Getting higher quality in your field operations

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**Goal:** Get ideas about developing a culture of quality with field teams and lone workers.

**Discussion topics**
This webinar will discuss how digital inspections and standard operating procedures (SOPs) can draw remote team members into your culture of quality, including:

- Improving QA/QC inspections in the field, even for novice inspectors
- Simplifying communication for better supervision and mentorship
- Making it easier to compare notes with other teams and remote team members
- Improving the feeling of connectedness of lone workers and field teams

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Using data to promote a culture of quality
Using data to establish a culture of quality

Collect data through:

- **Standard operating procedures.** Existing process includes quality checks – measurements that ensure operators are performing jobs well – to catch issues early.

- **Scheduled inspections.** Predictability of failures or risk management requirements drive us to a time-based inspection process.

- **Issue reporting.** Observant workers and supervisors can catch issues on an ad hoc basis without scheduled inspections.

Earliest possible detection of potential problems, plus avoidance of problem situations. Everyone is engaged. Takes buy-in from process owners.

Predictable, reliable processes with regular time, labor, and money requirements. Catches issues later than SOPs.

Less predictable and reliable, but engages the entire team. Catches issues later than SOPs, but can find things scheduled inspections don’t.
What about geographic information systems (GIS)?

- Location
- Imagery
- Analysis
- Planning
Challenges of the field
Challenges of the field

Physical distance

Transit times

Less-frequent / harder communication
Addressing challenges

Physical distance
• Digits move fast: Eliminate paper
• Digits are light: Minimize the stuff you carry

Transit times
• Get the job done right the first time
• Enable virtual supervision and mentoring

Less-frequent / harder communication
• Make comms automatic and real-time
• Show how everyone is doing, including remote workers, using metrics
Fulcrum and field inspection management
Automating field inspection management

Our goals for the Fulcrum Field Inspection Management platform

- Drive intelligent automation to maximize field team performance and agility
- Harness the value of location for mobile teams
- Ensure process rigor and compliance at scale
- Create real-time visibility into performance across inspectors, teams, and stakeholders
- Digitally transform field-based inspections for safety, quality, & maintenance
Automating field inspection management

What Fulcrum’s Field Inspection Management platform does

The Fulcrum platform

Fulcrum provides a SaaS-based Field Inspection Management platform that

- digitizes inspection processes,
- provides intelligent automation for inspection teams, and
- delivers data-driven reporting and analytics

to drive safer and higher-quality outcomes.
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On quality in the field
Leveraging Fulcrum:
Getting Higher Quality in your Field Operations

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About TREKK

• Multi-disciplined civil engineering firm providing services, including:
  • Transportation
  • Traffic
  • Water and wastewater
  • Structural
  • Utilities
  • Survey
  • Construction inspection
  • Field services

• 180 employees in nine offices in Missouri, Illinois, Kansas, Nebraska, and Tennessee

• Roughly 25% of employees represent our Field Services
About Our Field Services…

• Review 1,000’s of structures annually
• Vault Inspection and TREKK360
• GPS locate and mapping
• Manhole inspections and smoke testing
• Flow/rainfall monitoring
• Sanitary sewer evaluation studies
• Drainage system condition assessment
• Storm and sanitary sewer cleaning
• CCTV inspections (mainline and service)
• 45+ NASSCO-certified technicians/operators
To Begin, Start by Answering “Where & What?”

• GPS the structures.
  • Survey or mapping grade?

• Characterize & inspect the manholes.
  • How big, how deep, how bad?

• Characterize & inspect the pipes.
  • Diameters, materials, connectivity, condition?

• Be as accurate as possible.
The Challenge with Field Inspections...

- Accurate data capture is complex
- Traditional inspections use less efficient methods
- Quality is important
- Confined space brings safety risks
- We improvised by adopting two cutting-edge technologies:
  - 360-degree photos
  - “Smart” Forms in Fulcrum
Real World Inspection Challenges:

- 1993 Pipe Diameter: 21” or 24”
- 2005 Pipe Diameter: 1.3’ (15.6”)
- 2021 Pipe Diameter: ???
In Our World, Accuracy Can Be Tricky…

- Rod in flared end of CIPP Liner.
- It appears like 15” at first glance.
- Original GIS said 12” pipe.
- Liner subtracts at least 0.5” from 12”.
- Better to call it 11” pipe.
- (Verified with 3D Model.)
The Old Ways Weren’t Working…

- Legacy forms allowed more error.
- Photos were being assigned incorrectly.
- Photos were going missing.
- We didn’t have comprehensive visuals.
- Logic was hard to program before.
- Reports were time-consuming to create.
- (Queue Fulcrum & 360-Photography.)
The Importance of 360° Photography…

- Minimizes confined space entry
- Allows you to complete field inspections in the office
- Panoramic Views (like Google Street View)
- 3D model exports enable measurement abilities

Safety advantages:
- Wire-free operation
- Less H2S exposure
- No manned entry
360 Photos Offer Safer Perspectives…
They Also Provide Quality Visuals...
The Importance of Fulcrum for Data Collection…

• Low-Code / No-Code reduces labor
  • Forms are quicker to code
  • Smart logic is easier to program
  • Reports are automatic
  • Imports & Exports & Data Shares are powerful
• Updates are instant across all field and office teams
• Real-time collaboration is only one sync button away
• The flexible power of building Smart forms means:
  • Less field and office technician training required
  • Higher consistency through guided data entry
One Overlooked Bonus: Clean Inspection Reports
Fulcrum Reports Scale Across Our Many Disciplines
So How Did This Change the Game for Us…

- The Old Way vs Leveraged Technology:
  - Improved QA/QC?
  - Simplified Communication?
  - Collaboration?
  - Bridging the Field to Office Gap?

- Metrics to prove ROI:
  - Field revisits have reduced from roughly 6% to 1%.
  - Total inspection labor has reduced roughly by 25%.
    - Ability to natively work offline in the field
    - Performing office-based virtual inspections
    - Conforming “Smart” Forms to increase data relevance
    - No photos are missed, nor misplaced
Behind the Scenes: How We Leverage Fulcrum
Live Demo
Thank you for listening! Questions?

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