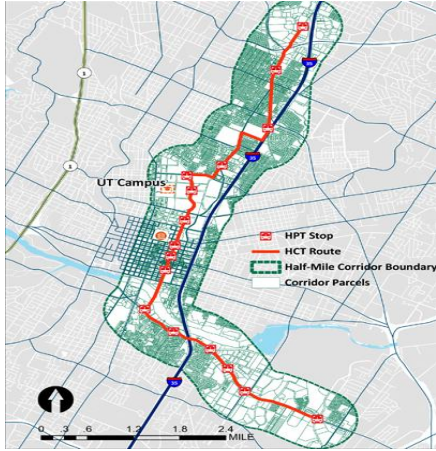


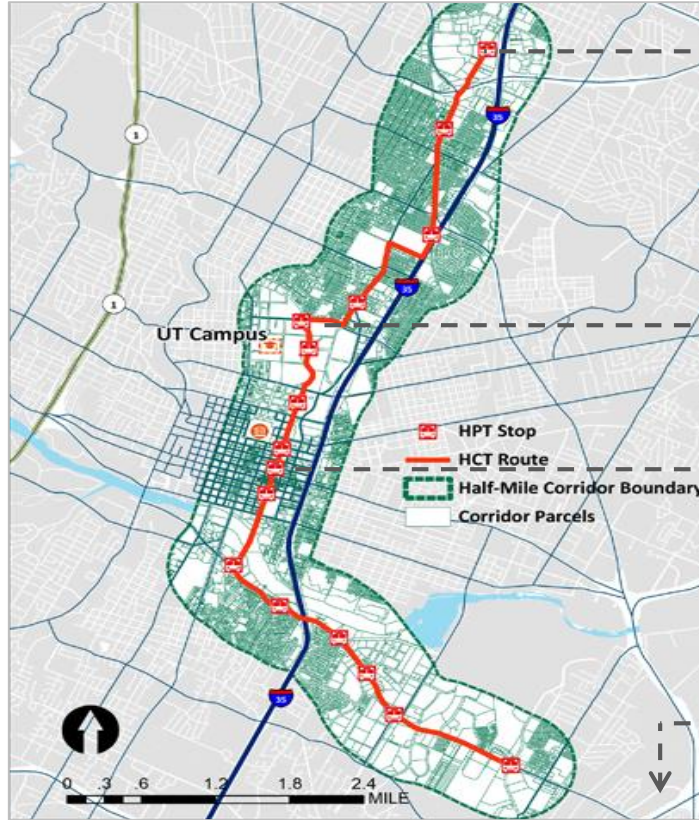
Urban Rail Studies Move Faster in 3D



Nathan Brigmon
GeoDesign Summit
January 22-23, 2015
Redlands, CA



- Analyzing the impact of a future urban rail line in Austin
- “Build” versus “No Build”
- City of Austin, University of Texas – Austin, Advisory Committee, and Civic Analytics



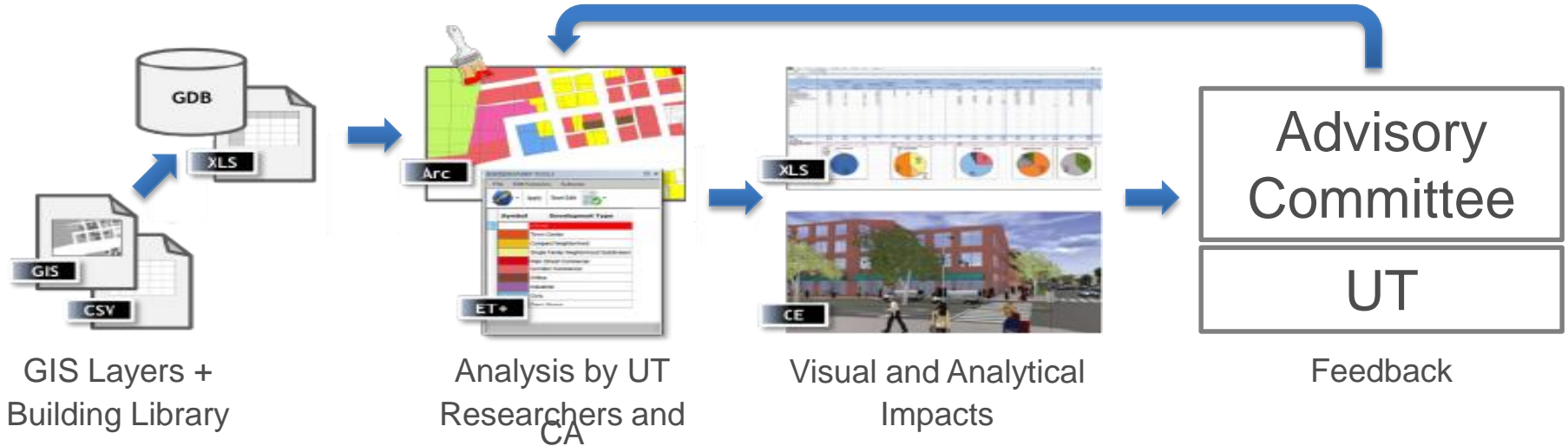
----- New ACC Campus

----- University of Texas

----- Downtown

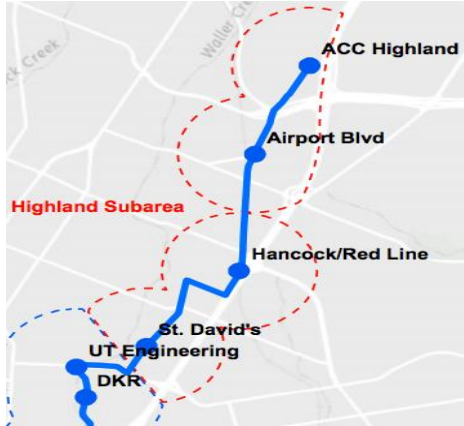
----- Airport

- Scenario planning: ArcMap + Envision Tomorrow + CityEngine

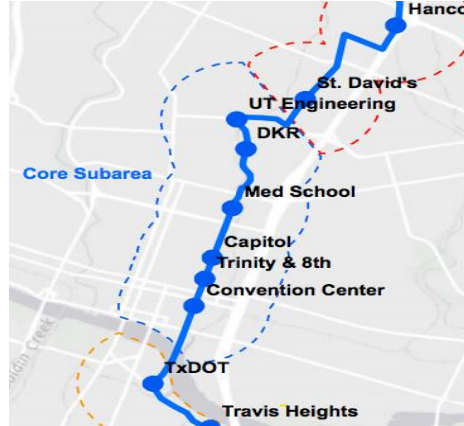


- Divided route in three subareas

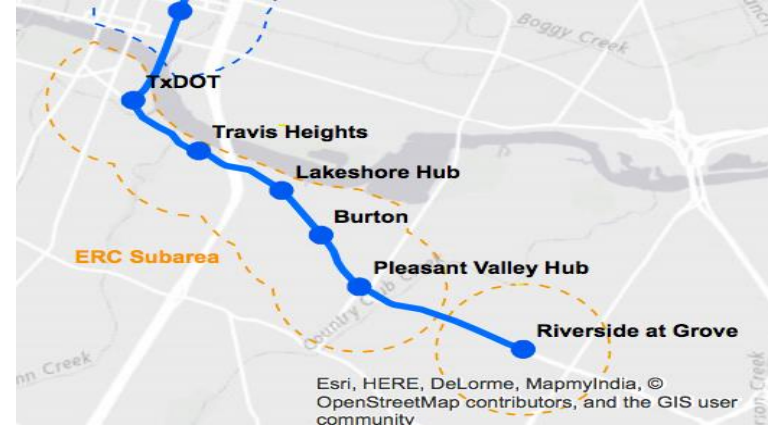
Highland



Core



East Riverside



Ex:
East Riverside

Population

28,366

- 46,007

17,641

- 2010 data & 2030 population and employment projections
- Find **difference** for each corridor – control totals.
- Use building library (~ 75-80 building types)

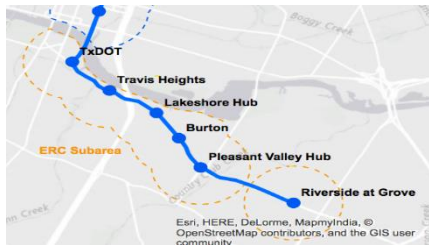


Chart 2: Employment from Future Development

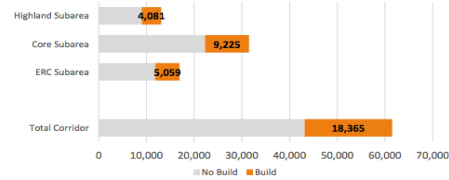


Chart 10: Landscaping Water Use per Household, Future Development

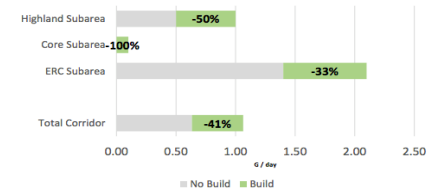
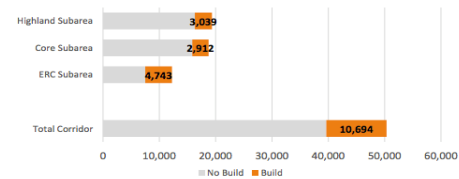


Chart 1: Residents from Future Development



- Using building attributes: population, employment, estimated property tax revenue, people per acre, parking spaces, water use, etc...

... we gain insight into “Build” and “No Build” scenarios.



- Feedback process with University of Texas
- Feedback process with Central Corridor Advisory Committee

2030 'No-Build High' ET Scenario (COA)

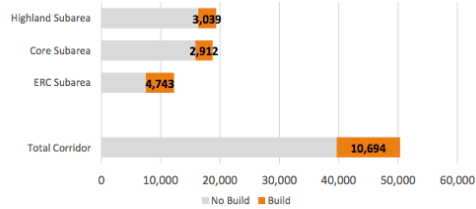
04/30/2014

Ex:
East Riverside



Source: City of Austin 2014

Chart 1: Residents from Future Development





- Low buy in at first
- How does 3D contribute?
- Not presented until mid-project



CityEngine



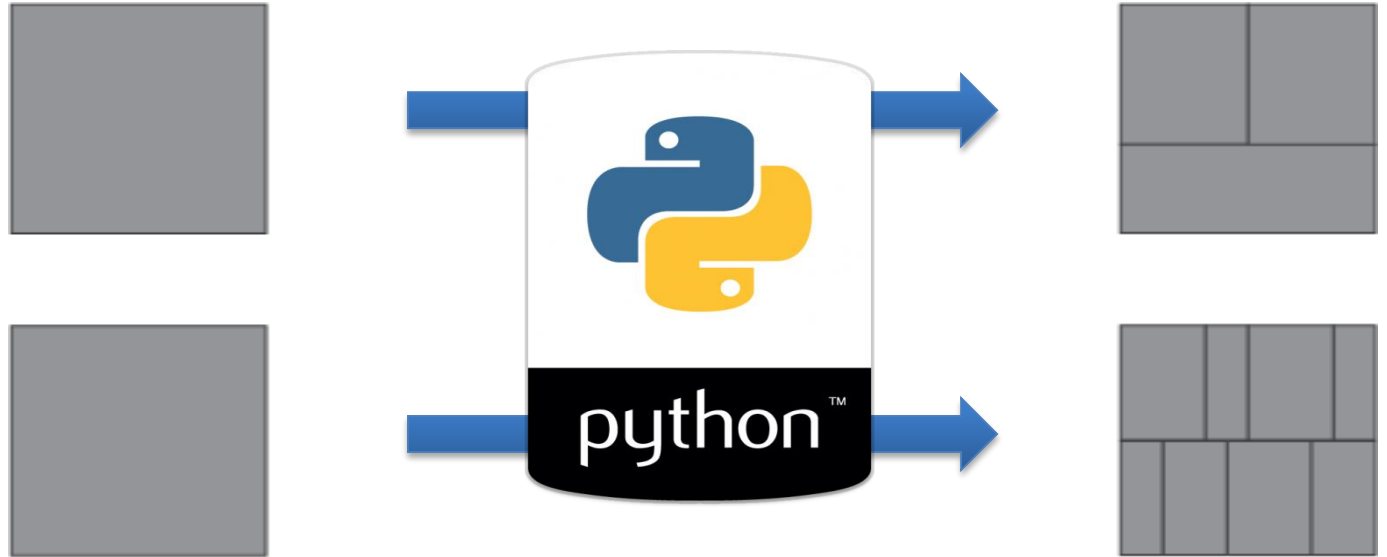
Envision
Tomorrow

Building Name	Building and Site Characteristics				
	Lot Size (Sq Ft)	Building Lot Coverage	Parking Lot Coverage	Height (Stories)	Floor Area Ratio (FAR)
210 Barton Springs	69,131	100%	0%	17	4.05
300 E Riverside	186,367	45%	24%	5	1.27
High Density Apartment	101,054	70%	21%	4	1.98
Apt Low Density	65,340	35%	17%	2	0.19
Broadstone (RunTex)	66,503	100%	0%	6	3.16
Cityview	175,265	77%	0%	8	1.99
Grove Tract Lofts	789,510	21%	13%	2	0.27
Hyatt Garage & Ballroom	416,739	74%	3%	1	0.40
Lakeshore Lot 10	137,824	42%	18%	5	2.05
Lakeshore Pearl	261,273	29%	37%	5	0.82



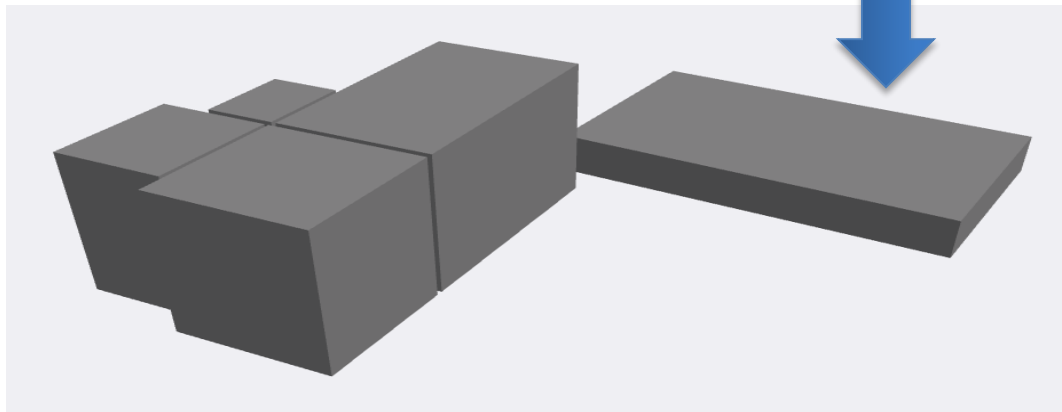
- Python Scripting:

If (Bldng X) { divide into "Bldng X" lots }






```
GIS_Building_Template.cga ✕
162 ### TREES
163 #
164
165 Trees -->
166   scatter(surface, geometry.area / 150, uniform) { PutTree(rand(.4, 1.5))
167   NIL
168
169 PutTree(scalar) -->
170   s(0, 0, 0)
171   r(0, rand(360), 0)
172   center(xz)
173   i(fileRandom("assets/vegetation/*.obj"))
174   s('scalar', 'scalar', 'scalar')
175   center(xz)
```



CityEngine Web Viewer - 1 x
www.arcgis.com/apps/CEWebViewer/viewer.html?3dWebScene=9964261bcc1547b384e64affcd2354de

Project Connect - Urban Rail

SHARE HELP



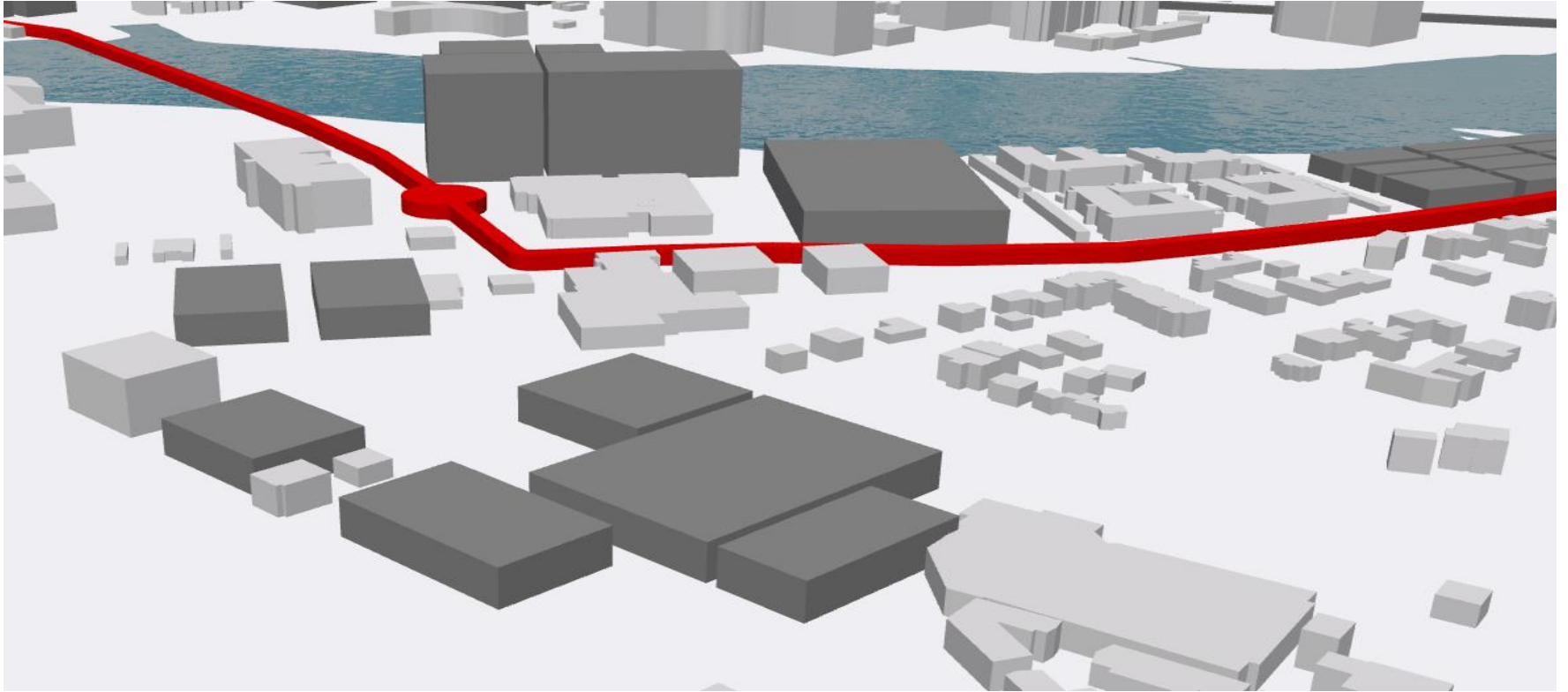
The 3D model displays a cityscape with a red line representing the urban rail corridor. Labels in red 3D text identify areas: 'TOWN LAKE' and 'LEWISTOWN' at the top, 'BURTON' and 'PIEDMONT VALLEY' on the left, and 'GROVE' at the bottom. A red location pin is placed on the rail line. The interface includes a top navigation bar with 'SHARE' and 'HELP', a left sidebar with navigation icons, and a right sidebar with a 'Layers' panel.

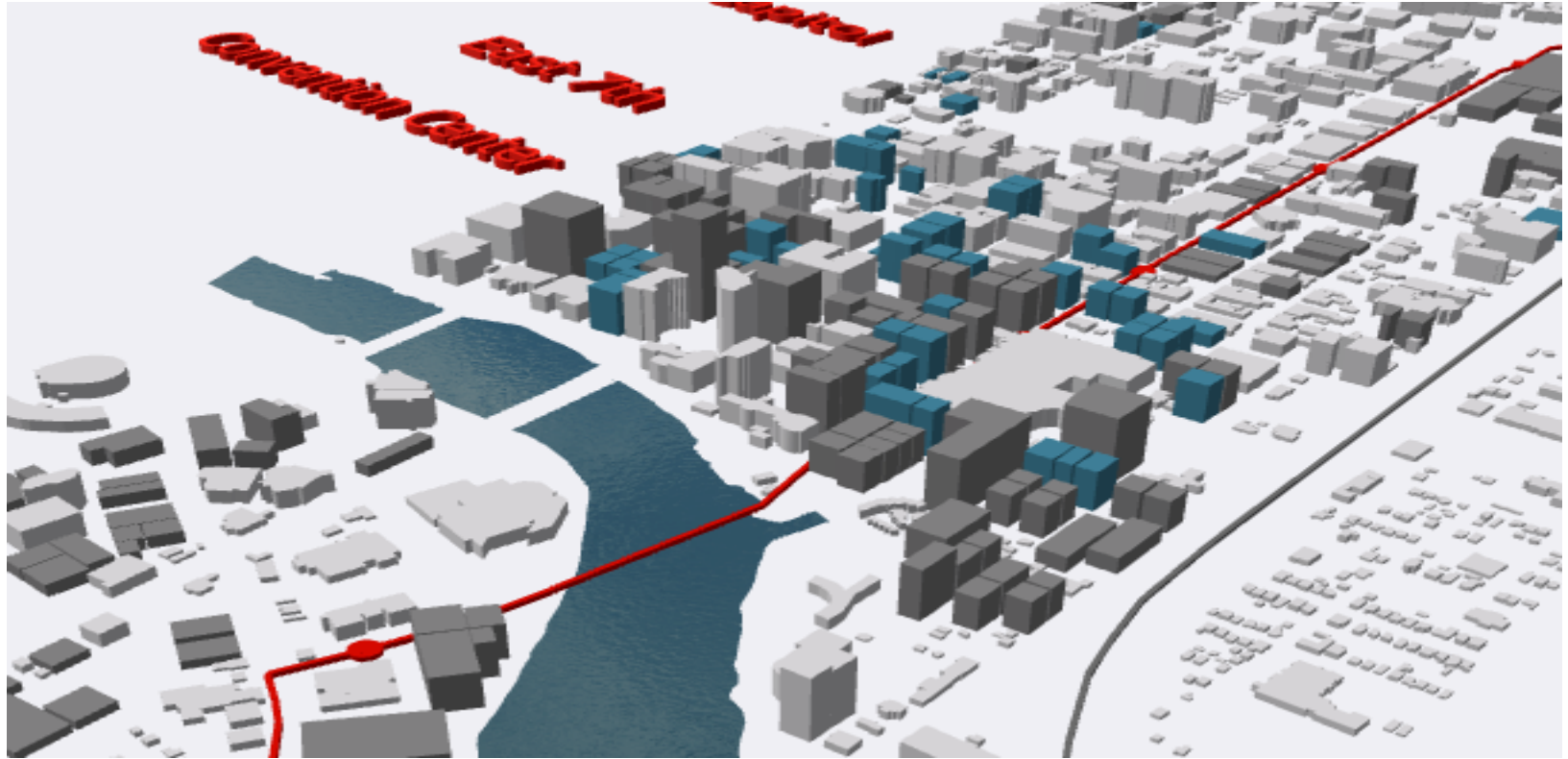
Layers

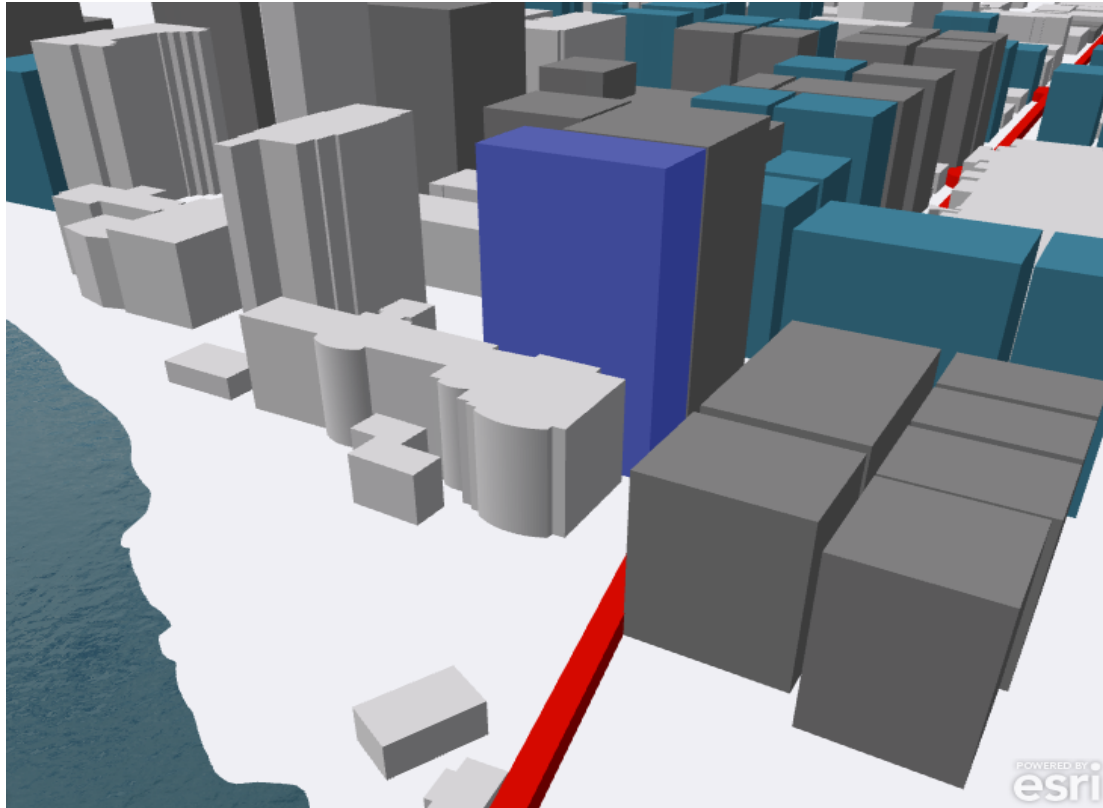
- Town Lake
- I35
- Proposed Corridor
- ACC Highland Stop
- Existing Buildings
- 2030 Scenario
 - 2030 Build Delta
 - 2030 No Build Delta
- Future/Proposed Development
- ACC Main Building
- ACC Built Environment
- Project Connect Icon

Navigation icons: Home, Location, Zoom In, Zoom Out, Full Screen.

Thumbnail gallery at the bottom: 11 small images showing different views of the 3D model.







Information

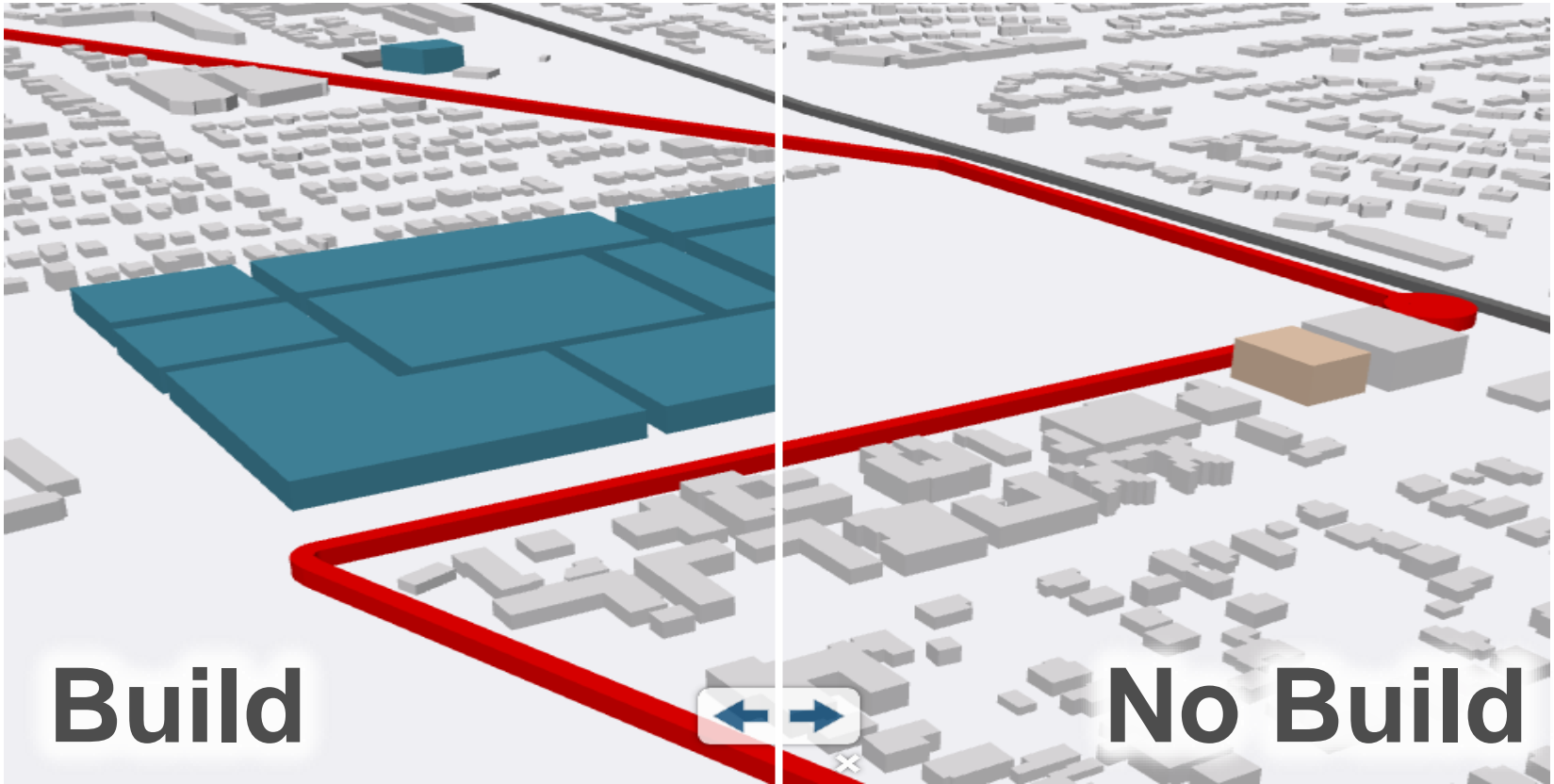
Shape618

Attributes

DEV_TYPE Four Seasons Condos

Reports


FootprintArea 1601.46



CityEngine Web Viewer - 1 x
www.arcgis.com/apps/CEWebViewer/viewer.html?3dWebScene=9964261bcc1547b384e64affcd2354de
DataViz Online Stopwatch 3D Bookmarks greenscout EAPDD Other bookmarks

Project Connect - Urban Rail

SHARE HELP SIGN OUT (NATHAN BRIGMON)



Layers


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 - 2030 Build Delta
 - 2030 No Build Delta
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- ACC Main Building
- ACC Built Environment
- Project Connect Icon

Navigation icons: Home, Search, Settings, Chat, Info, Zoom, Rotate, Full Screen, Previous View, Next View

CityEngine Web Viewer - [X]
www.arcgis.com/apps/CEWebViewer/viewer.html?3dWebScene=9964261bcc1547b384e64affcd2354de
DataViz Online Stopwatch 3D Bookmarks greenscout EAPDD Other bookmarks

Project Connect - Urban Rail

SHARE HELP SIGN OUT (NATHAN BRIGMON)

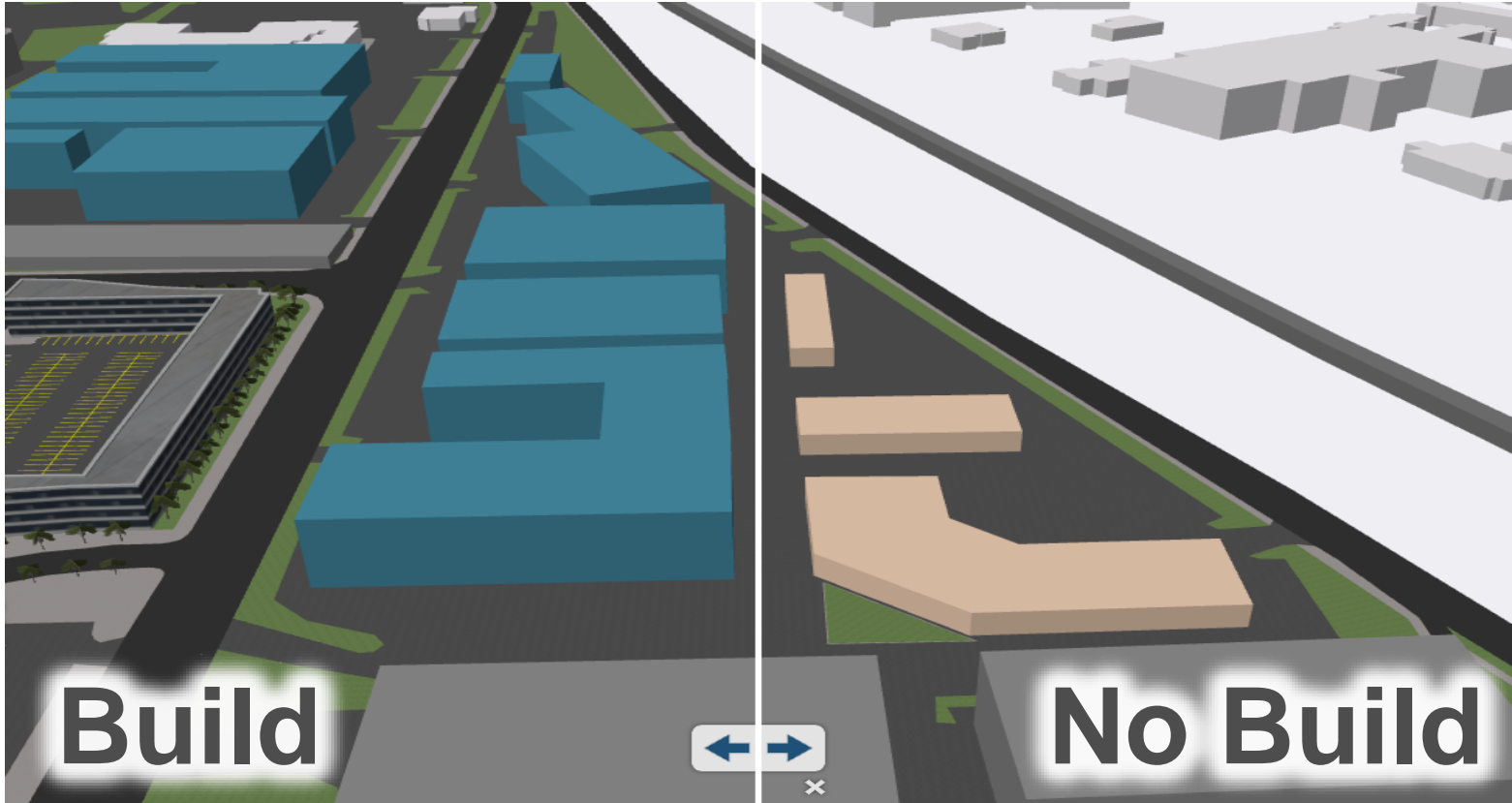


The 3D model shows a large, modern glass-fronted building (ACC Main Building) with a red and white train (ACC Highland Stop) on a track in front of it. The surrounding area includes other buildings, green spaces with trees, and a street with a car and a bus. The scene is viewed from an elevated perspective.

Layers

- Town Lake
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- ACC Built Environment
- Project Connect Icon

Navigation controls: Home, Zoom In (+), Zoom Out (-), Full Screen (F), Previous View (◀), Next View (▶)



CityEngine Web Viewer - F x

www.arcgis.com/apps/CEWebViewer/viewer.html?3dWebScene=9964261bcc1547b384e64affcd2354de

DataViz Online Stopwatch 3D Bookmarks greenscout EAPDD

Project Connect - Urban Rail

SHARE HELP SIGN OUT (NATHAN BRIGMON)



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POWERED BY 



- More engagement
- Faster feedback
- New conversations
- Unique data validation
- Process moved *faster*



CIVICANALYTICS

7600 Burnet Road
Suite 108
Austin, TX 78757



866-512-3835 x 702



nathan@civicanalytics.com



<http://civicanalytics.com>



@natebrigmon