

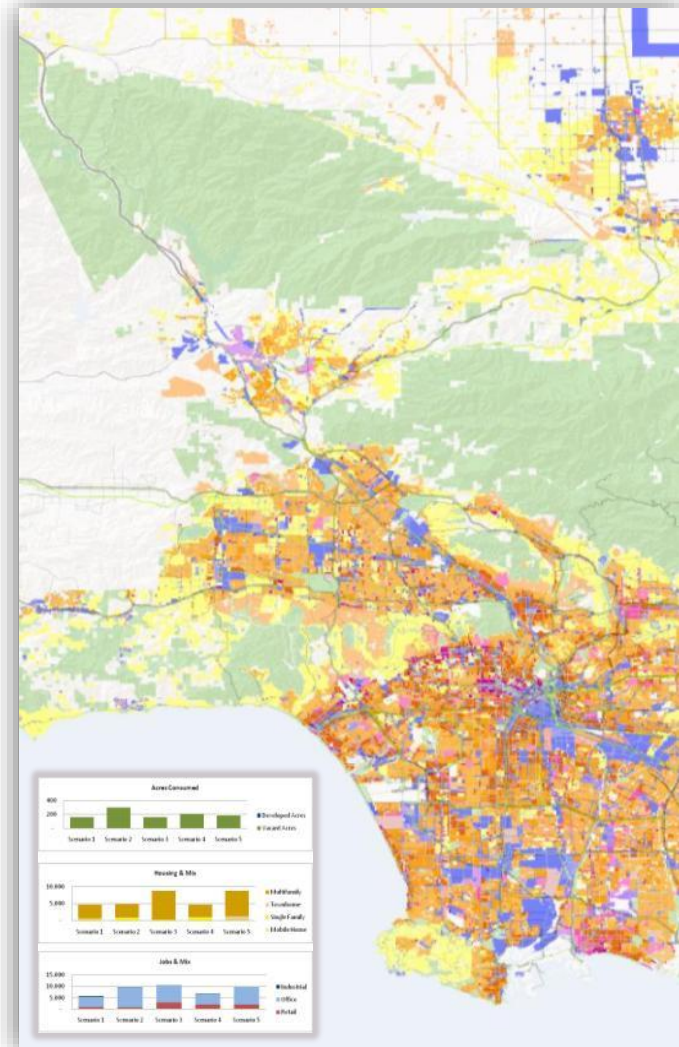
Scenario Planning with Envision Tomorrow

What is Envision Tomorrow?

□ Suite of planning tools:

- ▣ Analysis Tools
- ▣ Prototype Builder
 - Return on Investment (ROI) model
- ▣ Scenario Builder
 - Extension for ArcGIS

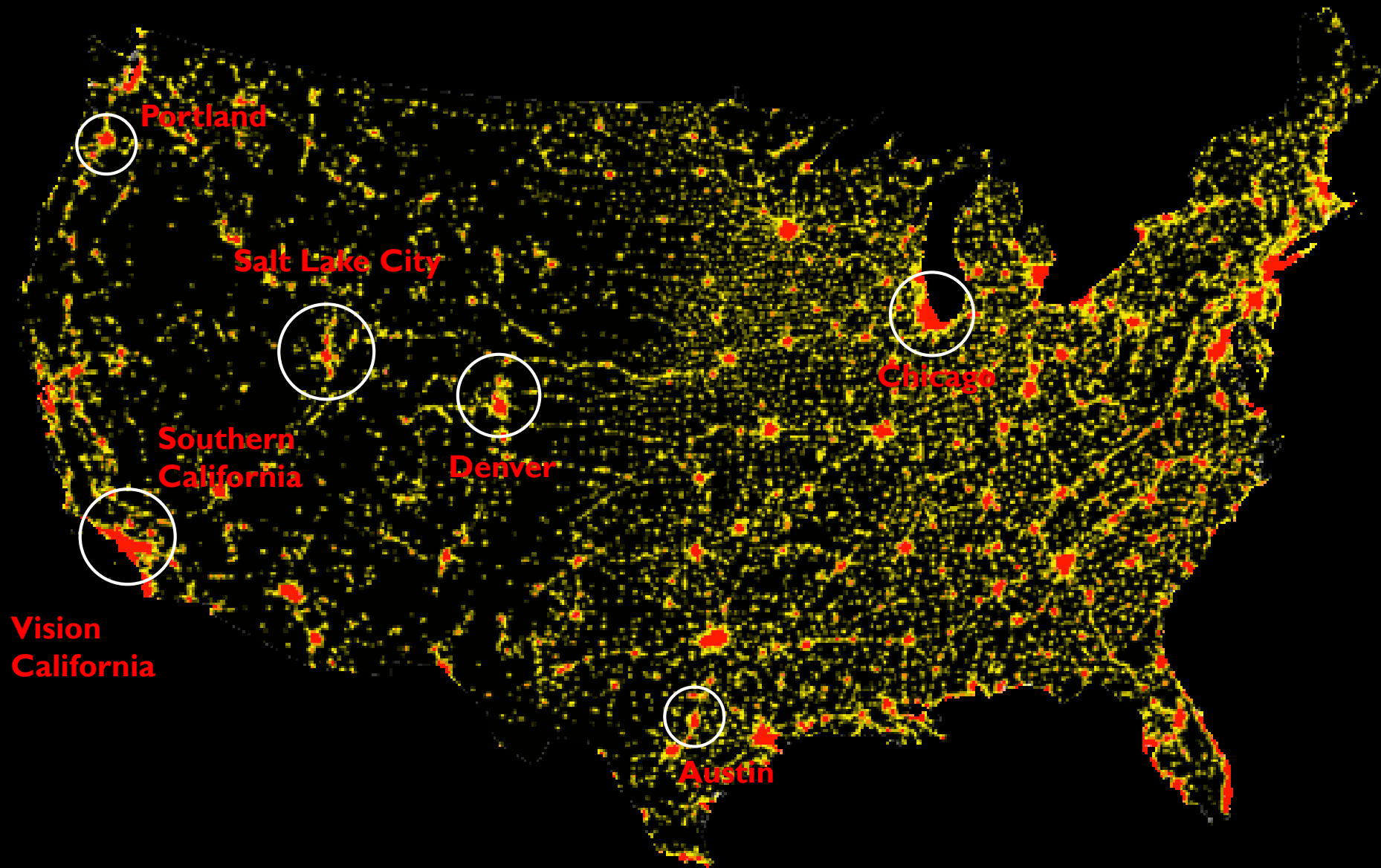
envision
tomorrow™
a suite of urban and regional planning tools



Building-Level Approach to Planning

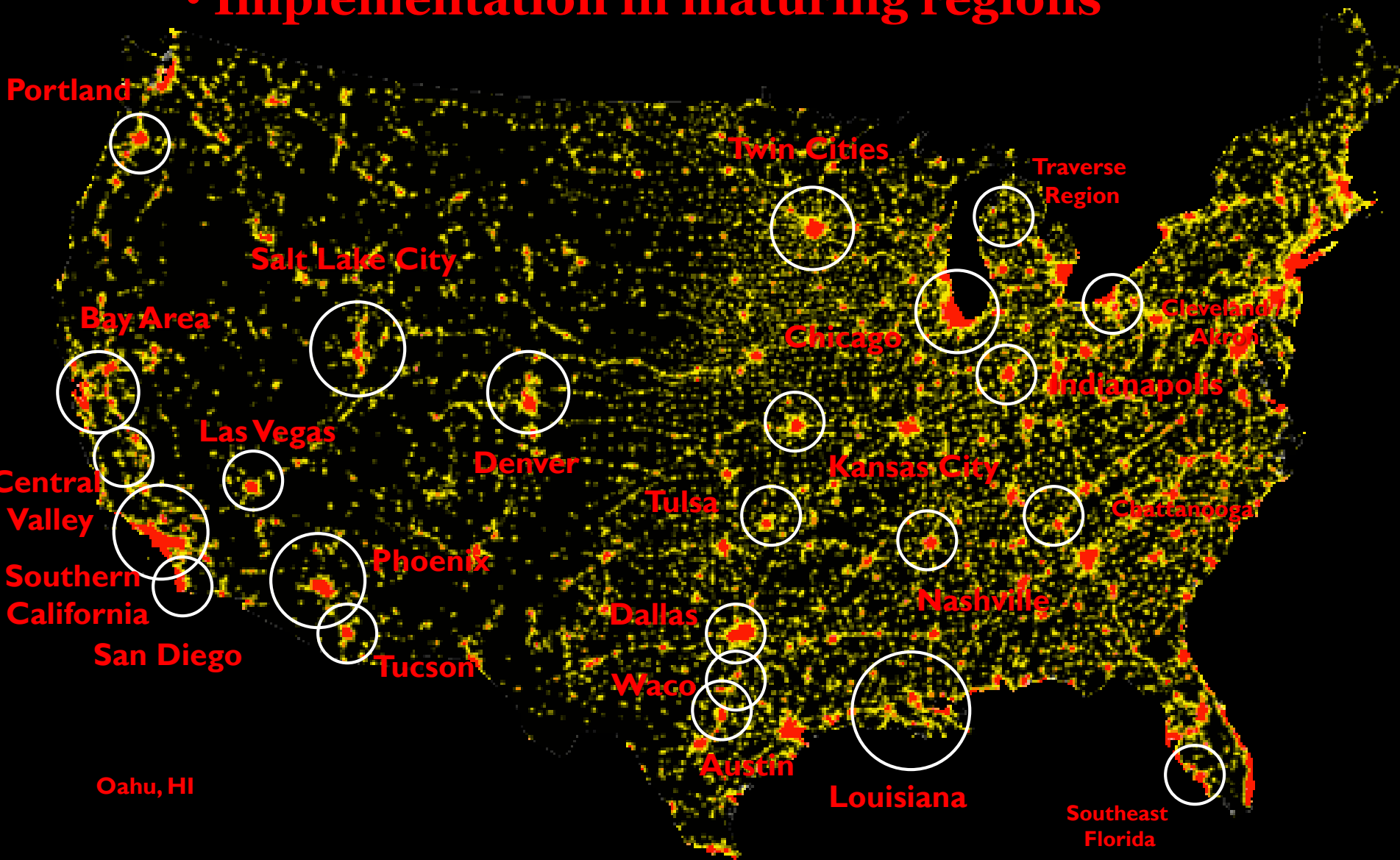


Early Scenario Plans Using Envision Process

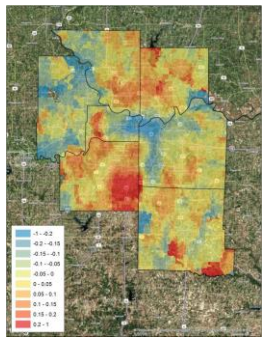


And Since the 2000's...

- Broadening access in smaller communities
- Implementation in maturing regions



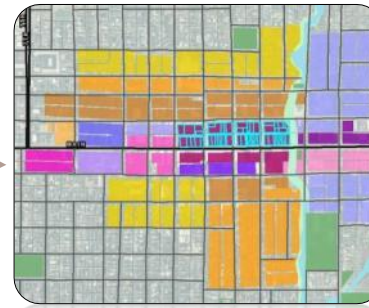
Scenario Building Process



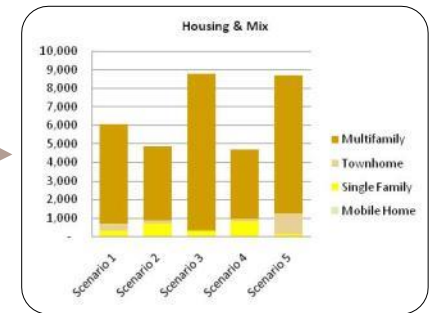
**Baseline
Analysis**



**Create Building &
Development
Types**



**Scenario
Development**



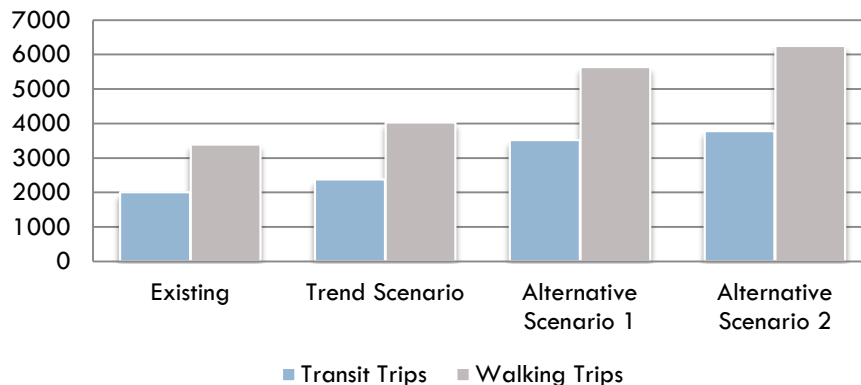
Evaluation



Transit-Supportive Land Use

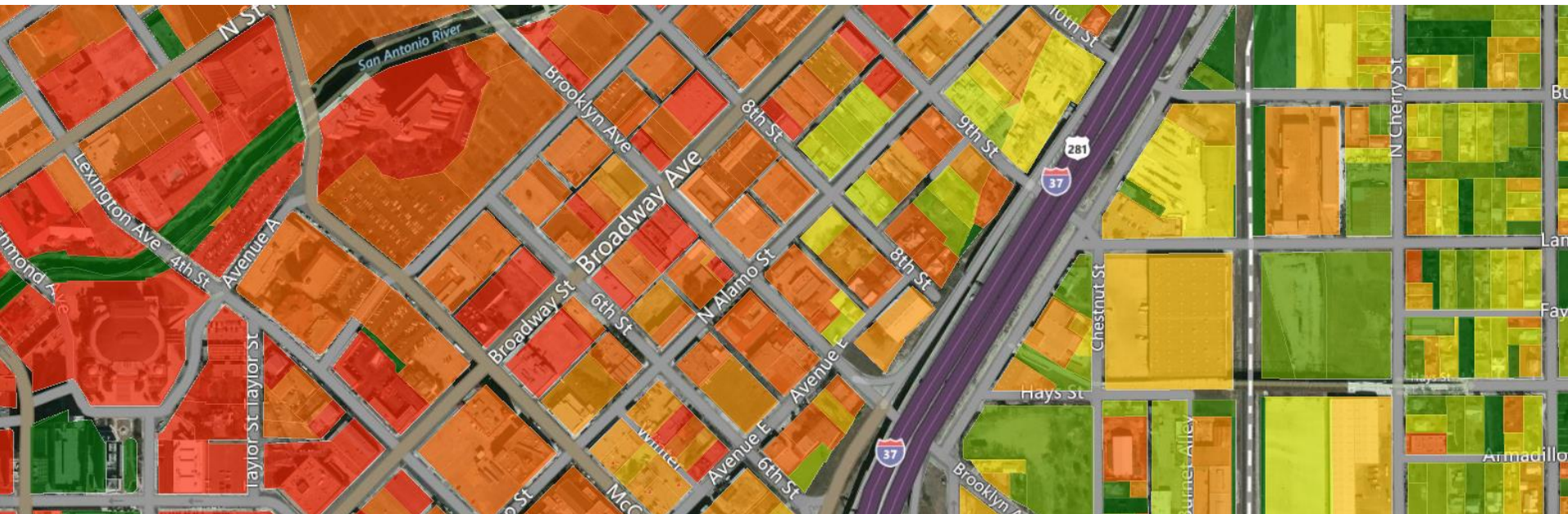
- Isolate areas where transit-oriented development is appropriate

Walk and Transit Trips



Identifying Development Opportunities

- Spatial tools for assessing areas with infill and redevelopment potential



Redevelopment Readiness Analysis

- A tool to assess which parcels within a study area may be candidates for redevelopment in the short term.
- Two methods:
 - ▣ Low Hanging Fruit: isolate the bottom quartile of total value per acre (land + improvement)
 - ▣ Timing: estimate the parcels that are ready today, or within 5-10 years based on the age of the structure and the value of the land and a depreciation schedule.

Redevelopment Timing Field Calculator

Select Parcel Layer:

Select "Year Built" field:

Select "Improvement or Building Value" field:

Select "Land Value" field:

Enter Current Year (4 digit):

Enter Building Lifespan: years

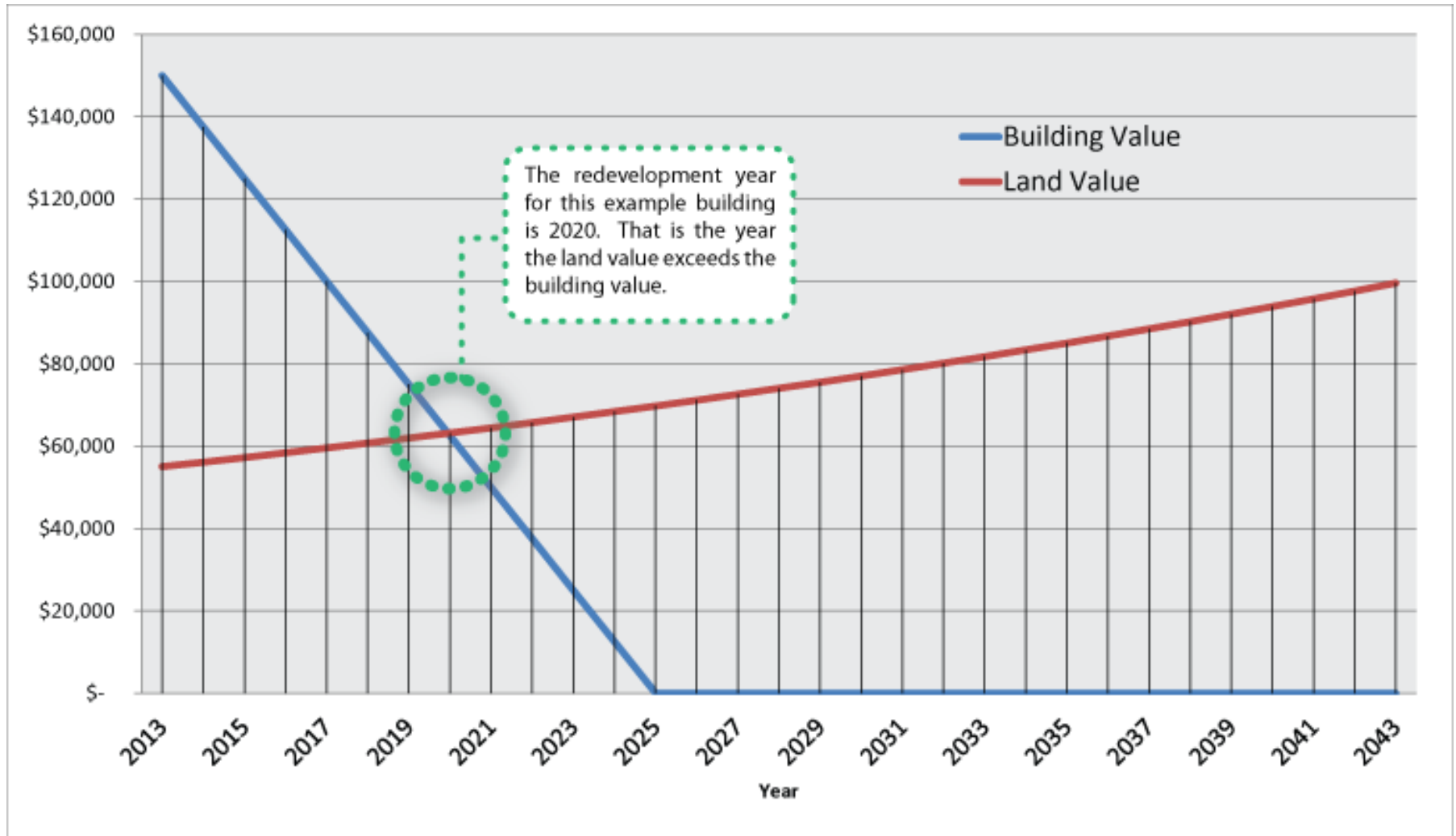
Enter Annual Land Appreciation: % per year

Enter Planning Horizon: years

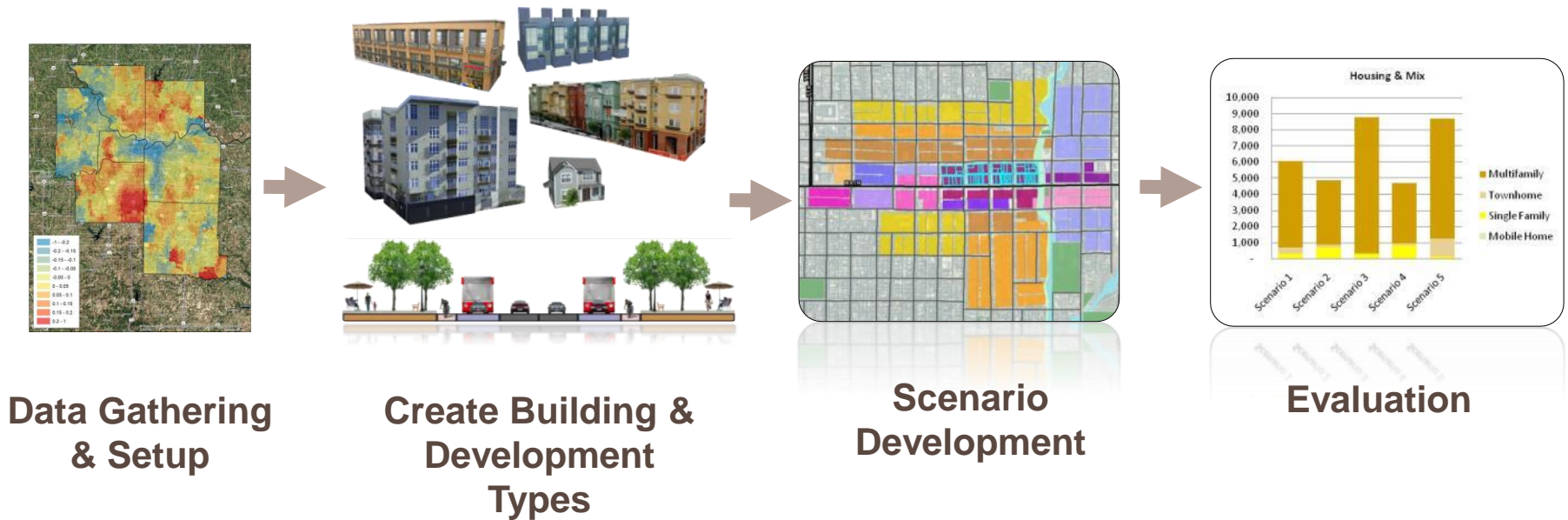
$$\frac{[_Value]}{(50 - (2012 - [yr_built2]))} + (([Land_Value] * (2.00 / 100)))) + 2012))))$$



Redevelopment Timing



Scenario Building Process



Prototype Builder (ROI Model):

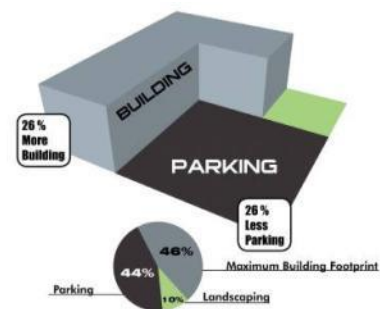
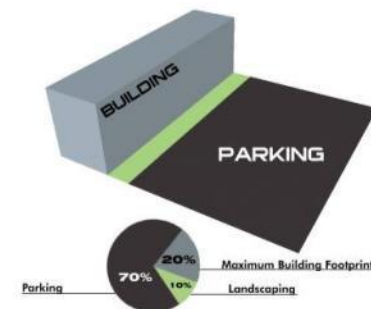
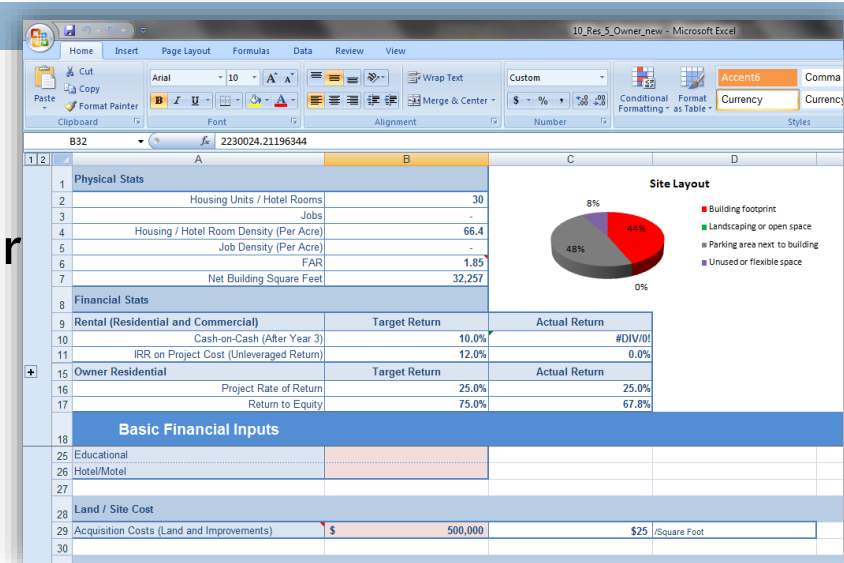
Quick Building Modeler: Physical & Financial

- Powerful as standalone tool or integrated with Scenario Builder

- Test existing regulations for financial feasibility

- Test impact of new development regulations

- Experiment with sensitivity of key variables



Library of Buildings

Calibrated to Local Market

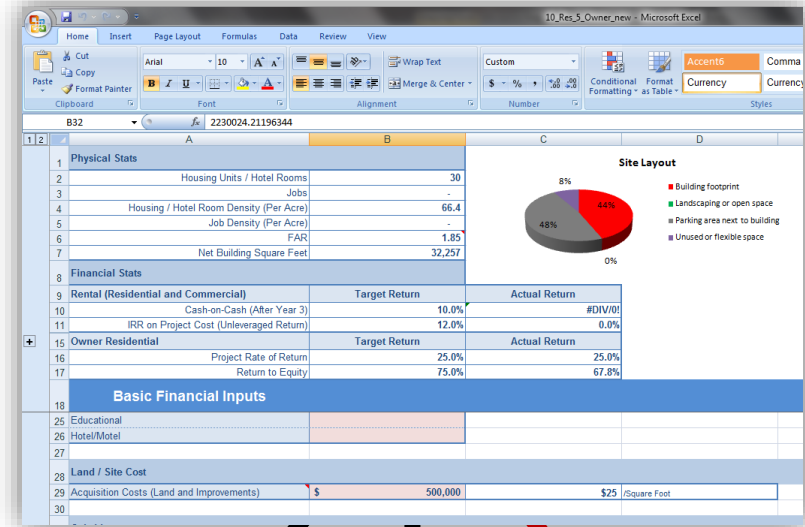


Create Building Library

Why start with buildings?

□ *Easily modeled & lots of existing data*

- Density and Design
- Rents and Sales Prices
- Costs and Affordability
- Energy and Water Use
- Fiscal Impacts



Feasible?



Test Financial Performance of Zoning Alternatives

Baseline

4 story Mixed Use with existing parking



Optimal

6 story Mixed Use with lower parking requirements



Baseline		Optimal	Change
Height	4 Stories	6 Stories	+2
Parking Spaces	127	115	-10%
Land Used	43,000 Square Ft	43,000 Square Ft	0%
Density	31 DU / Acre	63 DU / Acre	+103%
Floor Area Ratio	1.1	2.0	+79%
Project Value	\$17.3 Million	\$23.5 Million	+35%
Unit Cost	\$519,272	\$369,590	-29%

Development Type Mix

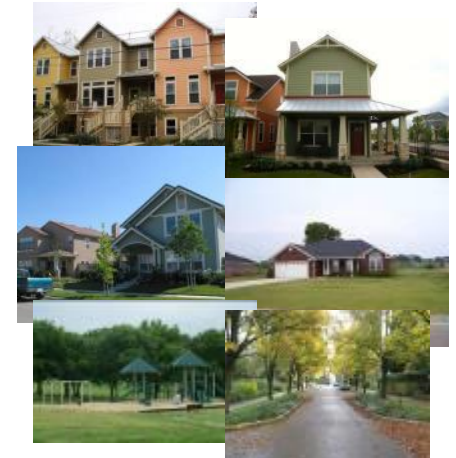
A Variety of Buildings, Streets and Amenities Create a “Place”



**Town
Center**



**Medium-Density
Residential**



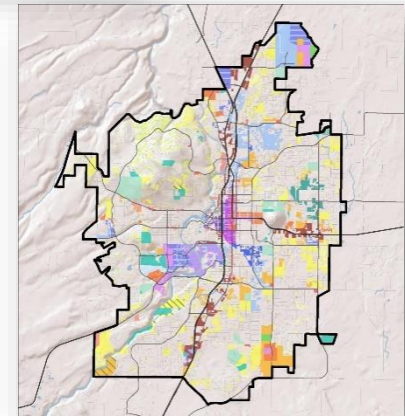
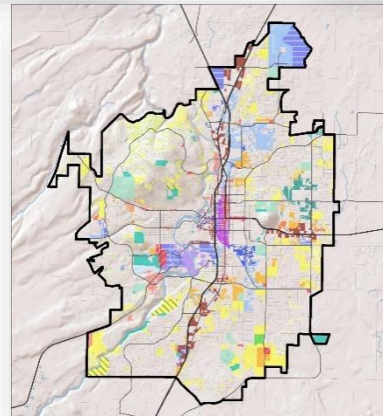
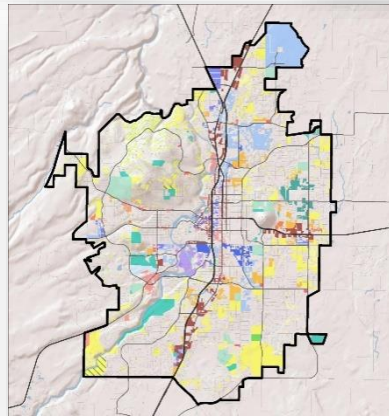
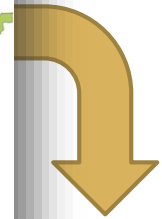
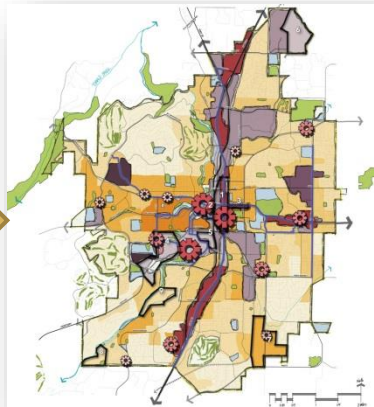
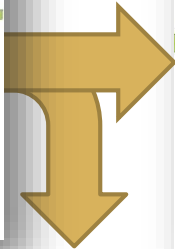
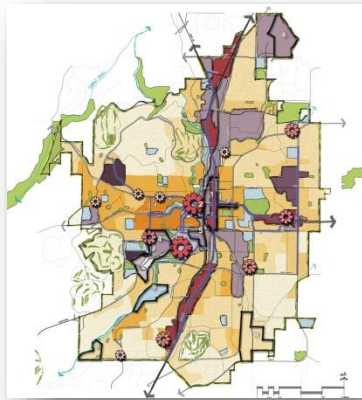
**Single-Family
Residential**

SCENARIOS: Three Land Use Maps

Scenario 1
Basecase

Scenario 2
Intensify

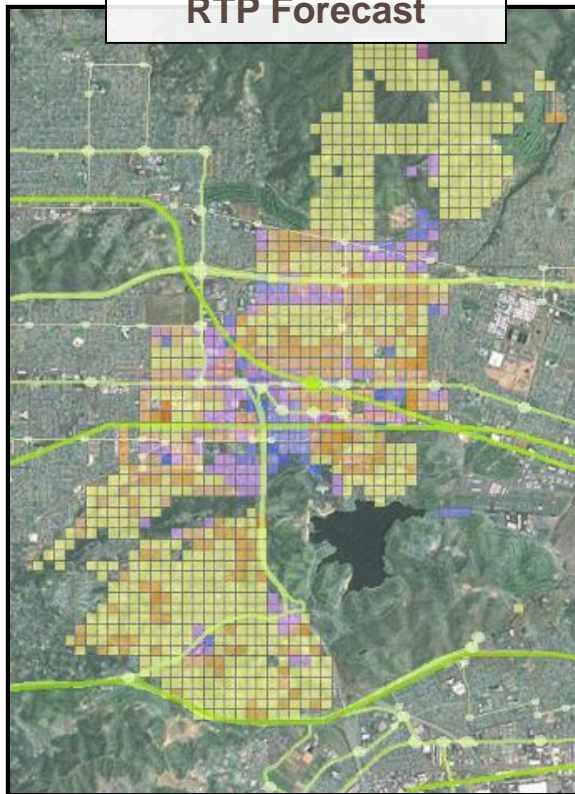
Scenario 3
Intensify and Mix



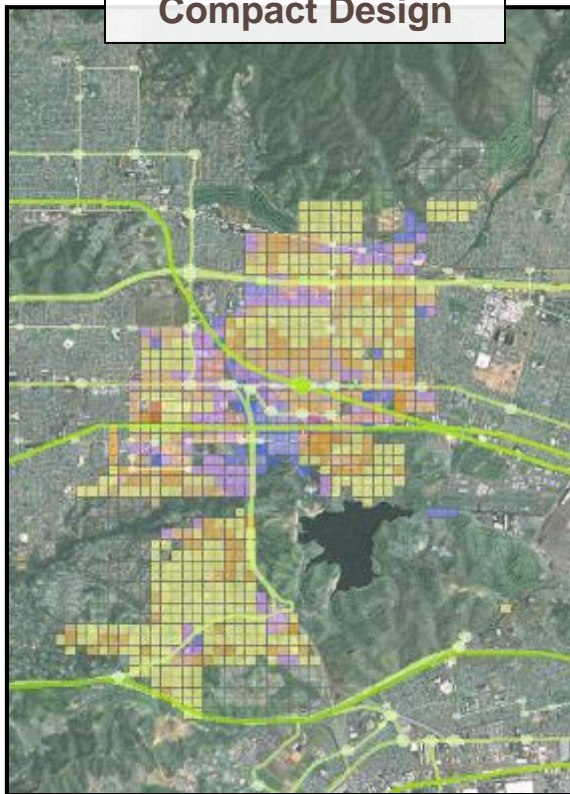
Design and Test Multiple Scenarios

- Test land use policies
- Experiment with new development patterns

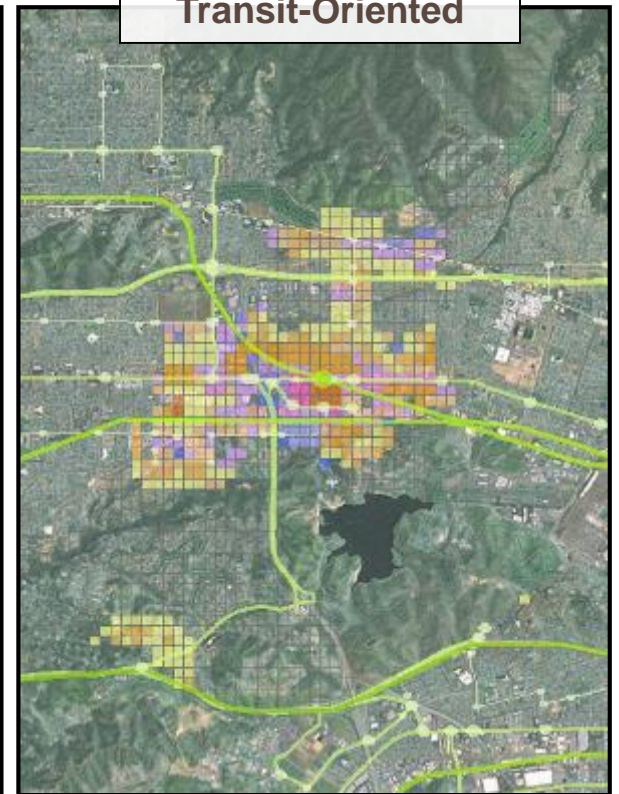
RTP Forecast



Compact Design

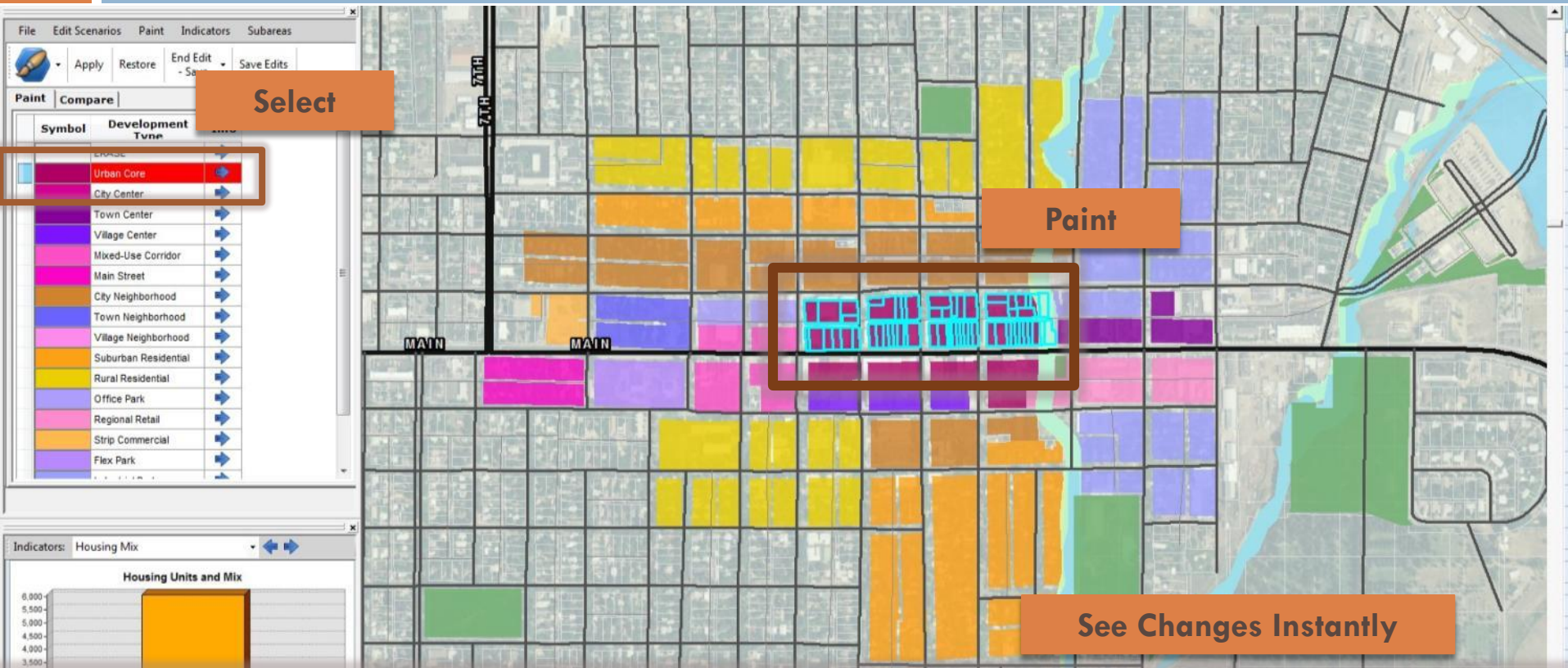


Transit-Oriented

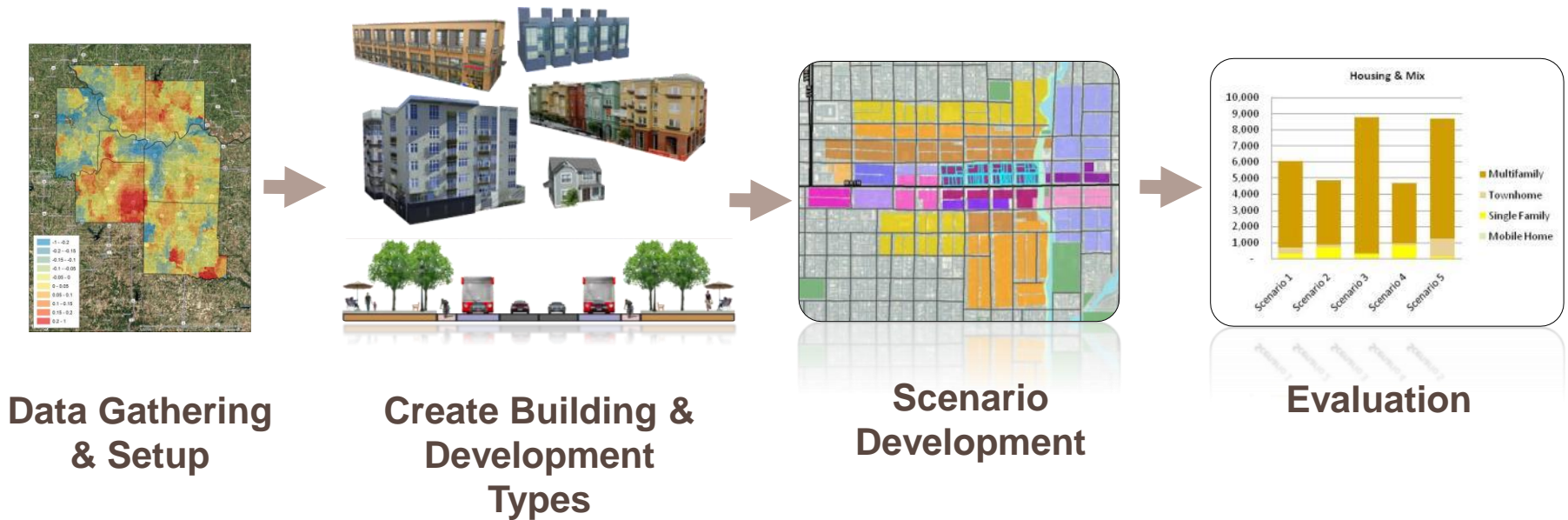




Real-time Scenario Building and Evaluation



Scenario Building Process

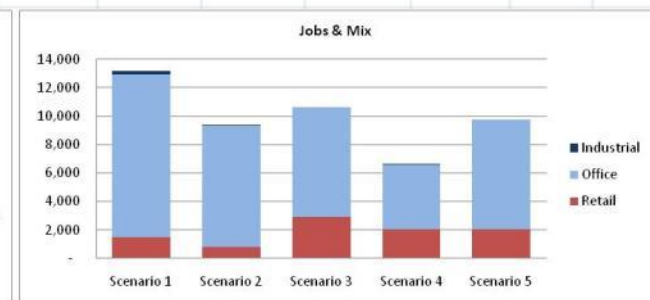
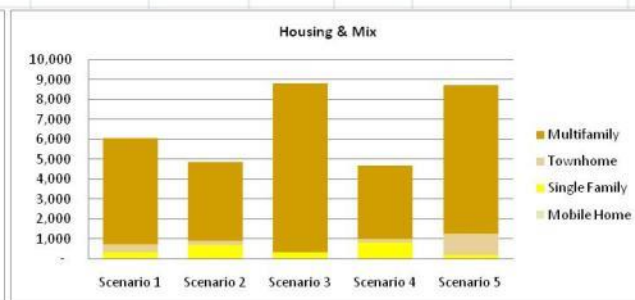
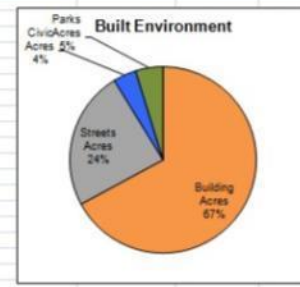
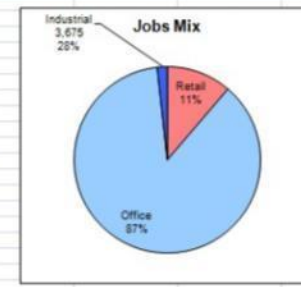
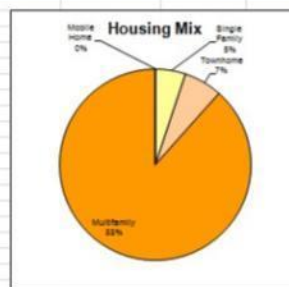
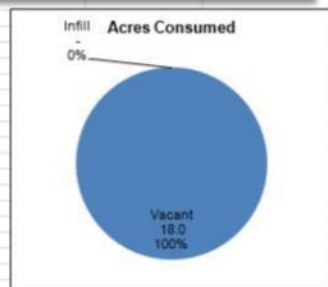


Monitor Indicators in Real-time

Detailed Tables

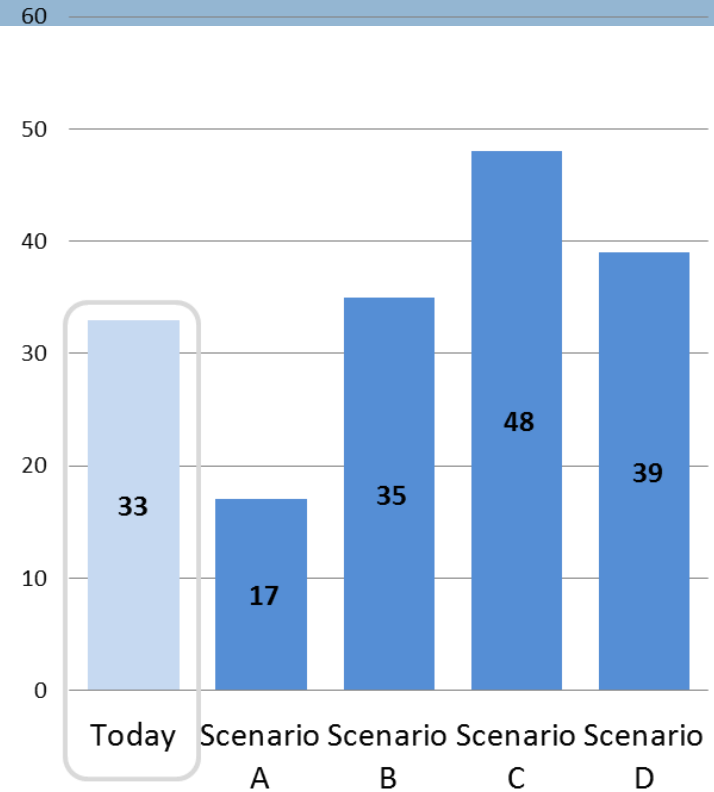
Enter Scenario Name or Theme	Acres Consumed				Total Housing Units	Housing Mix				Total Jobs	Employment Mix			Built Environment			
Dev Type	Total Vacant Acres	Total Developed Acres	Discounted Developed Acres ("Paved %")	Total Acres		Single Family	Townhome	Multifamily	Mobile Home		Retail	Office	Industrial	Building Acres	Streets Acres	Civic Acres	Parks Acres
Urban Core	13.6	-	-	13.6	2,179	-	-	2,179	-	11,838	888	10,950	-	9.26	3.40	0.54	-
City Center	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Town Center	3.4	-	-	3.4	343	-	-	343	-	121	121	-	-	2.32	0.85	0.14	-
Village Center	3.2	-	-	3.2	132	-	-	132	-	113	113	-	-	2.17	0.80	0.13	-
Mixed-Use Corridor	5.7	-	-	5.7	149	-	-	149	-	199	199	-	-	3.80	1.42	0.23	-
Main Street	4.0	-	-	4.0	2,567	-	-	2,567	-	-	-	-	-	2.65	0.99	0.16	-
City Neighborhood	24.5	-	-	24.5	344	-	344	-	-	-	-	-	-	16.44	6.14	0.98	-
Town Neighborhood	4.0	-	-	4.0	50	-	50	-	-	-	-	-	-	2.67	1.00	0.16	-
Village Neighborhood	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Suburban Residential	35.9	-	-	35.9	210	210	-	-	-	-	-	-	-	24.07	8.62	1.44	-
Rural Residential	34.3	-	-	34.3	100	100	-	-	-	-	-	-	-	22.96	8.23	1.37	-
Office Park	1.9	-	-	1.9	-	-	-	-	-	487	-	487	-	1.30	0.47	0.08	-
Regional Retail	5.6	-	-	5.6	-	-	-	-	-	98	98	-	-	3.74	1.28	0.22	-
Strip Commercial	2.1	-	-	2.1	-	-	-	-	-	62	62	-	-	1.42	0.49	0.08	-
Flex Park	3.7	-	-	3.7	-	-	-	-	-	27	-	-	27	2.51	0.86	0.15	-
Industrial Park	27.5	-	-	27.5	-	-	-	-	-	201	-	-	201	18.42	6.32	1.10	-
Totals	169.5	-	-	169.5	6,073	310	394	5,370	-	13,145	1,480	11,437	228	114	41	7	-
						5.1%	6.5%	88.4%	0.0%		11.3%	87.0%	1.7%	67.1%	24.1%	4.0%	
						0.0%	0.0%	0.0%	0.0%		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	

Quick Reference Graphs



Active Healthy Living

- The fabric of our community can influence how physically active we are.



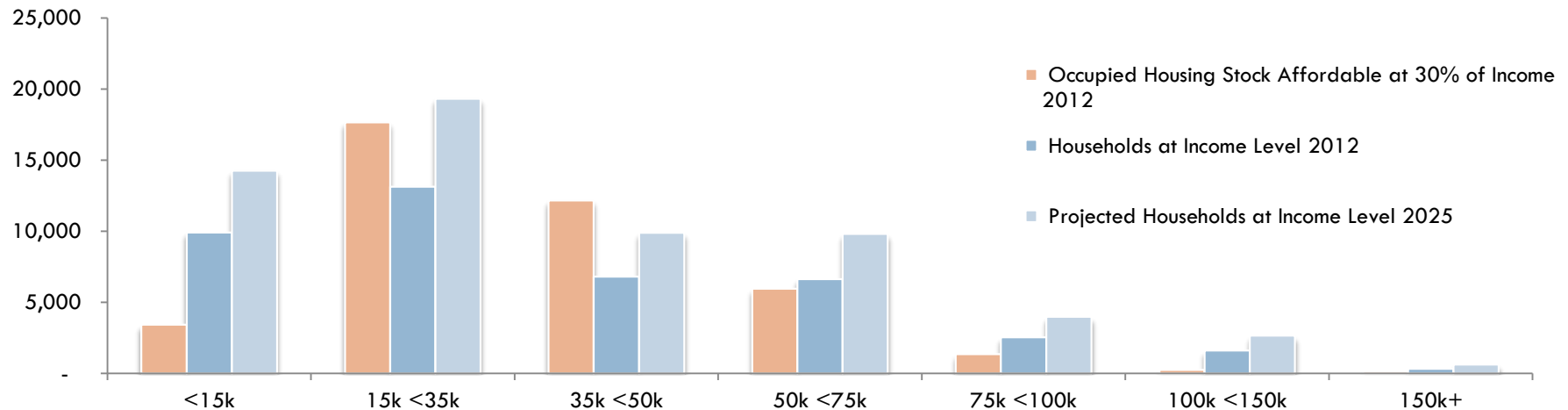
"Walkability" Score for the Region

Housing Affordability and Smart Growth

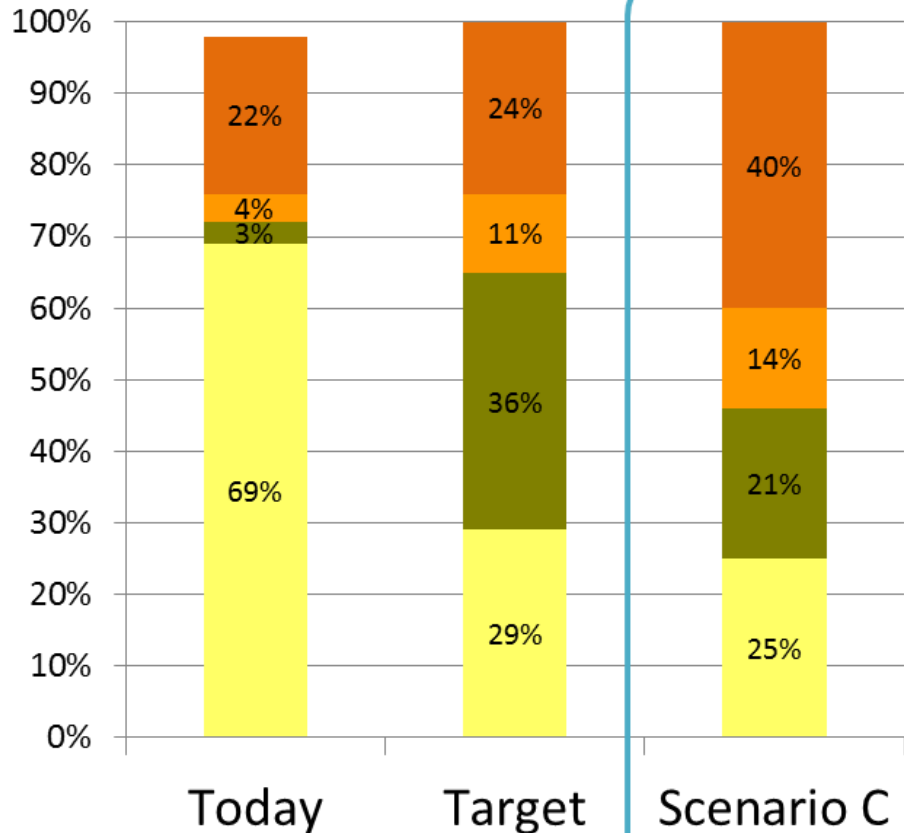
ET can report several metrics of housing affordability:

- Housing costs
- Current and future housing demand for different income levels

Current Rental Households and Housing Stock Compared with Future Rental Demand



Housing to Meet Future Preferences



14%



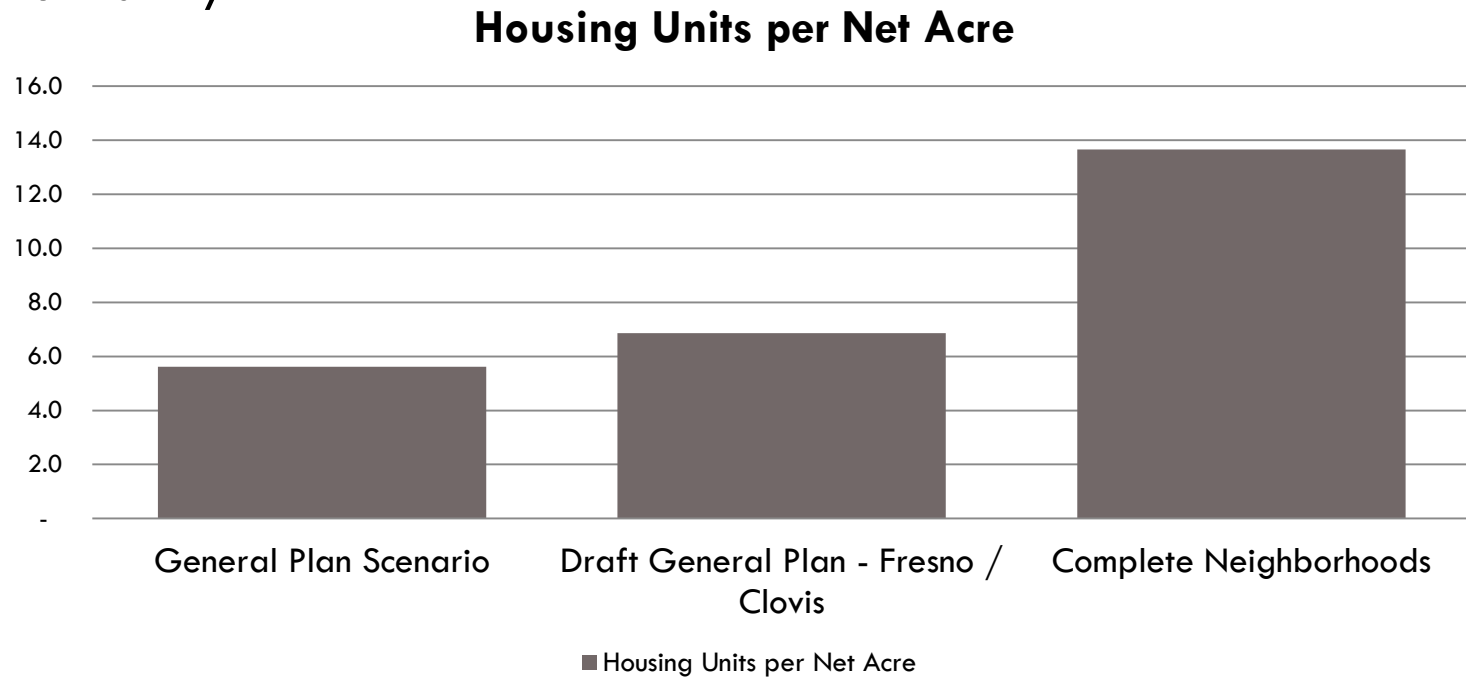
14%



40%

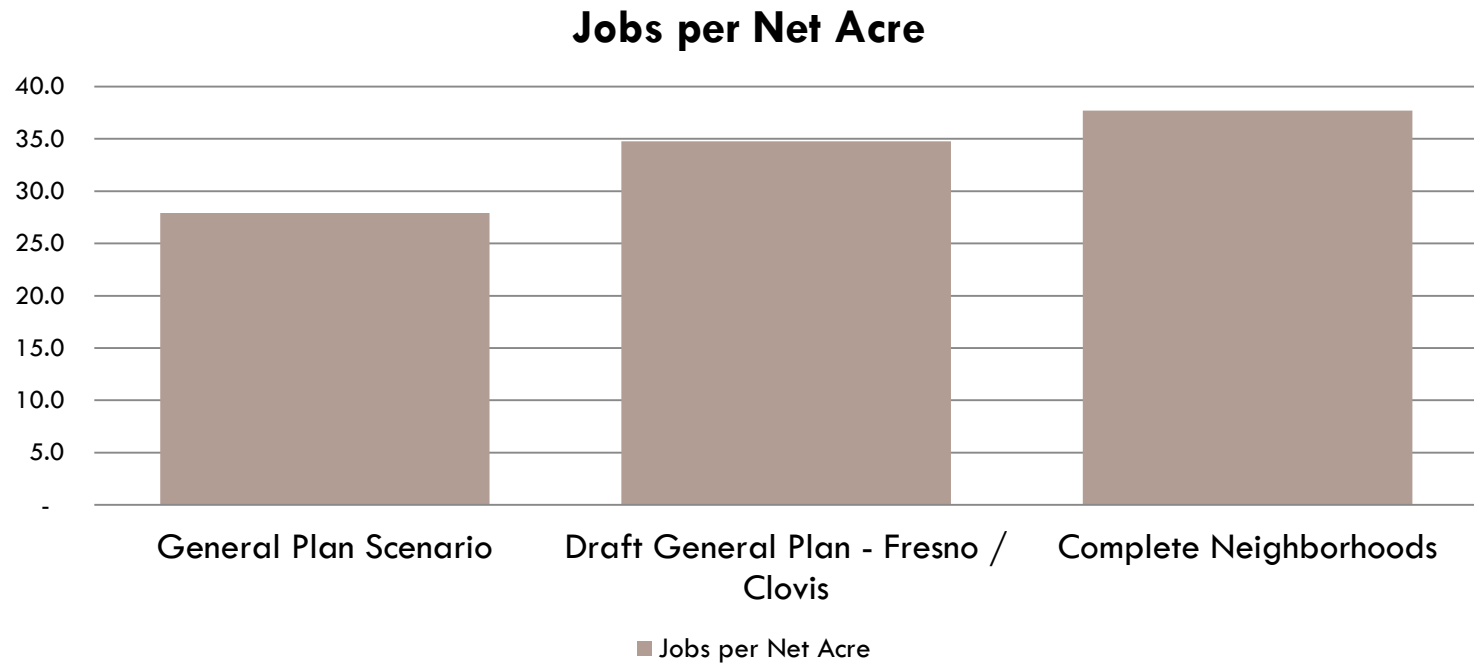
Housing Density

- Continued increase in overall housing density
- Scenario 3: significantly shifts to smaller units and increases modest density multifamily



Job Density

- Interestingly, job density did not increase significantly.



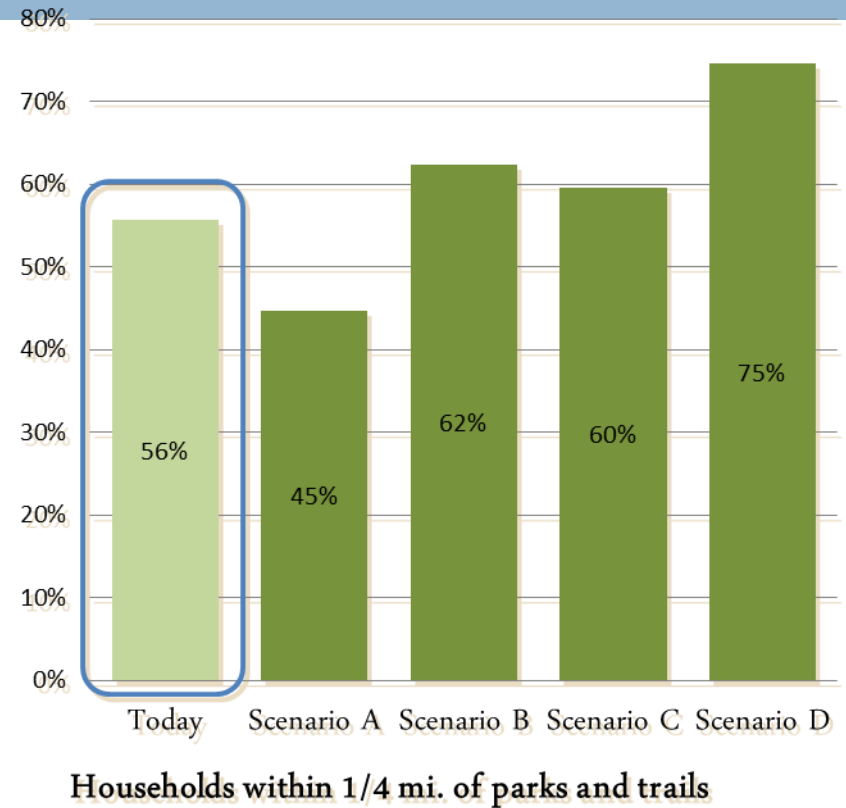
Parking Management

- Finding efficiencies with the ULI shared parking tool

Land Uses by Time of Peak Parking and Demand		
Weekday	Evening	Weekend
<ul style="list-style-type: none">• Banks and public services• Offices and other employment centers• Park & Ride facilities• Schools, daycare centers and colleges• Factories and distribution centers• Medical clinics• Professional services	<ul style="list-style-type: none">• Auditoriums• Bars and dance halls• Meeting halls• Restaurants• Theaters• Hotels	<ul style="list-style-type: none">• Religious institutions• Parks• Shops and malls

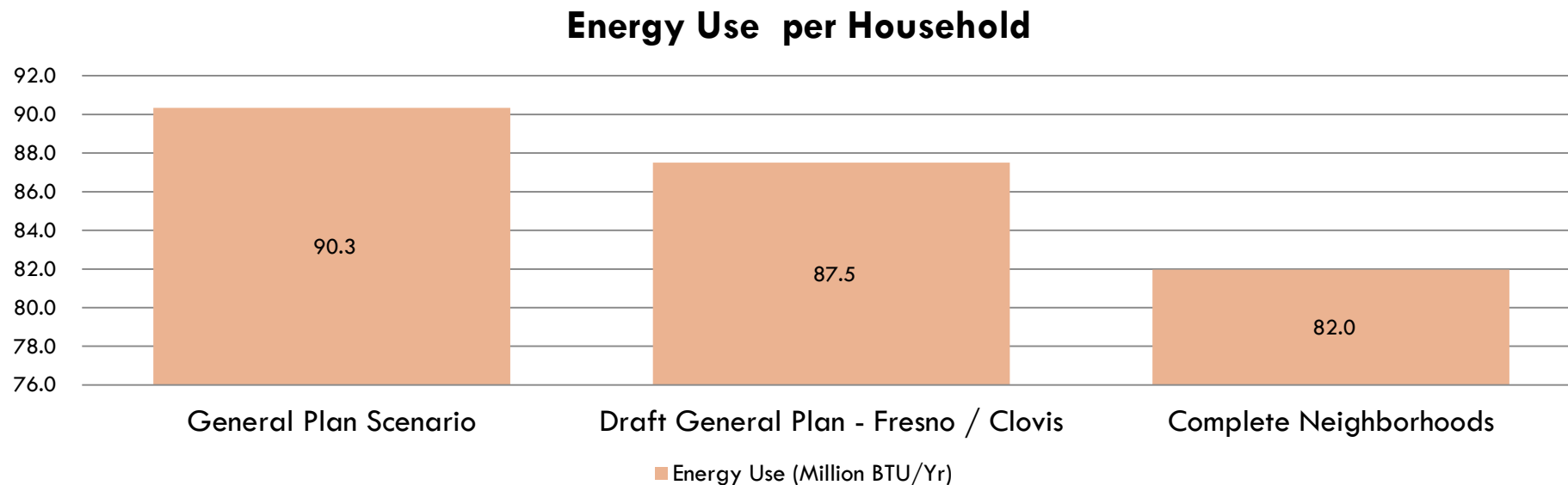
Parks and Green Space

- Assess livability and public health impacts of new development.
- Model green space standards in new development



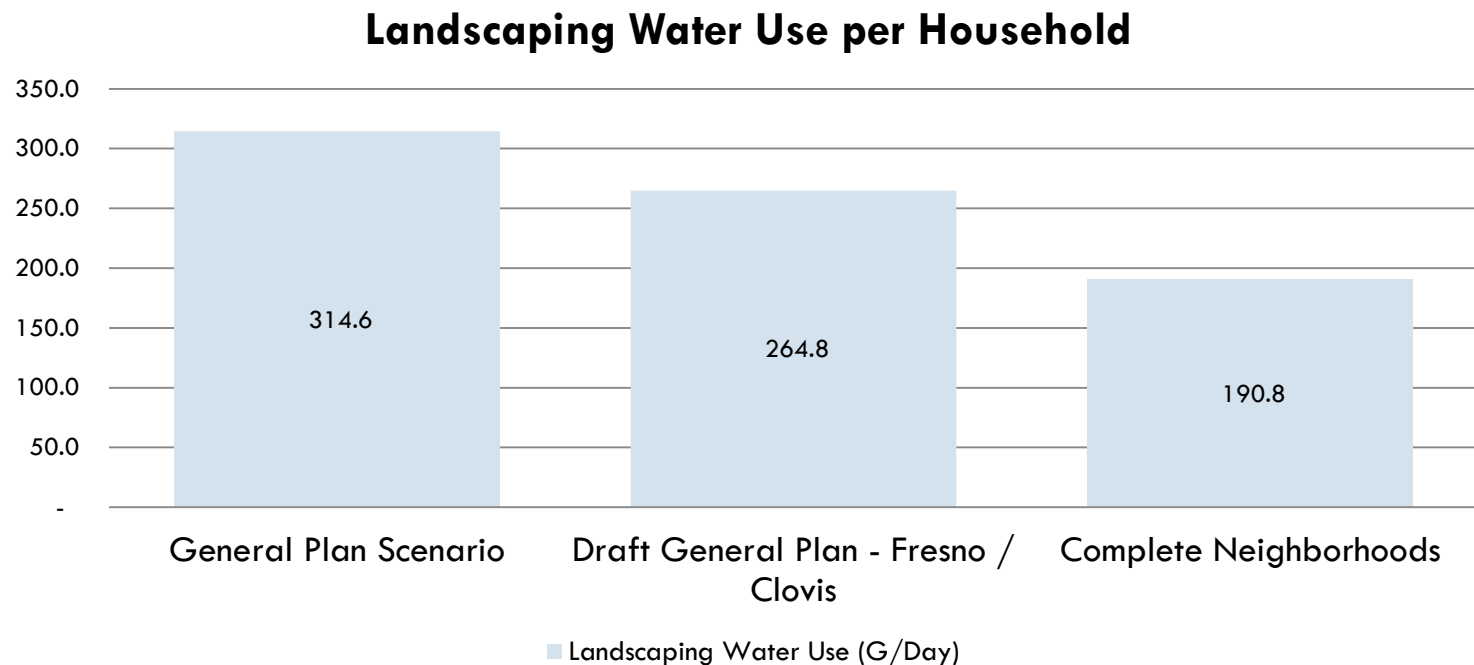
Building Energy Use

- Energy efficiency increases with smaller units and shared walls in multifamily



Landscaping Water Use

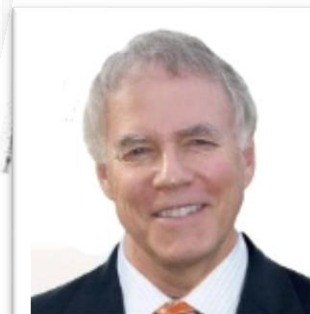
- Shift to smaller lot single family and townhomes results in significant reduction in lawn area between scenarios



The Science of Travel Behavior

Key Factors that Influence Travel Patterns

- Housing density
- Commercial services
- Land use mix
- Employment access
- Urban form
- Access to transit



Reid Ewing
Director of the Metropolitan Research Center
University of Utah

Travel and the Built Environment

A Meta-Analysis

Reid Ewing and Robert Cervero

Some of today's most vexing problems, including sprawl, congestion, oil dependence, and climate change, are prompting states and localities to turn to land planning and urban design to curb automobile use. Many concluded that roads cannot be built fast enough to keep up with rising demand induced by the road building itself and the sprawl it spawns. The purpose of this meta-analysis is to summarize empirical results on the relationship between the built environment and travel, especially network

Keywords: vehicle miles traveled (VMT); walking; transit; built environment; effect sizes

Introduction

Land use

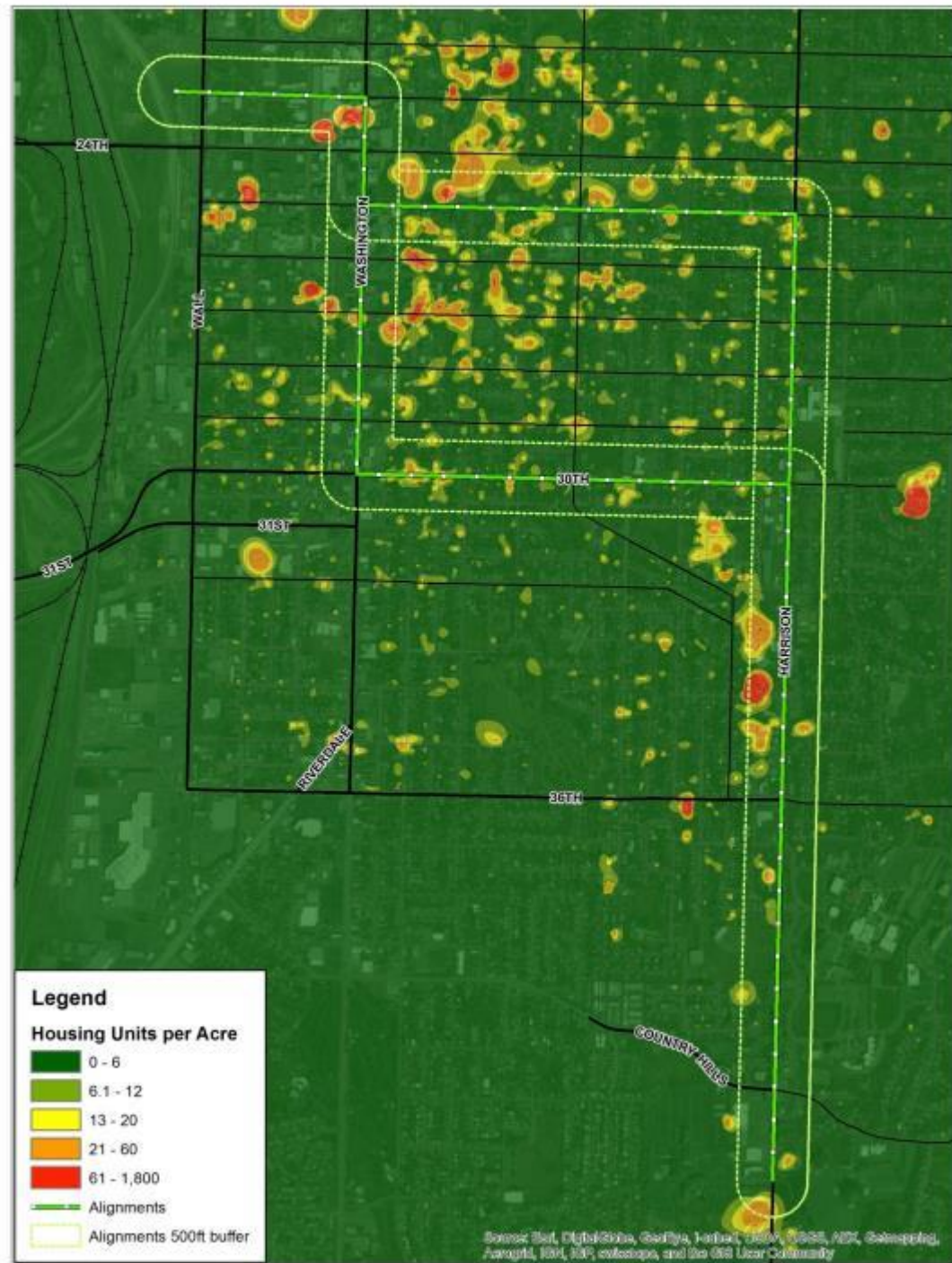
...the relationship between the built environment and travel, especially network

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...the relationship between the built environment and travel, especially network

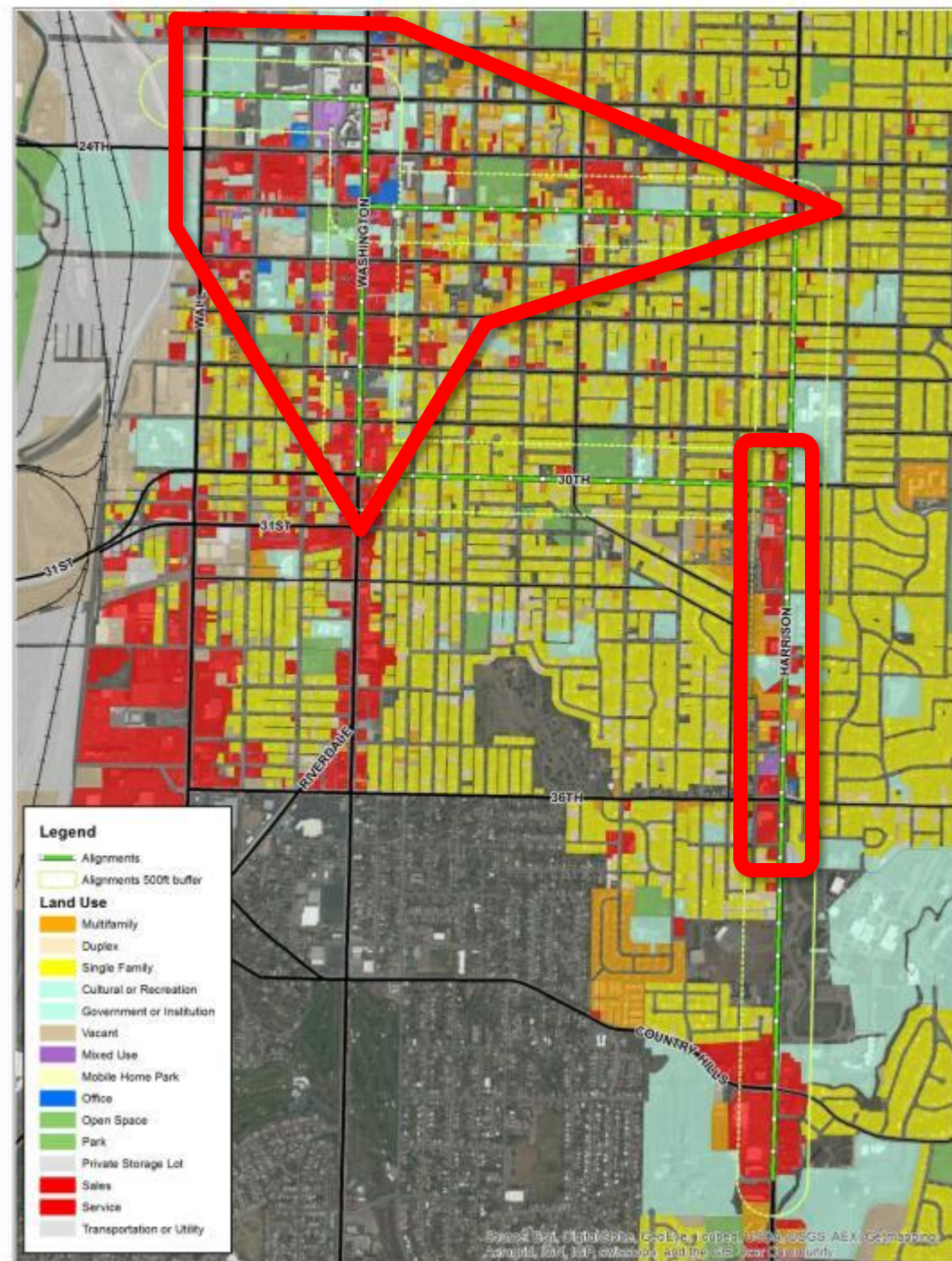
Current Residential Density

- Higher density residential surrounding 25th and Harrison south of 30th
- Legacy apartments and larger single family converted to multi-unit
- Student apartments around Harrison south of 30th



Current Land Uses

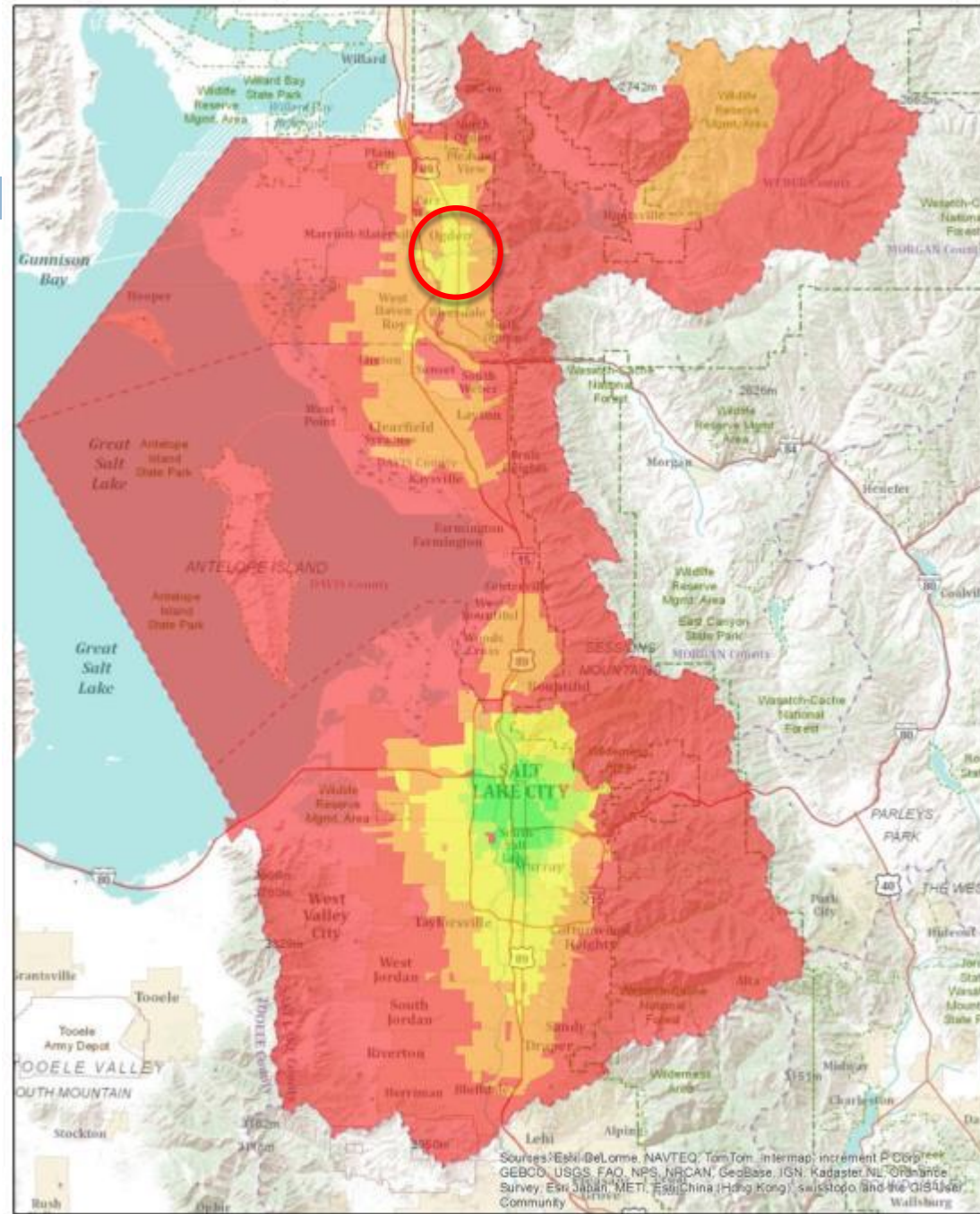
- Commercial and limited mixed-use along Washington
- Variety of uses and building types along 25th
- Predominantly single family along Harrison north of 30th
- Mix of commercial and multifamily uses on Harrison south of 30th



Employment Access

- Good regional employment access in central Ogden

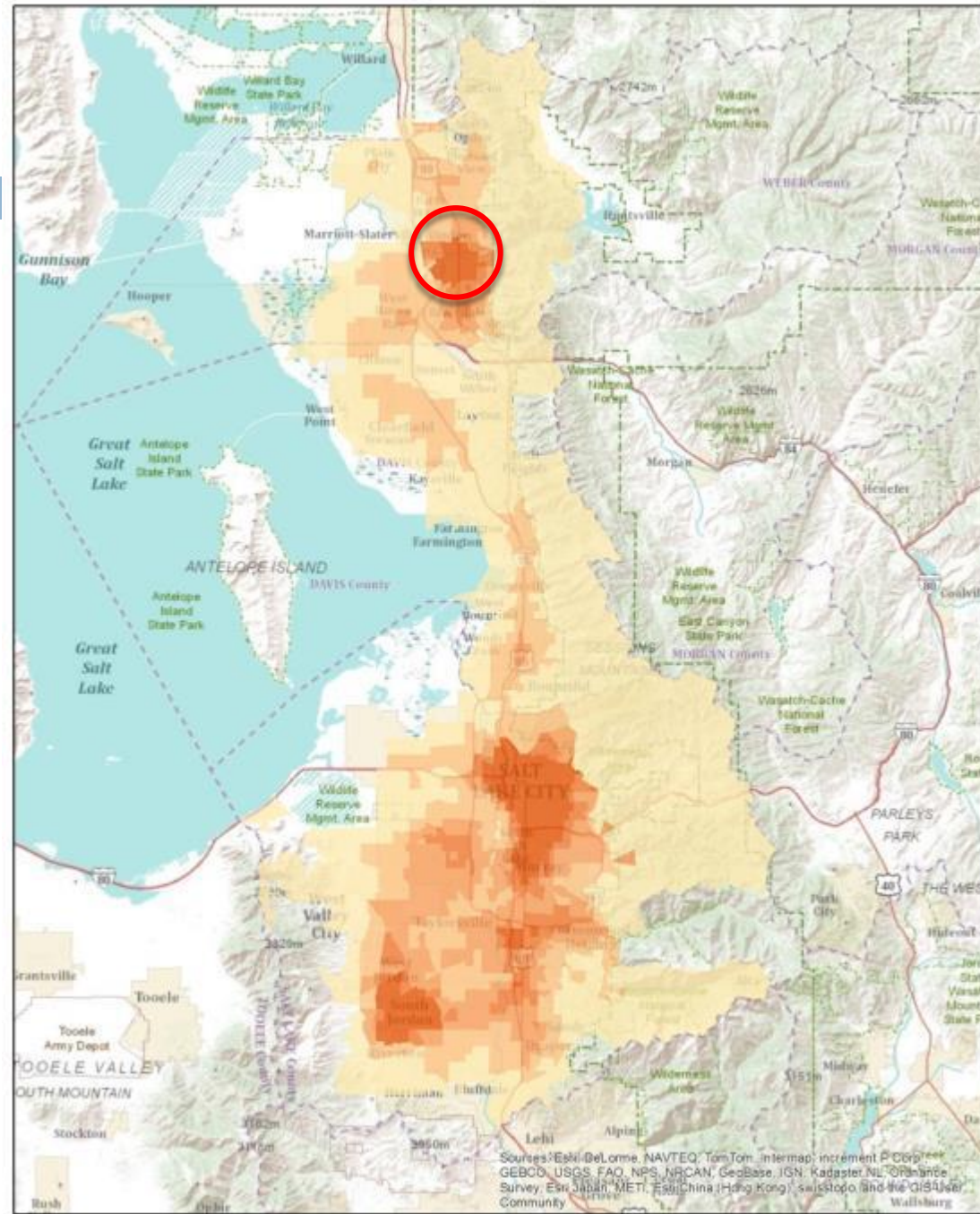
Regional Employment Accessible within a 10 Minute Auto Trip



Transit Stop Density

- High level of transit access

Transit Stop Density within 1 Mile



Equitable Impact Fees

- ❑ One size fits all
- ❑ No spatial consideration
- ❑ Disproportionately impacts infill and redevelopment

ation

A		B		Jsc
132	STORM QUANTITY (infrastructure revenue)	Small Pad Retail		
133		Suburban office		\$
134		Suburban office		\$
135		Suburban office		\$
136		Light Industrial / Tech Flex		\$
137		Light Industrial / Tech Flex		\$
138				
139	Fee Type	Use Type		Fee
140	SANITARY SEWER (infrastructure revenue)	Single Family		\$
141		Townhomes		\$ 4,900.00
142		Garden Apartments		\$ 4,900.00
143		Small Pad Retail		\$ 4,900.00
144		Suburban office		\$ 4,900.00
145		Suburban office		\$ 4,900.00
146		Suburban office		\$ 4,900.00
147		Light Industrial / Tech Flex		\$ 4,900.00
148		Light Industrial / Tech Flex		\$ 4,900.00
149				
150	Fee type	Use		Fee
151	PARKS	Single Family		\$
152		Townhomes		\$ 4,637.00
153		Garden Apartments		\$ 4,637.00
154		Small Pad Retail		\$ 4,637.00
155		Suburban office		\$ -
156		Suburban office		\$ -
157		Suburban office		\$ -
158		Light Industrial / Tech Flex		\$ -
159		Light Industrial / Tech Flex		\$ -
160				

The World is Not Flat

