



# FIG WORKING WEEK 2023

28 May - 1 June 2023 Orlando Florida USA

Protecting  
Our World,  
Conquering  
New Frontiers

# M4D, An Agile and Platform Agnostic Digital Twin

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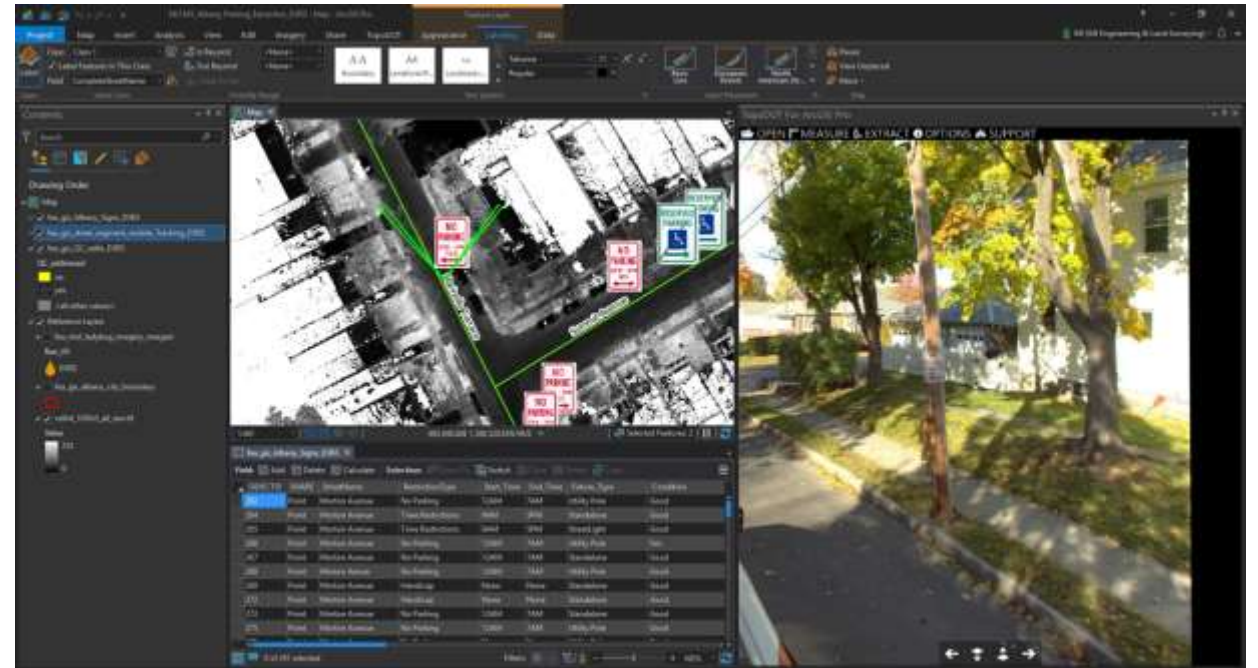
## Overview

- What is a digital twin?
- MJ4D web application
- Web mapping and MJ4D integration
- Case studies
- MJ4D SaaS Interface



## what is a digital twin?

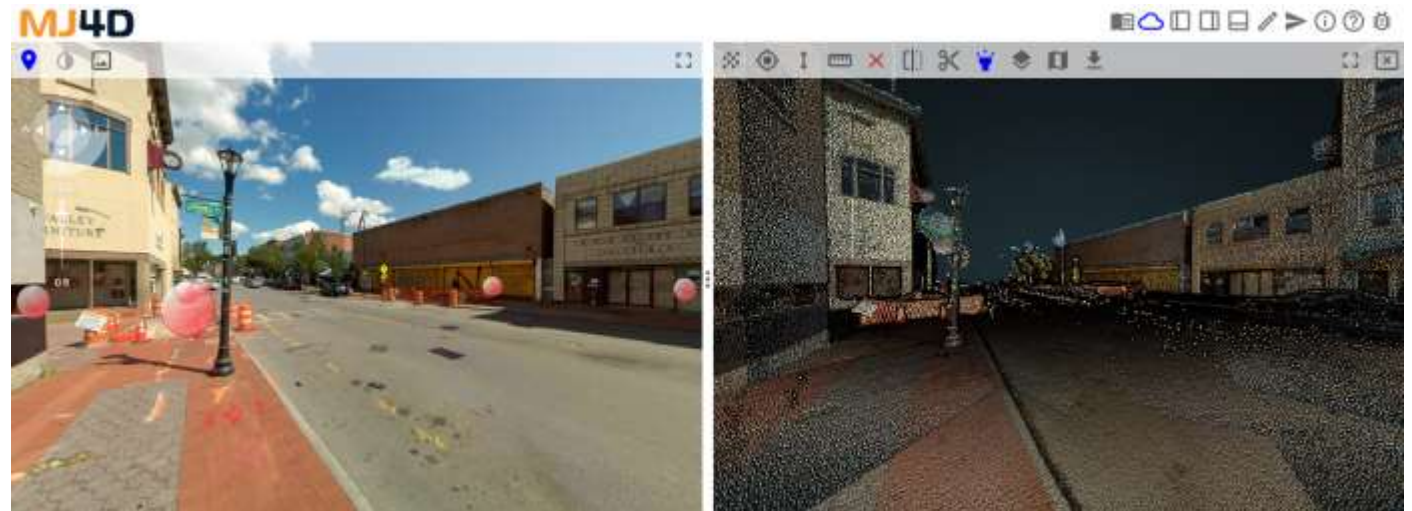
- Real-time digital counterpart that quantifies physical space in conjunction with a variety of digital records
- Typical digital twin:
  - Topography
  - Water
  - Storm Sewer
  - Sanitary Sewer
  - ADA Ramps
  - Traffic Signals
  - Streetlights
  - Curbs
  - Signage





## what is a digital twin?

- MJ uses web-enabled Content Management System (CMS) that leverages a GIS database for digital storage of infrastructure data
- MJ's MJ4D software leverages Esri's ArcGIS Online software suite to fill CMS and GIS needs
- Easy to use and customizable so it can grow with the client based on current and future needs



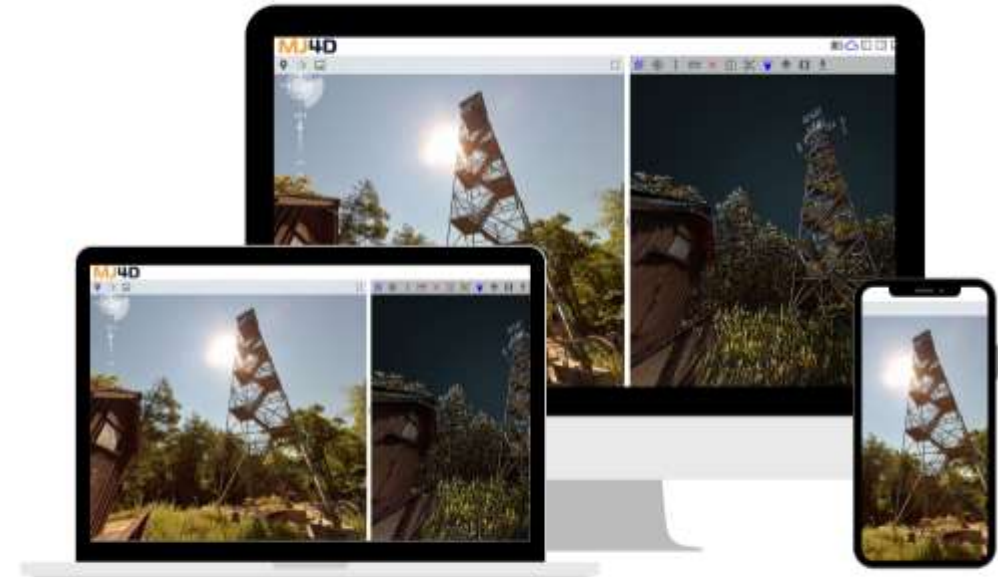


## digital twin inputs



## MJ4D

- Software as a service (SaaS) Web application developed by MJ's in-house geospatial group
- Tailored to surveyors, engineers, urban planners, GIS analysts and public works personnel
- Offers the ability to explore a digital twin directly from a mobile or desktop web browser





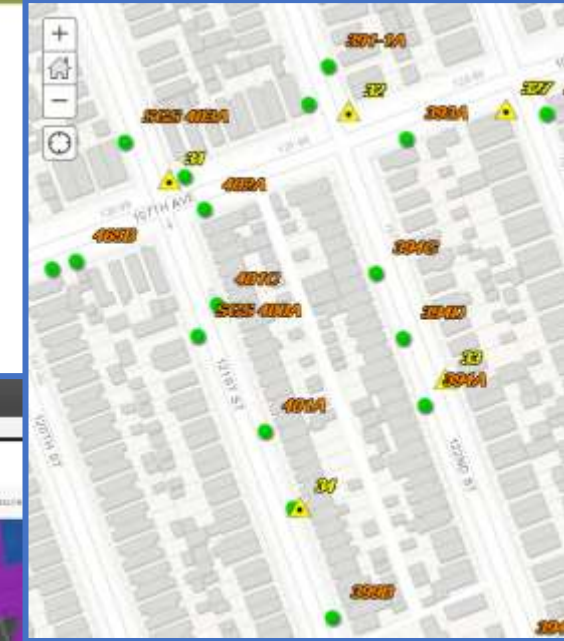
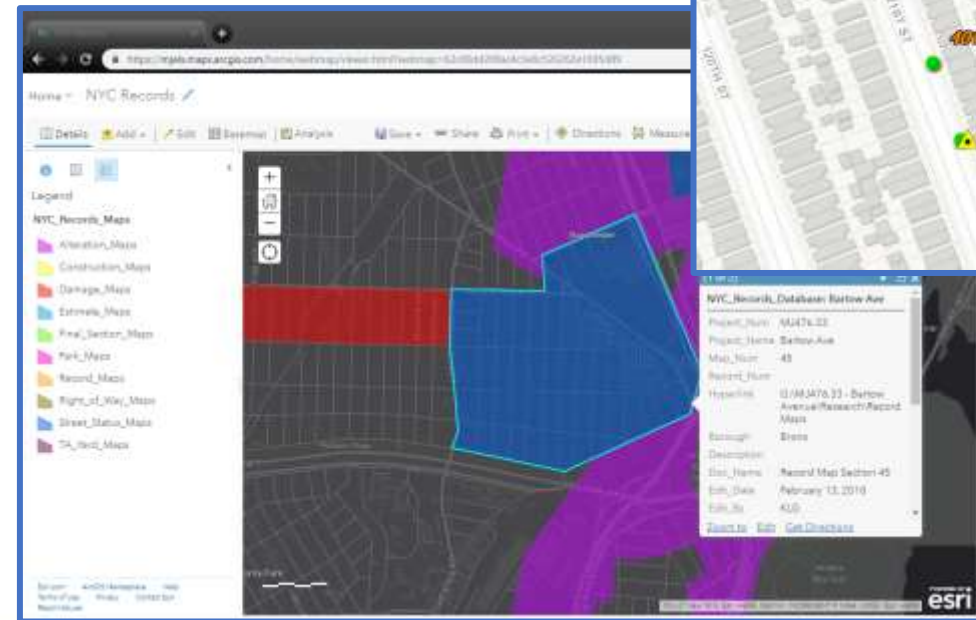
## MJ4D

- Three georeferenced and synchronized views
  - Overview map – Planimetric Features
  - 3D LiDAR point cloud data
  - 360-degree, high-res panoramic photo



## webmapping integration

- Interactive web-based maps powered by GIS
- Accessed via a web browser or apps
- Data is stored in the cloud
- Esri's ArcGIS Online is the industry standard
- Accessed via web browser
- Integrates with desktop GIS like ArcMap and ArcGIS Pro
- Collect and edit data and view maps on tablets & cellphones using ESRI apps (Collector, Survey123 & Field Maps)
- Subscription based



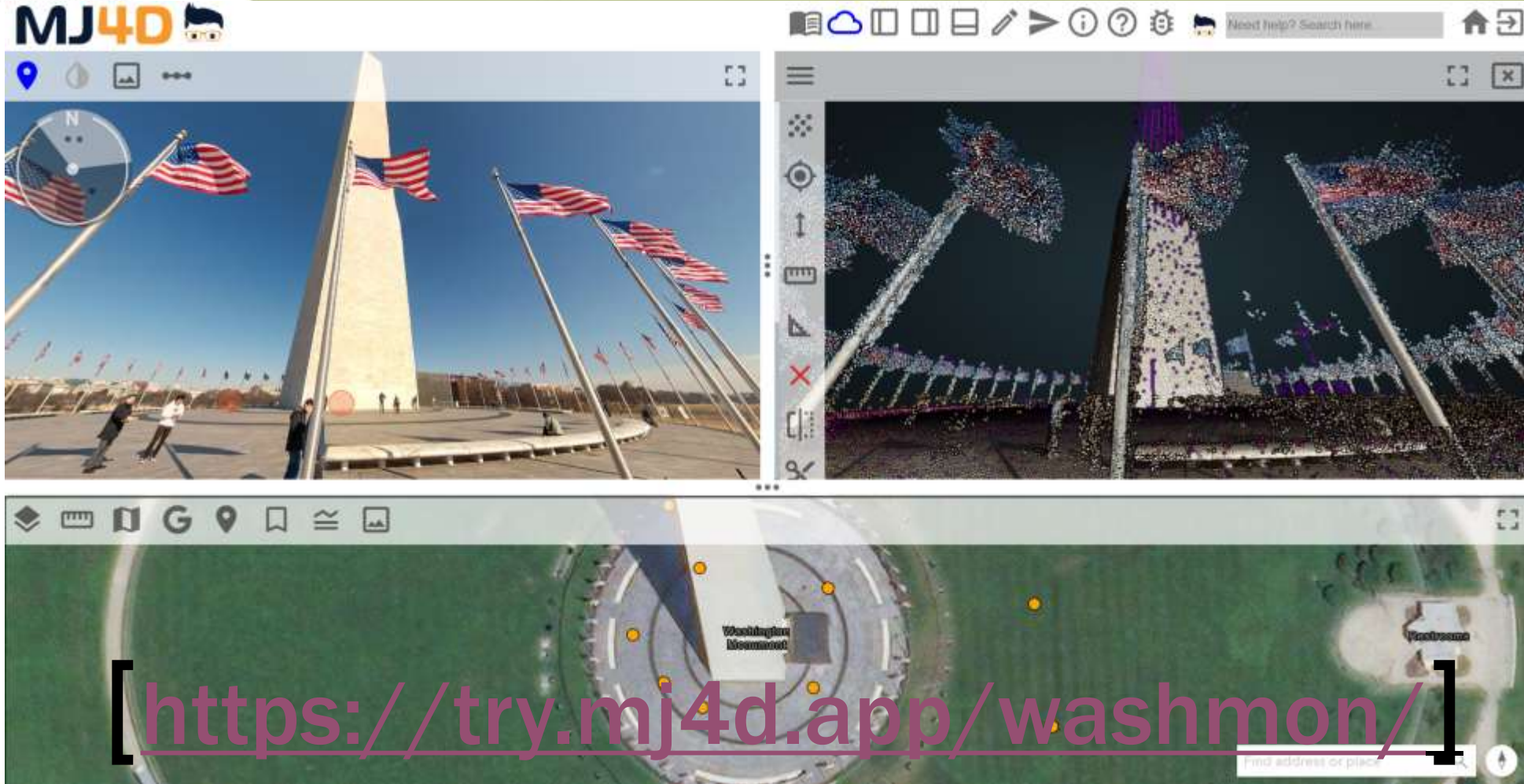




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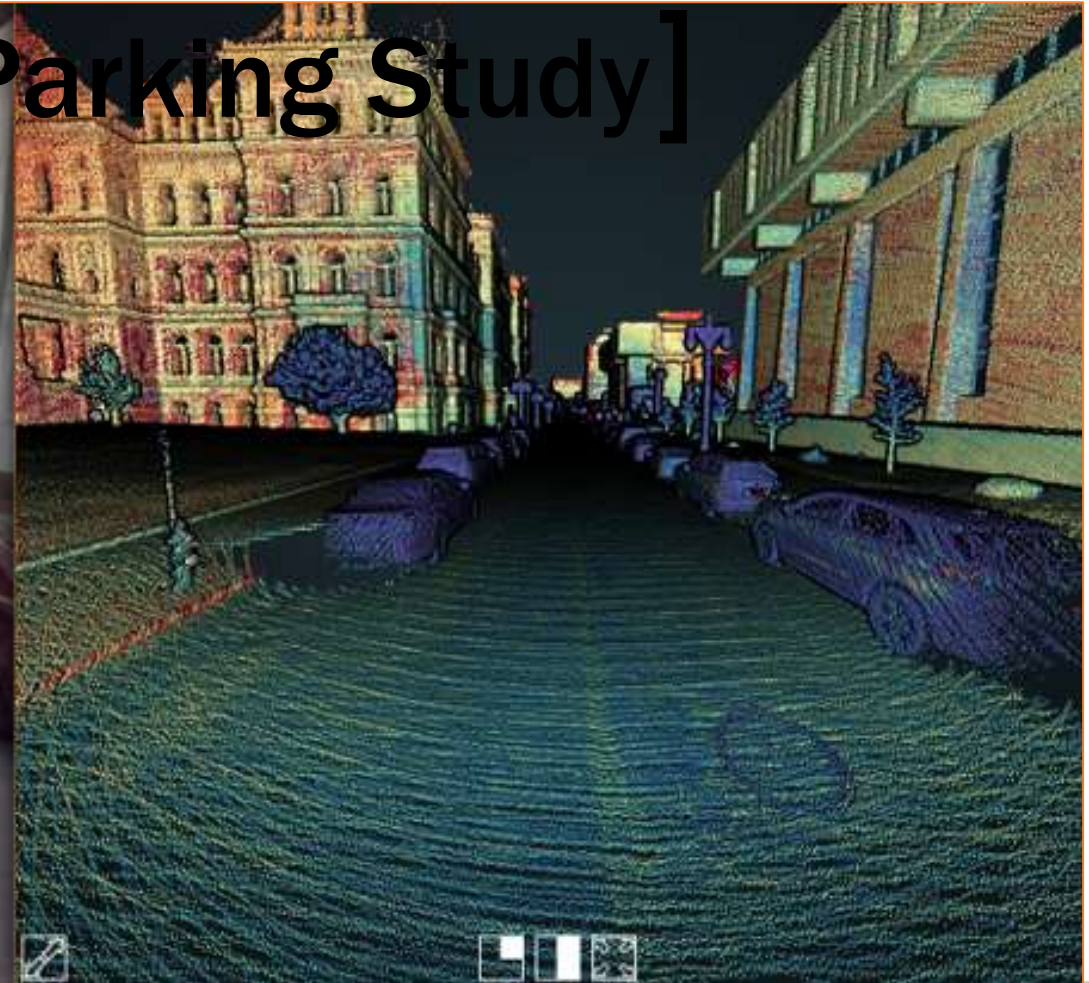
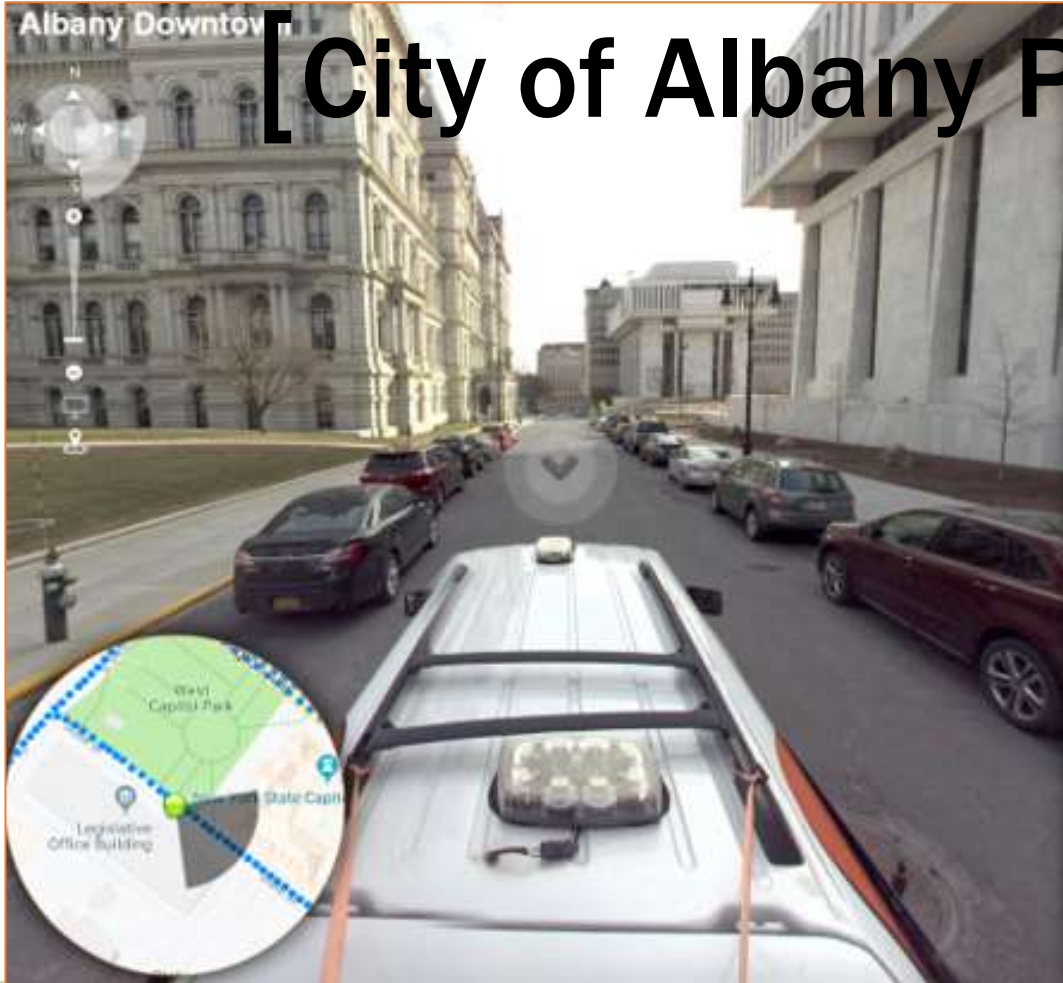
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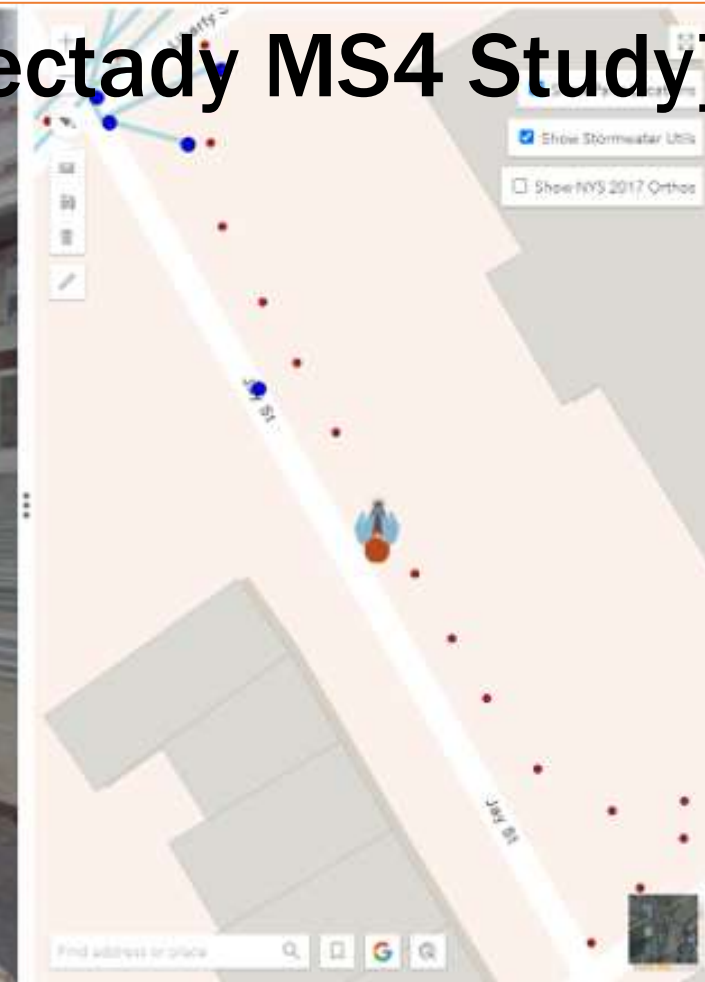


## [City of Albany Parking Study]



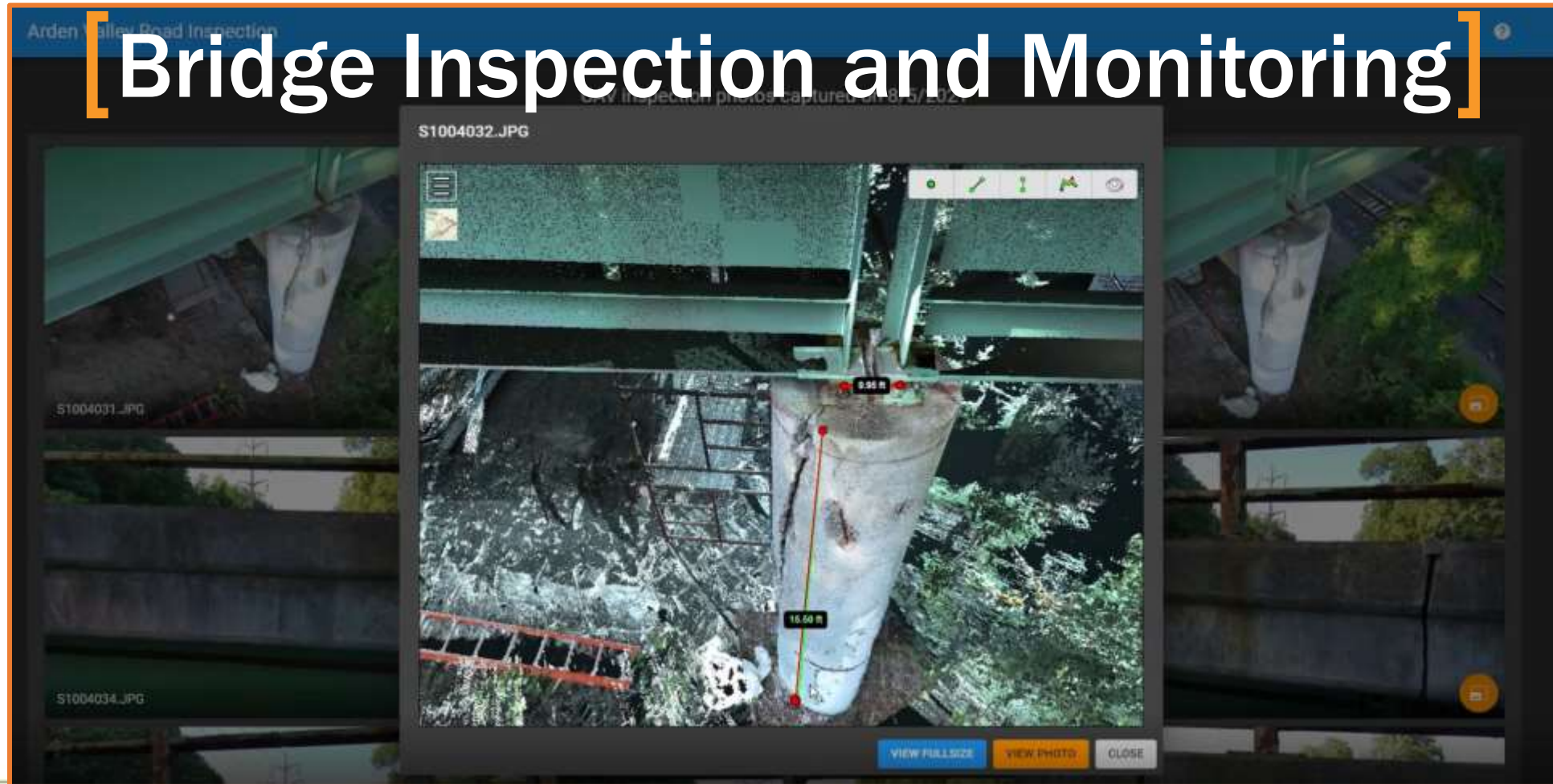


## [Town of Halmoon / City of Schenectady MS4 Study]





## Bridge Inspection and Monitoring



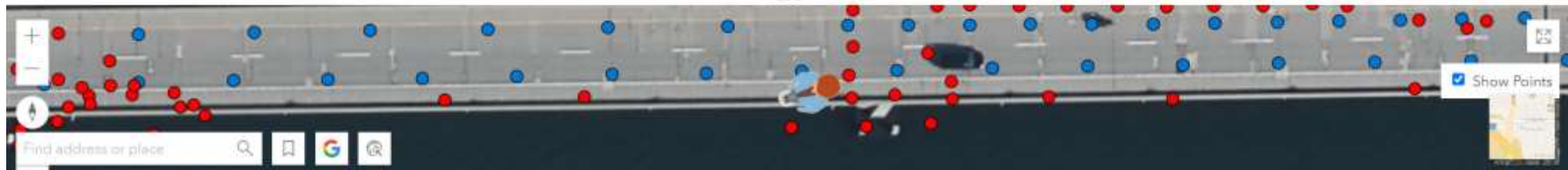
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## [ Structural Surveys ]

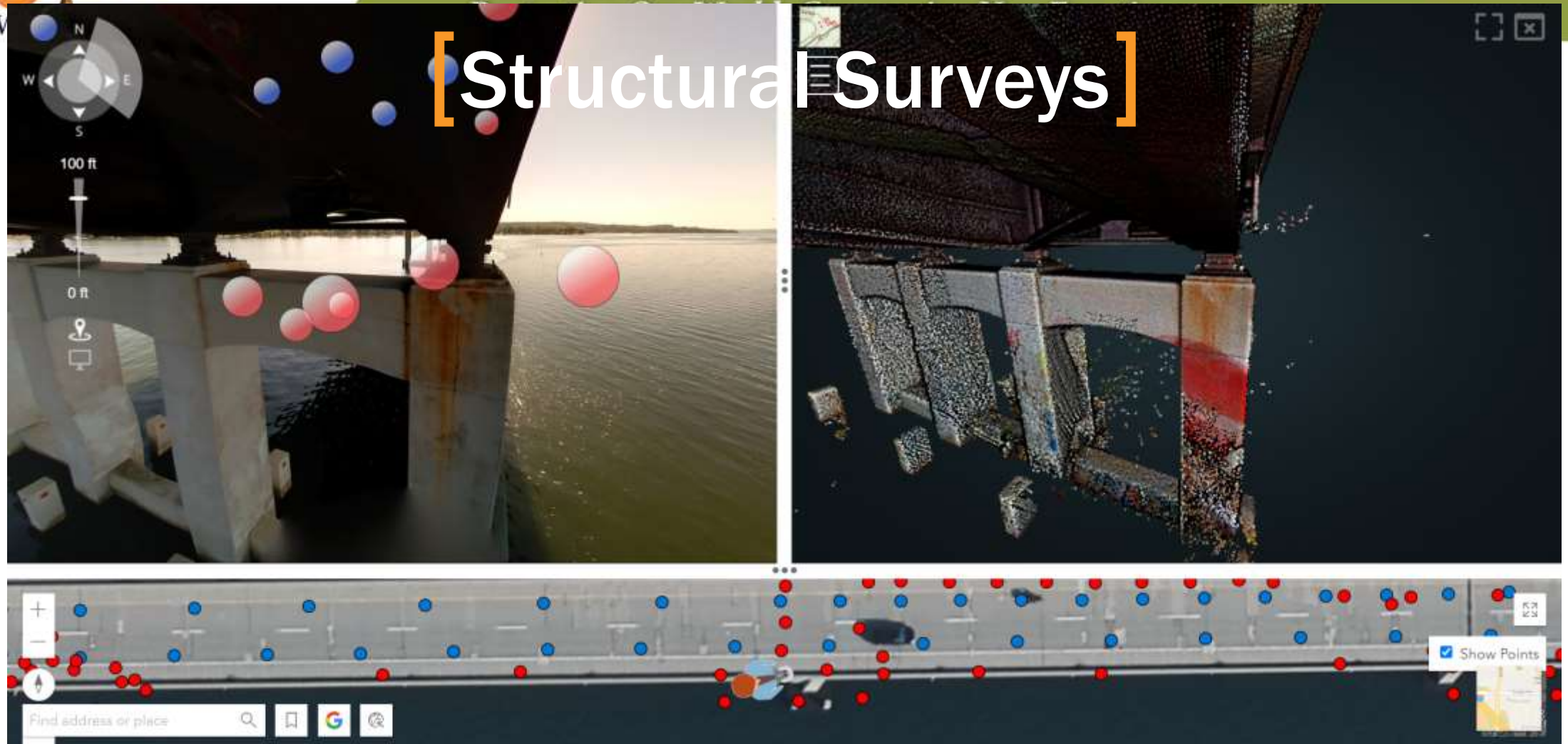






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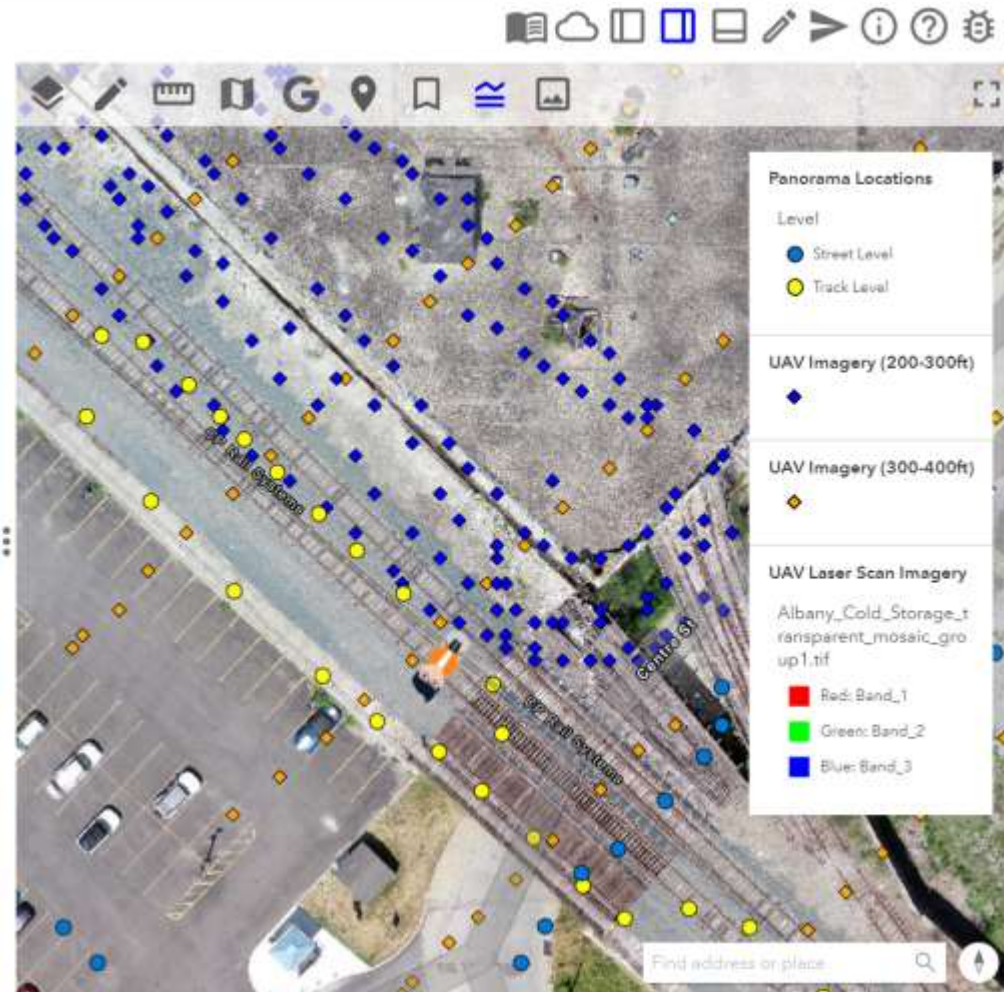
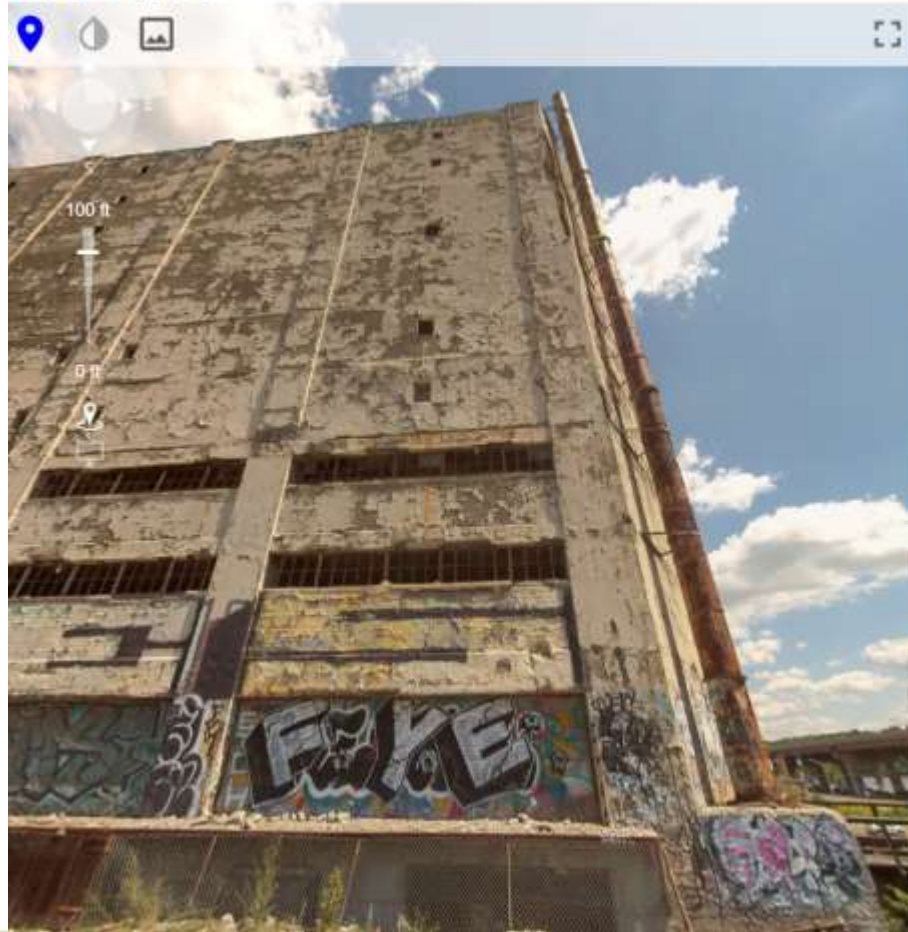


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**MJ4D**



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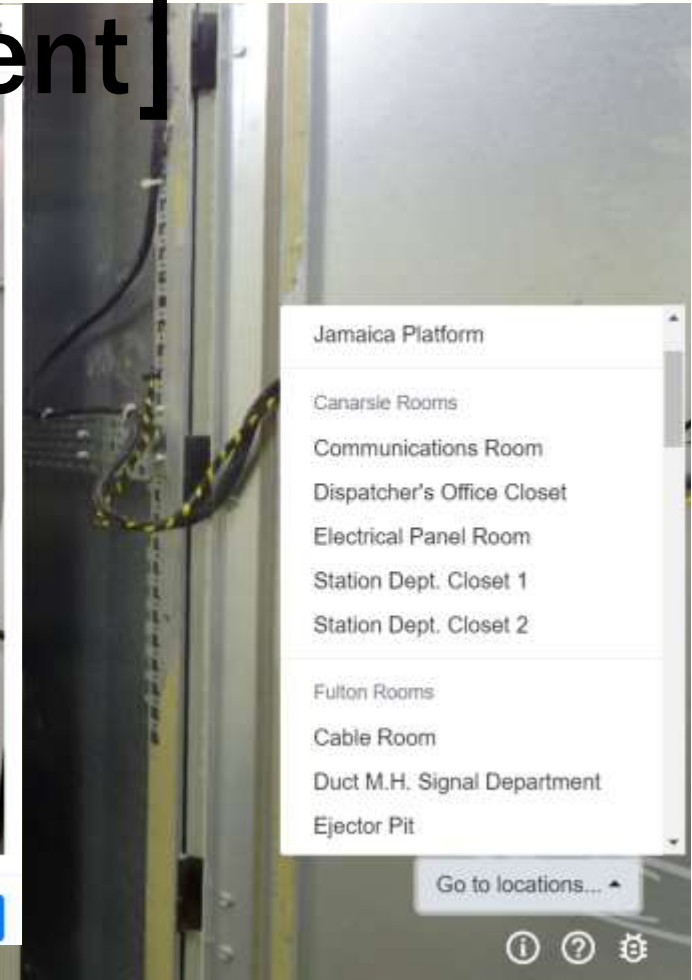
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## [ Facility Management ]





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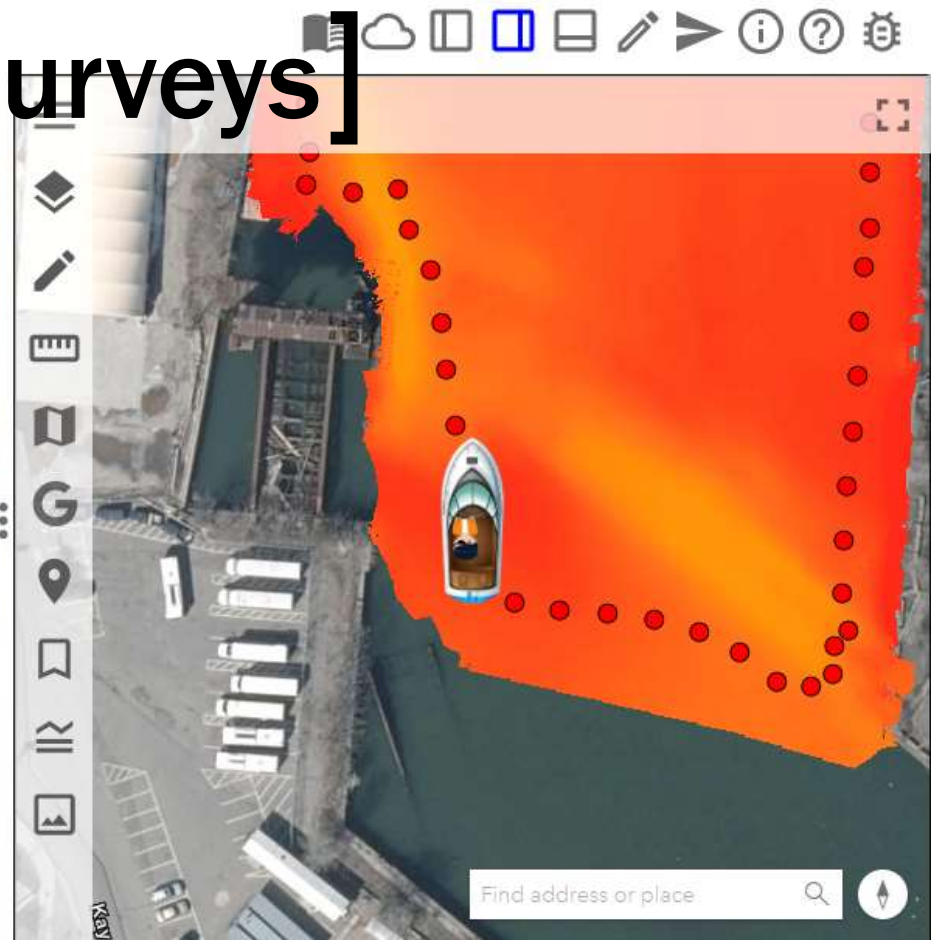
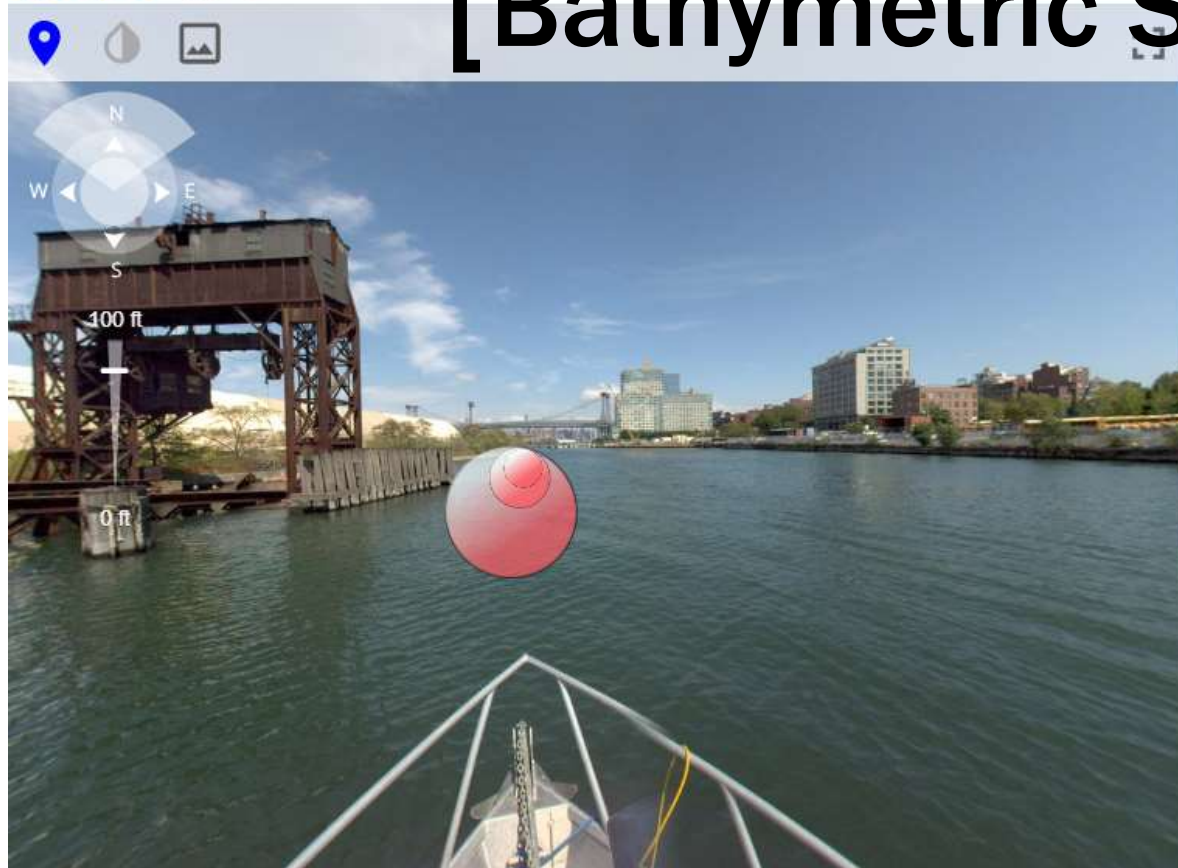
[FHWA Inspector Training]





## [Bathymetric Surveys]

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## [ Forensic Investigations ]



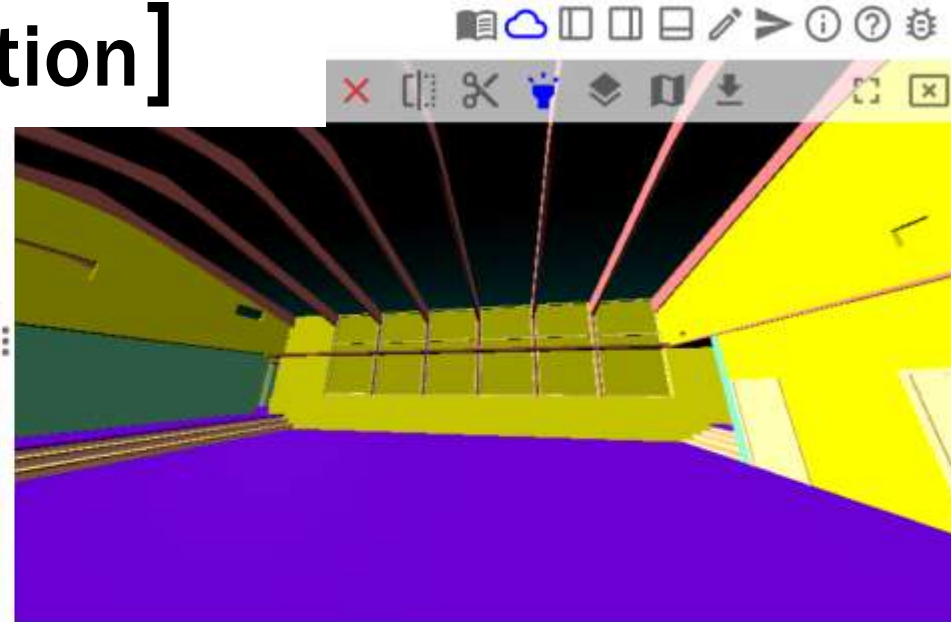
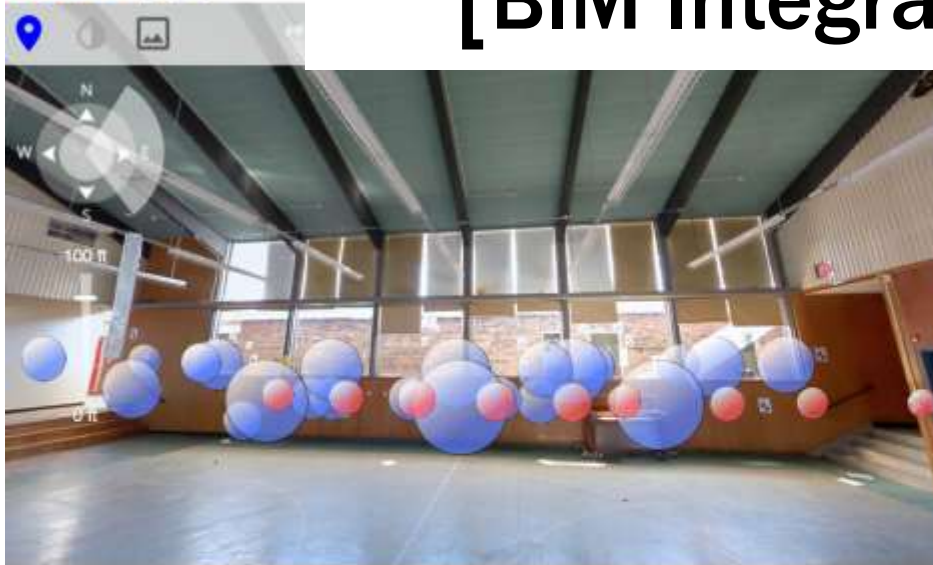
## [Forensic Investigations]





## [BIM Integration]

MJ4D



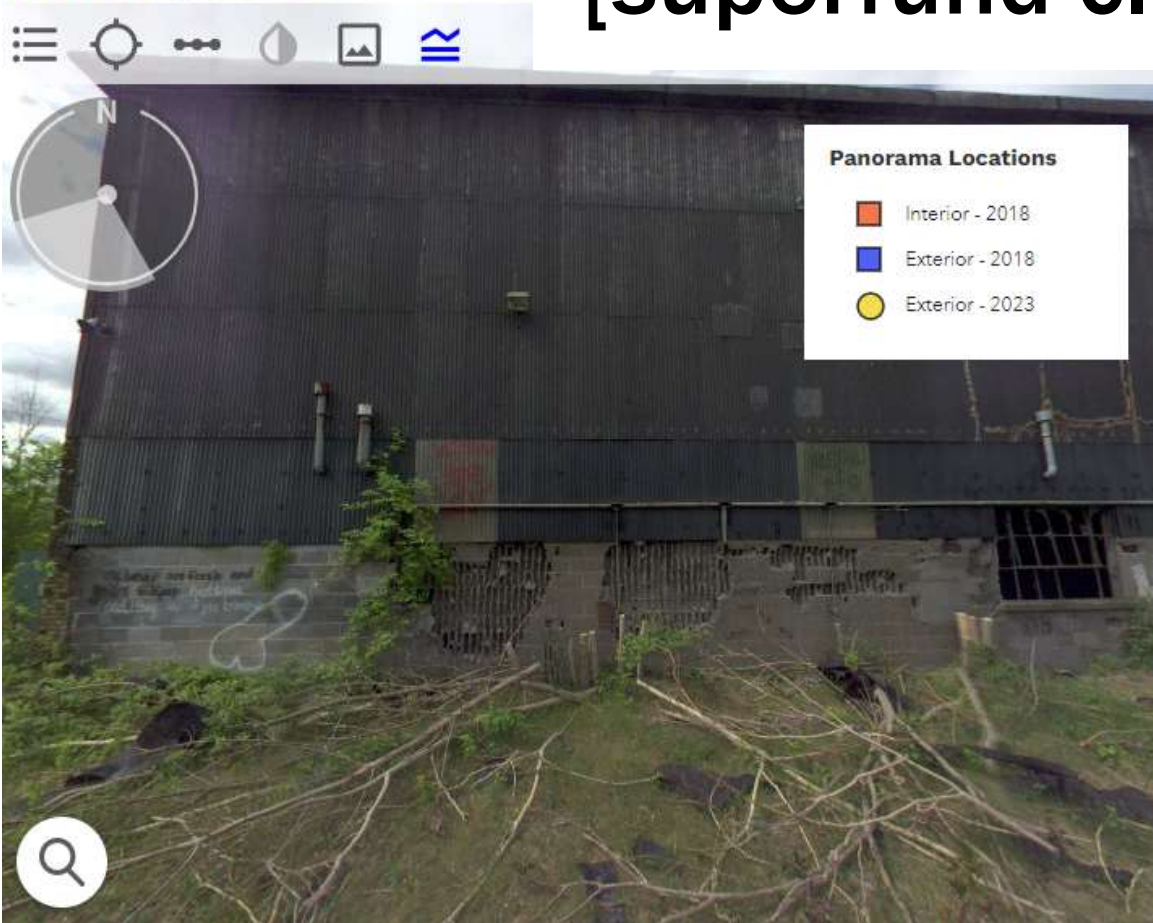


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[superfund cleanup]



**Panorama Locations**

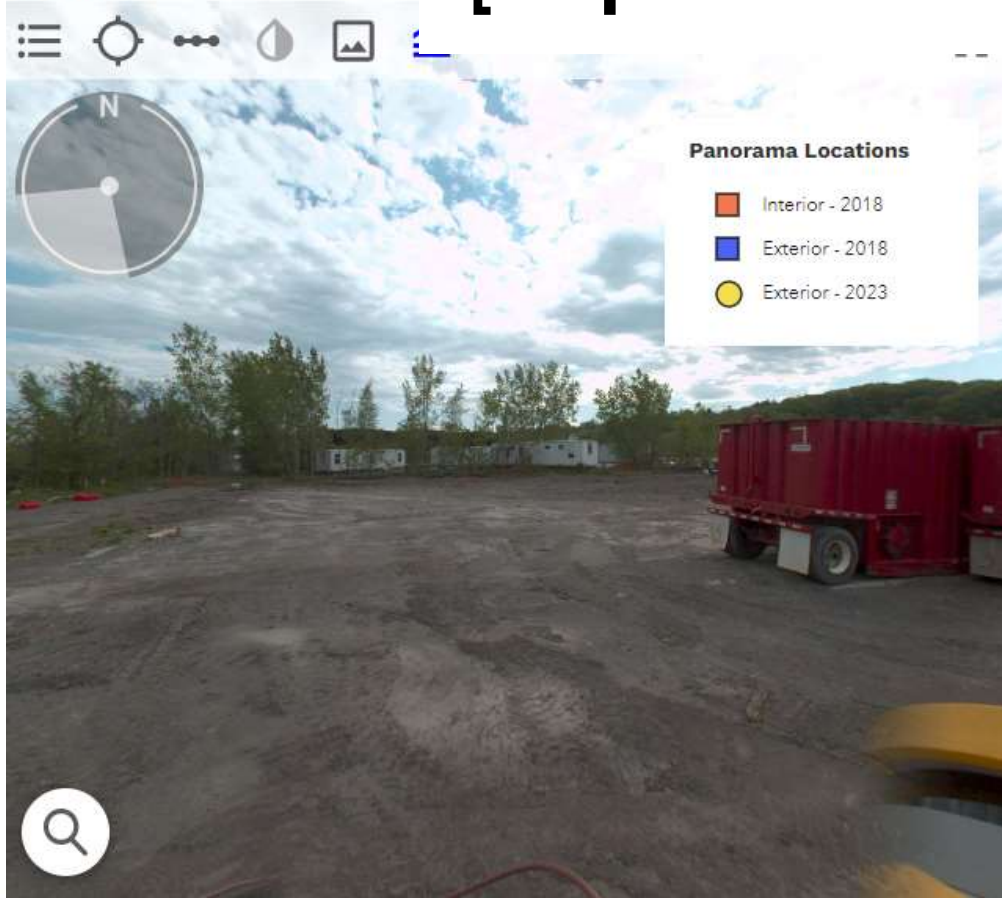
- Interior - 2018
- Exterior - 2018
- Exterior - 2023





MJ4D 

## [superfund cleanup]

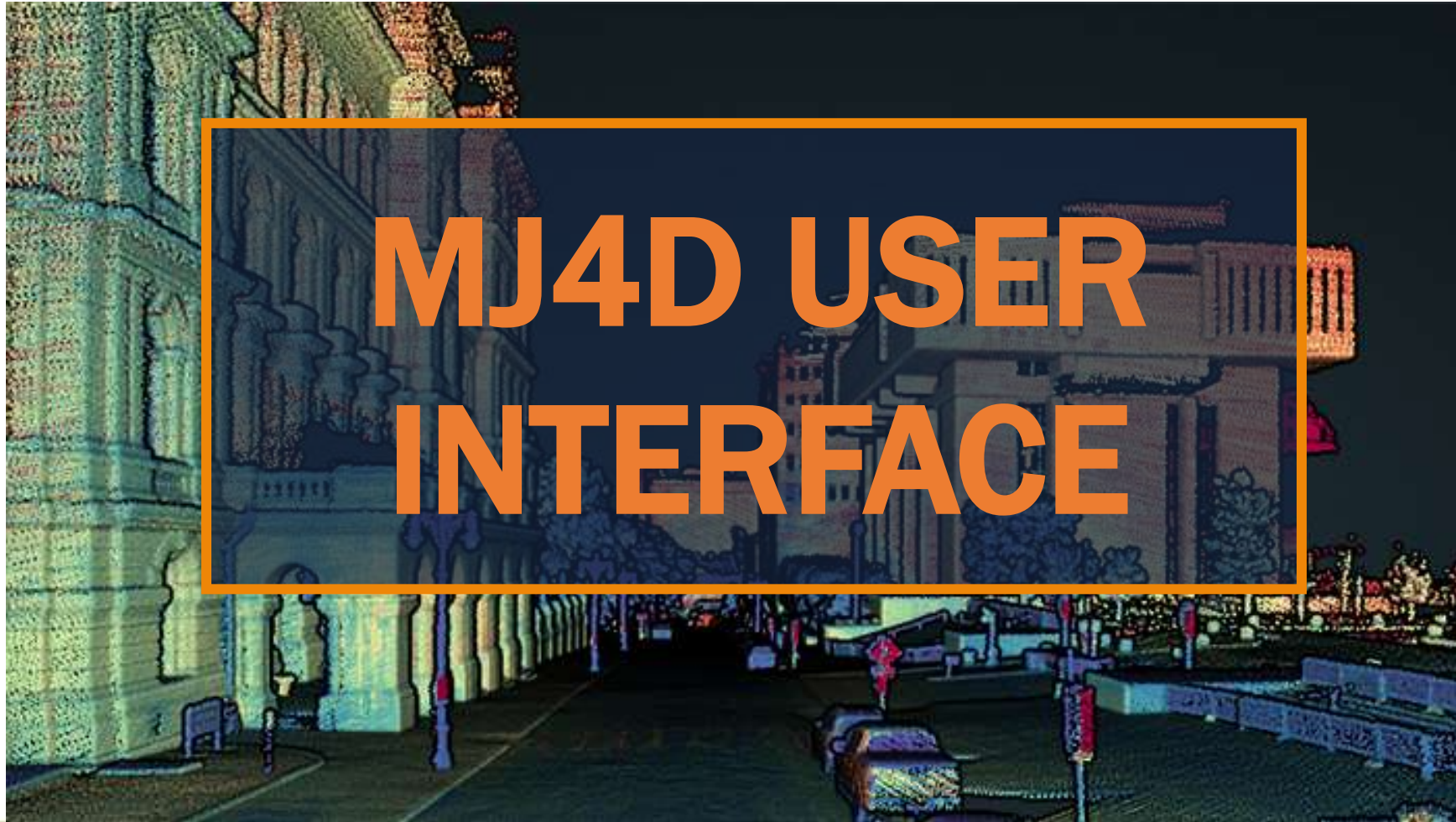




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**Be there without being there.**

## Sign In

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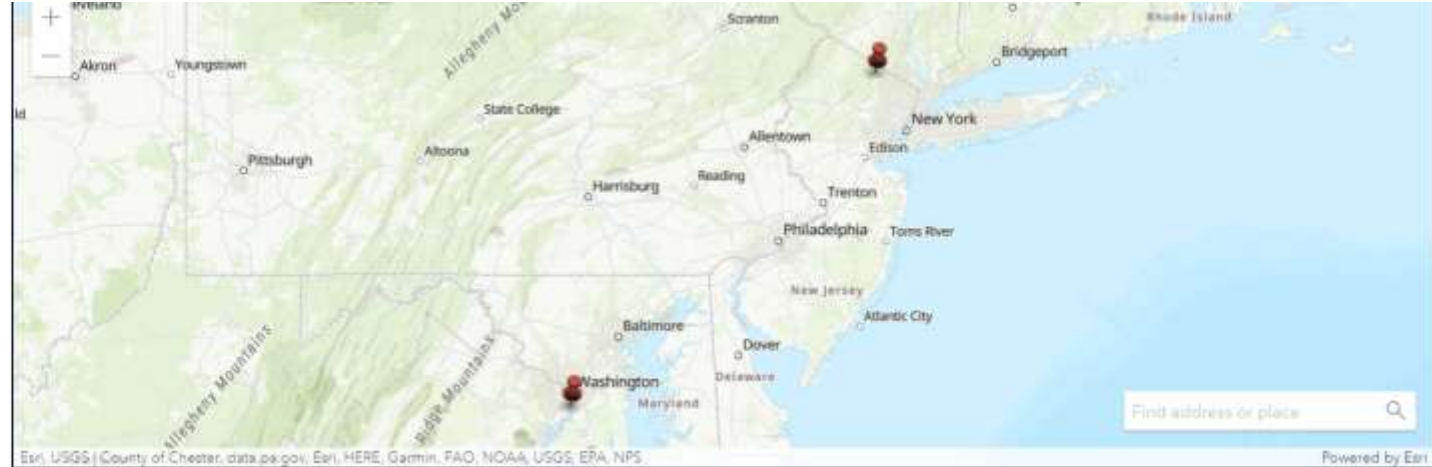




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Favorites



## Projects

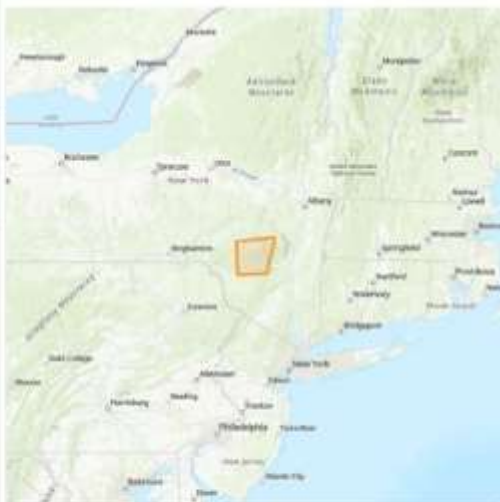
COLUMNS			FILTERS	DENSITY
Zoom Map	Open Viewer	Project Name	Favorite	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Sterling Forest Fire Tower	★	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Washington Monument	★	



## Request a Project

Please fill out the following fields before submitting your project request:

### Project Area



← REDO SKETCH

Project Name

Project Description

Please describe the area of interest and purpose of the project - if it's a building, how many floors?

Project Deliverables

In addition to the MJ4D app, what other project deliverables do you need? Survey mapping? Floorplans? AutoCAD? Revit?

Project Due Date

11/07/2022

Contact

mkoterba@mjels.com

Full Name

Phone (optional)

Do You Have Project Files to Upload?

SUBMIT

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Contact

mkoterba@mjels.com

Full Name

Phone (optional)

Do You Have Project Files to Upload?

Select A File Format

None

- None
- Pointclouds(LAS, LAZ) and Equirectangular Panos(JPG) in a ZIP file
- Leica (LGS)
- NavVis "proc" folder in a ZIP file
- Trimble (VCE)

UPLOAD FILE





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## Thank you!



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