# High-Quality 3D Representation of Toronto Waterfront

Michael Carnevale, OCAD University, ESRI Intern

# Purpose and Context

- Theme 3: Visualization Support

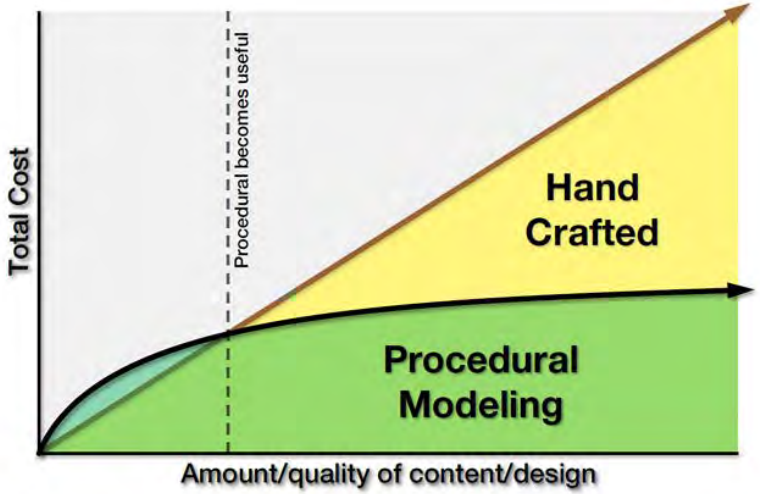
**Main Goal**

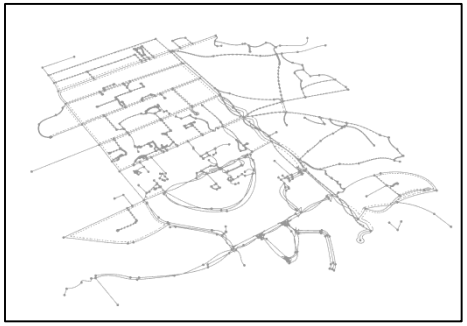
- Develop a high-quality 3D representation of Toronto Waterfront using ESRI's CityEngine software that can be used as a visual analytics testbed within the broader iCity project

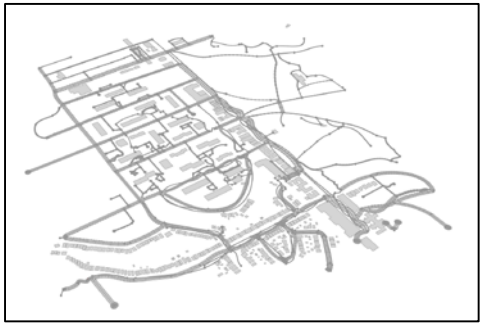
>>> Find and import geometry and geodata into CityEngine for procedural modelling

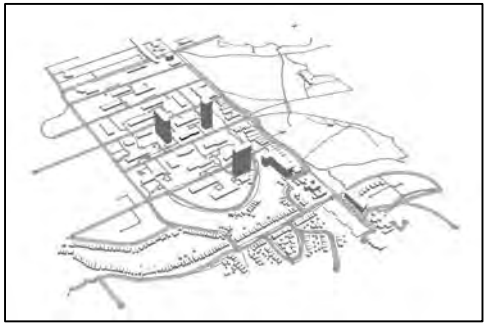
>>> Identify gaps in data

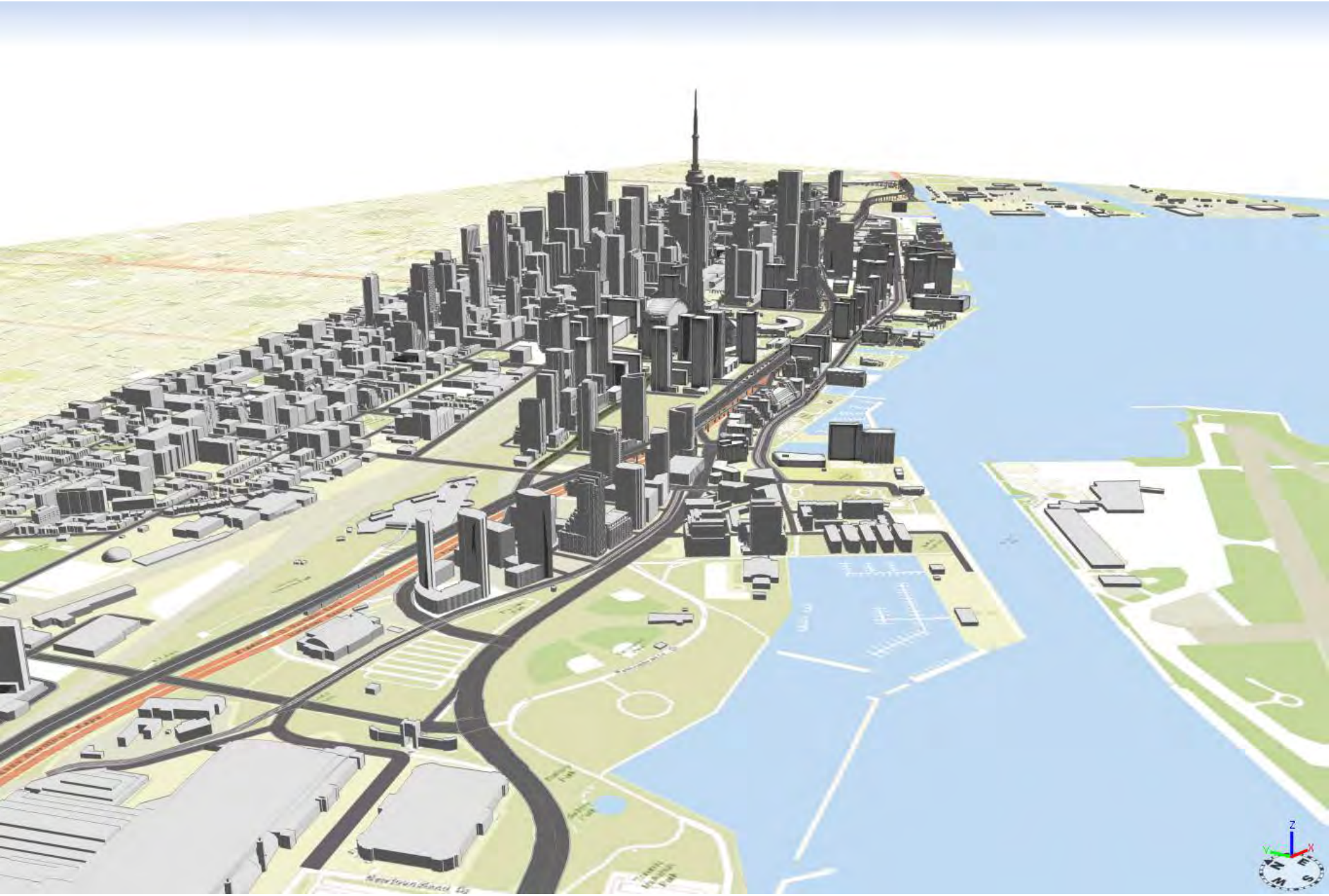
# CityEngine and Procedural Modelling

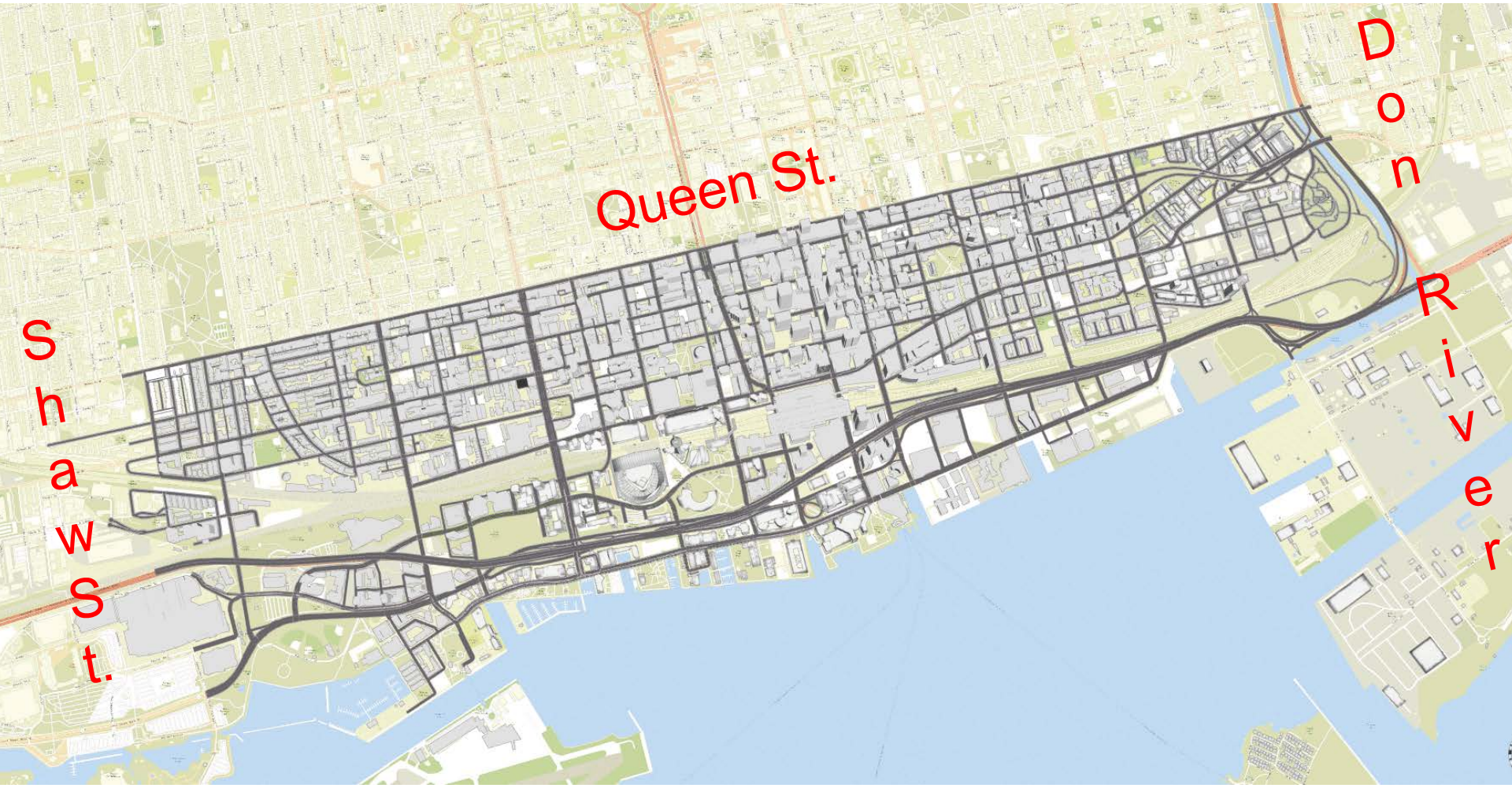











Queen St.
Don River
Shaw St.

# Development Process

**Streets**
Geometry + Texturing
Gardiner Exp.
Queen’s Quay

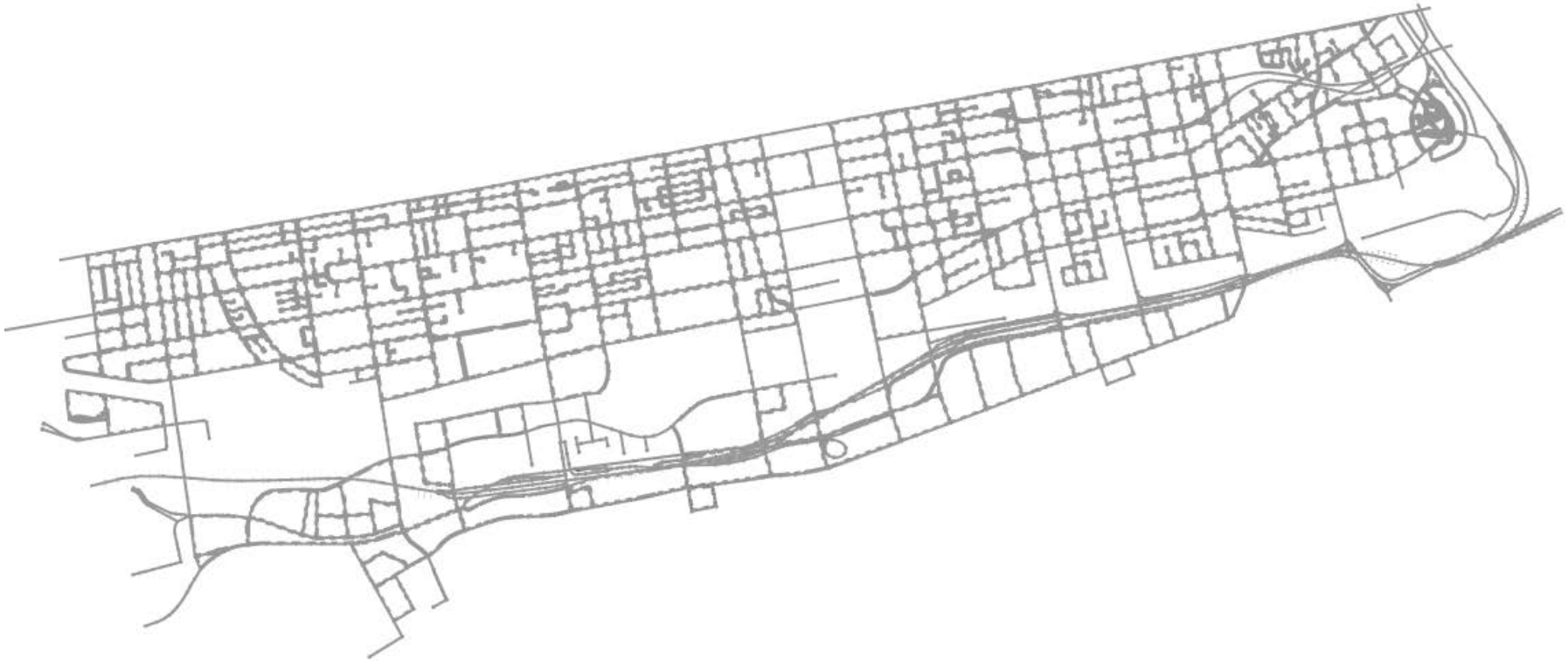
**Buildings**
Extrusion vs. Massing
Texturing

**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

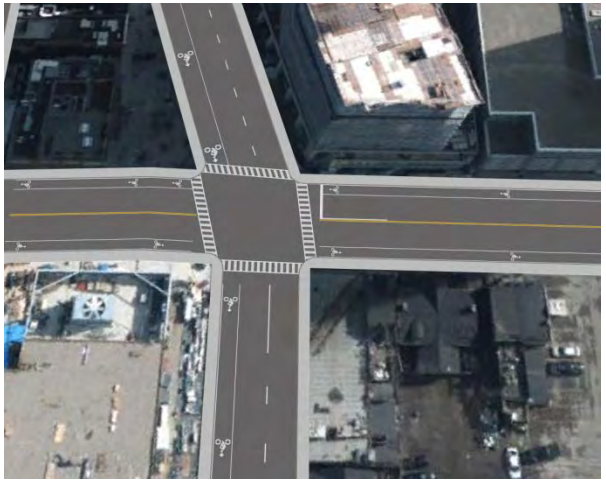
## modelled street network

# Development Process – Street Textures

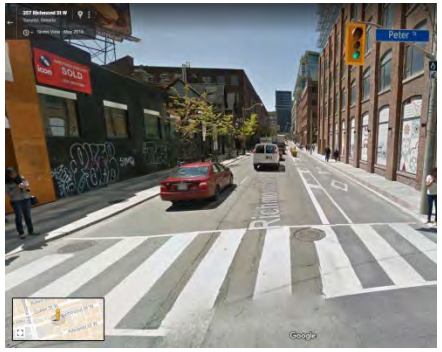
## Imagery

## Default Textures

## Corrected Textures



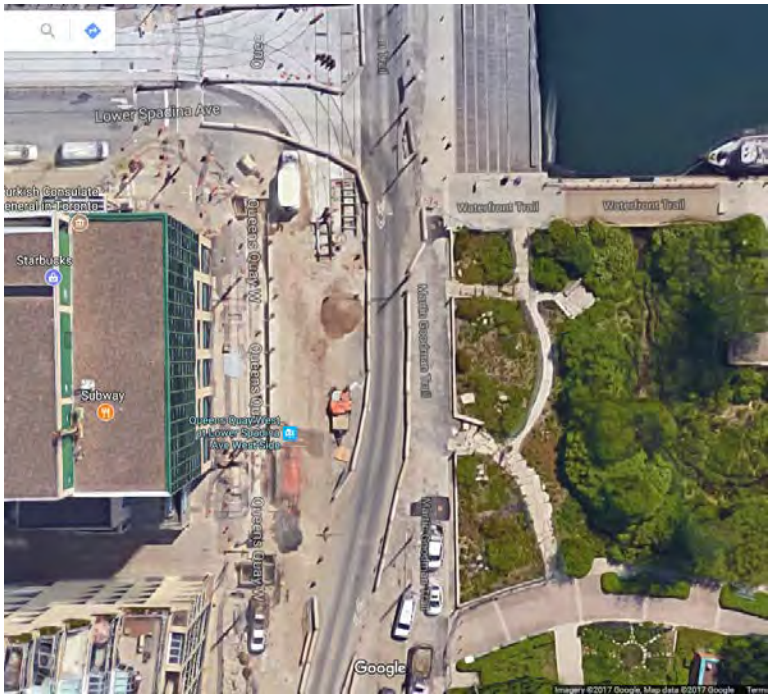
Google Maps + Streetview



Complete Streets Rule

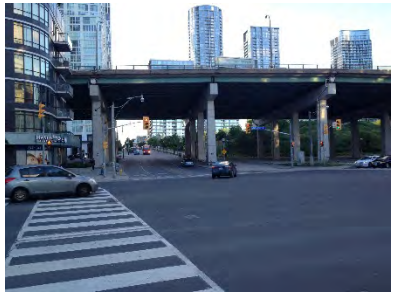
# Development Process – Queen's Quay

## Google Map




## ESRI Imagery

## On-site photos



Streetcar Tracks

# Development Process – Gardiner

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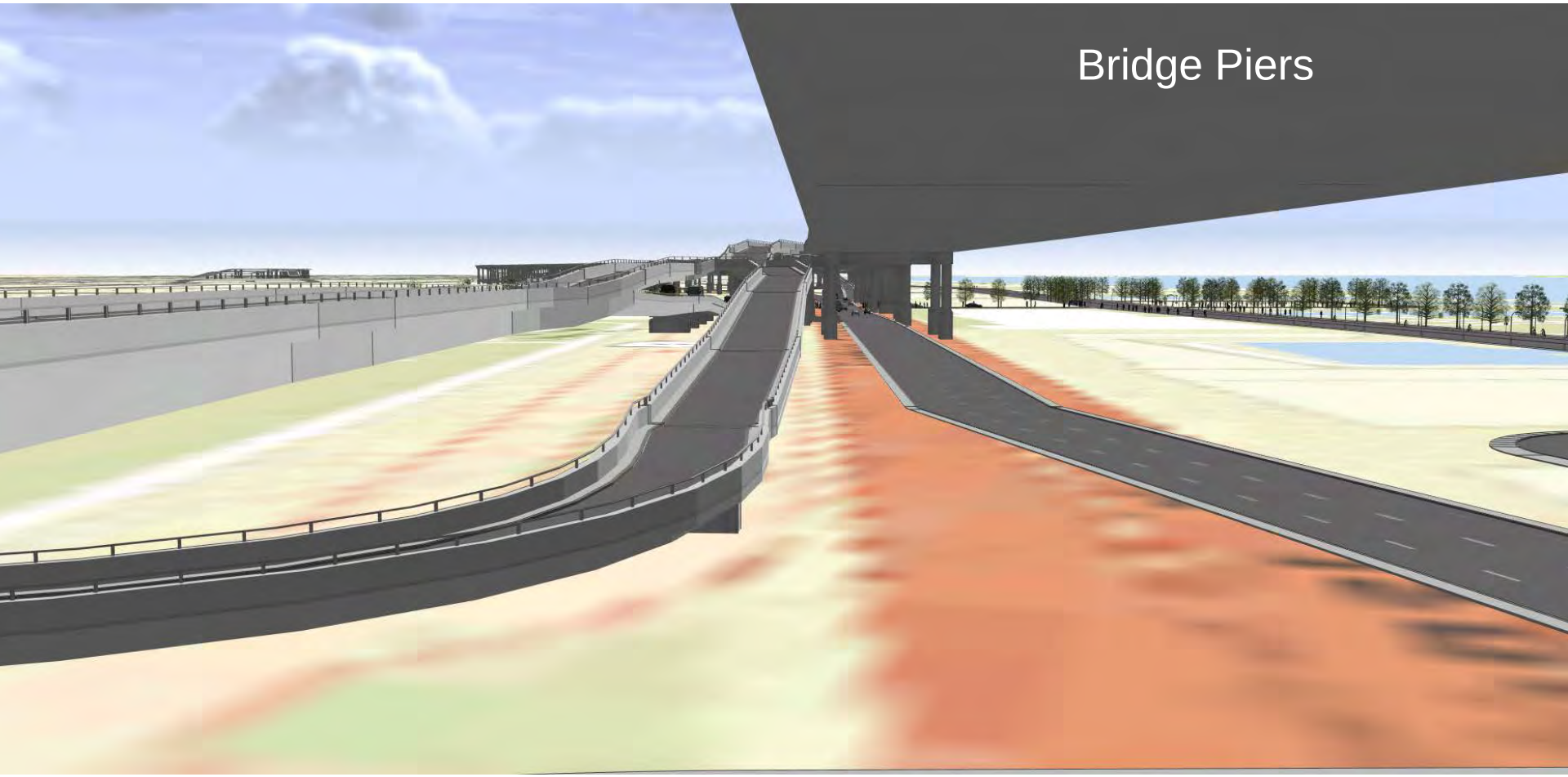
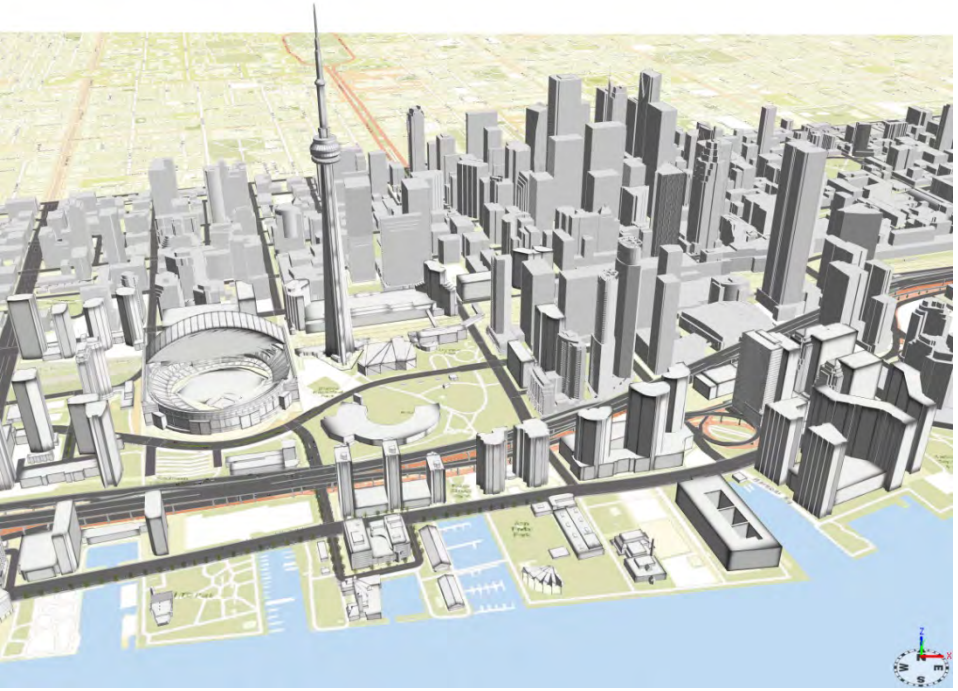
Bridge Piers

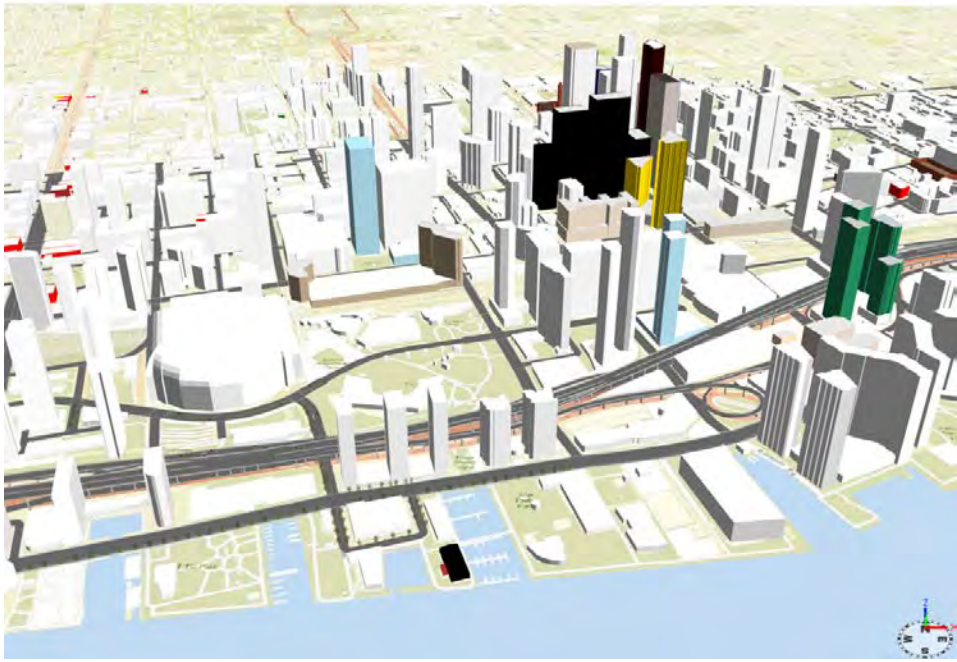

Bridge Piers

# Development Process – Buildings

3D massing



Footprint Extrusions



Building Textures
- 3D massing

Building Textures
- Extrusions

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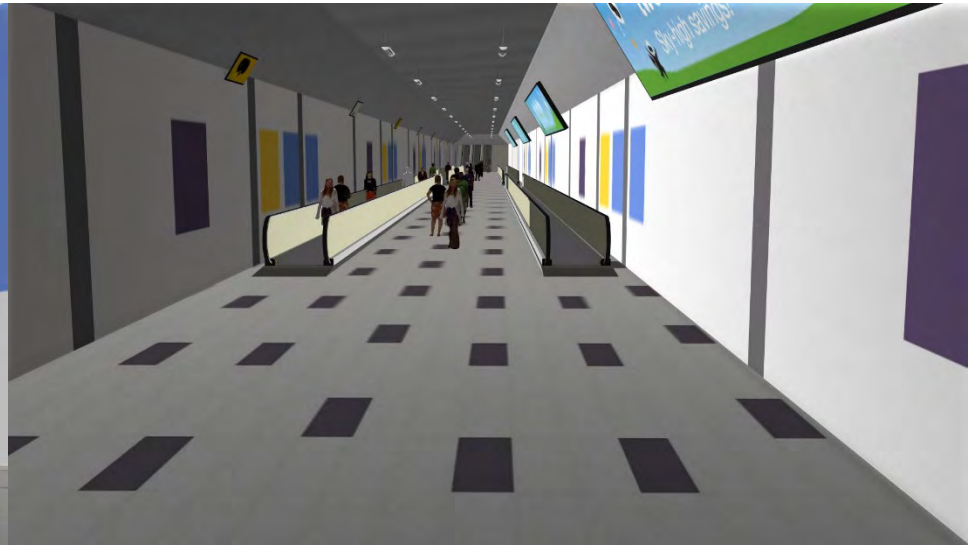
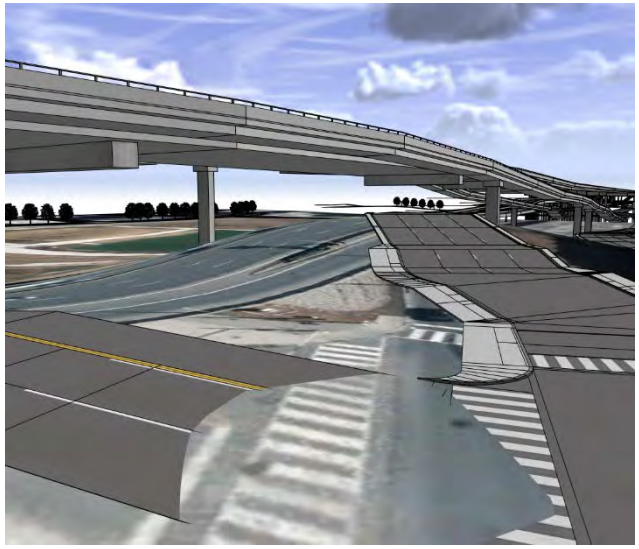
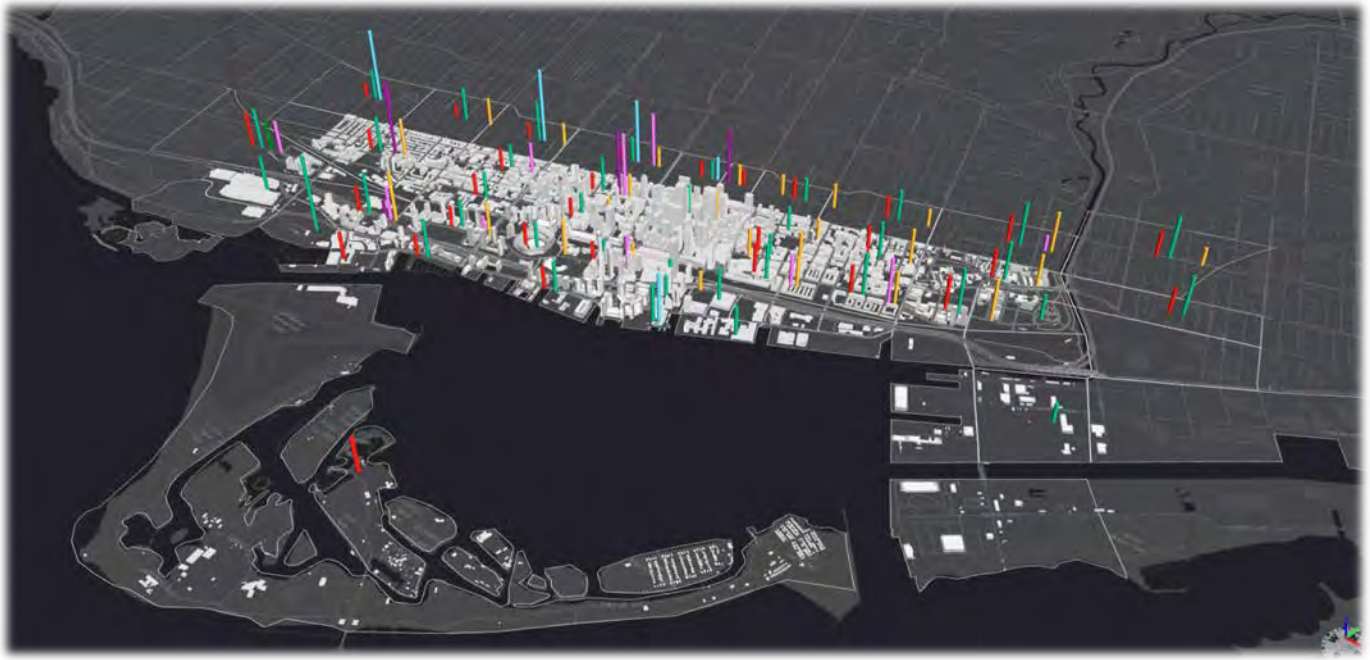


# Development Process – Terrain

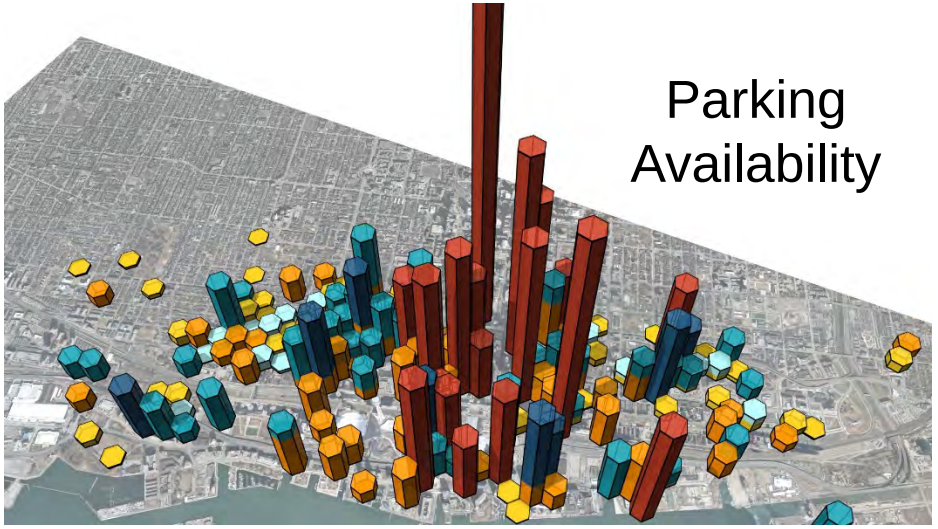


# Development Process – Data Vis

Student MoveTO



Building Zoning Heights



Parking Availability

Thank You