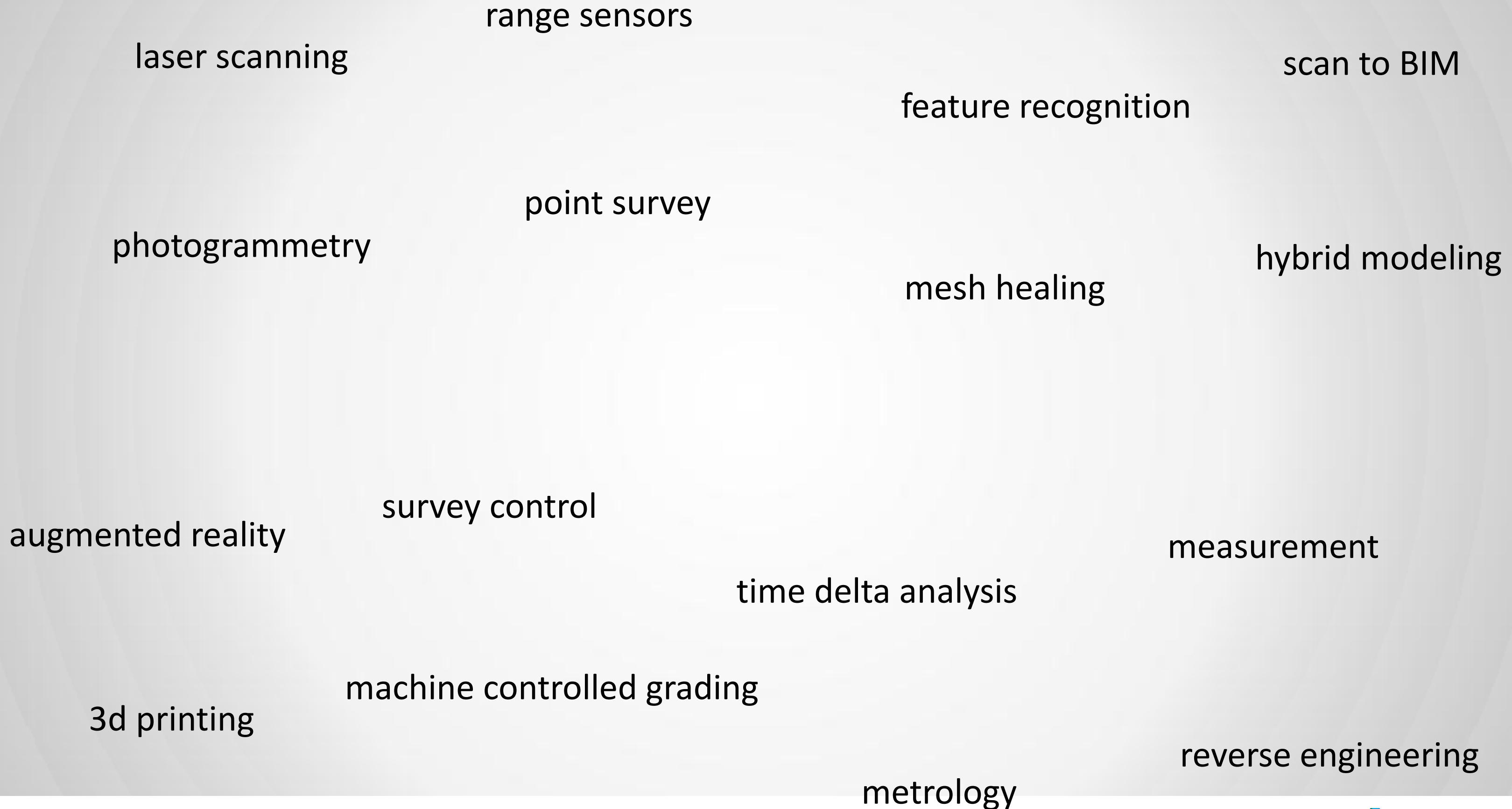




# Every Point Cloud Has a Silver Lining When You Use Autodesk® InfraWorks™

Presenter Keith Warren  
BIM / Infrastructure Manager

Co-Presenter Mark Dwillis  
Senior Designer



# Reality Computing

Civil 3D, Navisworks, 3Ds Max, ReCap Pro & Infraworks

**Realization**

machine controlled grading

3d printing

**Analysis**

metrology

reverse engineering

time delta analysis

survey control

measurement

**Capture**

point survey

**Manipulation**

mesh healing

hybrid modeling

range sensors

laser scanning

scale to BIM

# Class summary

This session will show how VTN Consulting is using Autodesk Infrastructure Modeler® to create and communicate conceptualizations of 3D city designs, with real engineering data compiled from Point Cloud Scans, GIS, CAD, 3D Models, and civil engineering cad files. Then share the models with Autodesk Infraworks 360® for team collaboration in the cloud.



# Autodesk Labs

*“Autodesk Labs is home to innovative new technologies and collaborative development. Its mission is to involve you, the customer, in the progress of design technology solutions. We’re not a beta program (although Autodesk does have an active beta community), or a usability team, because the technology we work with is too new to be a product. The user feedback that you provide to Labs is really on product ideas, while they’re still in an early conceptual stage.”*

- Project Galileo Before it became (Autodesk Infrastructure Modeler®)

Web Site: <http://labs.autodesk.com/>

# Autodesk Labs



## It's Alive in the Lab

Exhibits, Research, Labs, and Point of View from the Office of the CTO

Home Archives Subscribe

SCOTT SHEPPARD



November 05, 2013

**Mercedes Benz Biome Car Appears In Mercedes Benz Commercial**

I am an Autodesk Gallery Ambassador. One of our exhibits that I have blogged about is:

April 02, 2013

**Autodesk Gallery Powers of Design Exhibit: 10\*\*0 Biome Concept Car**

I work out of our office on One Market Street in San Francisco. My standup-desk is right across from our Gallery at One Market. One of our newer exhibits is called *Powers of Design*. It was first featured at the Technology Entertainment & Design (TED) conference last year. *Powers of Design* depicts the size of everything from the inconceivably small to the mind-blowingly large. I thought I'd cover the exhibit elements, one at a time, over the next few months. I started small and am working my way up.



Physical prototype of Biome concept car. Image: U.S. News

Autodesk Labs

What's for Me?

What's New?

AUTODESK BLOGS

3D Roadie

3ds Max SDK and Scripting Mayhem

AEC DevBlog

Amalgamation

Around the Corner

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Tools for Consumers

**Give Us Feedback**

**Dive Into Discussion Groups**

**Read the Blog**

**Stay informed of Changes**

**//LABS\_LATEST**

- Project Sci-Viz for 3ds Max graduates from Autodesk Labs 11/01/13
- New technology preview: Project Dalton for pipe flow simulation and analysis 10/31/13
- Former ADN Plugin of the Month, Digital Signature Stamp for AutoCAD, retired from Autodesk Exchange Apps 10/31/13
- Defect corrections based on your feedback: new Project Miller download now available 10/30/13
- Update: Project Memento now exports geometry and textures to OBJ format 10/23/13
- Improvements based on feedback: updated Leap Motion Controller Plug-in for Autodesk MotionBuilder 10/21/13
- Defect correction update based on your feedback: Project Miller 10/17/13
- The Innovation Genome Project 10/17/13
- New technology preview: Project Miller for fixing/viewing before 3D printing 10/11/13
- Autodesk App Exchange version of DWF Batch Publish for AutoCAD now maintained by JTB World 10/10/13

**//LABS\_BLOG**

- Project Sci-Viz for 3ds Max Graduates from Autodesk Labs 11/04/13
- Project Dalton Now Available on Autodesk Labs 11/01/13
- AU CAVE: And now for something completely different... 10/31/13
- Happy Halloween from Autodesk Labs 10/31/13

# Key learning objectives

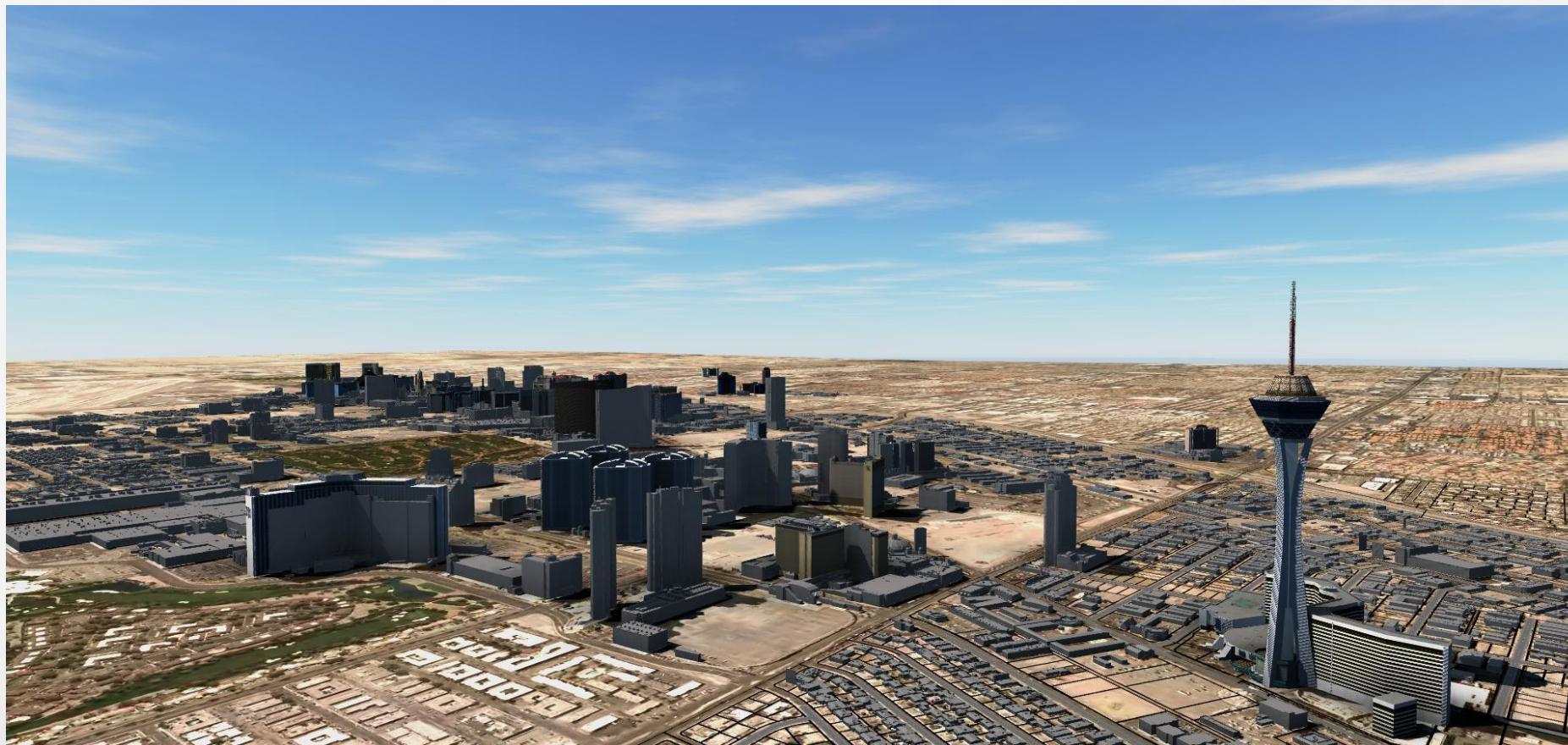
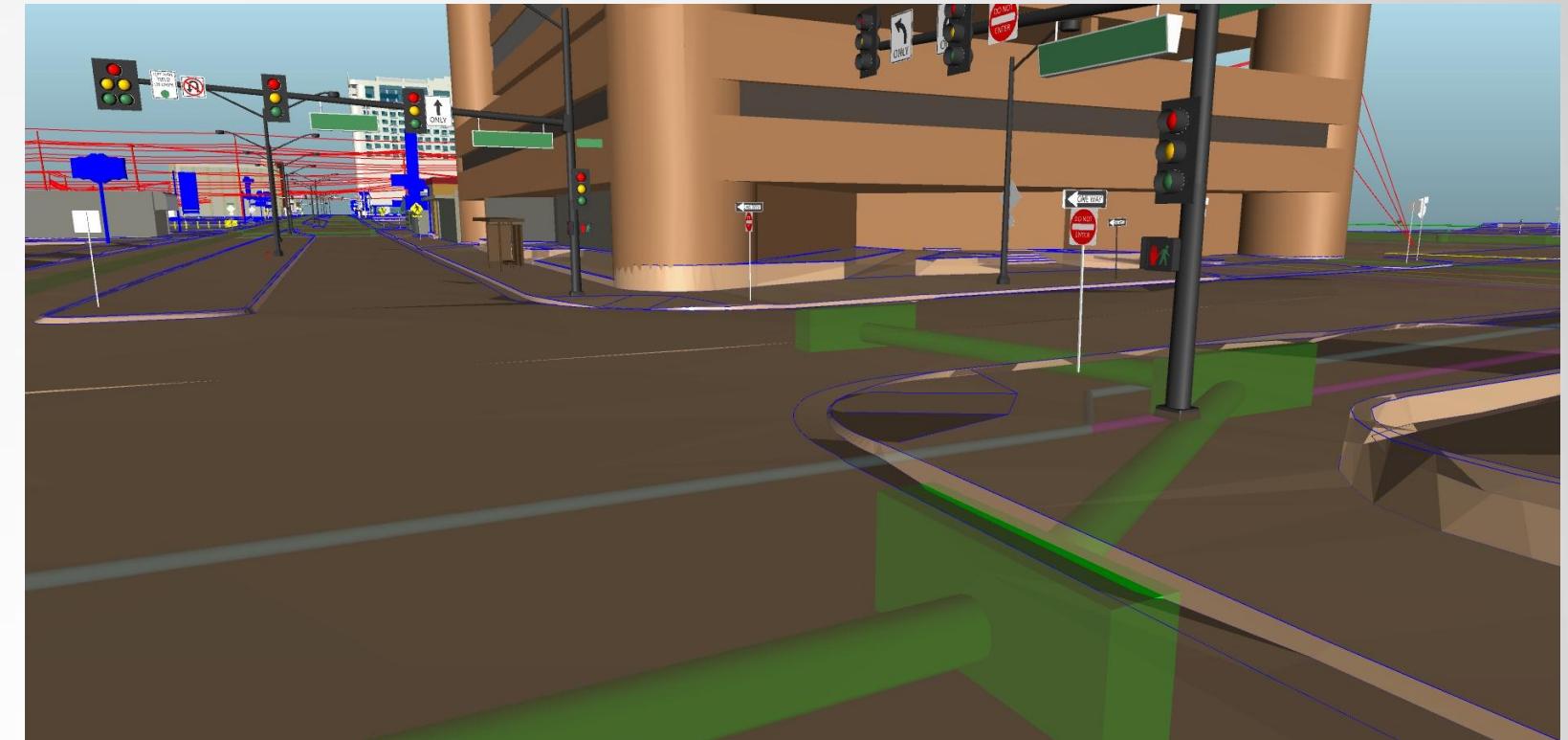
At the end of this class, you will be able to:

- Find data to create compelling models
- Setup model file with coordinate system
- Create Surface and drape aerial photo
- Add models (building, power poles, street signs, etc.)
- Exporting from Civil 3D
- How to share data with cloud services
- Create compelling stories for your stakeholders



# Solutions

- ✓ 3D Geospatial Data (GIS)
- ✓ 3D Intelligent Modeling
- ✓ Urban Planning and Design
- ✓ Space Planning



# Integration of:

- Engineering Design and As-Built
- Construction Data
- Architecture Design Data
- Survey Field Data / Point Cloud Data (HDS)
- Coordinate Reference System (CRS)
- GIS – Parcels, Zoning, Future Land Use, Flood Zones, Etc.
- Emergency Response

# Where do I get the data?

Free data sources:

- ✓ USGS for Terrain & Imagery <http://viewer.nationalmap.gov/viewer/> (formerly Seamless)
- ✓ Municipalities for GIS data
- ✓ Open Street Maps
- ✓ Tiger Data (Streets)
- ✓ Trimble 3d Warehouse for buildings

# How do I get started?

Terrain

Terrain, or an elevation model, is required to get started using Infraworks. GeoTiffs, DTMs, and DEMs are freely available from a variety of sources. USGS is the first place to start.

Aerial

Aerial or satellite photos provide color, texture, and orientation to the model, but no depth. They also provide a stencil for tracing city features such as buildings, trees, or roads.

Roads

Roads also provide context to the model, as well as a data source to display road names via tooltips in the model.

# Class Demo

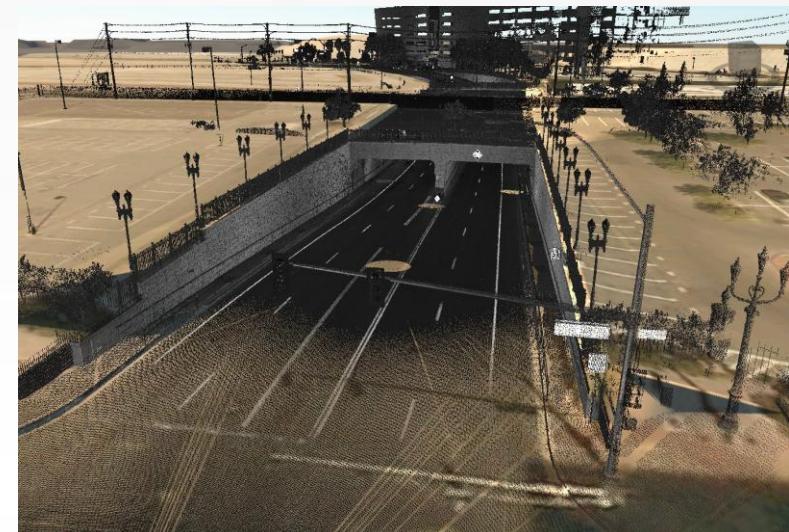
Utility Infrastructure



City Planning



Point Cloud Scan



Mobile App  
Cloud Serves





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