, 2015 11:56:54 AM CST</td>
</tr>
<tr>
<td>Reference Number</td>
<td>20150112-1818321713</td>
</tr>
</tbody>
</table>

**Job Details**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor Name</td>
<td>CEAM</td>
</tr>
<tr>
<td>Contract #:</td>
<td>None</td>
</tr>
<tr>
<td>Contract Start Date</td>
<td>Jan 12, 2015</td>
</tr>
<tr>
<td>Project Name</td>
<td>CEAM 2015 Annual Conference</td>
</tr>
<tr>
<td>Job Location (Geo-Control)</td>
<td>West 98th Street, Bloomington, MN, US</td>
</tr>
<tr>
<td></td>
<td>Jan 12, 2015 11:56:03 AM CST [View Map]</td>
</tr>
</tbody>
</table>

**Weather Conditions**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature High</td>
<td>-5</td>
</tr>
<tr>
<td>Temperature Low</td>
<td>-20</td>
</tr>
<tr>
<td>Weather Conditions</td>
<td>Clear, Cold, Windy</td>
</tr>
</tbody>
</table>

**Workforce 1**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor's Name</td>
<td>University of Minnesota</td>
</tr>
<tr>
<td>Number of Foremen</td>
<td>1</td>
</tr>
<tr>
<td>Number of Journeymen</td>
<td>1</td>
</tr>
<tr>
<td>Number of Helpers</td>
<td>1</td>
</tr>
<tr>
<td>Number of Apprentices</td>
<td>1</td>
</tr>
<tr>
<td>Workforce Total</td>
<td>4</td>
</tr>
</tbody>
</table>

**Workforce 2**

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor's Name</td>
<td>None</td>
</tr>
<tr>
<td>Workforce Total</td>
<td>0</td>
</tr>
</tbody>
</table>
Add Pages

Helps break-up mobile users’ workflow into logical steps to complete
**PRONTOFORMS**

Select Question Type

Textbox, Text Area, Dropdown, Radiobutton List, Multiselect Box, Yes/No, Date/Time, Number, Location, Image, Signature, Audio, Barcode, Credit Card Transaction, more...

Edit Question Properties

Required, Default Values, Data Sources, more...
PRONTOFORMS

Create Data Destinations & Document Types

PDF, Word, HTML, XML, JSON, CSV

Email, Dropbox, Google Drive, more...
**PRONTOFORMS**

### Form Information
- **Form Name:** Construction - Daily Report
- **Submitter Name:** Charles Wid
- **Submission Date:** Jan 12, 2015 11:50:48 AM CST
- **Server Receive Date:** Jan 12, 2015 11:50:54 AM CST
- **Reference Number:** 20150112-1818221713

### Job Details
- **Contractor Name:** CEAM
- **Contract #:** None

### Details

<table>
<thead>
<tr>
<th>Workforce 1</th>
<th>Workforce 2</th>
<th>Workforce 3</th>
<th>Workforce 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contractor's Name: University of Minnesota</td>
<td>Contractor's Name: None</td>
<td>Contractor's Name:</td>
<td>Contractor's Name:</td>
</tr>
<tr>
<td>Number of Foremen: 1</td>
<td>Workforce Total: 0</td>
<td>Workforce Total:</td>
<td>Workforce Total:</td>
</tr>
<tr>
<td>Number of Journeymen: 1</td>
<td>Workforce Total: 0</td>
<td>Workforce Total:</td>
<td>Workforce Total:</td>
</tr>
<tr>
<td>Number of Helpers: 1</td>
<td>Workforce Total: 0</td>
<td>Workforce Total:</td>
<td>Workforce Total:</td>
</tr>
<tr>
<td>Number of Apprentices: 1</td>
<td>Workforce Total: 0</td>
<td>Workforce Total:</td>
<td>Workforce Total:</td>
</tr>
<tr>
<td>Workforce Total: 4</td>
<td>Workforce Total: 0</td>
<td>Workforce Total:</td>
<td>Workforce Total:</td>
</tr>
</tbody>
</table>

### Experience
- **Today's Progress:** Sitting back and basking in the warm sunshine.
- **Work completed %:** 16
- **Estimated Completion Date:** Jan 30, 2015
- **Delays:** CEAM 2015 Annual Conference
  - **Problem Areas, etc.:** Arranging tables
  - **Safety Concerns:** Ice
  - **Equipment Used:** Salt
  - **Material Received (Include Shortages):** Salt
  - **Visitors on site:** All the smart people
PRONTOFORMS
TRIMBLE TERRAFLEX

- Tree Inventory
- What We Were Looking For...
  - Higher Accuracy GPS Capability
  - Advanced Data Collection Capabilities
  - Multi-User/Device Data Collection
  - Mapping of Collected Data
  - Data Export Ease
  - Easy Form Setup & Modification
Trimble TerraFlex

iOS, Android, Trimble WEH, selected tablets running Windows 7/8
CSV, ESRI File Geodatabase, Shapefile, KML/KMZ, WFS
Trimble TerraFlex
TRIMBLE TERRAFLEX IMPROVEMENTS

- Import Existing Data
- Create Template from Existing Attribute Tables/Layers
- Create Tasks
- Push Existing Data to Field Users
- Update Geometries by Field Users
- Update Attributes by Field Users
- Update Attributes by Office Users
APPLICATION SUBSCRIPTION FEES

- ProntoForms
  - $25-30 per user per month

- Trimble TerraFlex
  - $250-400 per user per year
    (basic vs advanced)
FUTURE APPLICATIONS

- Mobile Work Orders
- Mobile Time Entry
- Mobile GIS/Data Entry
- Mobile Pavement Survey Data Collection