Leveraging 3D Imagery to Facilitate Project Delivery

John Revette, PE, BCCE
November 1, 2018
Presenter

John Revette, PE, BCEE
Environmental Engineer

- 14 years Wastewater Treatment Experience
- Education:
  - MS, Johns Hopkins University
  - BS, Clarkson University
- Water Environment Federation (WEF) and the New York Water Environment Association (NYWEA) member
- Father of four
Value Proposition of Technology

- Provide a “better” finished product?
- Improves project delivery?
- Reduces Cost?
- Simplifies Process?
Is More Detail/Accuracy Necessary?
Is More Detail Better?
Is More Detail Better?
Is More Detail Better?
Generic - Treatment Plant Project

- Poor (no) As-Buils
- Remote location difficult (costly) for engineering team to access
- Communication Between Owner and Engineer Sometimes Difficult
  - Produce a product that the client can visualize and provide feedback as part of the review process.
- Mitigate Construction Risk

Common Project Issues
Limitations of Photos and Video

- The “what’s just out of view” Phenomenon
- Scale – is that a 4 inch or 40 inch pipe?
- Quality
- Different people look for different things
Limitations of Photos and Video

- Speed of access to find and open photos
- Data Storage
“Limitations” of Laser Scanning

- Expensive Equipment
- Large Data Files
- Unusable by clients without expensive software packages
3D Imagery

- Combination of “image stitching” and laser scanning technology to create an alternative user interface for project use and delivery
User Interface - Field Measurements
Finished Project

- Minimize Change Orders related to existing field conditions
- Maximize coordination with the Owner/Operators during Design
- Well Documented “As-Builts”
Case Study: ENDICOTT NY
Case Study:
ENDICOTT NY
Case Study: MONROE COUNTY NY
Case Study: MONROE COUNTY NY

How many photos would it take to capture 7 floors of data?
User Interface - Export GIF
What to Retain

- Consider adding 3D imagery to your toolbox
- Understand your clients' needs and how they perceive value in technology
- Think about ways to use technology effectively and efficiently
- 3D technology is really cool
Thank you.

For more information, please contact me:

John Revette, PE, BCEE
jrevette@wendelcompanies.com