Geodesign for Smart Growth

Enabling Technology

Matthew Baker
Geographic Information Systems

Basic Feature Types

Points

Lines

Polygons / Areas

Assign Attributes to Features

<table>
<thead>
<tr>
<th>Type</th>
<th>Location</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Light Rail</td>
<td>X,Y</td>
<td>1.3mi</td>
</tr>
<tr>
<td>Bus</td>
<td>X,Y</td>
<td>2.5mi</td>
</tr>
<tr>
<td>Train</td>
<td>X,Y</td>
<td>5.3mi</td>
</tr>
</tbody>
</table>

Symbolize Based on Attributes

Light Rail Stations

Potential Light Rail

Mixed Use

Mixed Use Land Use
Analysing your Design

Geoprocessing on-the-fly

Sketch → Analyse → Visualize

Make Changes
Visualizing Walkability

Analyzing design on-the-fly

- Potential Stations
- Existing Road Network
- Analyse Design
- Walkability

Walkability Analysis
- 1/4 Mile (5 Minutes)
- 1/2 Mile (10 Minutes)
- 1 Mile (15 - 20 Minutes)
- > 1 Mile (20+ Minutes)
What’s in 1 Acre?

- 75% Impervious Surface
- 75% Effective Rainfall Area
- 35 Density Units
- 40 Jobs
- 18 Parking Spaces
- 15% Population in Elementary School
- 7650 VMT / Person (vehicle miles travelled)
- 248 VHT / Person (vehicle hours travelled)
- 8.1 tonnes CO2 / Person
Cartography and Design

Cartographic Representations