

3D GIS and Virtual Reality for Facility and Asset Management



1990

Incorporated Civil Engineering & Land Surveying

2011

Incorporated 3D laser scanning and 3D BIM modeling into service offerings

2014

Focused 3D documentation and BIM modeling efforts on engineering infrastructure

2015

UAV mapping support added to service offerings

2017

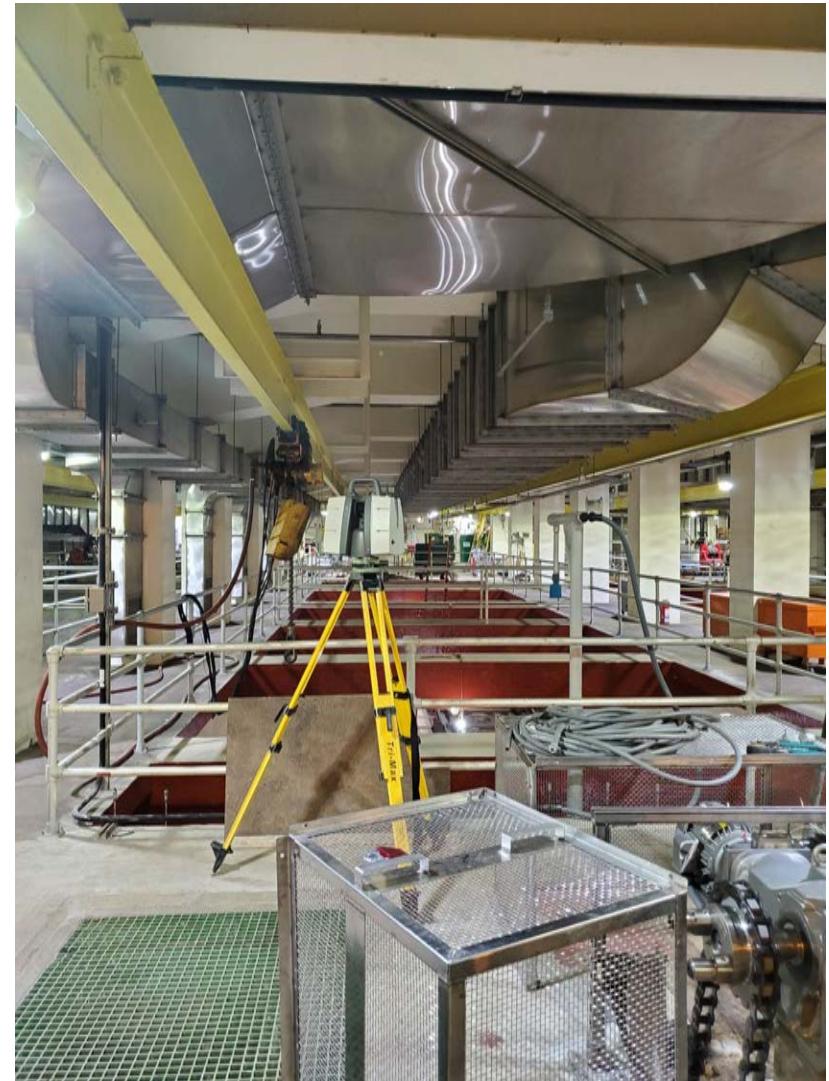
GIS Pilot project kick-offs

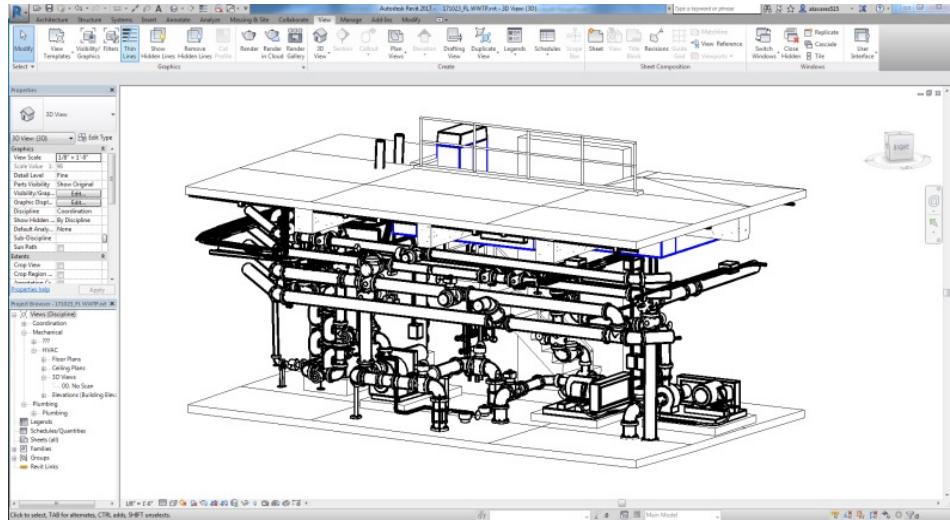
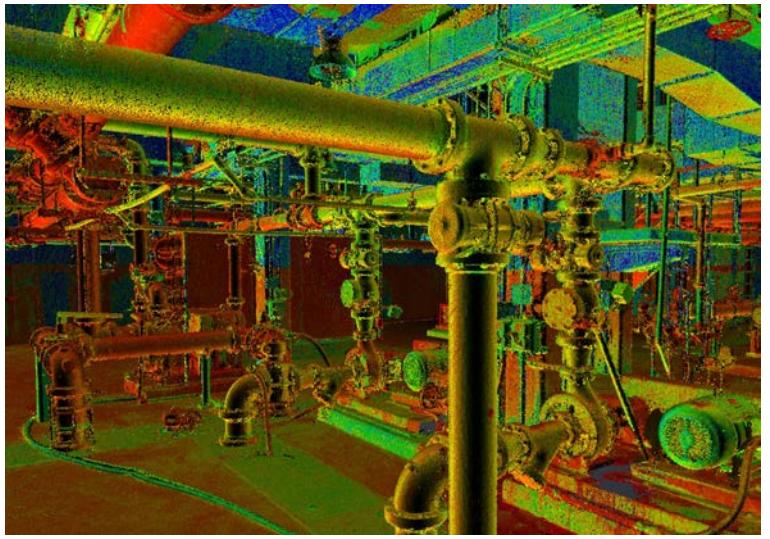
2020

Develop workflows for 3D modeling integration with ArcGIS and various asset management platforms

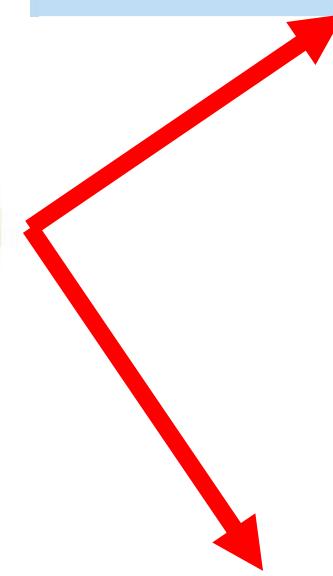
2021

Keynote Presentation at ESRI Infrastructure Management GIS Conference





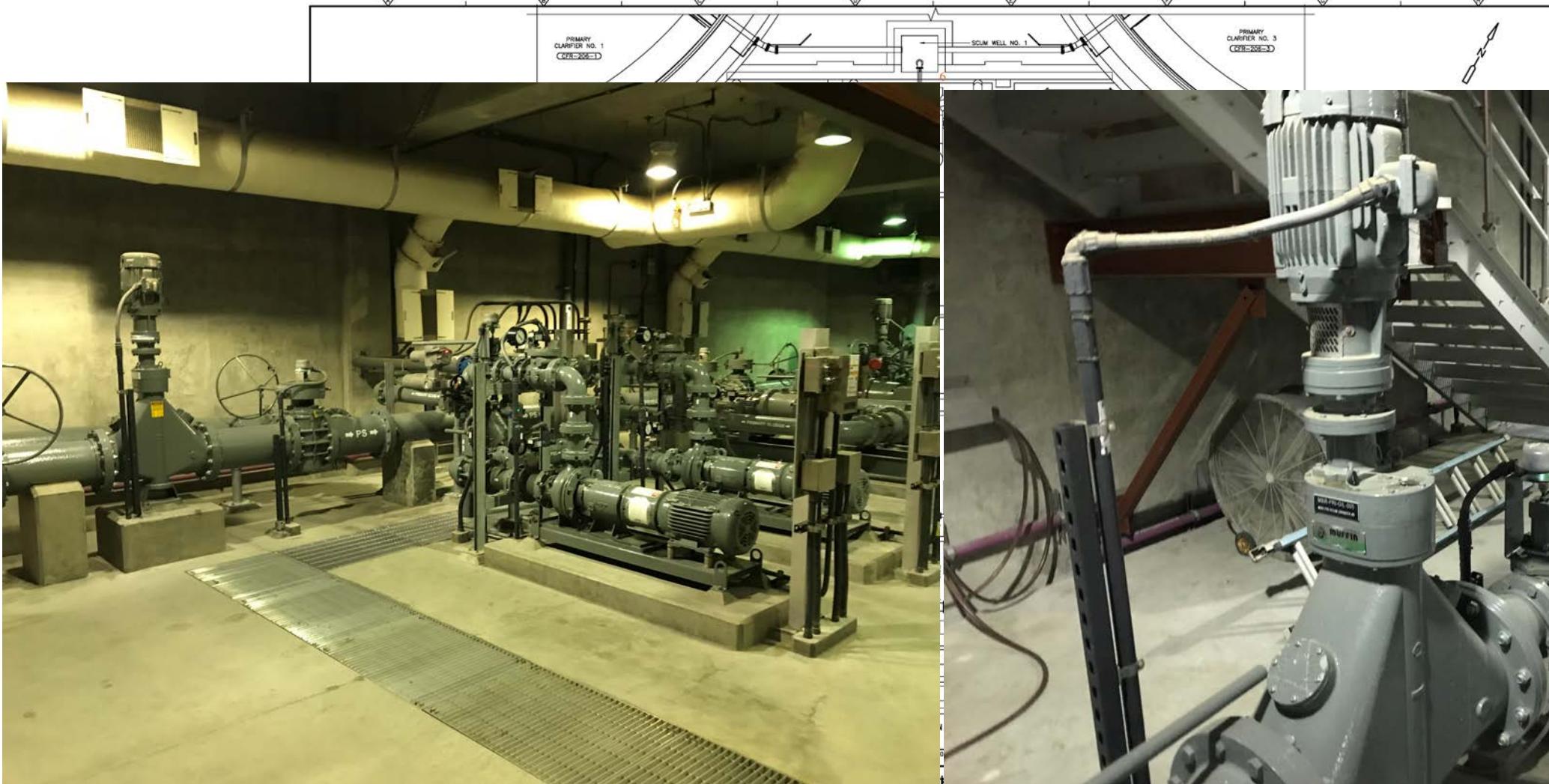
Asset Management



Field Operations

Challenge





INFORMATION										SHEET CHK'D BY: M. LLUENGA DATE: 10/22/12 FLT: 100% CONFORMED		SHEET NO. 1 OF 12		CITY OF RIVERSIDE		PUMP STATION LIGHTING/RECEPTACLE PLAN		DRAWING NO. 102-E-009 SHEET NO. 989 OF 1476	
REV. NO.	DATE	DRW#	CHK'D	REMARKS	REV. NO.	DATE	DRW#	CHK'D	REMARKS	DATE	DRW#	CHK'D	REMARKS	DATE	DRW#	CHK'D	REMARKS		
1	10/22/12	102-E-009	100%	CONFORMED															

WQCP - Scene - ArcGIS Pro

Project Map Insert Analysis View Edit Imagery Share

Cut Copy Paste Copy Path Add Preset Add Graphics Layer

Clipboard Navigate Layer Selection Inquiry Labeling Offline

Explore Bookmarks Go To XY Basemap Add Data

Select Select By Select By Attributes Measure Locate Infographics Coordinate Conversion

Attributes Clear Pause Lock View Unplaced Sync More Convert Download Map Remove

Pop-up

GIL (1) DocName

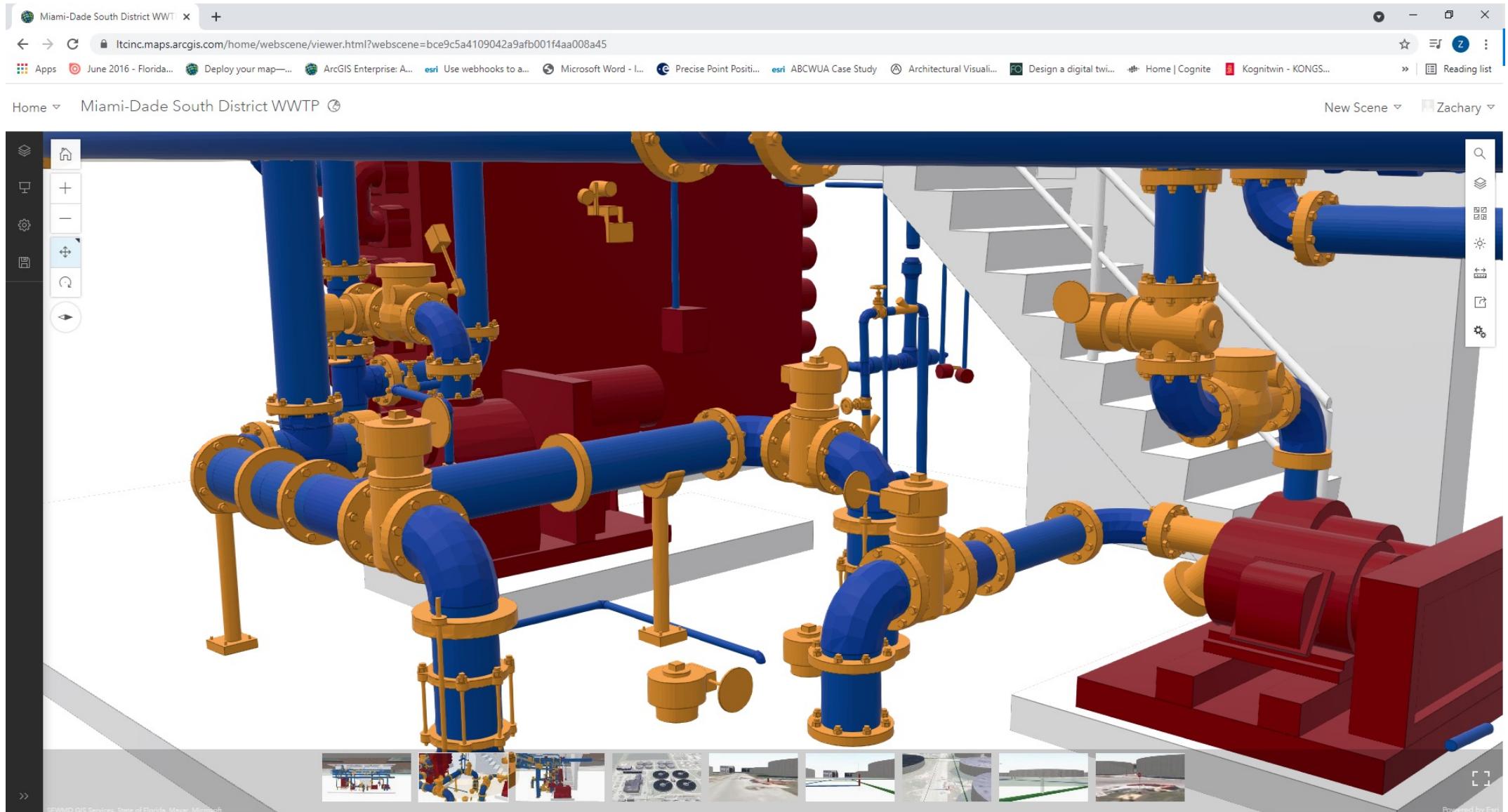
OBJECTID_1 4
Asset_Record_Type Q
Asset_Id MBR-PRI-GIL-005
Department 4125
Area 412540
Asset_Desc GRINDER, IN LINE, SCUM, # 5, JWC, MBR PRIMARY PUMPING STRUCTURE
BldgLevel Level -1
Objectld 731544
FamilyType Custom_Valve_12

MBR-PRI-GIL-005 x2.JPG

1 of 1 117.4563469°W 33.9643881°N Pop-up Job Status Symbology

-3.87 ft 117.4563833°W 33.9643385°N 689.767 ft

Selected Features: 1



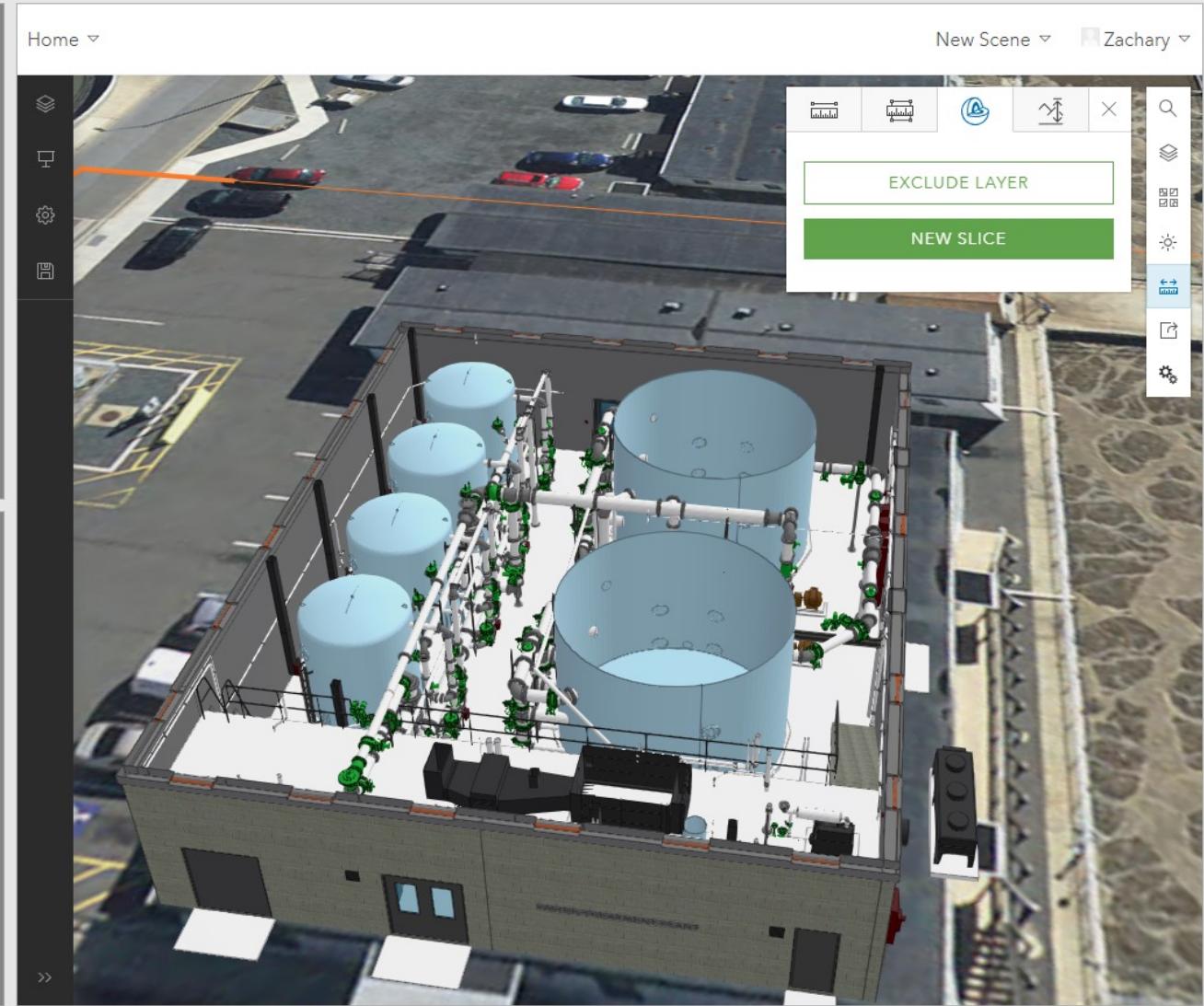
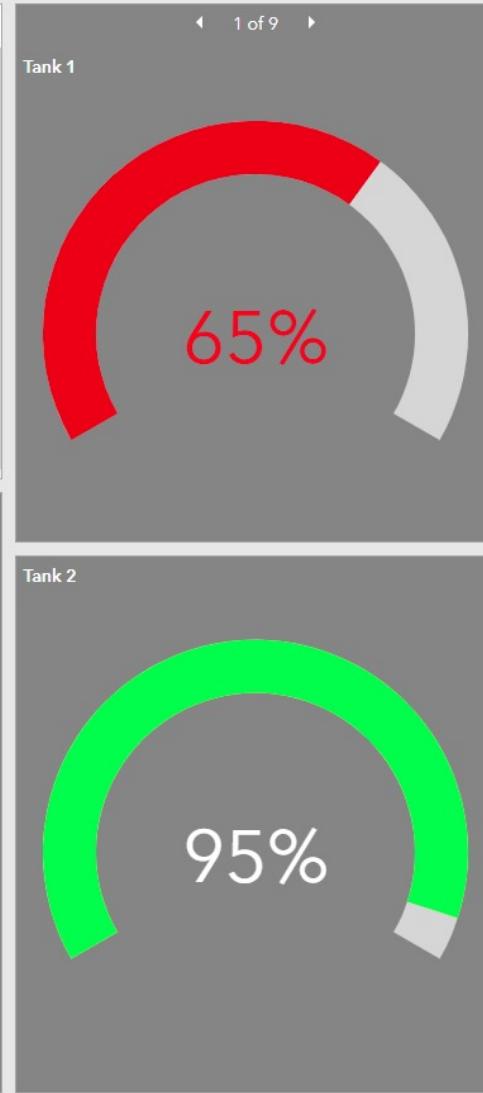
Tank Report

1 of 9

OBJECTID_1	1
SITE_ID	16_ALASKA
ASSET_ID	505863
TANK_NAME	1
CAPACITY_GALLONS	75000
TANK_LEVEL%	65
TANK_TEMP_F	68
STATUS	SCADA
MXASSETNUM	
MXSITEDID	

100
90
80
70
60
50
40
30
20
10

Tank	Level (%)
1	65
2	95
3	92
4	96
5	90
6	95
7	95
8	95
9	20



EAM

GIS Work Materials Equipment Purchasing Operators Administration

Position 10474 Pipe

Record View Comments Codes Structure Linear Overview Nonconformities Open Work Orders 3D GIS

10470 - Pipe Class: PIPE Operational Status: Operational ElementLength: 0.0731877
10471 - Pipe Class: PIPE Operational Status: Operational ElementLength: 0.331584
10472 - Pipe Class: PIPE Operational Status: Operational ElementLength: 0.731876
10473 - Pipe Class: PIPE Operational Status: Not Operational ElementLength: 0.998666
10474 - Pipe Class: PIPE Operational Status: Operational ElementLength: 0.712693
10475 - Pipe Class: PIPE Operational Status: Not Operational ElementLength: 0.710856
10476 - Pipe Class: PIPE Operational Status: Operational ElementLength: 0.522962
10477 - Pipe Class: PIPE Operational Status: Operational ElementLength: 0.522962
10478 - Pipe Class: PIPE Operational Status: Operational ElementLength: 0.795666

10474

ASSETID	10474
Category	Pipe
Building	J
Updatedate	11/1/2018
WearFactor	0.750000
Material	Quartermile Steel
Countable	1
Plastic	0
None	
Length_Ft	15.000000

Coffee Chat: 3D GIS and Maximo

Use Case Example

Mike Wilson

Assets

Find Asset Find Navigation Item Go To Applications Available Queries All Records All Bookmarks Linear Assets 7th AV Hydrants Common Actions New Asset Save Asset Clear Changes Change Status More Actions Asset Details Report Downtime Manage Downtime History Create

List View Asset Spare Parts Safety Meters Specifications Features Relationships Work Work Zones 3D View Service Address Map 3D GIS

Home Waste Water Treatment Plant

Layers Legend

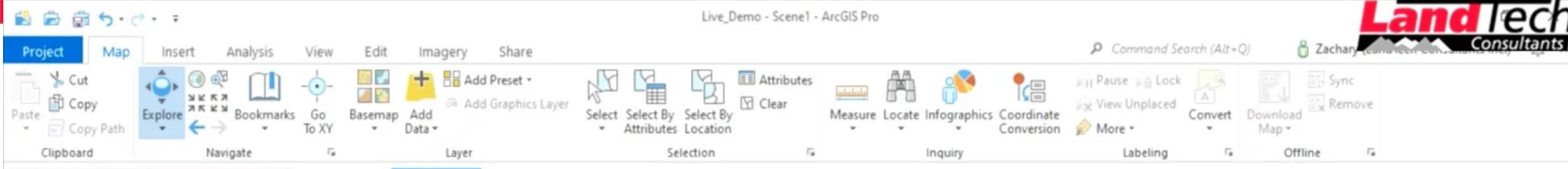
- Valves Maximo - Valves Maximo...
- Pipes Maximo - Pipes Maximo...
- Street_Entity
- Overview_Building_Model
- Water_Meter
- Fire_Hydrant
- Water_Distribution_Valve
- Water_Service_Line
- Water_Pipe_Fitting
- Water_Main_Line
- Sewer_Manhole
- Sewer_Main_Line

Software Integration









Contents Catalog Scene1

Drawing Order

- Scene1
- 3D Layers
 - Pump
 - Tank
 - Pipes
 - PipeFitting
 - PipeAccessory
 - FlexPipes
- MechanicalEquipment
- Ducts
- DuctFitting
- DuctAccessories

Selected Features: 1

1.40 m 77.0202256°W 38.8181265°N 0.657 m

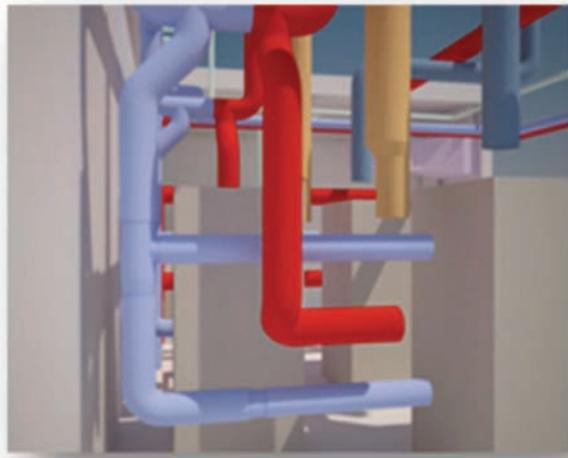
Tank Pump X PipeAccessory

Field: Add Calculate Selection: Select By Attributes Zoom To Switch Clear Delete Copy

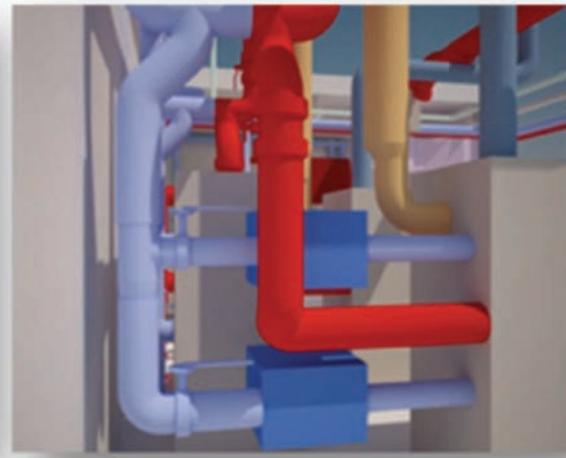
1 of 3 selected Filters: 100% Sync



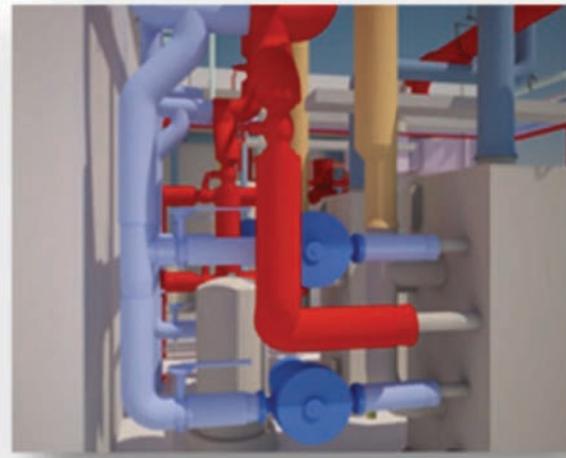
3D GIS
for
ASSET MANAGEMENT



LOD 200



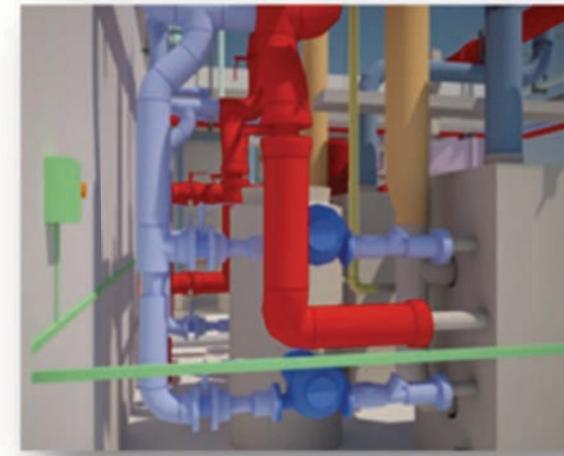
LOD 300



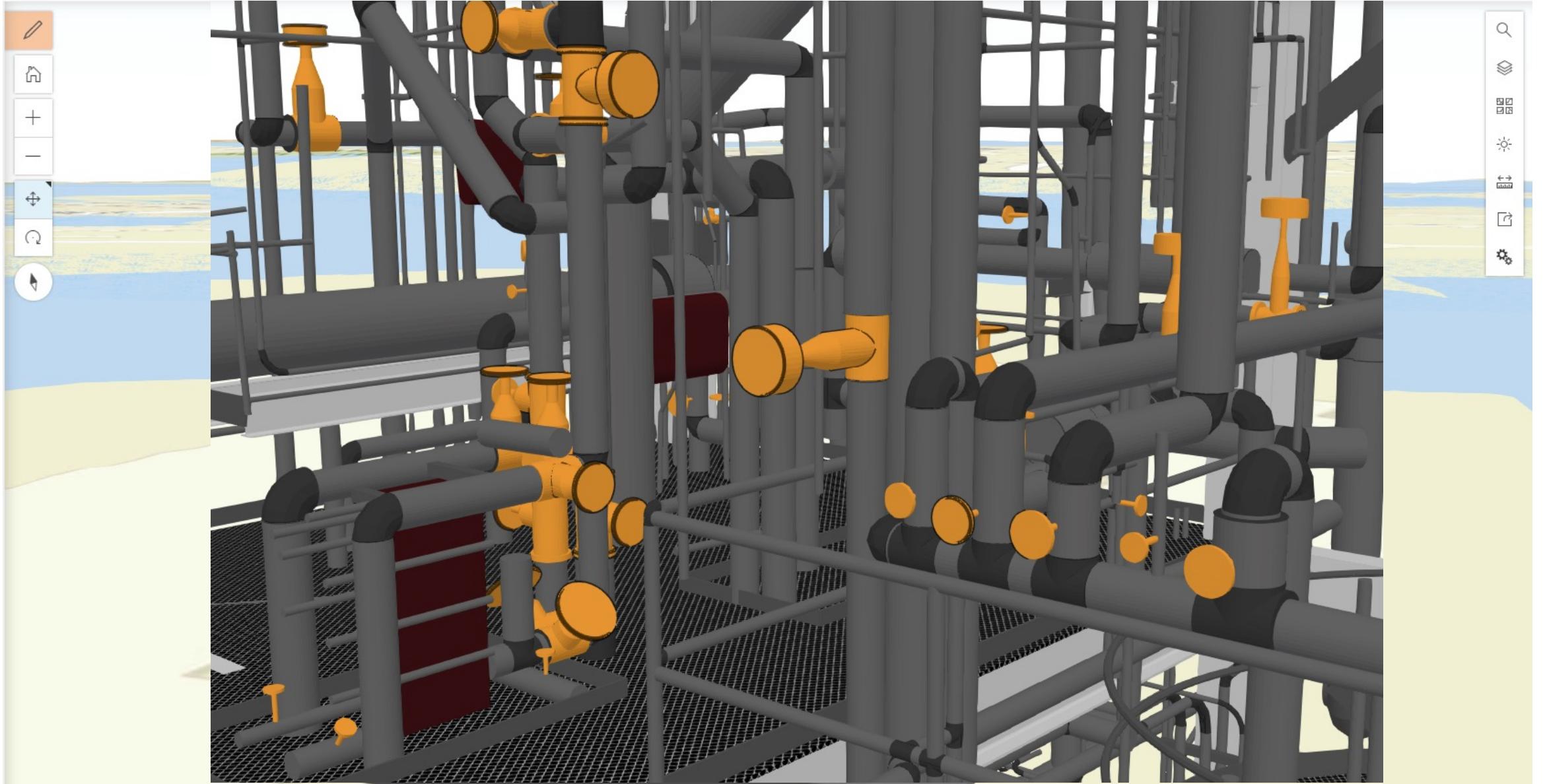
LOD 350

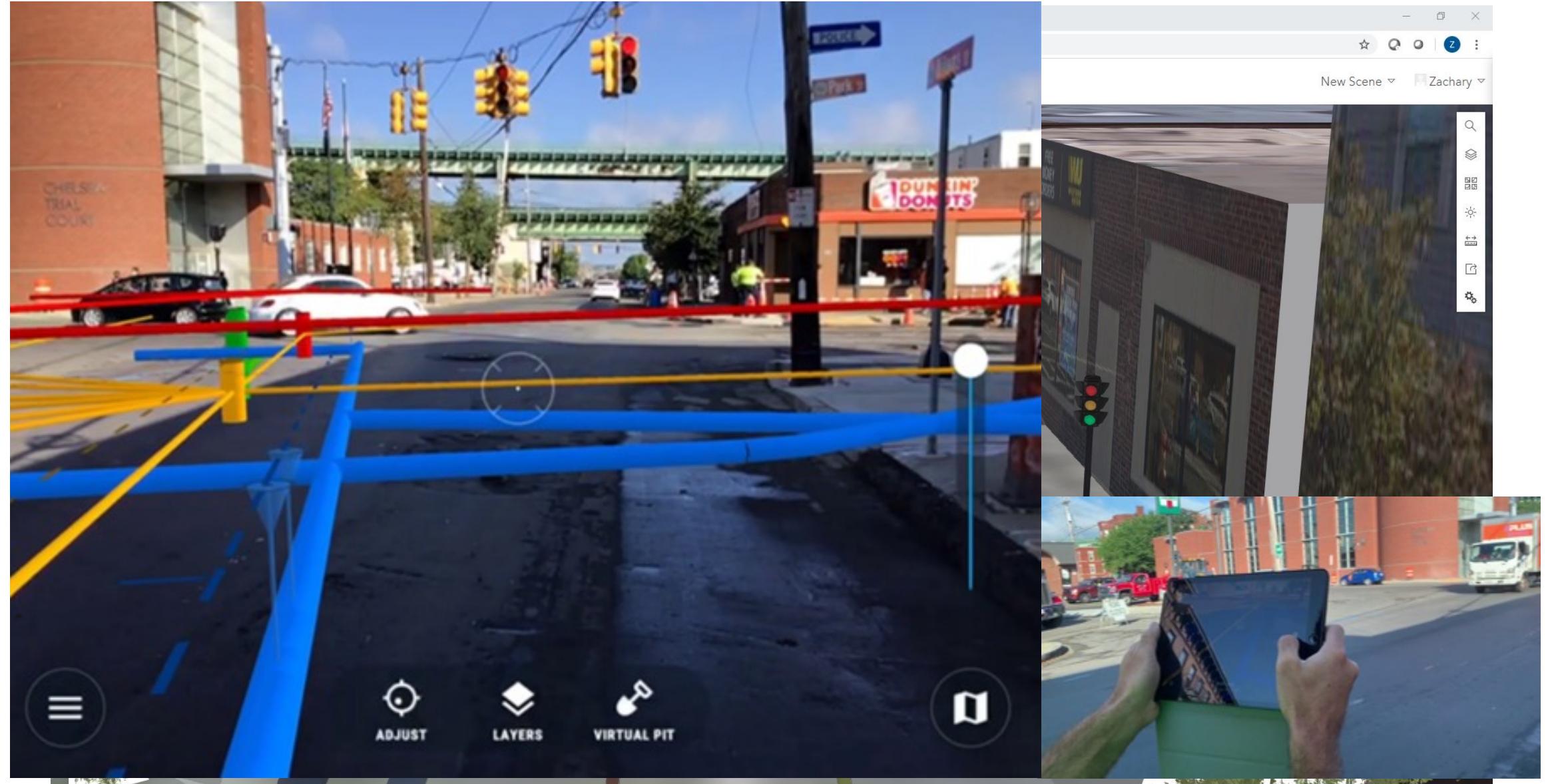


LOD 400



LOD 500

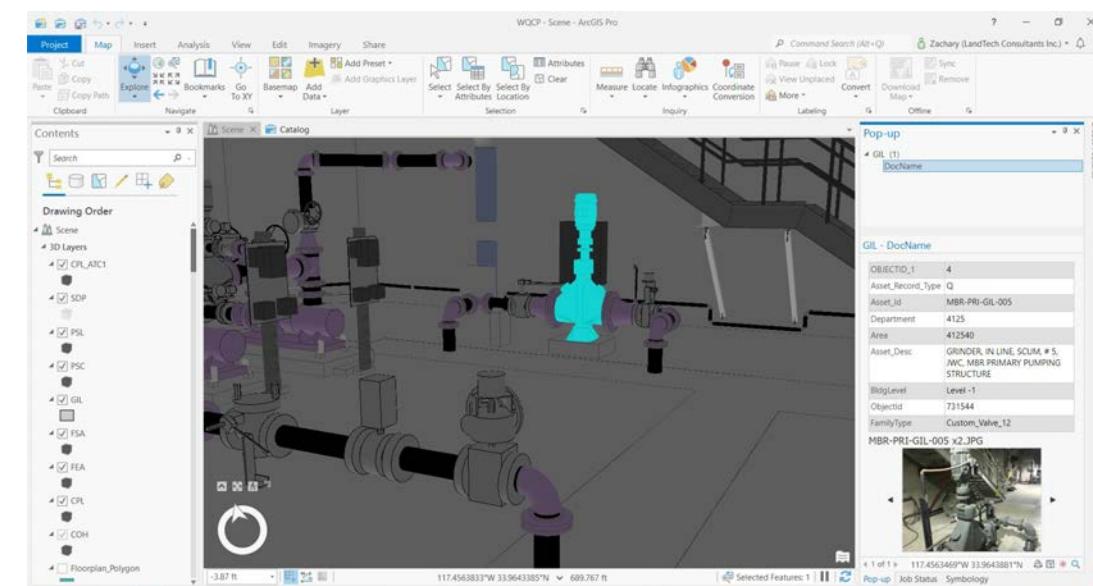
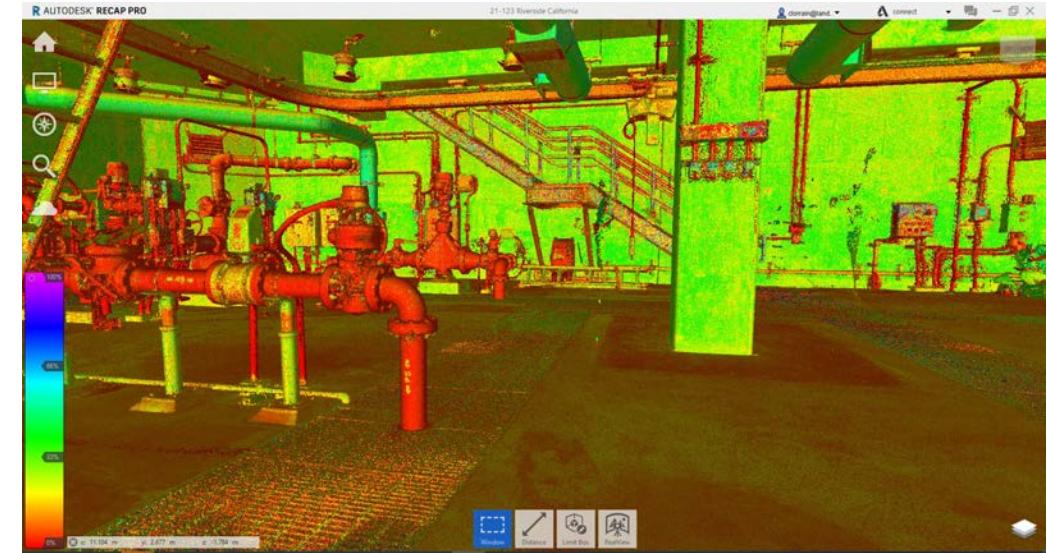






**3D GIS
for
UTILITIES
and
ASSET MANAGEMENT**

- Asset location and asset information all in one
- Centralized storage repository
- Data access enterprise wide
- Real time data
- 3 deliverables all in 1!



Contact



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