WORKFLOW

1 Input LU/GP by parcel
Input SED by TAZ

[Create Scenario Planning format] python tool

2 Scenario Planning format parcel

Paint scenarios

3 User scenario plan

[Scenario Planning + CE] python tool

4 Enhanced user plan with 3D features

[Add reference] Python tool
Excel macros button

5 SED comparison (user plan to policy goals)

6 Updated Scenario Planning report / ROI model

KEY FEATURES

- Realistic Model with texture
- Schematic Model in SCAG Land-Use
- Accurate street model
- SED comparison to SCAG policy

EXISTING

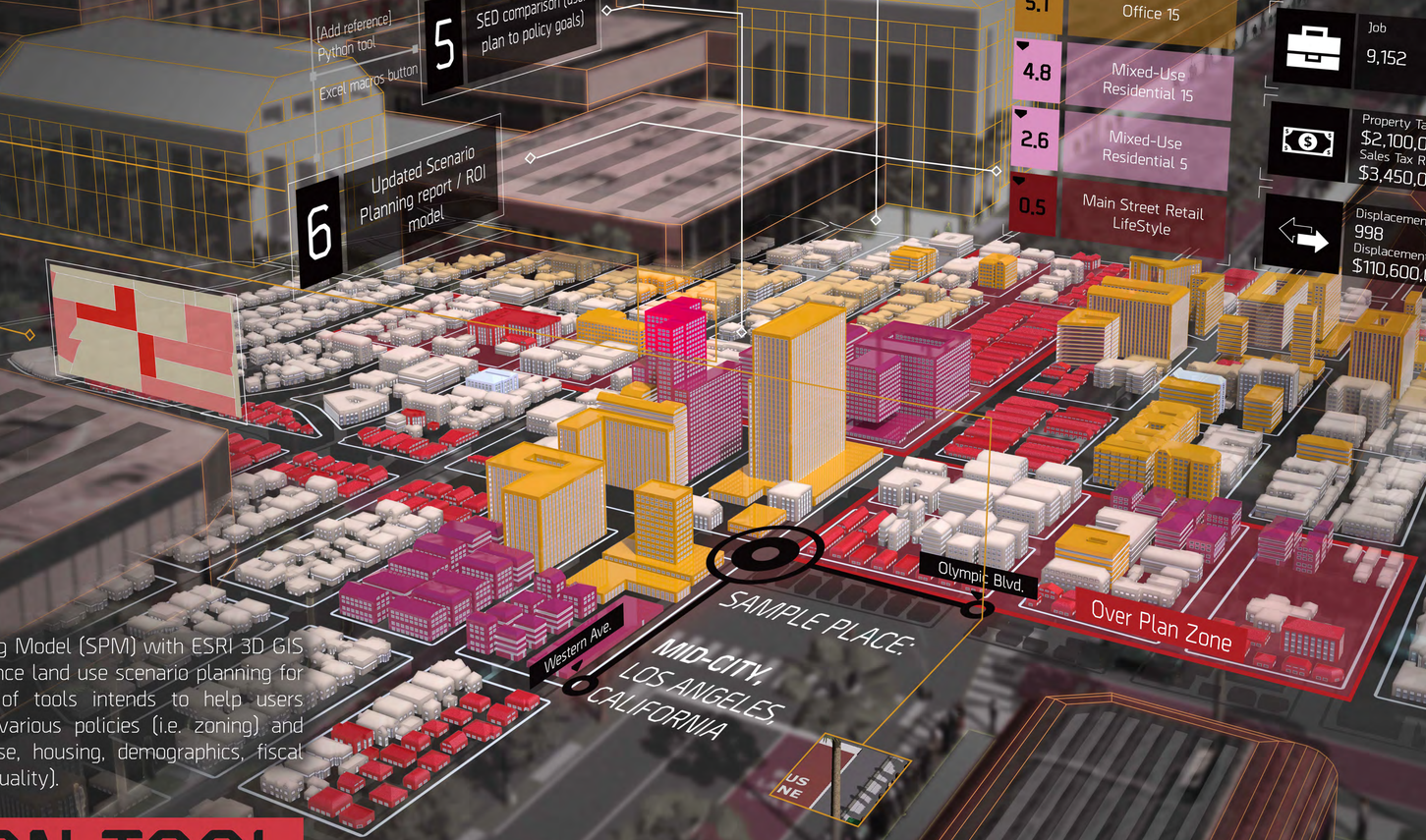
SCENARIO PLAN

F.A.R

9.8	Office 30
5.1	Office 15
4.8	Mixed-Use Residential 15
2.6	Mixed-Use Residential 5
0.5	Main Street Retail LifeStyle

Difference after enhanced with CityEngine

- Population: 24,747 — 7%
- Energy Use: 58 per household — 8%; 19 per job — 7%
- Job: 9,152 — 26%
- Water Consumption: 215 per household — 5%
- Property Tax Revenue: $2,100,000; Sales Tax Revenue: $3,450,000 — 80%
- Carbon Emission: 5.4 per household — 8%
- Displacement population: 998; Displacement value: $110,600,000 — 10%; 5%
- Solid Waste: 6.0 per household; 3.6 per job — 5%



INTRODUCTION:

Producer: Tuo Sun
Advisor: Ping Wang, Frank Wen, Simon Choi

This visualization tool integrates Scenario Planning Model (SPM) with ESRI 3D GIS technologies (ArcGIS Pro and CityEngine) to enhance land use scenario planning for sustainable economic development. This suite of tools intends to help users understand, measure and evaluate impacts on various policies (i.e. zoning) and programs that related to transportation, land use, housing, demographics, fiscal revenues, environments (i.e. public health and air quality).

VISUALIZATION TOOL

SCENARIO PLANNING ENHANCED WITH 3D GIS

produced by SCAG
products of ESRI
Other supports: Scenario Planning Model, Microsoft Excel, Adobe Illustrator