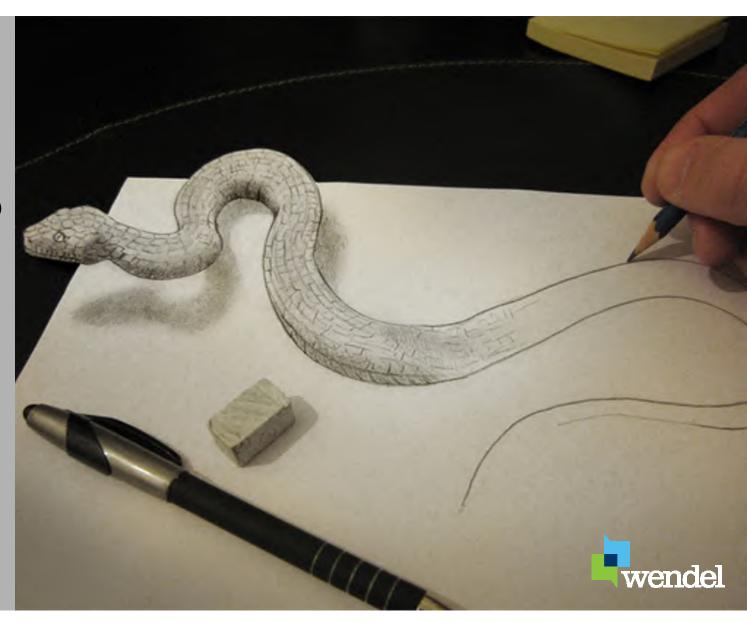
Leveraging
3D Imagery to
Facilitate
Project
Delivery

John Revette, PE, BCEE November 1, 2018



#### Presenter



#### John Revette, PE, BCEE

**Environmental Engineer** 

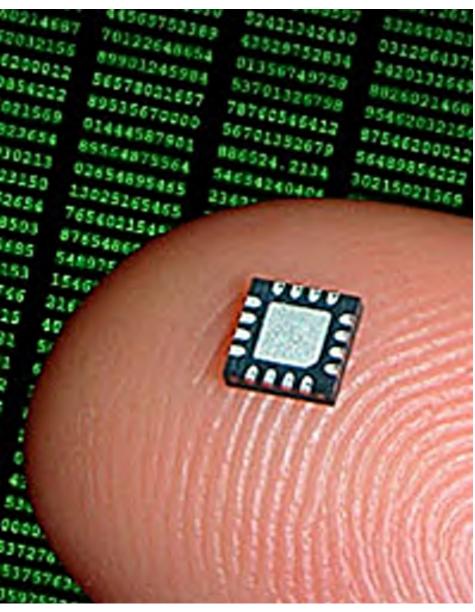
- 14 years Wastewater Treatment Experience
- o Education:
  - MS, Johns Hopkins University
  - BS, Clarkson University
- Water Environment Federation (WEF) and the New York Water Environment Association (NYWEA) member
- Father of four





# Value Proposition of Technology

- Provide a "better" finished product?
- o Improves project delivery?
- o Reduces Cost?
- Simplifies Process?



# Is More Detail/Accuracy Necessary?



## Is More Detail Better?





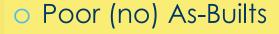






## Generic - Treatment Plant Project





- 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



oliver (6)

**Common Project Issues** 



#### Limitations of Photos and Video

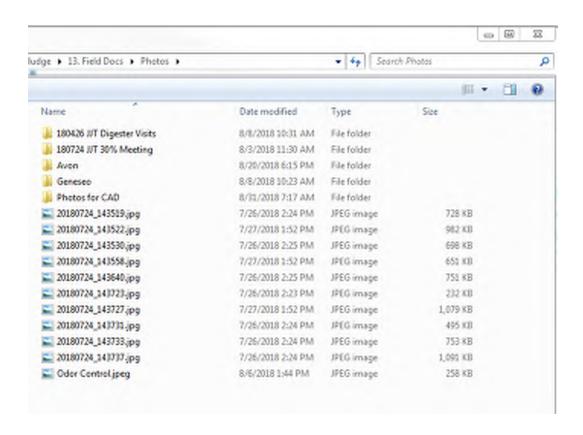




- The "what's just out of view"Phenomenon
- Scale is that a 4 inch or 40 inch pipe?
- Quality
- Different people look for different things



#### Limitations of Photos and Video



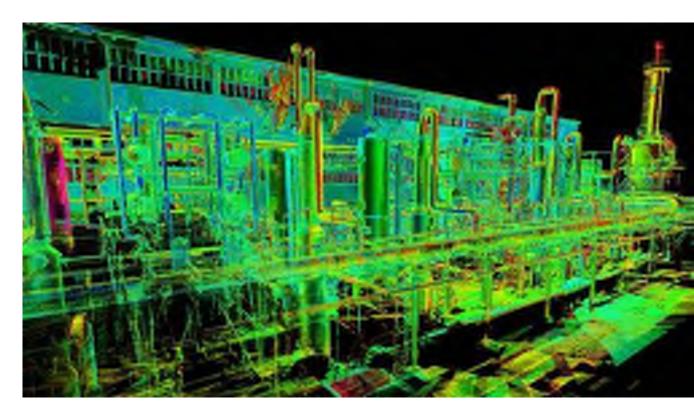
 Speed of access to find and open photos

Data Storage



## "Limitations" of Laser Scanning

- ExpensiveEquipment
- Large Data Files
- Unusable by clients without expensive software packages





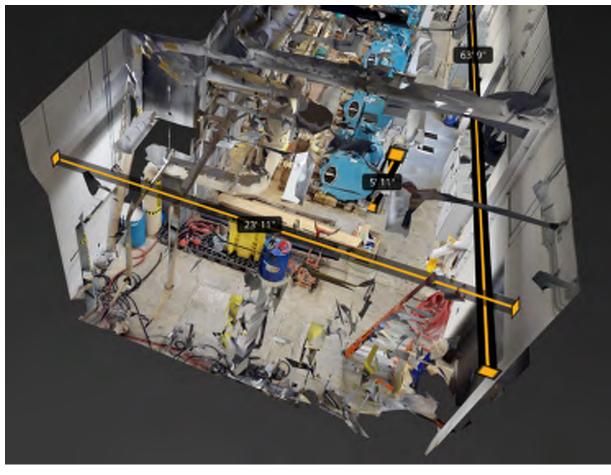
## 3D Imagery

 Combination of "image stitching" and laser scanning technology to create an alternative user interface for project use and delivery



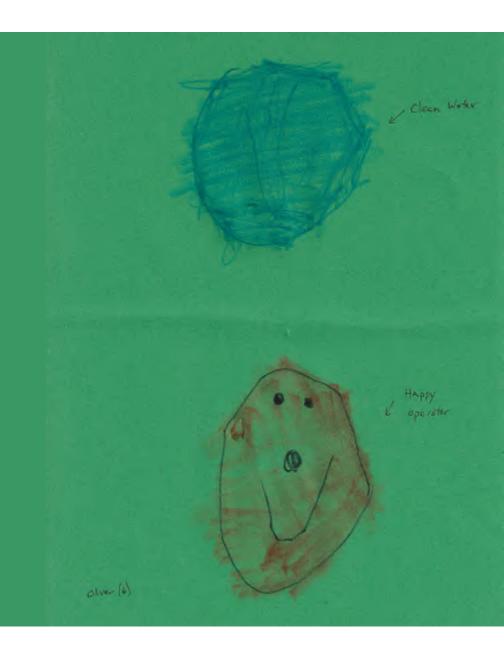
#### User Interface - Field Measurements



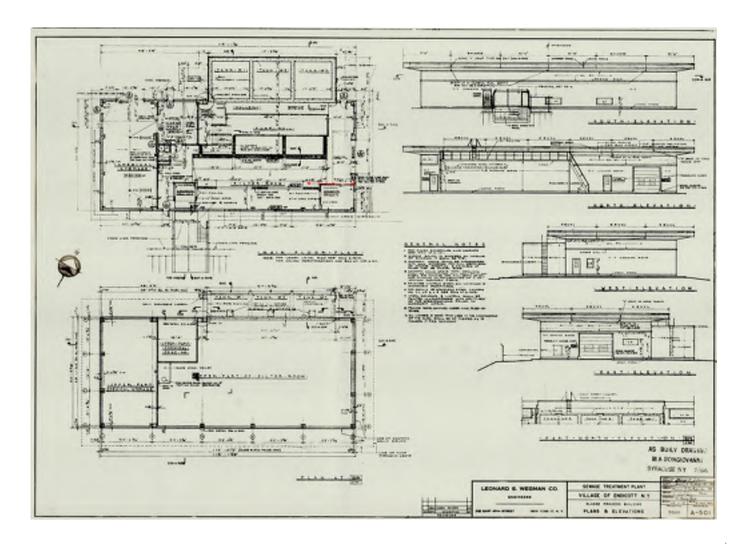


## Finished Project

- Minimize Change Orders related to existing field conditions
- Maximize coordination with the Owner/Operators during Design
- Well Documented "As-Builts"

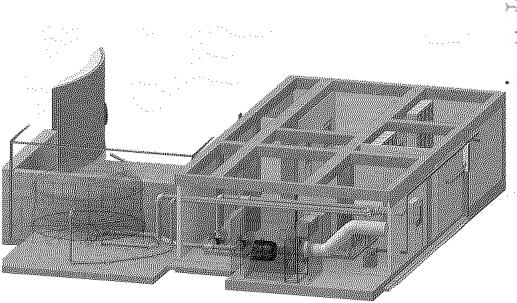


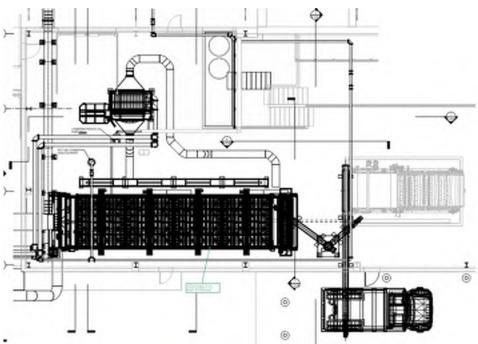
#### Case Study: ENDICOTT NY





#### Case Study: ENDICOTT NY





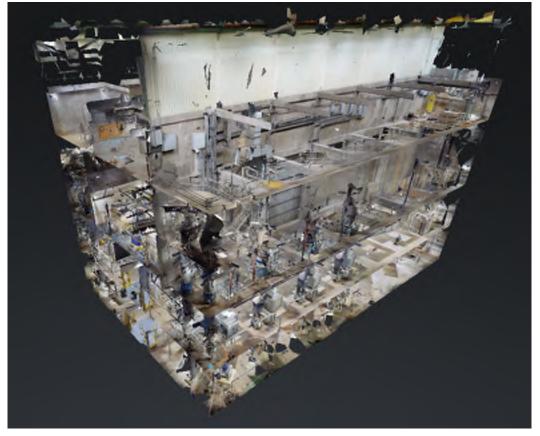
#### Case Study: MONROE COUNTY NY

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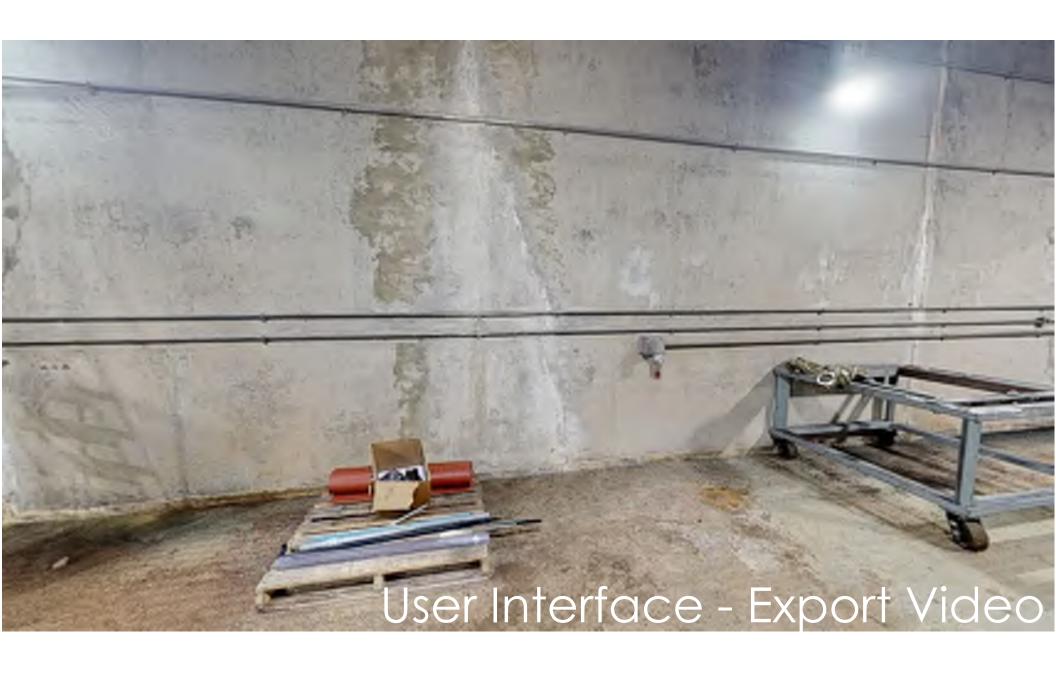


#### Case Study: MONROE COUNTY NY

How many photos would it take to capture 7 floors of data?







# User Interface - Export GIF









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

