

# Technical Tools for Evaluating Transit Hub Impacts



Together North Jersey Training  
Initiative

Transit Hubs – Workshop #1

December 15<sup>th</sup>, 2017



Robert Diogo, Special Programs Manager  
North Jersey Transportation Planning Authority

# What do we want to know?

- Transportation Impacts
- Environmental Impacts
- Infrastructure Impacts
- Land Use Impacts
- Fiscal Impacts
- Business Analysis
- Visualization

# Small Area Land Use Impact Tool: SALUIT

- SALUIT is an add-on to CommunityViz
- CommunityViz from City Explained, Inc.
  - ArcGIS extension



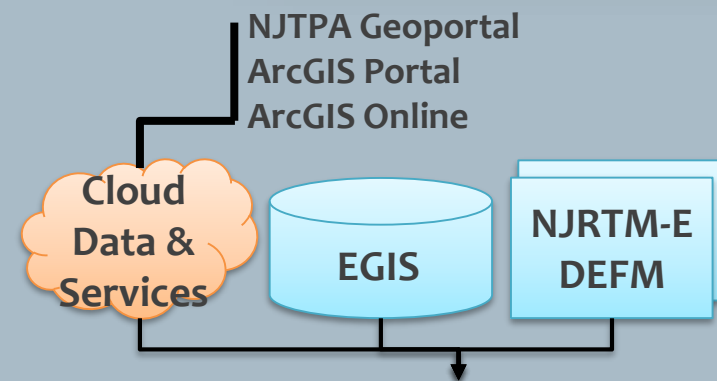
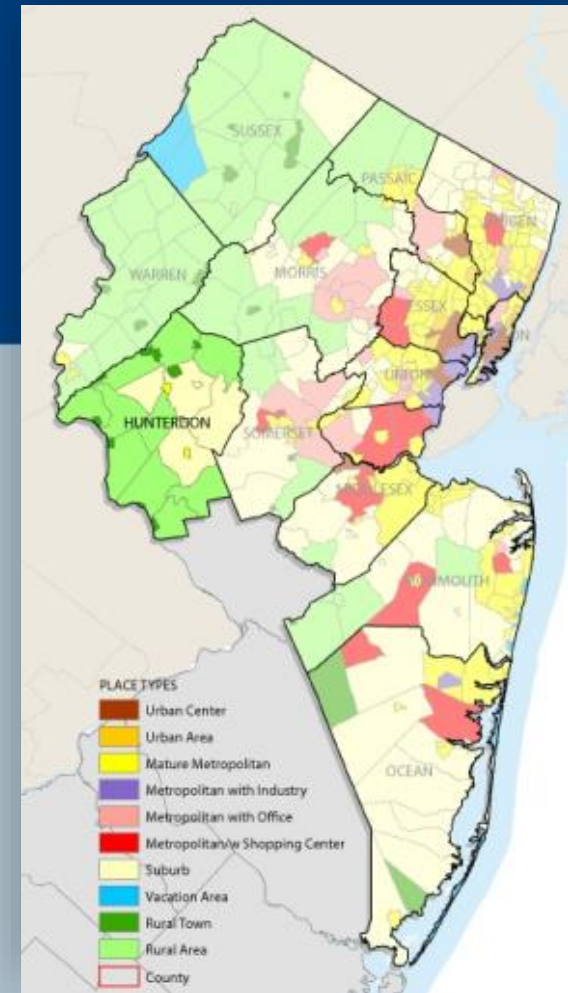
**NJTPA SALUIT**

communityviz® Scenario 360

**ArcGIS®** ArcMap™

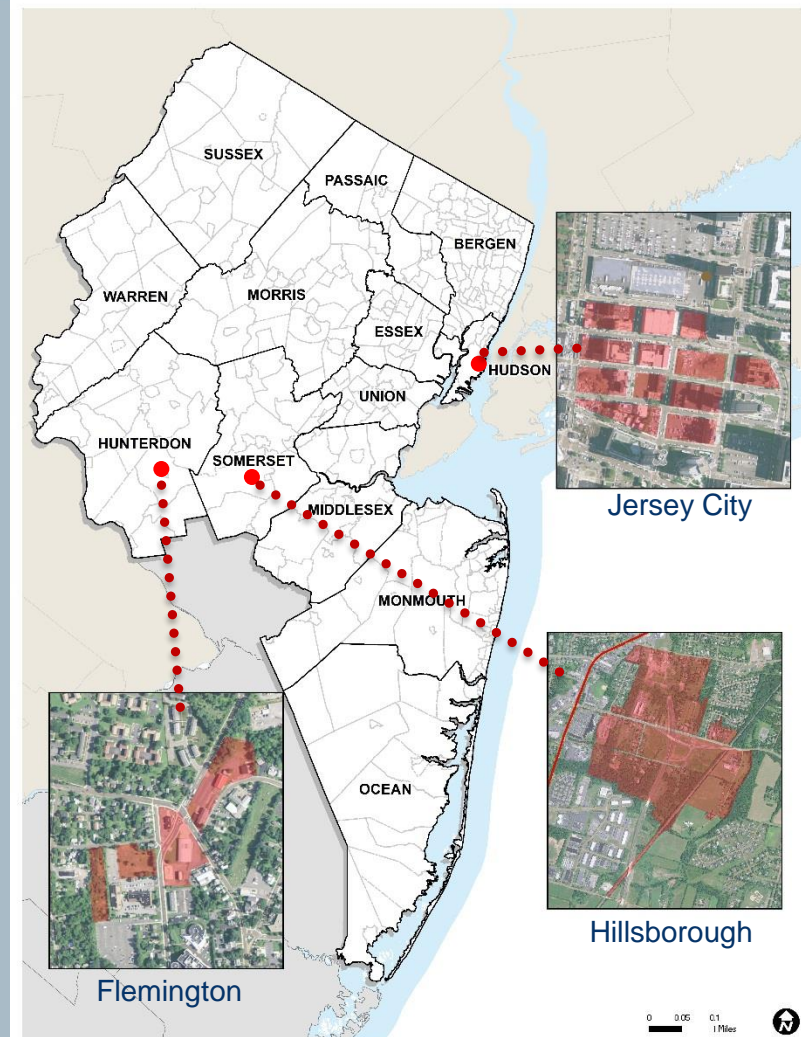
# SALUIT Features

- GIS-based
- Customize for NJTPA region and customers
- Calibrated to local conditions
- Easy to navigate
- Common tasks set up
- Use NJTPA data and models
- Sketch-level estimates

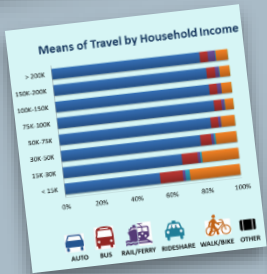
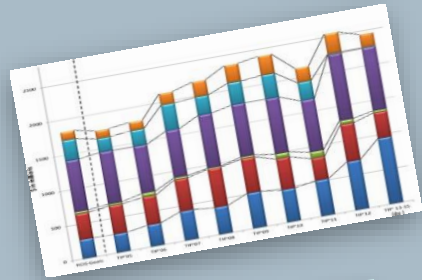


# Pilot Communities Reflecting Regional Diversity

- Jersey City / Hudson County
  - Powerhouse Arts District
- Somerset County – Hillsborough
  - Town Center / Transit Village
- Hunterdon County – Flemington
  - Business Improvement District

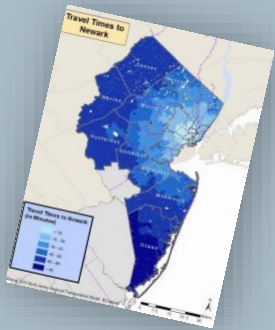


# Sketch Modeling



**INPUT DATA**

- Surveys
- Census
- Government Agency Data
- Other Sources (e.g. Local Data)



**PROJECT SITE SKETCHED LAND USE**

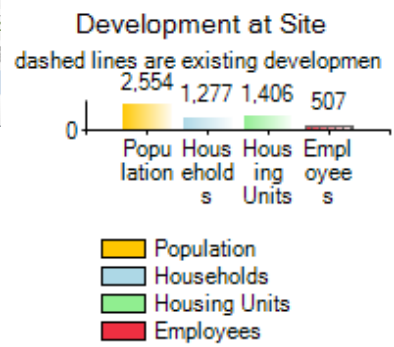
**TRANSPORTATION OUTPUT**

**ECONOMIC OUTPUT**

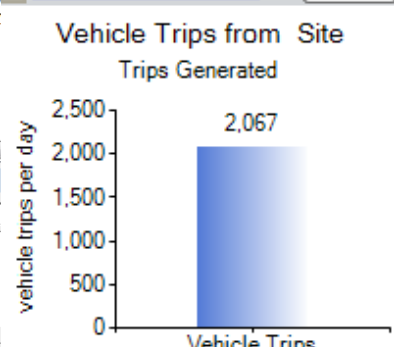
**LAND USE & ENVIRONMENTAL OUTPUT**

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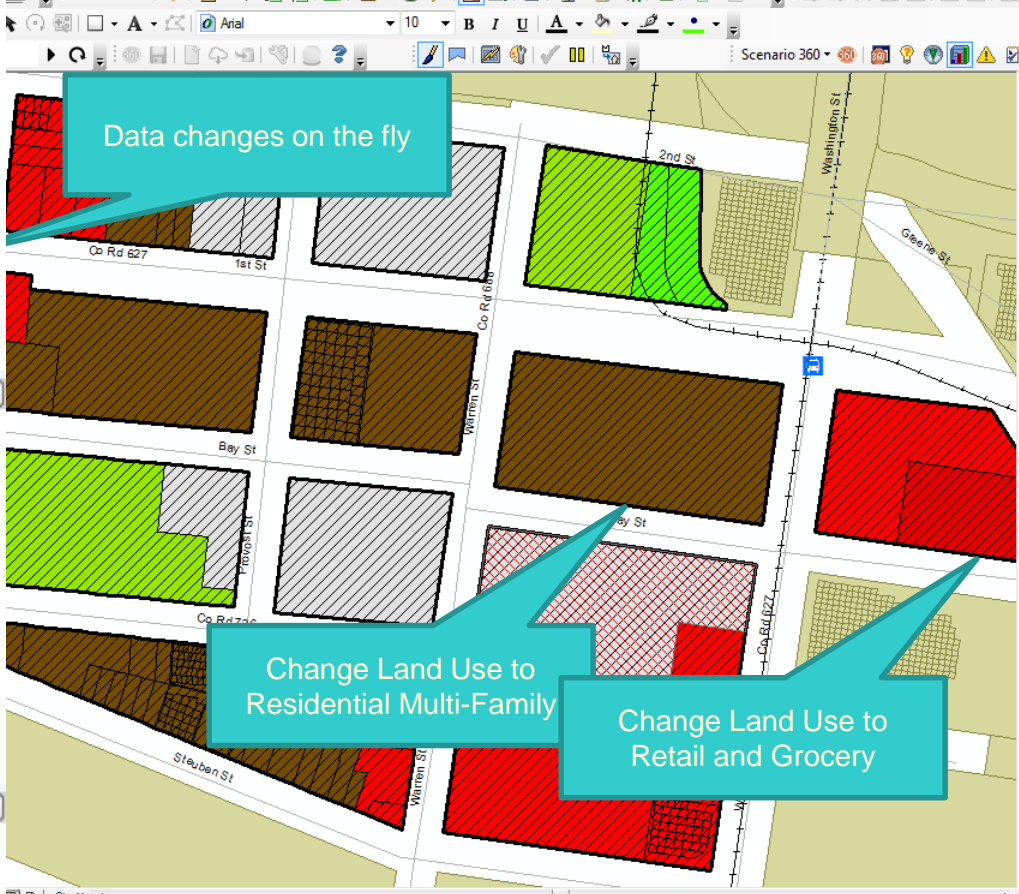
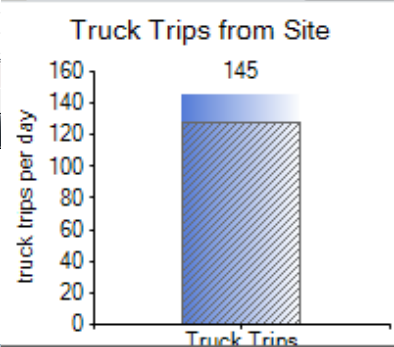
- Boundaries
- Study Area Boundary
- Project Site Boundary
- Municipalities
- TAZ
- Census Data
- Facilities
- Infrastructure
  - Bus Stops
  - Future Bus Stops
  - Bus Stop Access
  - Other Regional Stops - Ferry
  - Future Regional Stops - Ferry
  - Other Regional Access - Ferry
  - Train Stops
  - Future Train Stops
  - Train Access
  - Roads
  - Railroads



### Vehicle Trips from Site



### Truck Trips from Site



Create Features

Click here to see template

- vacant built
- vacant greenfield
- Project Site Boundary
- Project Site Boundary
- Site Parcels
  - Grocery
  - Hotel
  - Light industrial
  - Medical Office
  - Mixed Use Multifamily
  - Mixed Use Multifamily
  - Office Professional
  - Parks
  - Residential Multifamily
  - Residential Multifamily
  - Residential Multifamily
  - Residential Single unit
  - Residential Single unit
  - Restaurant
  - Retail
  - Specialty Retail
  - Storage Warehousing
  - Theater Cineplex
  - vacant built
  - vacant greenfield

Construction Tools

- Auto Complete
- Freehand
- Clone
- Painter Tool

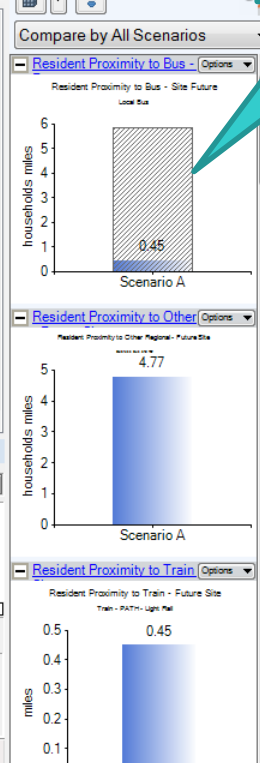


- Census Data
  - 2010 Tracts
  - SensitivePopulations\_Census2010
  - 2010 Block Groups
  - 2010 Blocks
- Facilities
  - Points of Interest 1
- Infrastructure
  - Bus Stops
  - Future Bus Stops
  - Bus Stop Access
    - Network Distance
      - < 1/4 Mile
      - 1/4 to 1/2 Mile
      - 1/2 to 1 Mile
  - Other Regional Stops - Ferry and Express E
  - Future Regional Stops - Ferry and Express
  - Other Regional Access - Ferry and Express

Identify Identify from: <Top-most layer>

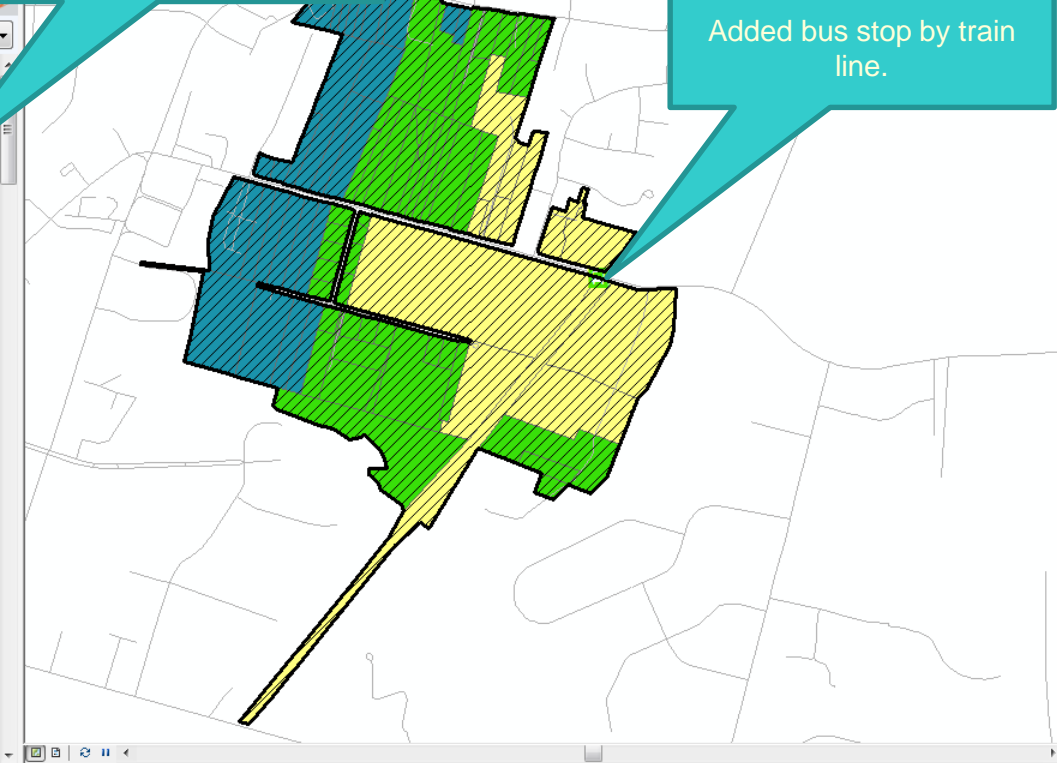
Location: Click on or drag a box over a feature or place on the map you want to identify. Its attributes will be listed here. Use the dropdown list to control which layer(s) will be identified.

No identified features Table



Bus access improved tremendously for site.

Added bus stop by train line.

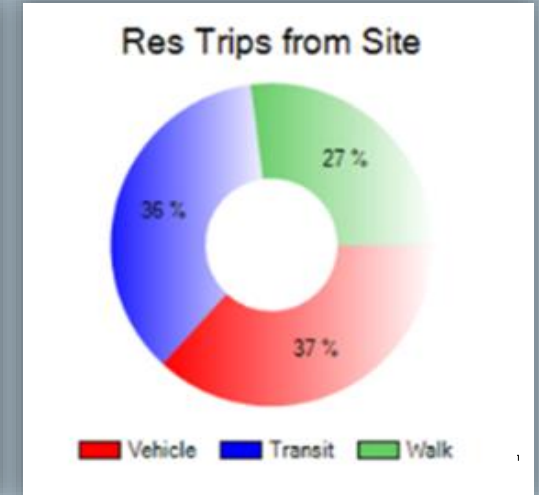
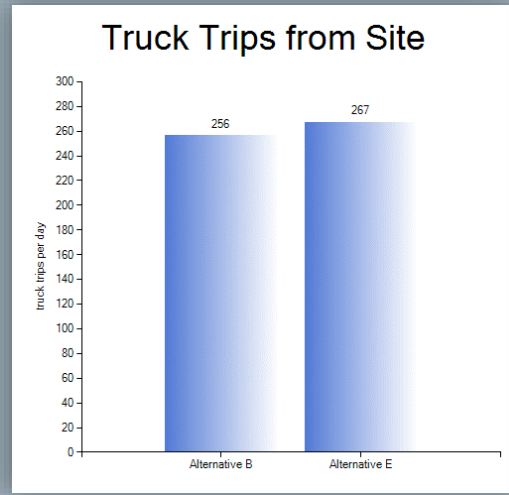
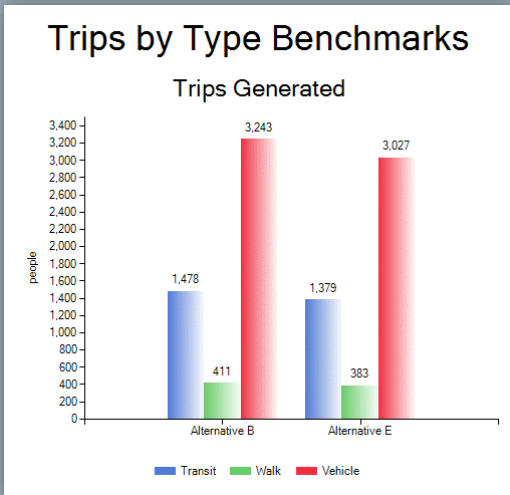
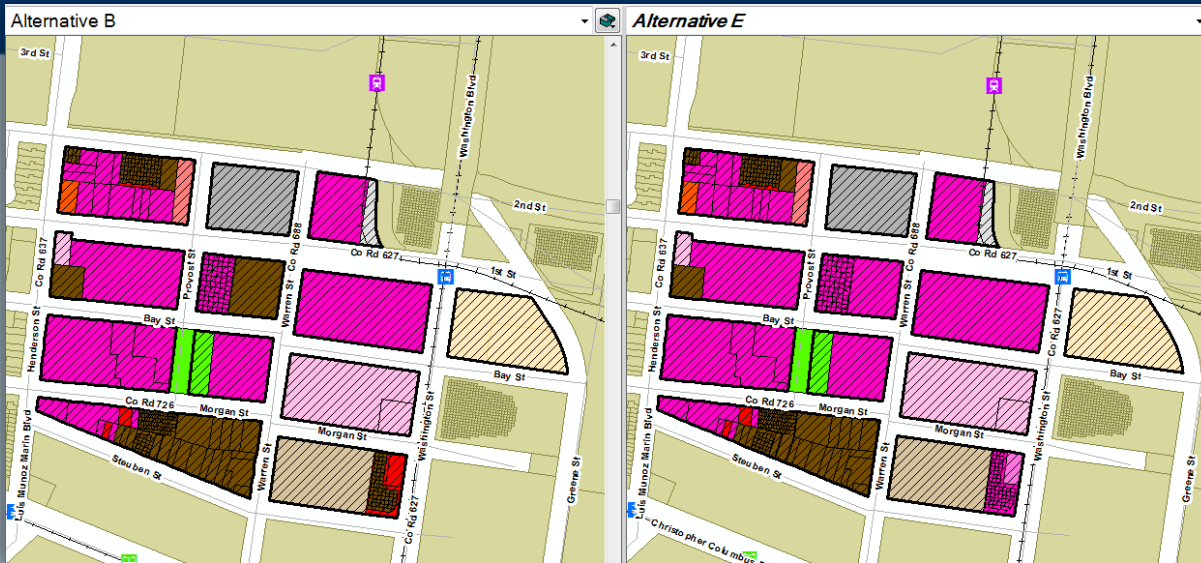


- Create Features
- Future Bus Stops
  - Future Regional Stc
  - Future Regional Stc
  - Future Train Stops
  - Future Train Stops
- Parcels
- Church
  - Grocery
  - Hotel
  - Light industrial
  - Medical Office
  - Mixed Use Multifam
  - Mixed Use Multifam
  - Office Professional
  - Parks
  - Public Property
  - Public School
  - Residential Multifan
  - Residential Multifan
  - Residential Single u
  - Residential Single u
- Construction Tools
- Point
  - Point at end of line
  - Clone
  - Edit ...
  - Cre...

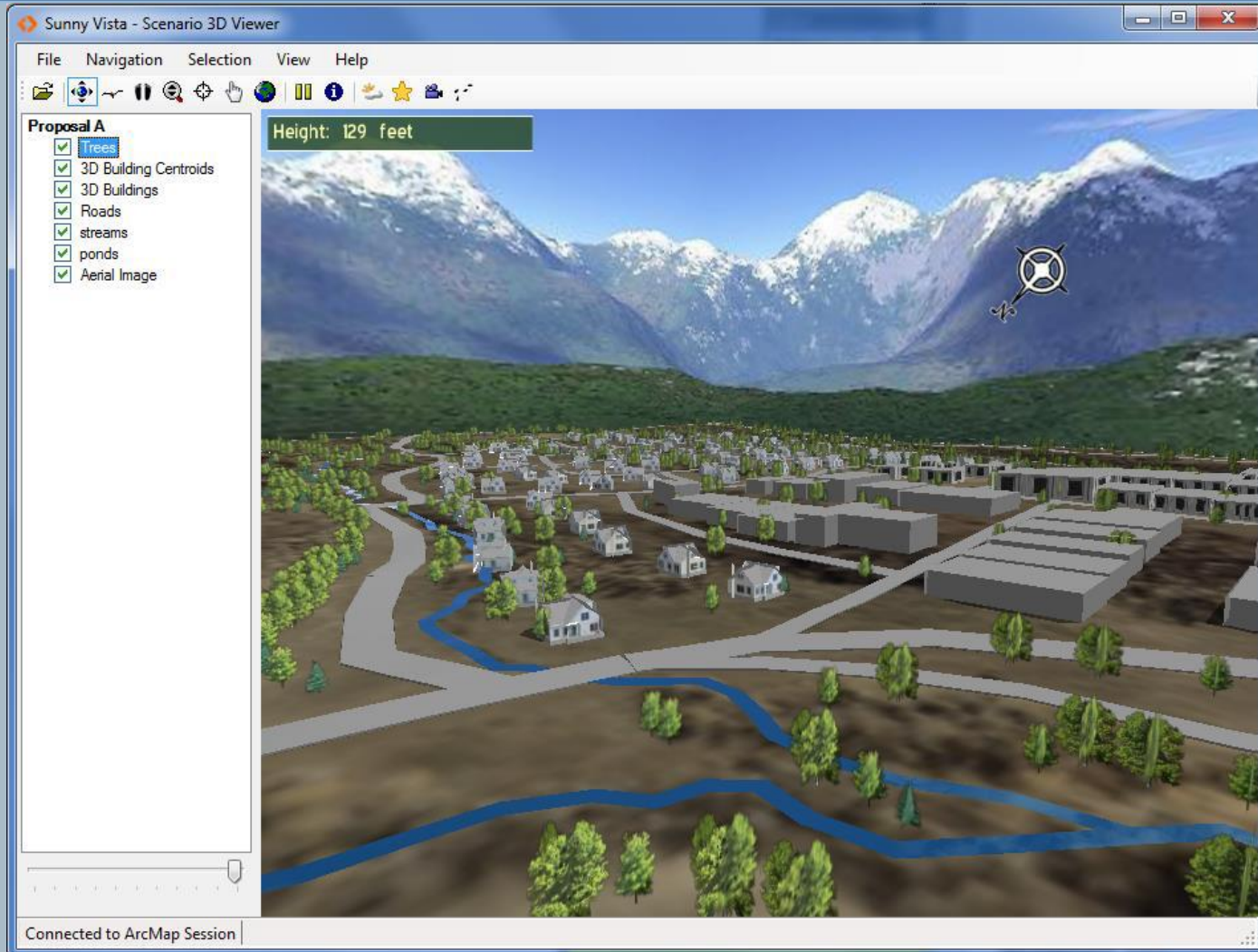




# Map and Graphical Outputs

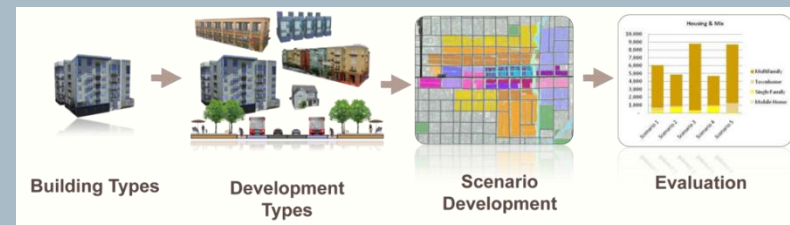
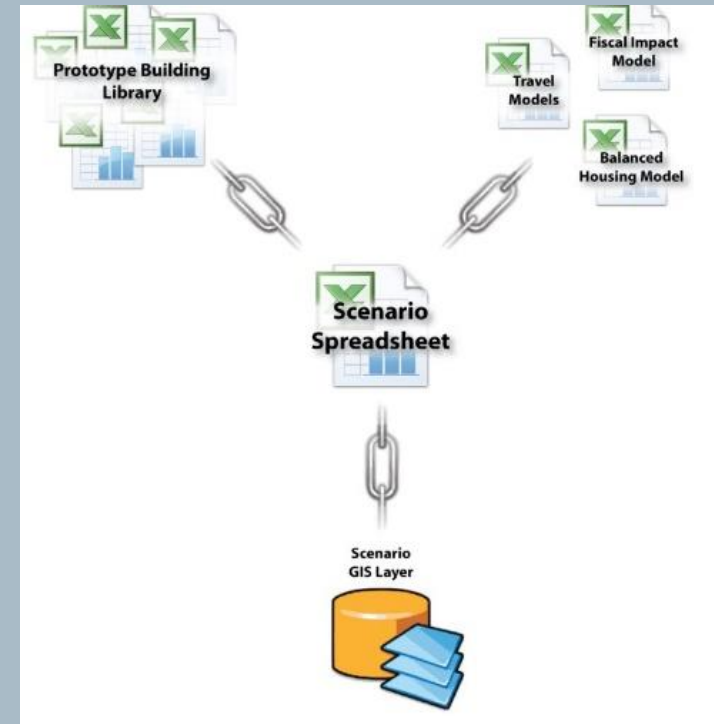


# CommunityViz: Scenario3D



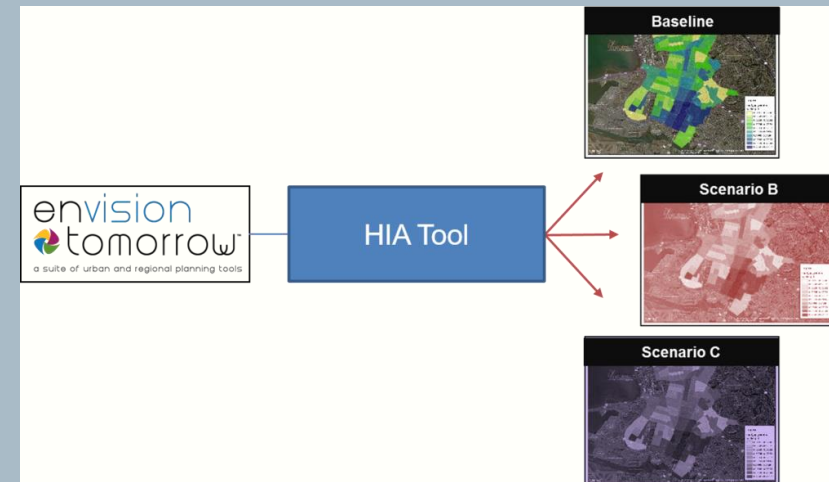
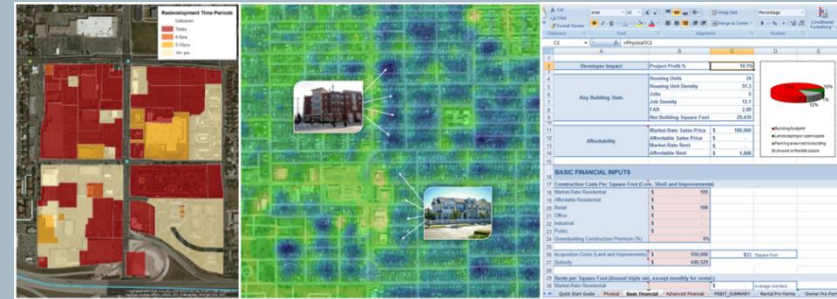
# Envision Tomorrow

- Suite of analysis and scenario design tools
- Developed by Fregonese Associates and Metropolitan Research Center (University of Utah)
- Excel spreadsheets linked to ArcGIS via an extension
- Data inputs based on building type data



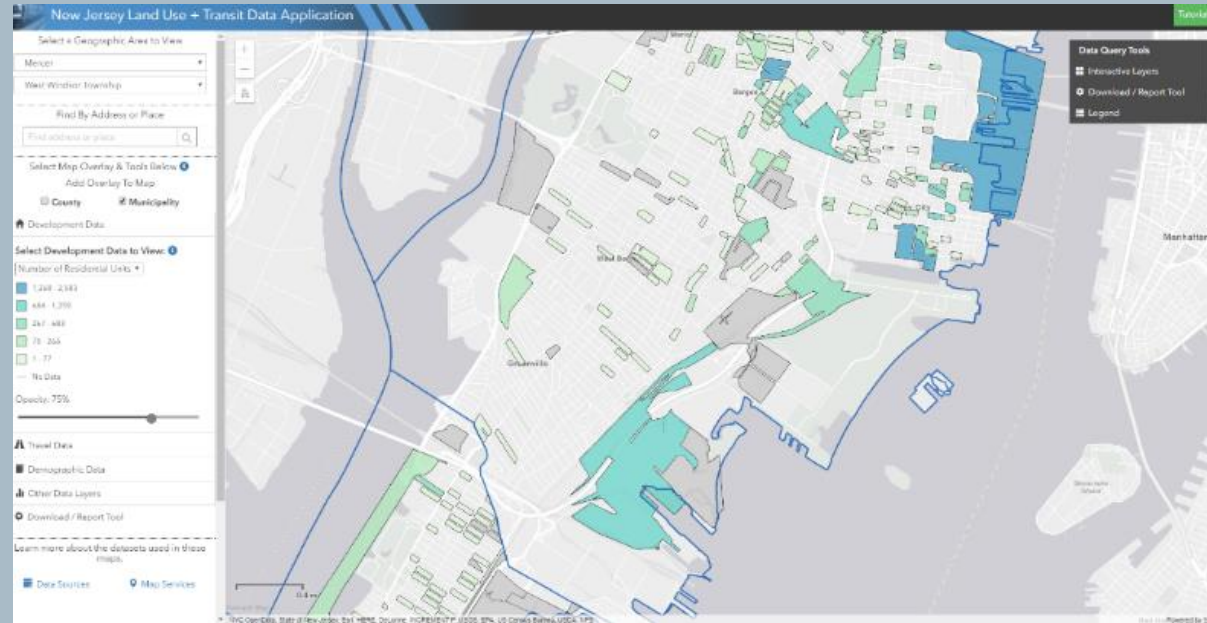
# Envision Tomorrow: Output

- Similar to SALUIT
- Fiscal Impacts: Estimate Return on Investment based on developer tool for building types (local input essential)
- Travel Behavior, Public Health



# Other Models

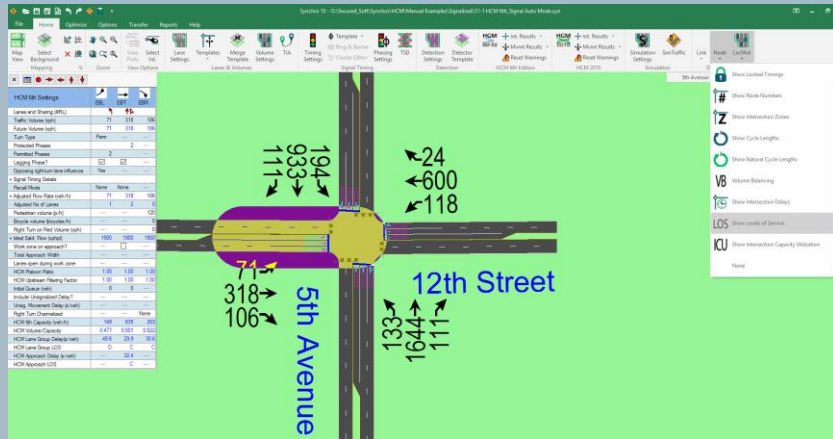
- New Jersey Land Use Transit Data Application
  - Online mapping tool
  - Developed by Rutgers, NJ TRANSIT, NJTPA
  - Provides overlay capabilities
    - Census
    - Residential and Commercial Development



- Growth Allocation Models
  - UPLAN (DVRPC), DEFM (NJTPA)
  - Allocate anticipated growth for use in Travel Demand Models

# Other Models

- **Transportation Models**
  - Travel Demand Models
  - Mesoscopic and Microscopic Models (e.g. Paramics, SYNCHRO, CUBE Avenue)



- **Business Location Models**
  - Census Business Builder
  - ArcGIS Business Analyst
- **GIS 3D Models**
  - ESRI CityEngine



# Thank You

*Defining the Vision. Shaping the Future.*



Robert Diogo  
Special Programs Manager  
One Newark Center, 17<sup>th</sup> Floor  
Newark, NJ 07102  
diogo@njtpa.org  
(973) 639-8409  
www.njtpa.org



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