High-Quality 3D Representation of Toronto Waterfront

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Purpose and Context

- Theme 3: Visualization Support

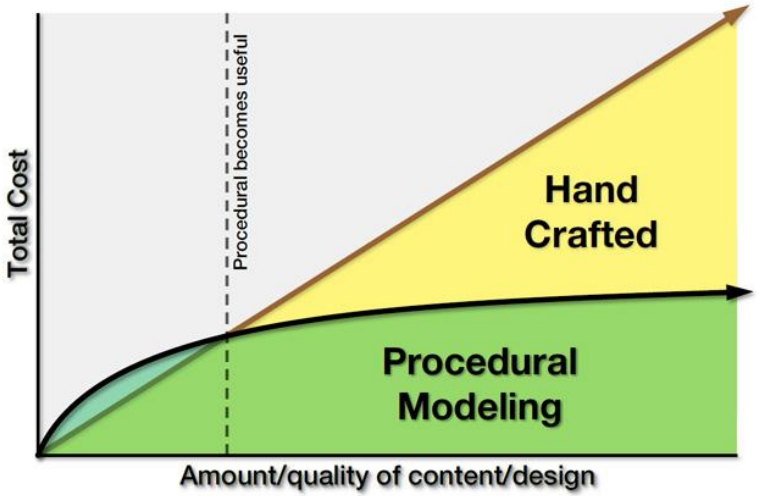
Main Goal

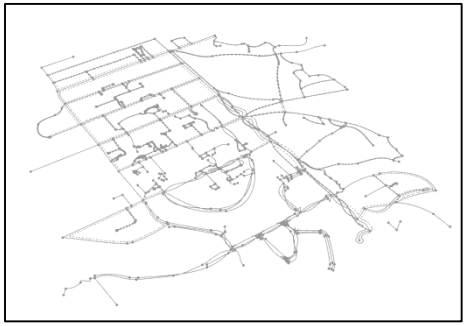
- Develop a high-quality 3D representation of Toronto Waterfront using ESRI's CityEngine software that can be used as a visual analytics testbed within the broader iCity project

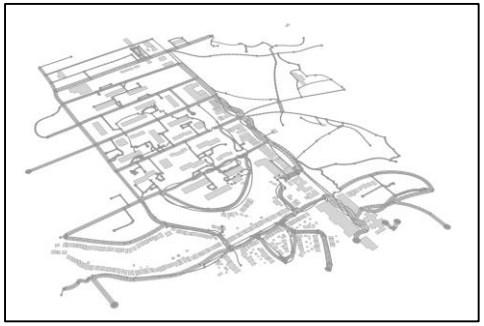
>>> Find and import geometry and geodata into CityEngine for procedural modelling

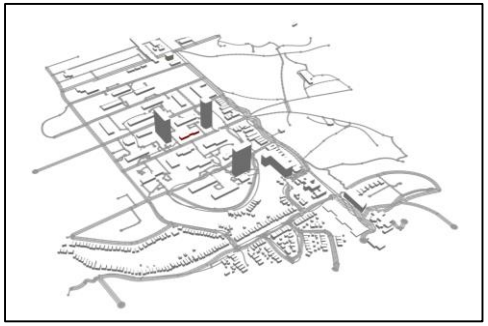
>>> Identify gaps in data

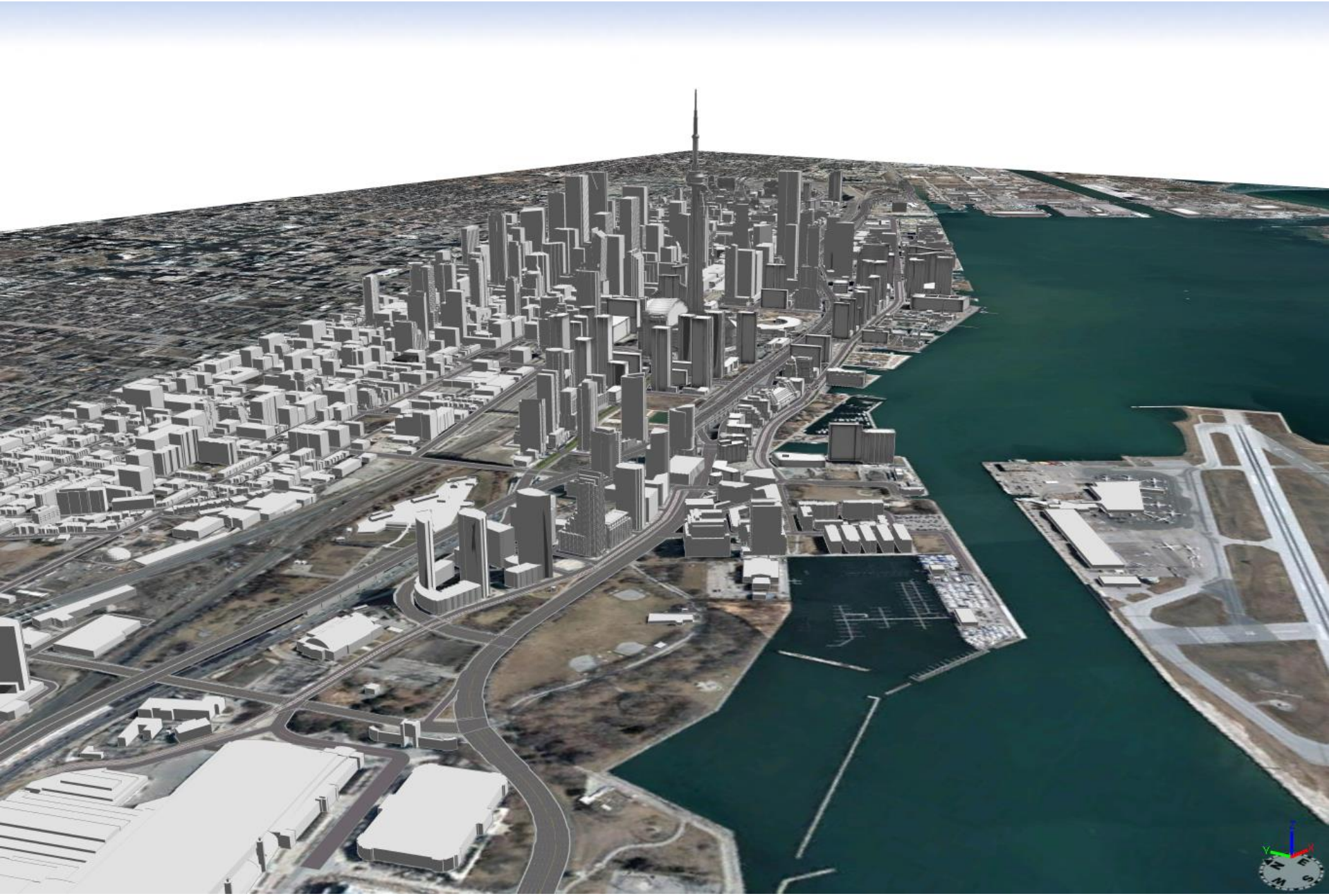
CityEngine and Procedural Modelling

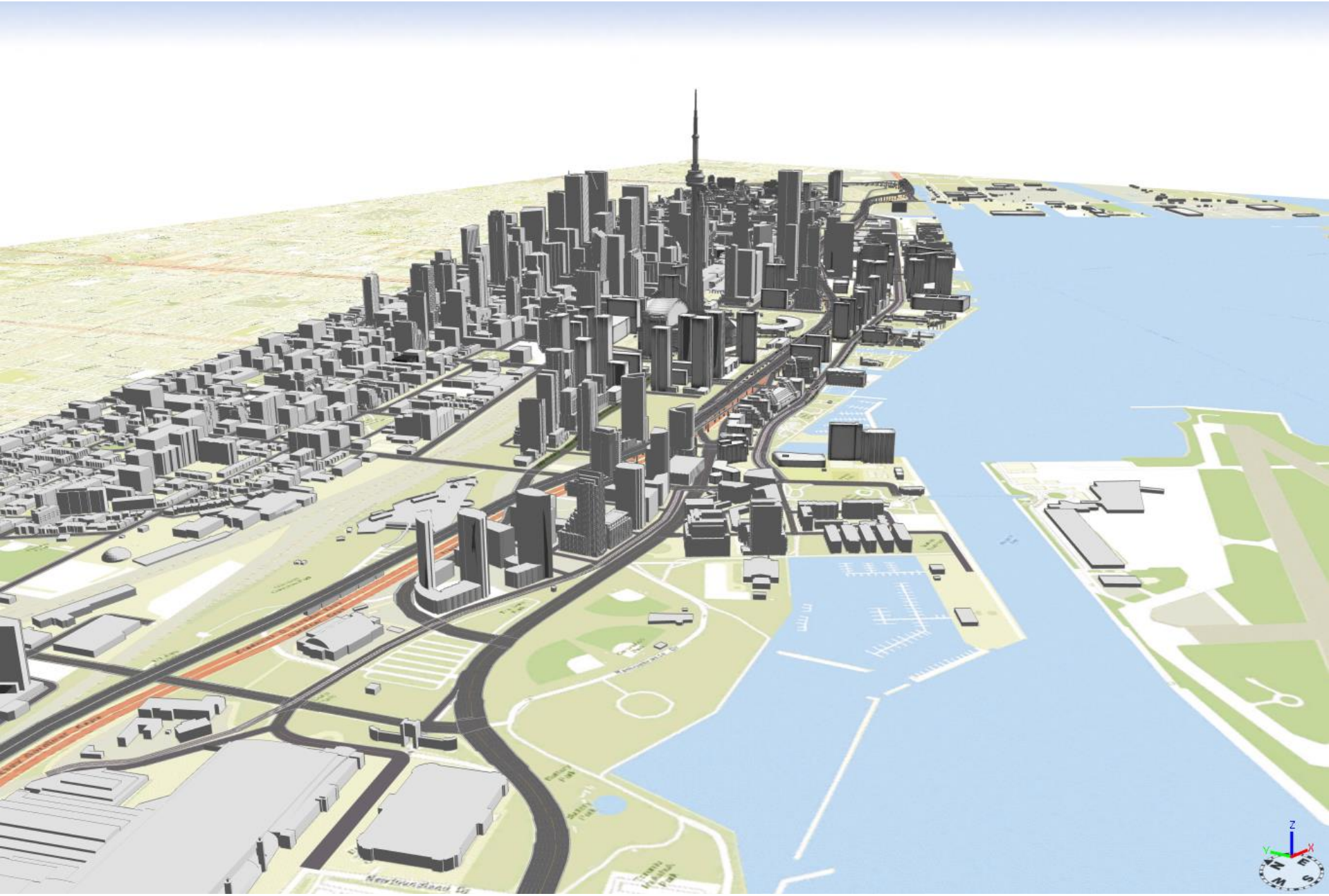


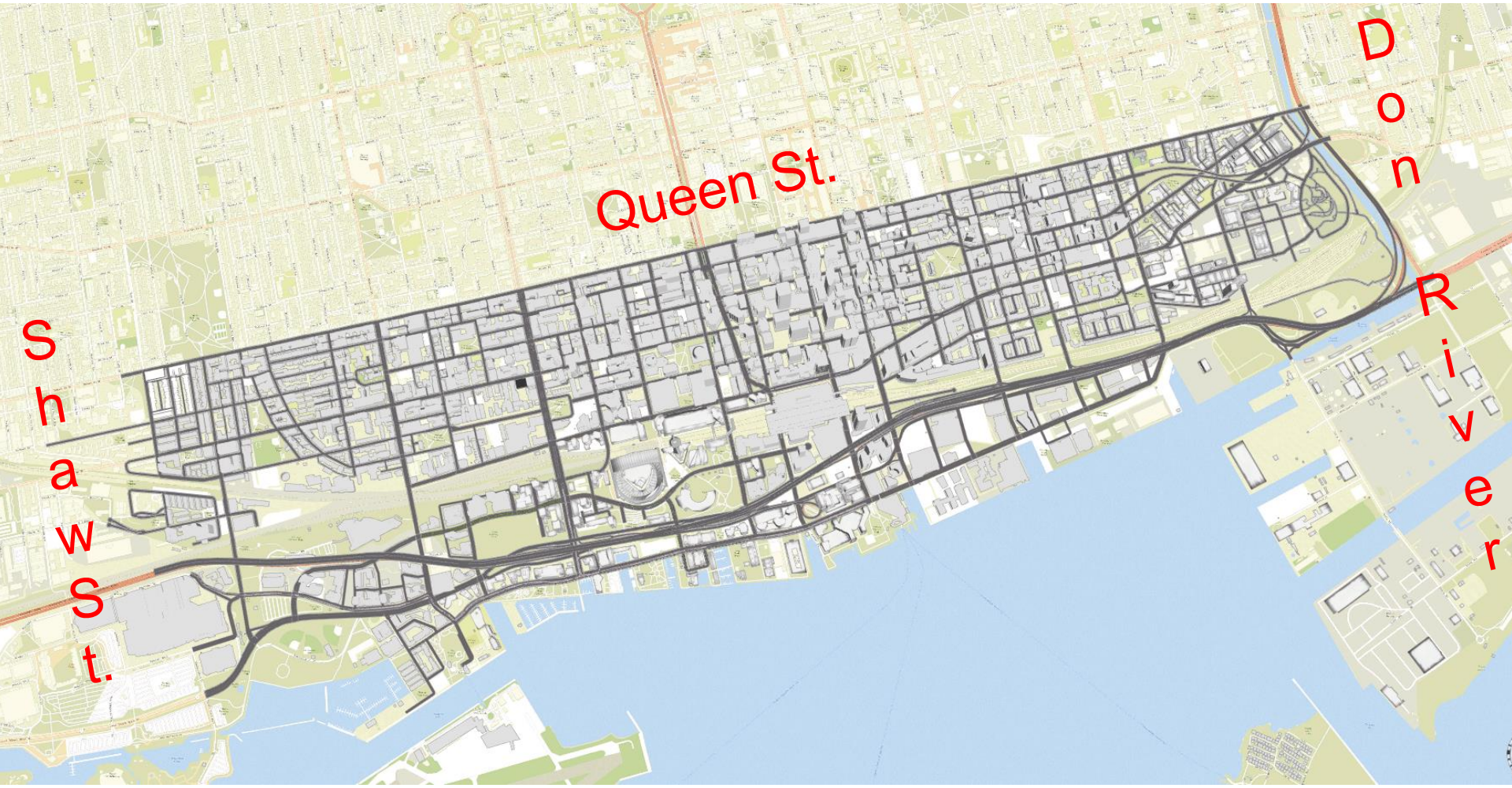











Queen St.
Don River
Shaw St.

Development Process

Streets
Geometry + Texturing
Gardiner Exp.
Queen’s Quay

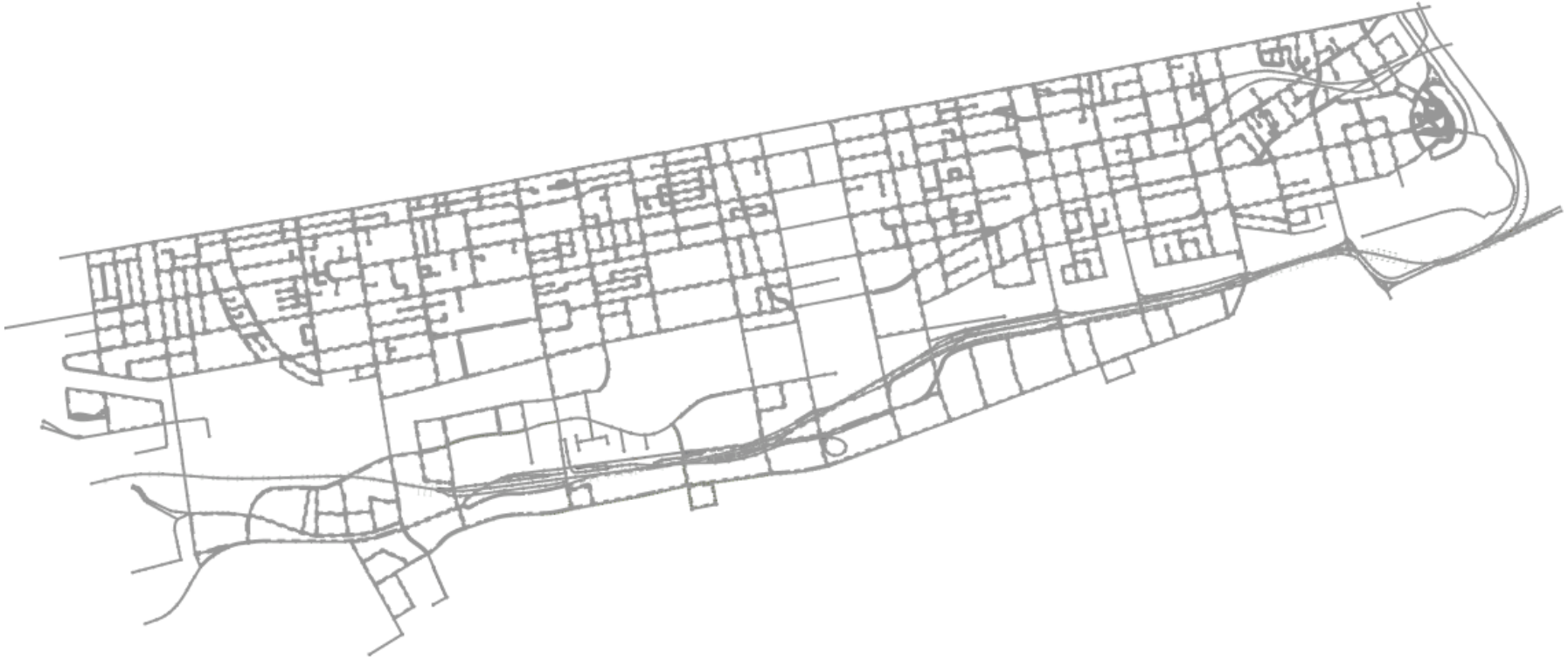
Buildings
Extrusion vs. Massing
Texturing

Detail Work
Street Furniture
Trees

Data Visualization
Student Move
ArcGIS DataVis

Development Process - Streets

- Toronto Open Data .shp
- Attributes (i.e., street names)
- No street widths/heights



Development Process – Street Geometry

ESRI Satellite imagery

Community Maps

Pre-modelled street network

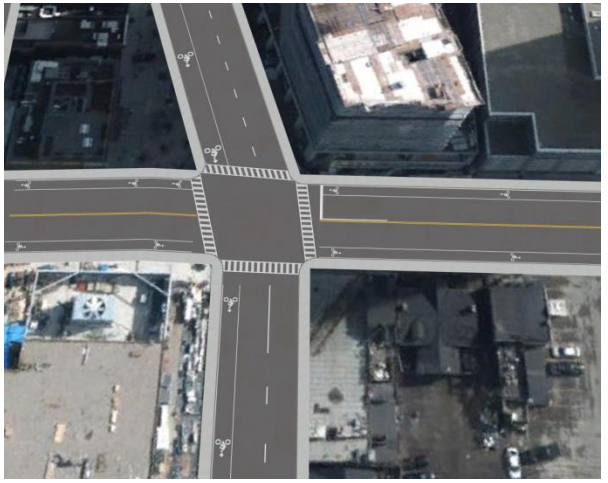
modelled street network

Development Process – Street Textures

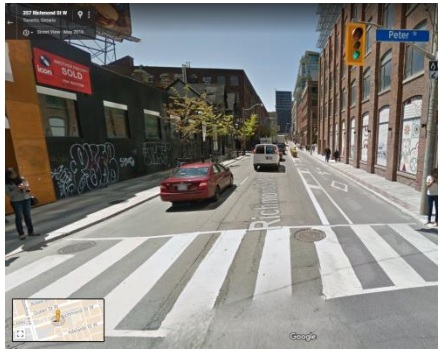
Imagery

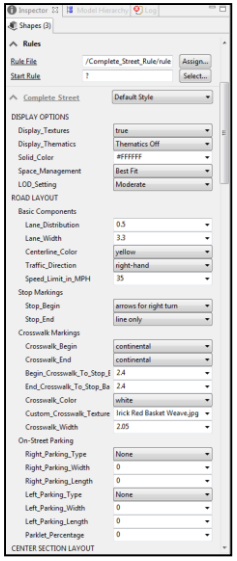
Default Textures

Corrected Textures



Google Maps + Streetview

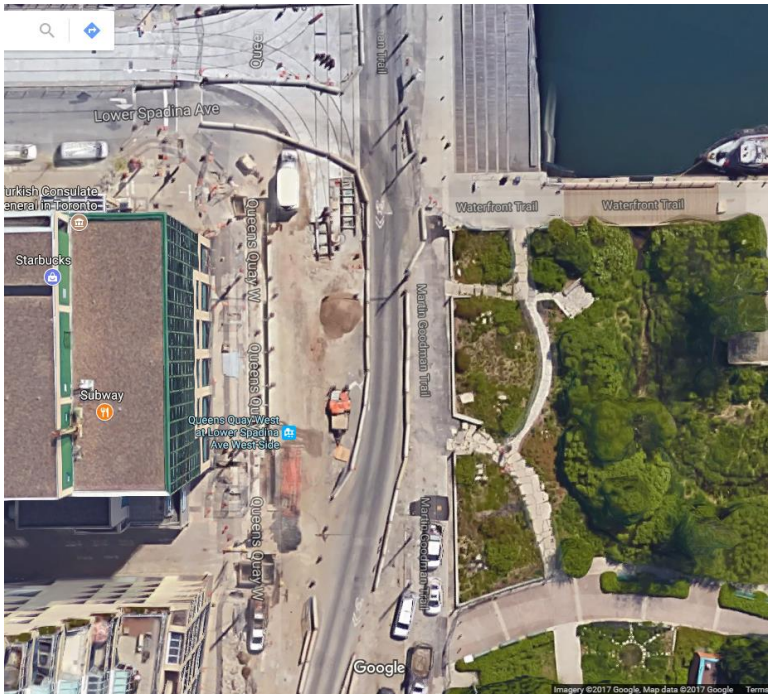




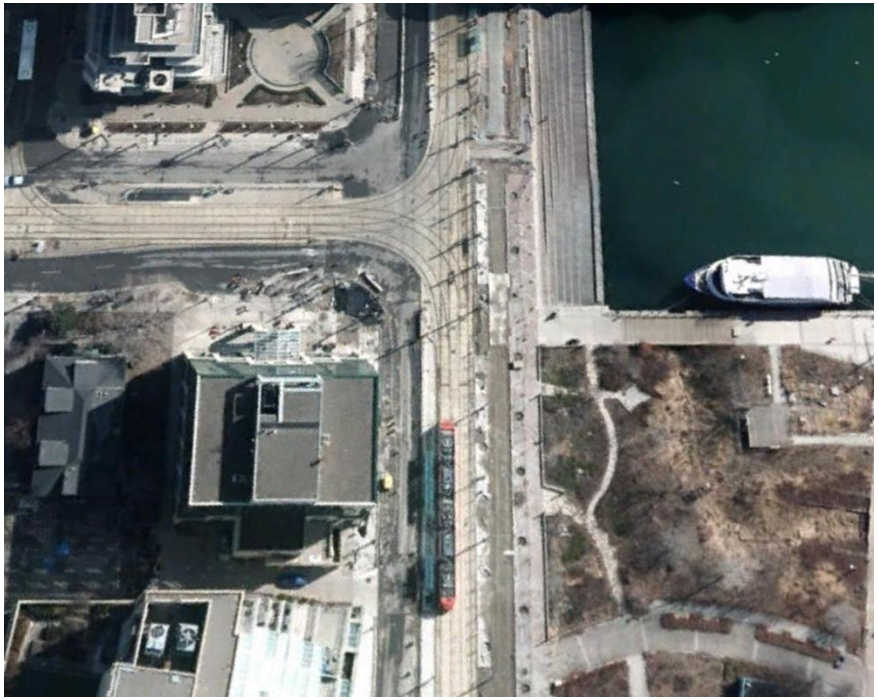
Complete Streets Rule

Development Process – Queen's Quay

Google Map



ESRI Imagery



On-site photos

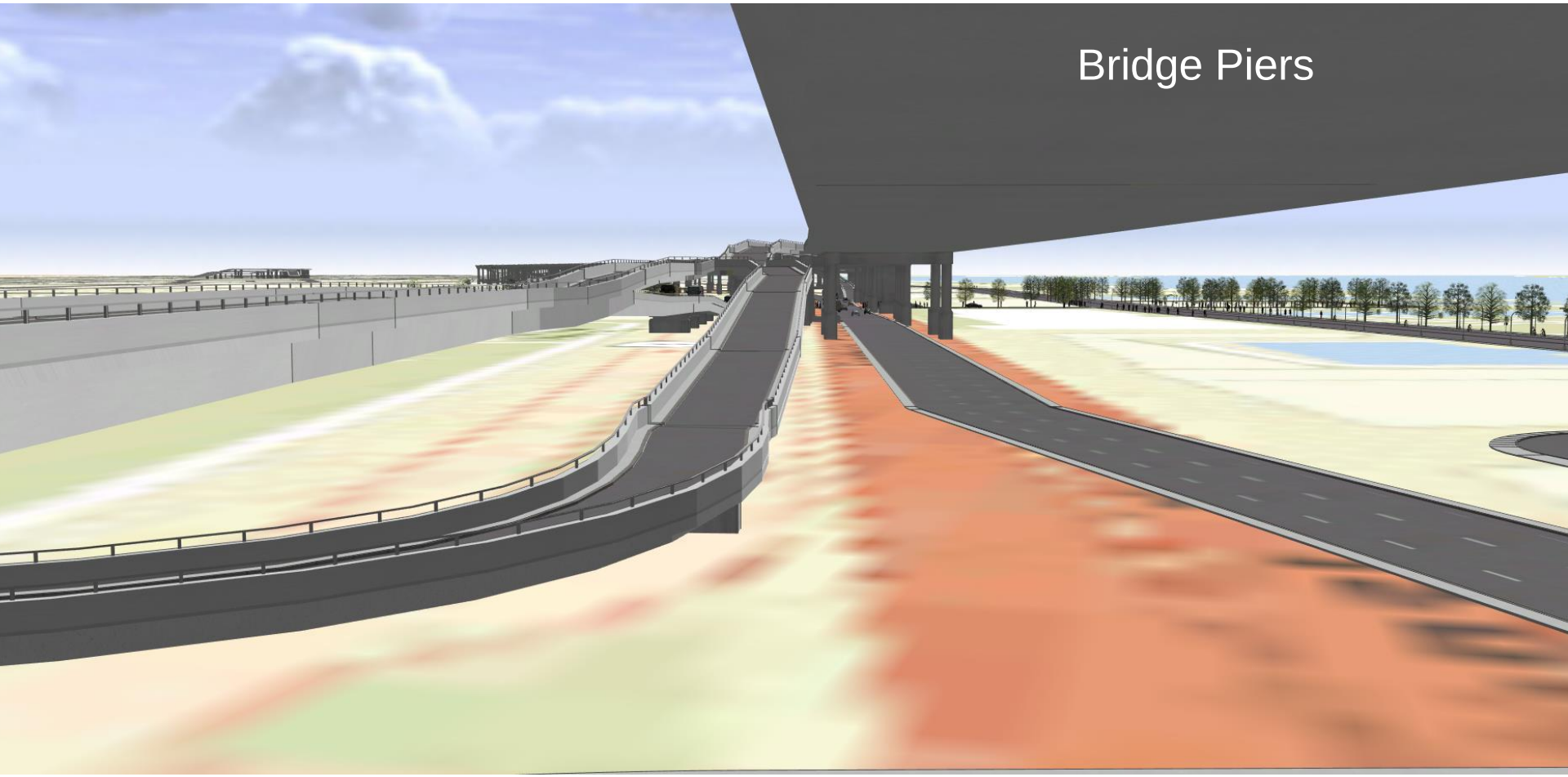
Streetcar Tracks

Development Process – Gardiner

Development Process – Gardiner

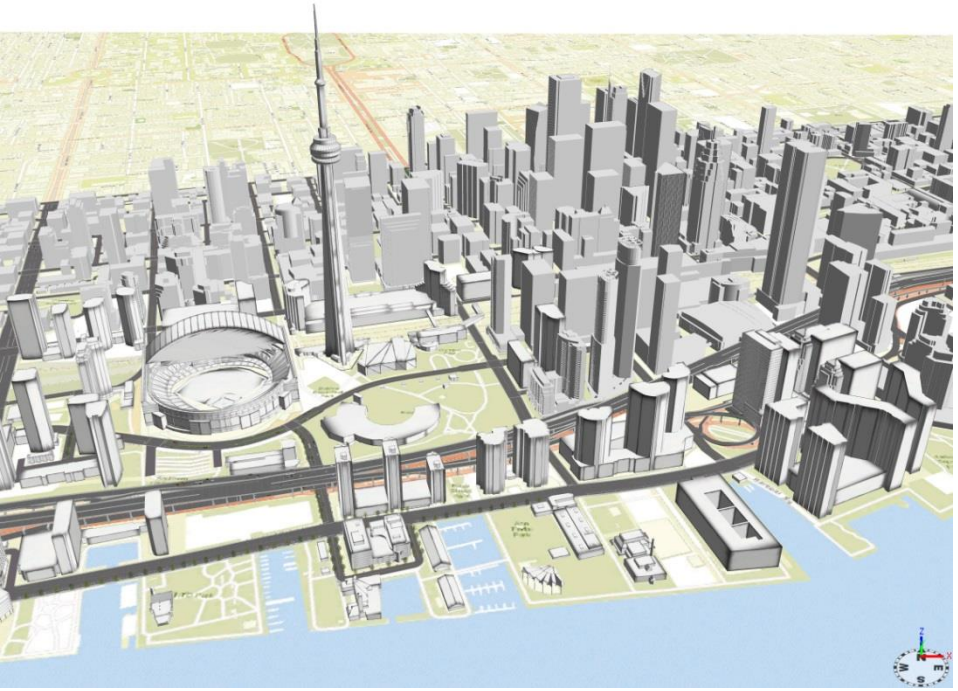
Development Process – Gardiner

Bridge Piers

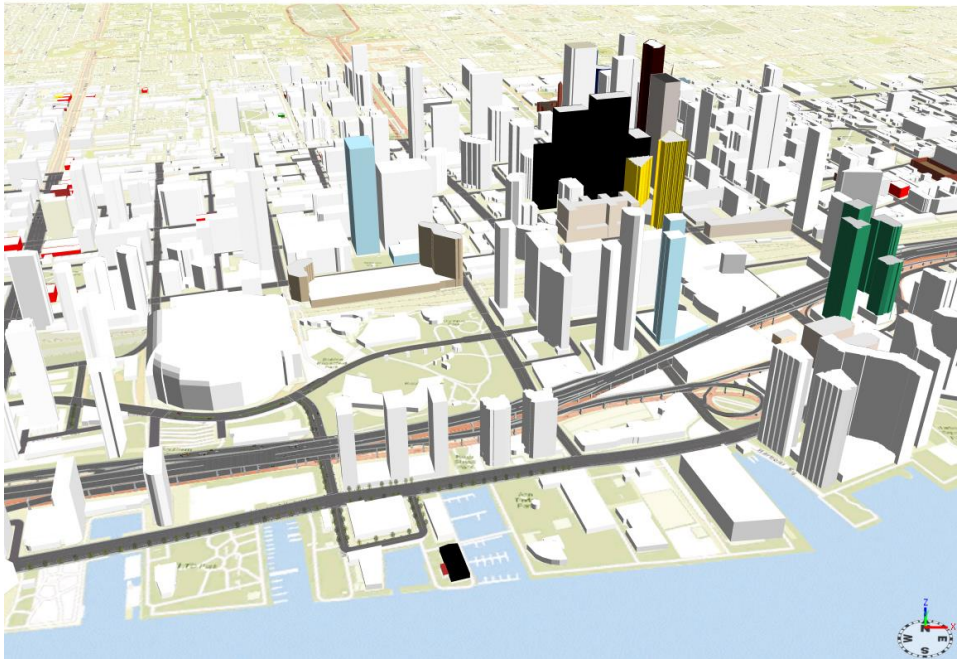

Bridge Piers

Development Process – Buildings

3D massing



Footprint Extrusions



Building Textures
- 3D massing

Building Textures
- Extrusions

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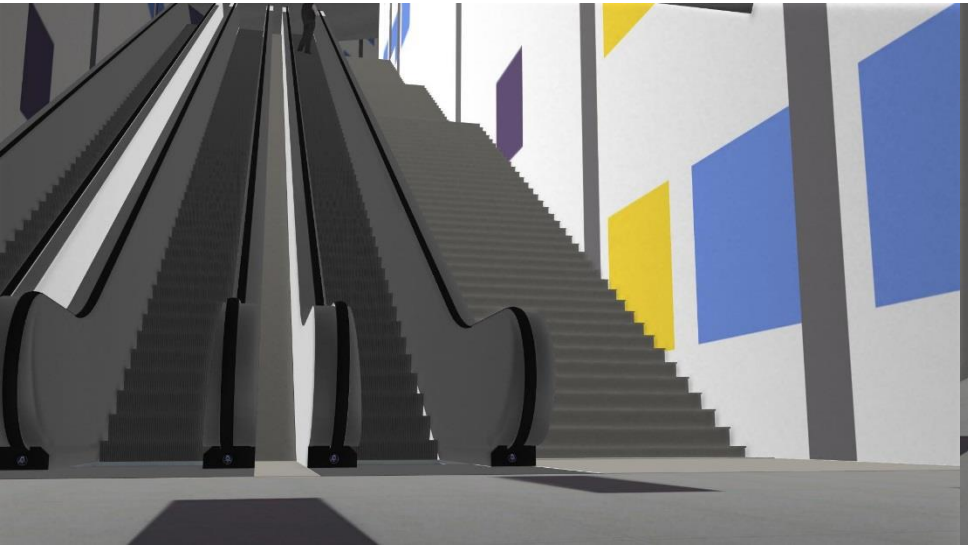
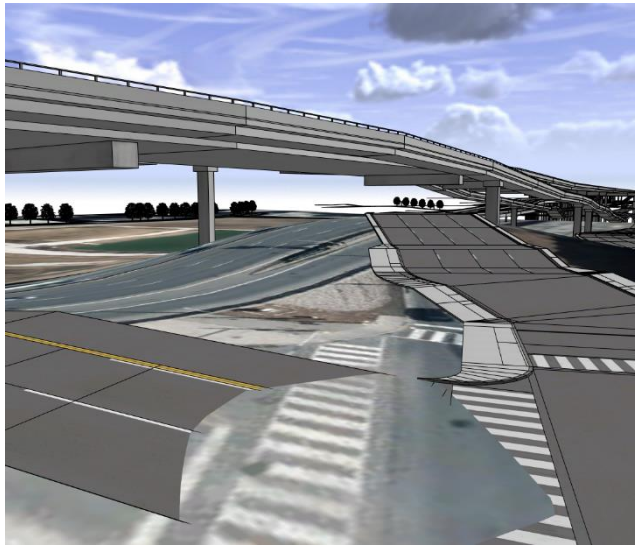
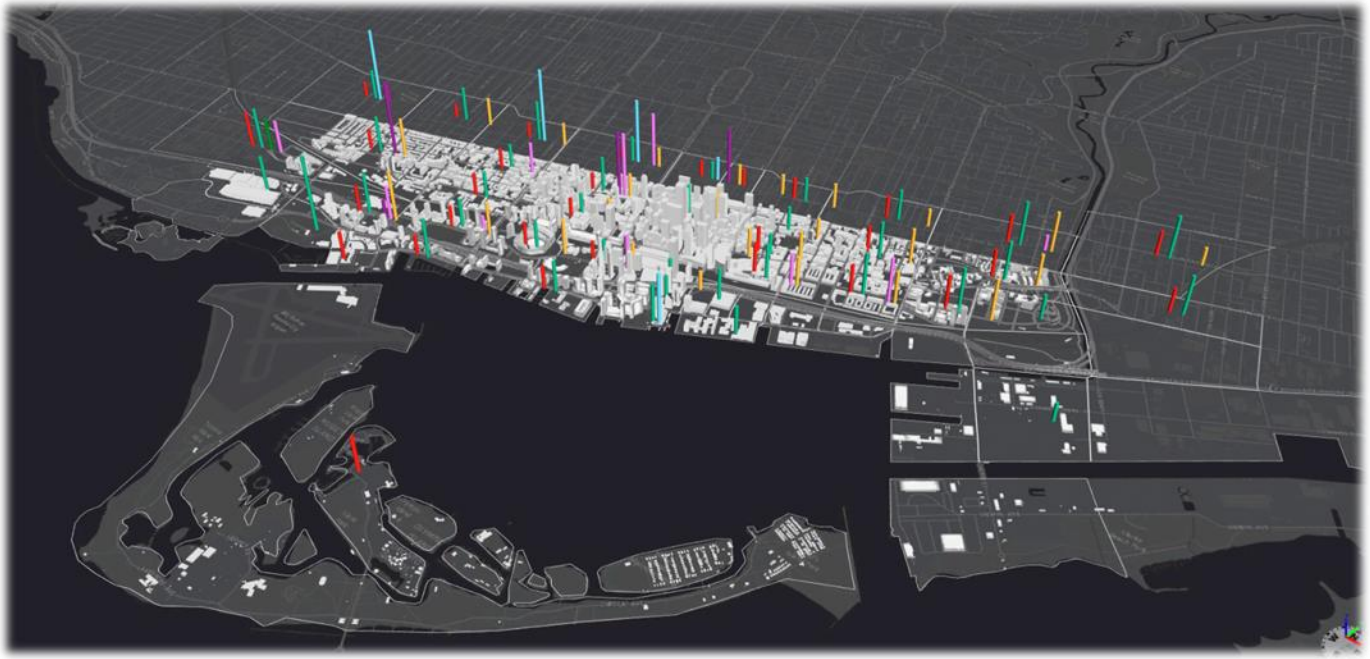


Development Process – Terrain

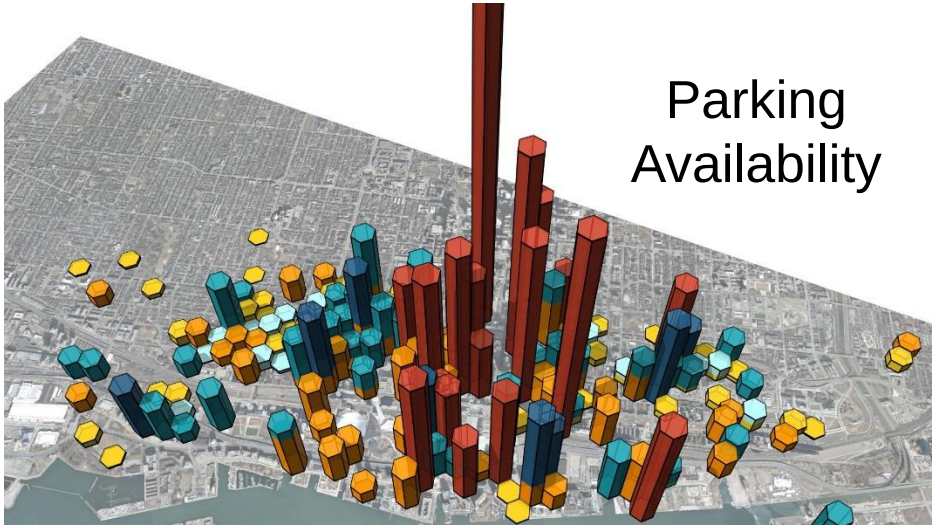


Development Process – Data Vis

Student MoveTO



Building Zoning Heights



Parking Availability

Thank You