FIELD ENGINEERING SOLUTIONS AND WORKFLOW

ADDING VALUE TO ENGINEERING PROCESSES WITH GIS SOLUTIONS
CAD, DATA ANALYSTS, OR CARTOGRAPHER USER PERSPECTIVE
OVERVIEW OF TYPICAL ENGINEERING PROCESS

1. Feasibility
2. Data Acquisition & Classification
3. Field Engineering & Data Collection
4. Construction Support
5. Permitting
6. Documentation
7. Inspection
8. Records Data Collection
9. Project Closeout
FEASIBILITY
Web Map Depicting Route Options

Converging Platforms to ESRI (Google Earth, Delorme, Etc.)

Full Service Web Tools
OVERVIEW OF TYPICAL ENGINEERING PROCESS

Feasibility
Data Acquisition & Classification
Field Engineering & Data Collection

Construciton Support
Permitting
Documentation

Inspection
Records Data Collection
Project Closeout
Data Acquisition & Classification
DATA ACQUISITION & CLASSIFICATION

Collecting Data from Various Sources
- Imagery
- Acquired GIS Data
- Basemapping

Integrating Data Formats Into ArcGIS Database
- High-Resolution Photography
- Shapefile
- AutoCAD .dwg or Microstation .dgn
Design Backdrop
Accurate
Recent
High Resolution
Stock vs. Route Specific Flown
Job Size/Number / Location
Mobilization Cost vs. Recently Flown Benefits
### GIS DATA

- County, State, Municipality
- Parcel Data
- Right-of-Way
- Tax Data
- Land Lots
- Existing Utilities

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Distance in Miles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butler County</td>
<td>28.35</td>
</tr>
<tr>
<td>- Unincorporated</td>
<td>22.38</td>
</tr>
<tr>
<td>- Greenville</td>
<td>3.44</td>
</tr>
<tr>
<td>- Georgian a</td>
<td>2.53</td>
</tr>
<tr>
<td>- Butler County School District</td>
<td>28.35</td>
</tr>
<tr>
<td>Lowndes County</td>
<td>11.54</td>
</tr>
<tr>
<td>- Unincorporated</td>
<td>9.71</td>
</tr>
<tr>
<td>- Fort Deposit</td>
<td>1.83</td>
</tr>
<tr>
<td>- Lowndes County School District</td>
<td>11.54</td>
</tr>
</tbody>
</table>

**Legend**
- County Boundary
- School District Boundary
- Flight Path
- Municipal Boundary
BASEMAPPING

- Imagery
- Aerial Surveying
- Ground Surveying
- Flight Line
- LiDAR Classified Point Clouds
- Digitization of Imagery
- Classification and Graphic Guidelines
- Integrate to Geodatabase
OVERVIEW OF TYPICAL ENGINEERING PROCESS

- Feasibility
- Data Acquisition & Classification
- Field Engineering & Data Collection
- Construction Support
- Permitting
- Documentation
- Inspection
- Records Data Collection
- Project Closeout
Field Engineering & Data Collection
FIELD ENGINEERING & DATA COLLECTION

Data Placed on Field Tablet

Engineers Designing in the Field

Data Syncing & Versioning

Data Export

Support
SUPPORT

• Answering Questions
• Monitoring
• Insuring Movement in the Right Direction
• Graphic Guidelines
• Conversions
OVERVIEW OF TYPICAL ENGINEERING PROCESS

Feasibility -> Data Acquisition & Classification -> Field Engineering & Data Collection

Construction Support <- Permitting <- Documentation

Inspection <- Records Data Collection -> Project Closeout
Documentation
LIGHTGUIDE CABLE
PROJECT:
BIGHOLE NC

SECTION:
DURHAM, NC TO FAYETTEVILLE, NC

SPAN:
DURHAM, NC TO CHATHAM, NC

BID COPY
APRIL, 2012
Permitting Agencies

Acquisitions

Environmental

Right-of-Way

Internal
OVERVIEW OF TYPICAL ENGINEERING PROCESS

- Feasibility
- Data Acquisition & Classification
- Field Engineering & Data Collection
- Construction Support
- Permitting
- Documentation
- Inspection
- Records Data Collection
- Project Closeout
Permitting
### Varying Degree of Detail
- Plan
- Profile
- Detail Insets

### Customization Based on Unique Requirements
- County
- Railroad
- DOT
- Corp Environmental

### Deliverable Formats
- Map Book
- CAD
- PDF
- Shapefile
- Paper
OVERVIEW OF TYPICAL ENGINEERING PROCESS

- Feasibility
- Data Acquisition & Classification
- Field Engineering & Data Collection
- Construction Support
- Permitting
- Documentation
- Inspection
- Records Data Collection
- Project Closeout
Construction Support
CONSTRUCTION SUPPORT
OVERVIEW OF TYPICAL ENGINEERING PROCESS

Feasibility → Data Acquisition & Classification → Field Engineering & Data Collection

Construction Support ← Permitting ← Documentation

Inspection ← Records Data Collection ← Project Closeout
Inspection
INSPECTION
OVERVIEW OF TYPICAL ENGINEERING PROCESS

- Feasibility
- Data Acquisition & Classification
- Field Engineering & Data Collection
- Construction Support
- Permitting
- Documentation
- Inspection
- Records Data Collection
- Project Closeout
Records Data Collection
RECORDS DATA COLLECTION

Location Devices  Support  Review Data
OVERVIEW OF TYPICAL ENGINEERING PROCESS

Feasibility → Data Acquisition & Classification → Field Engineering & Data Collection

Construction Support ← Permitting ← Documentation

Inspection ← Records Data Collection → Project Closeout
Katie Randolph
katie.randolph@neocom.biz

Michael Day Jr.
mike.day@neocom.biz

NeoCom Solutions
10064 Main Street
Woodstock, GA 30188

678.238.1818