

Using Build-Out Modeling to Manage Growth

Rocky Mountain Land Use Institute

Friday March 7, 2008

University of Denver-Sturm College of Law-
2255 East Evans Ave. at University

DONLEY & ASSOCIATES INC.

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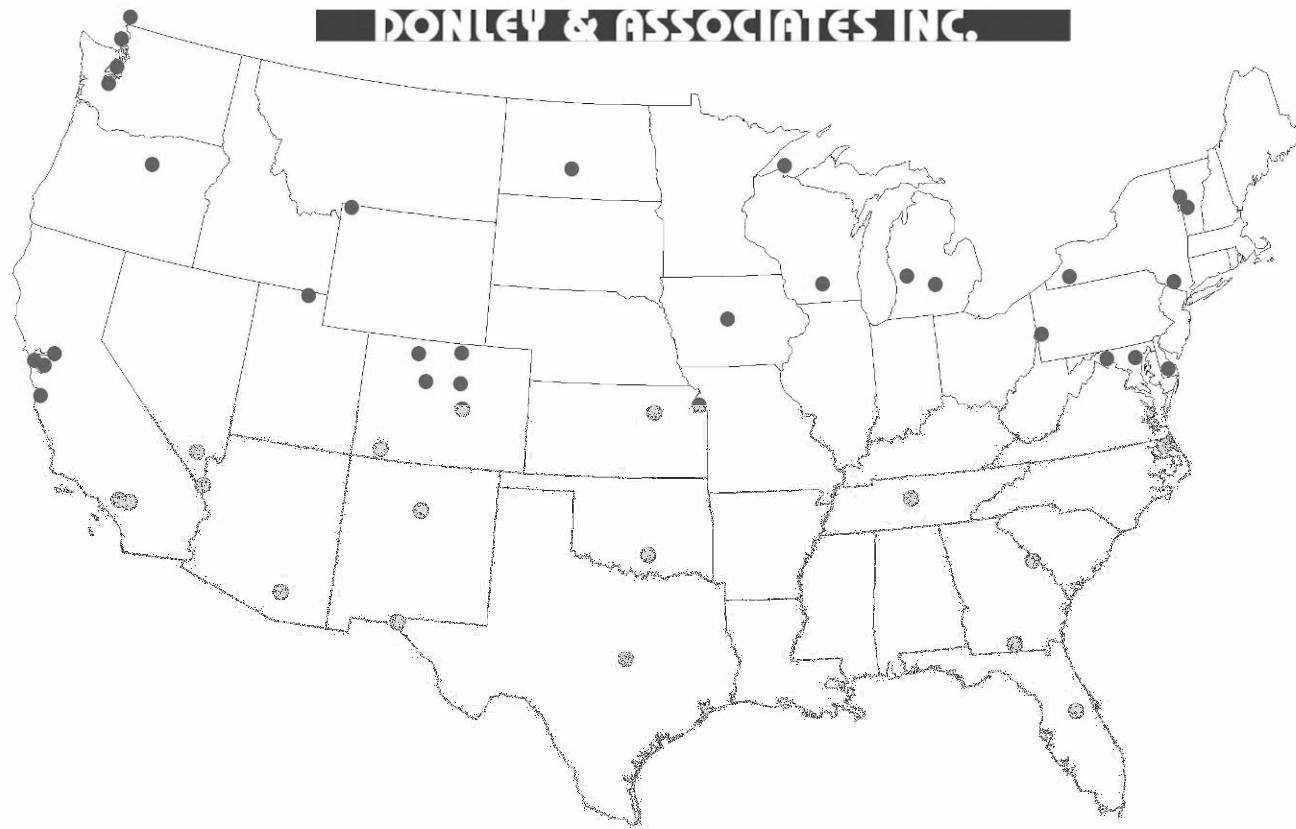
Learn about the evolution and application of the build-out model that addresses the impacts of rapid development in the Rocky Mountain West. The model was developed by the Lincoln Institute of Land Policy and the Sonoran Institute. Case studies and lessons learned are discussed.

- Andy Laurenzi, Program Director-Land & Water Policy Program, Sonoran Institute, Scottsdale, AZ;
- John DiBari, Research Manager -Land & Water Policy Program, Sonoran Institute, Missoula, MT;
- Charles A. Donley, AICP- Donley & Associates Inc., Colorado Springs, CO

Charles A. Donley, AICP

- Charles A. Donley, AICP is an urban and regional planner who specializes in creating CommunityViz GIS applications. As CommunityViz Technical Director, he oversaw training, technical support and professional services. Mr. Donley guided the CommunityViz Build-out wizard from conceptualization, to design, to marketing, and actual use. His firm, Donley & Associates Inc. provides services communities, counties, universities, non-profits and planning consultants (www.donleyassociates.com.)

Projects-Charles A. Donley AICP



communityvizTM

Decision-support software

Spatial spreadsheet

ArcView 9.x compatible-GIS

Wizards and Tools

- Build-out
- Suitability
- Allocate
- Impact Analysis
- Visualization



Build-out

- Supply of potential development
- Based on density from zoning or land use
- Not a forecast or land use allocation
- Residential: dwelling units/acre or lot size
- Adjustments: existing, constraints, etc.
- Non-residential (Commercial, Industrial, Public): FAR-floor area ratio

Build-out Wizard

Build-Out Wizard

Density Rules
Density is an indication of the number of buildings per unit area. Provide density rules or numbers for each land-use type.

Click in any field to enter a number or to select an option from a provided drop-down list. You can enter information for dwelling units, floor area, or both.

Designation	Dwelling Units		Floor Area	
	Quantity	Measurement	Quantity	Measurement
COMM	0	None	0.25	FAR
COS	0	None	0	None
HDR	16	DU per acre	0	None
IND	0	None	10000	Floor (feet)
LDR	2	Min. Lot Size	0	None

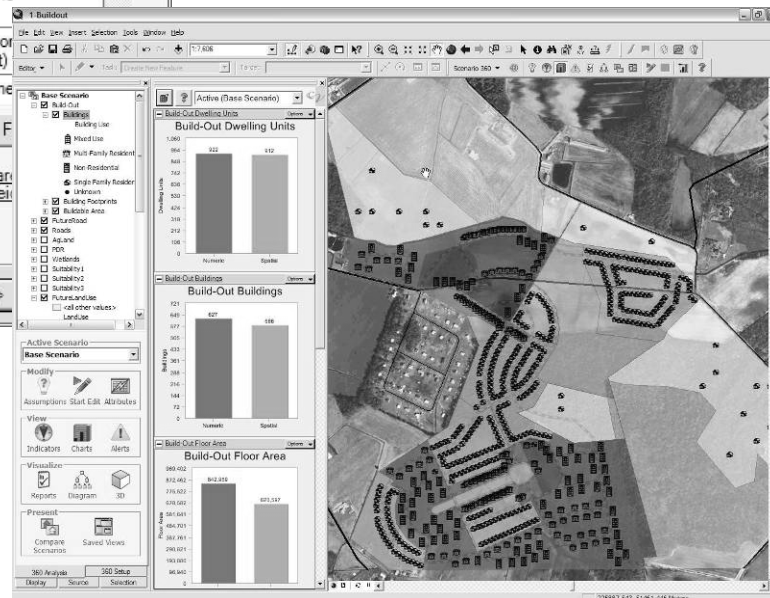
Advanced... Import Table...

☐ One or more designations include mixed-use buildings

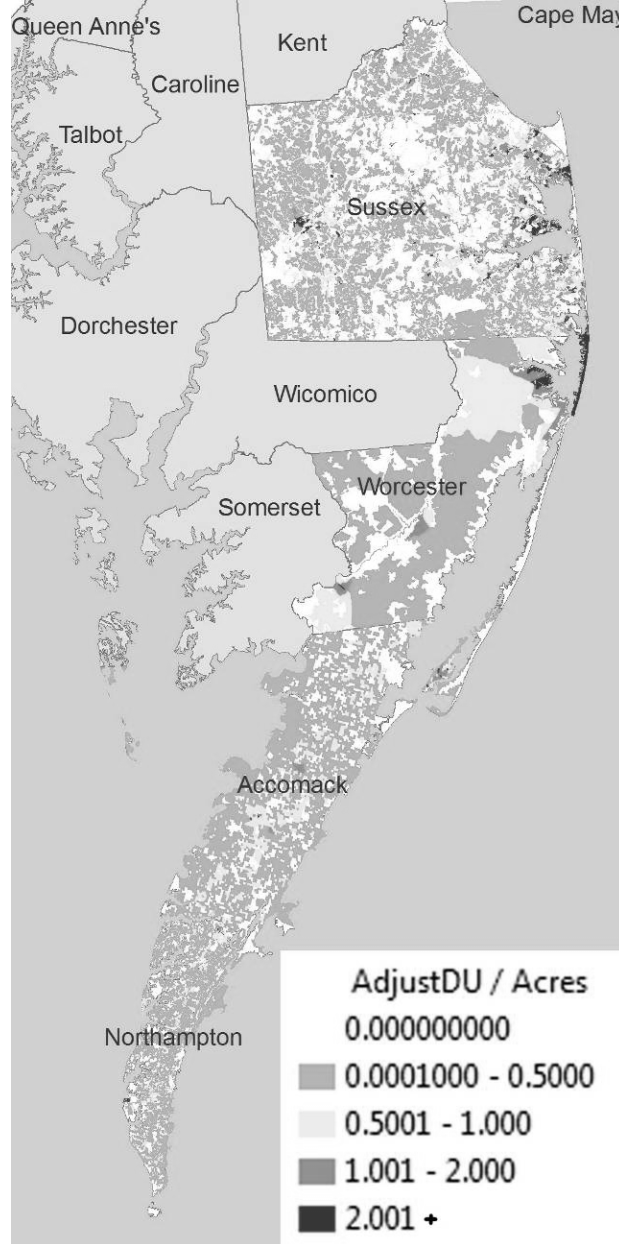
[How do I estimate floor area setbacks and building height?](#)

* This information has been populated using the Advanced option

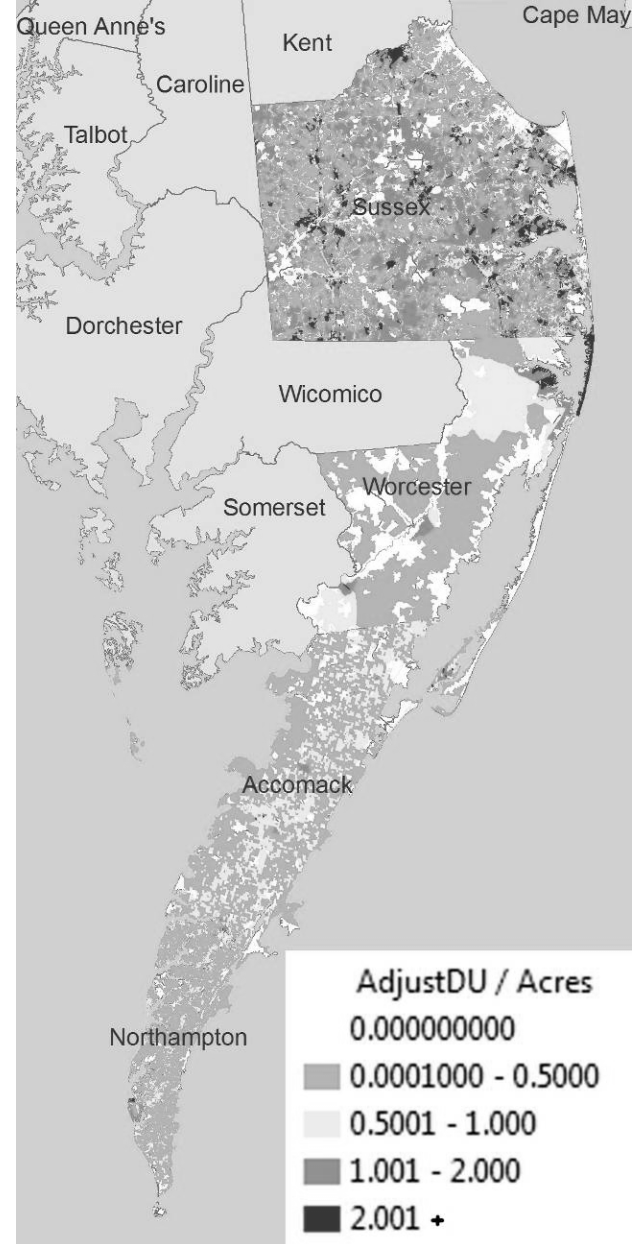
Save & Exit < Back Next >



DAWN House- holds at Build- out



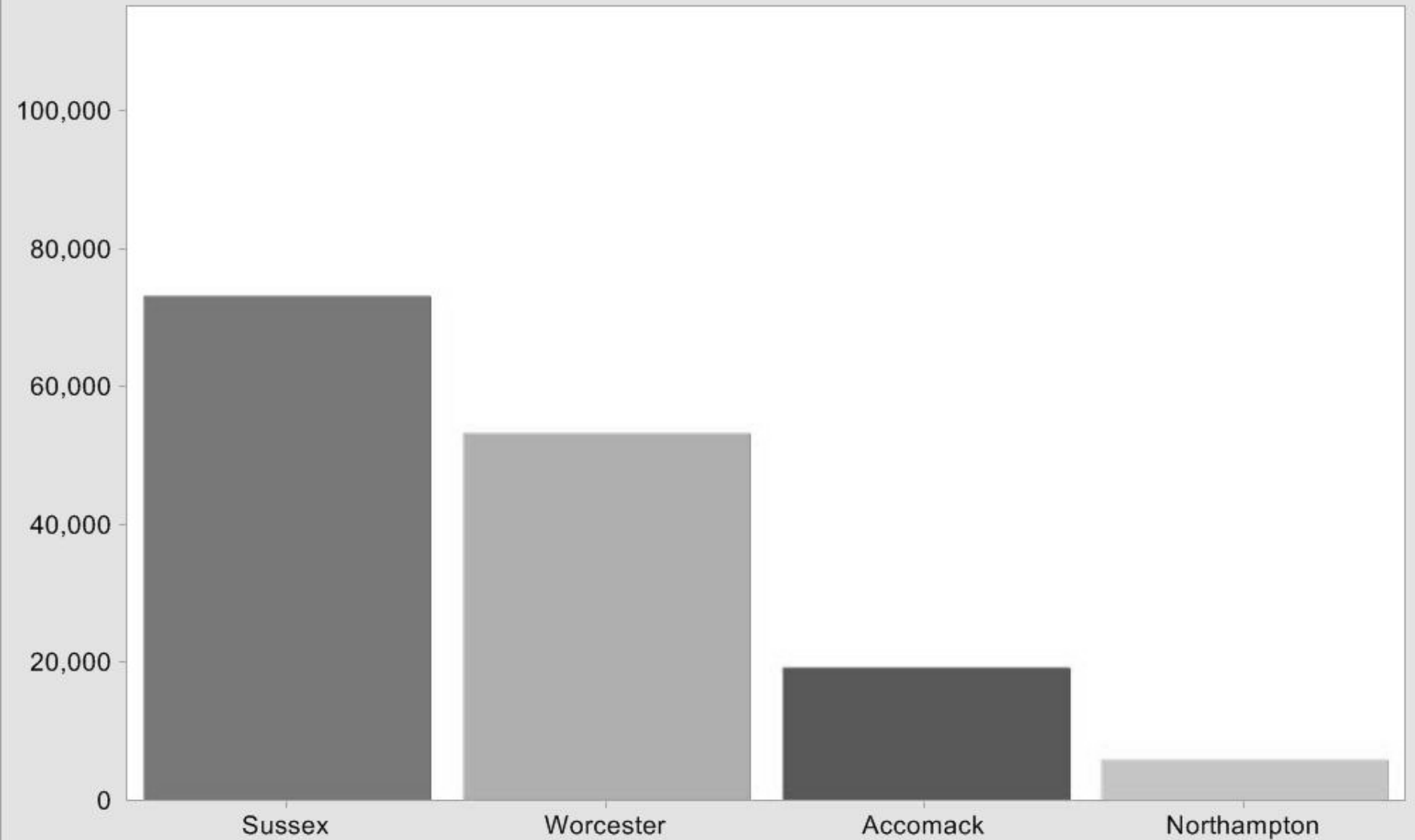
Existing



Buildout

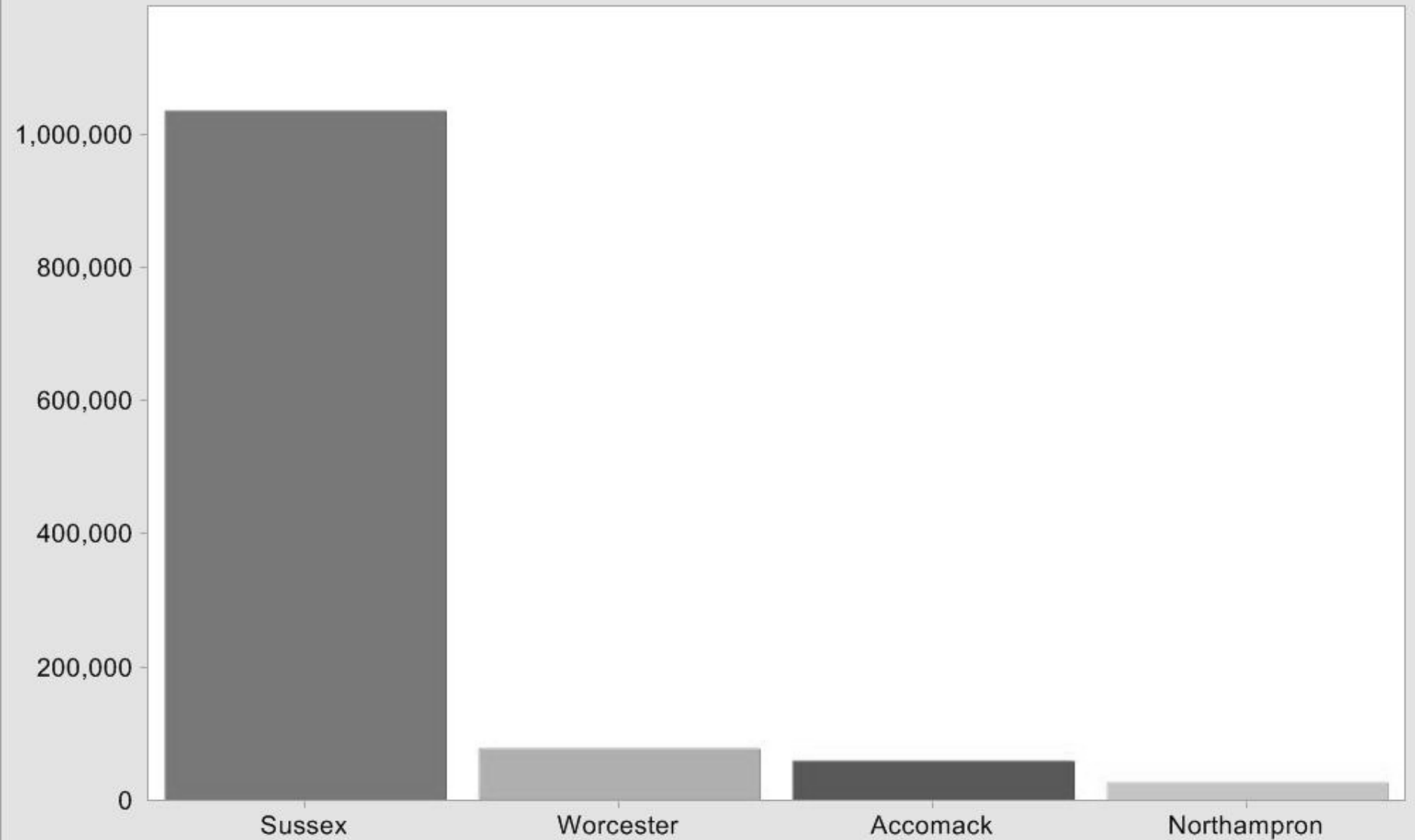
Existing Households

DAWN



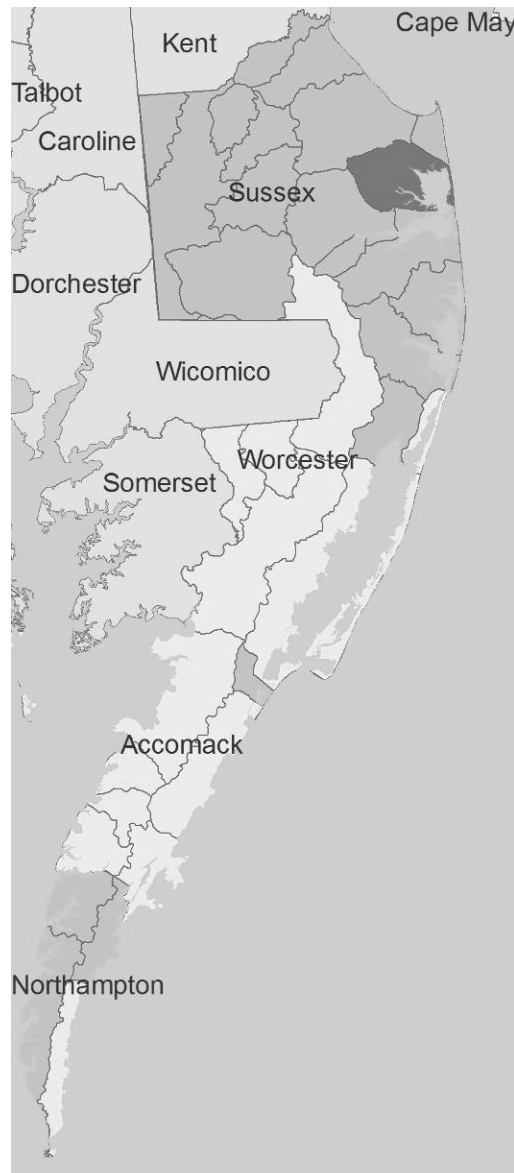
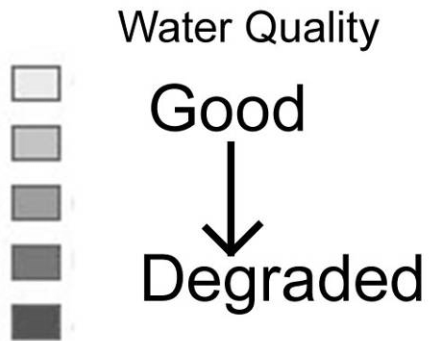
Buildout Households

DAWN

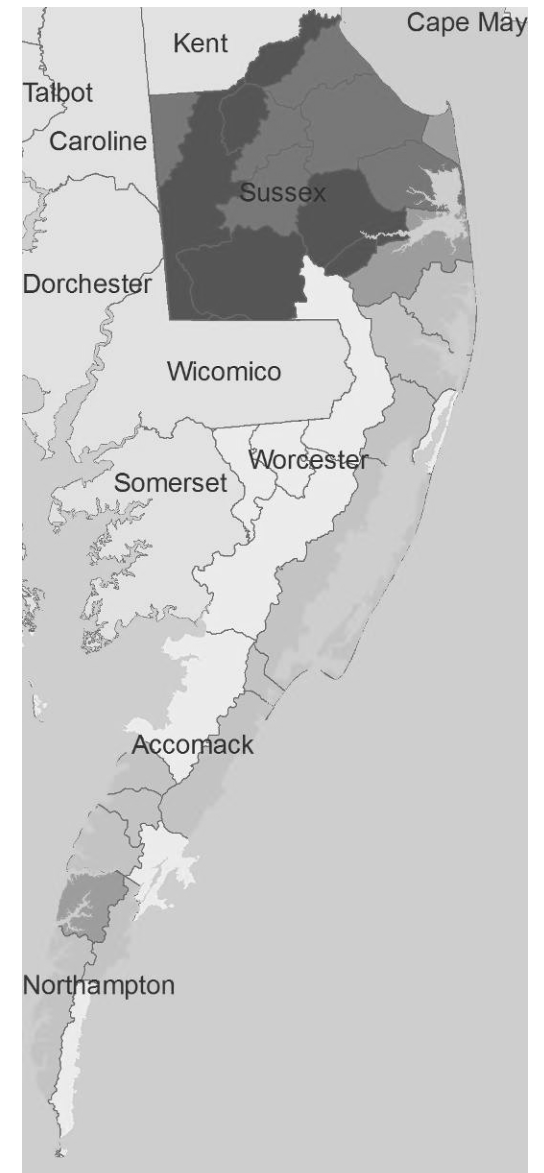


DAWN Watershed

Total Nitrogen



Existing



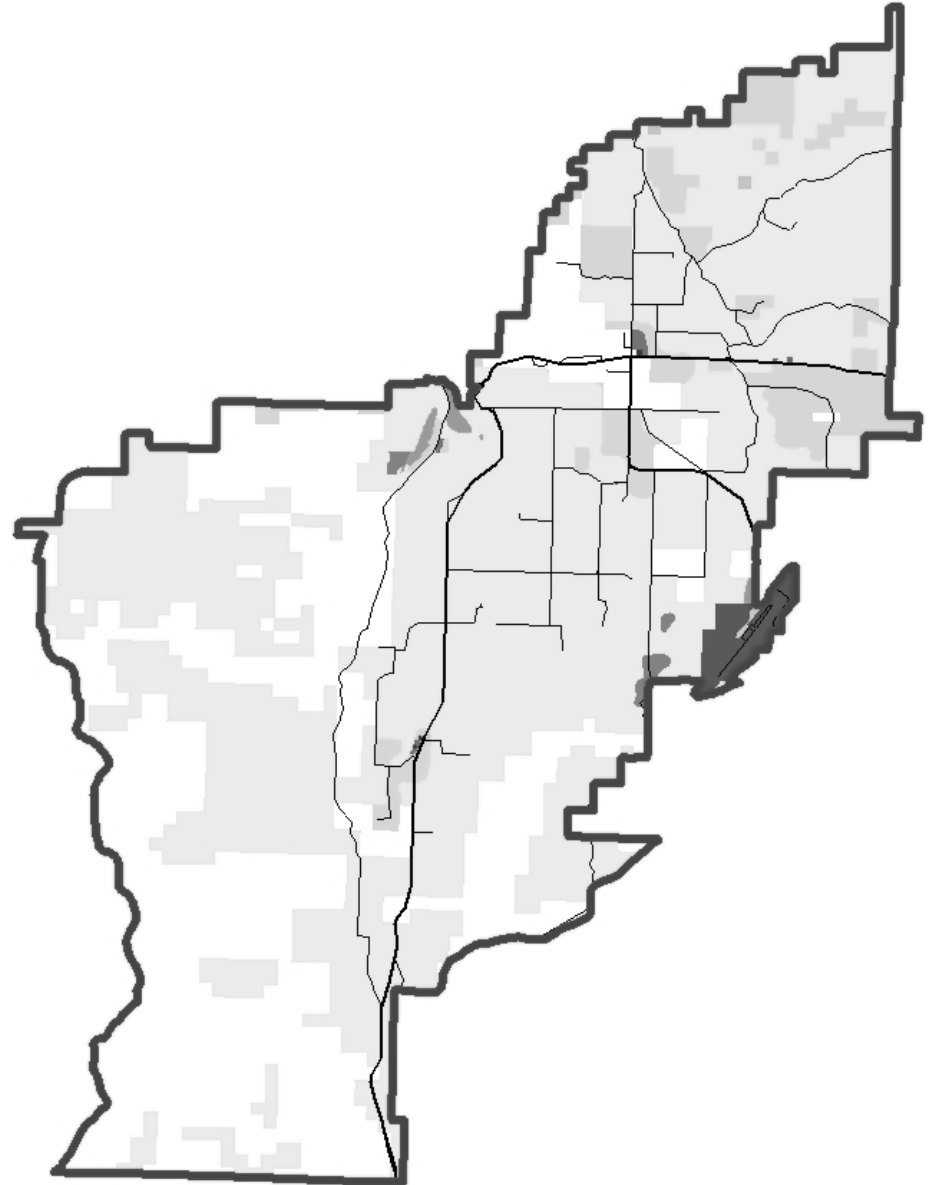
Buildout

Land Use Allocation

- Assign growth by small area over time
- Supply: build-out results
- Demand: forecast of growth for region
- Forecast: jobs driven
- Scoring: relative attractiveness- gravity
- Factors: proximity to major roads, urban services, employment, amenities
- CommunityViz Allocate & Suitability Tools

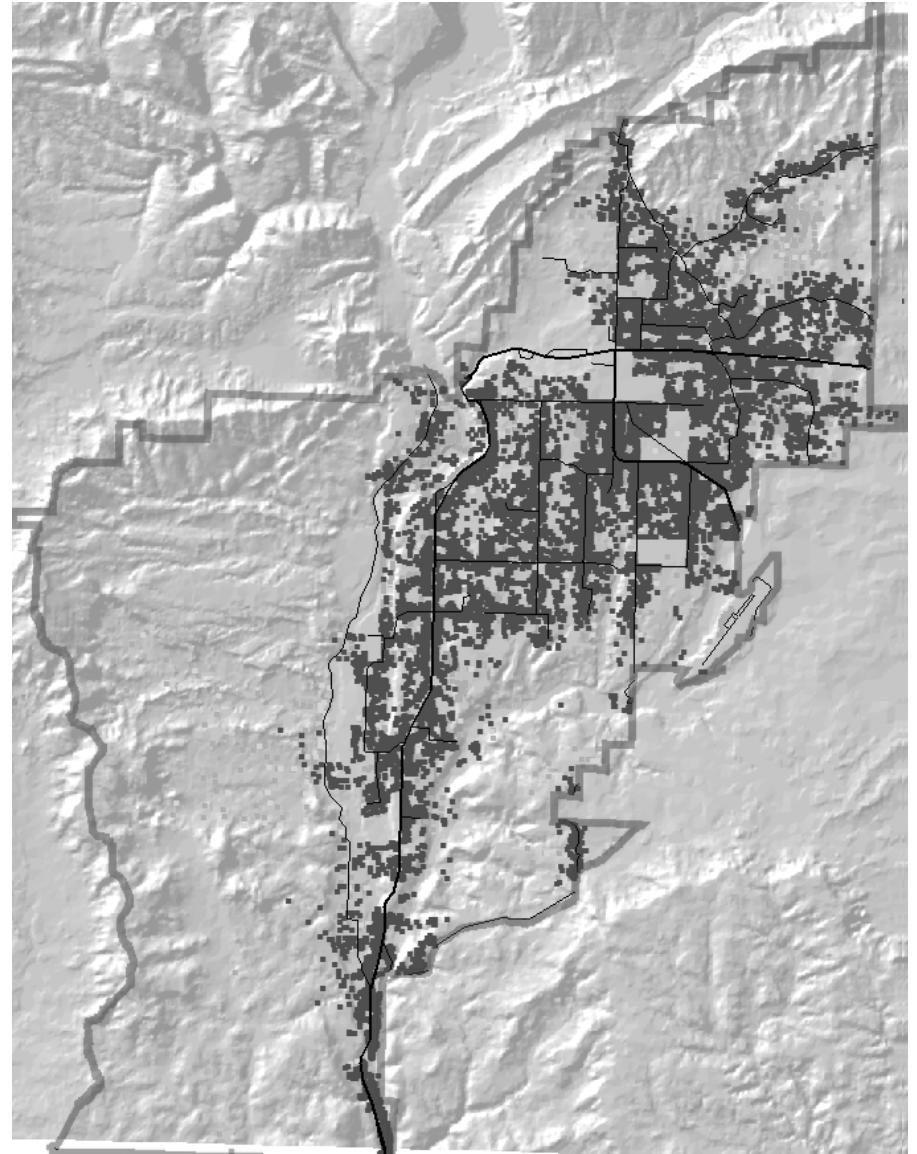
Scenarios

- Florida Mesa District Plan
- Vary development potential
- Range from growth controlled to Market-drive



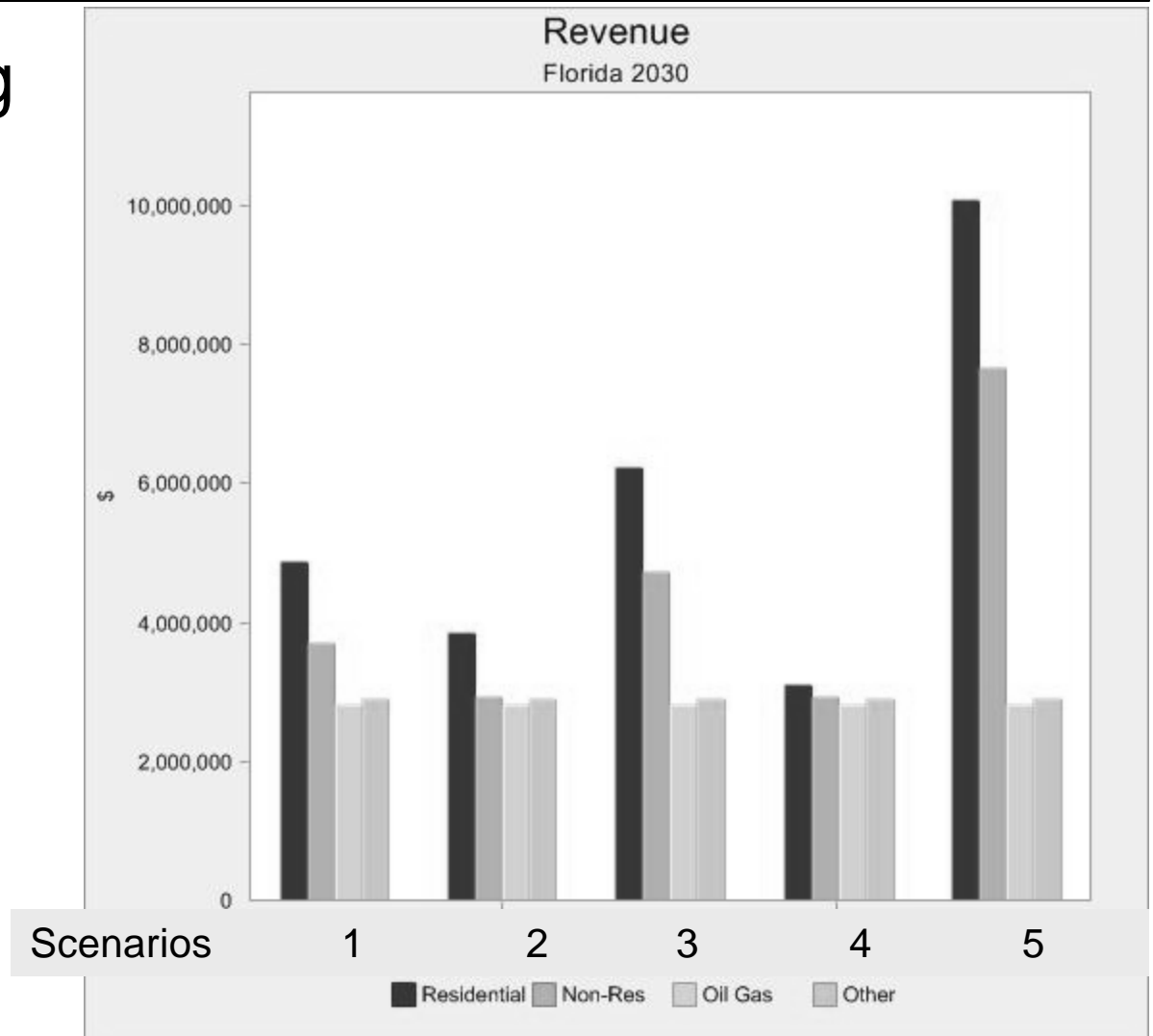
Compare Dwelling Units

- Scenario 1-Current Florida District Plan
- Scenario 2-Nodes
- Scenario 3-Revisions
- Scenario 4-Low Growth
- Scenario 5-Market Driven



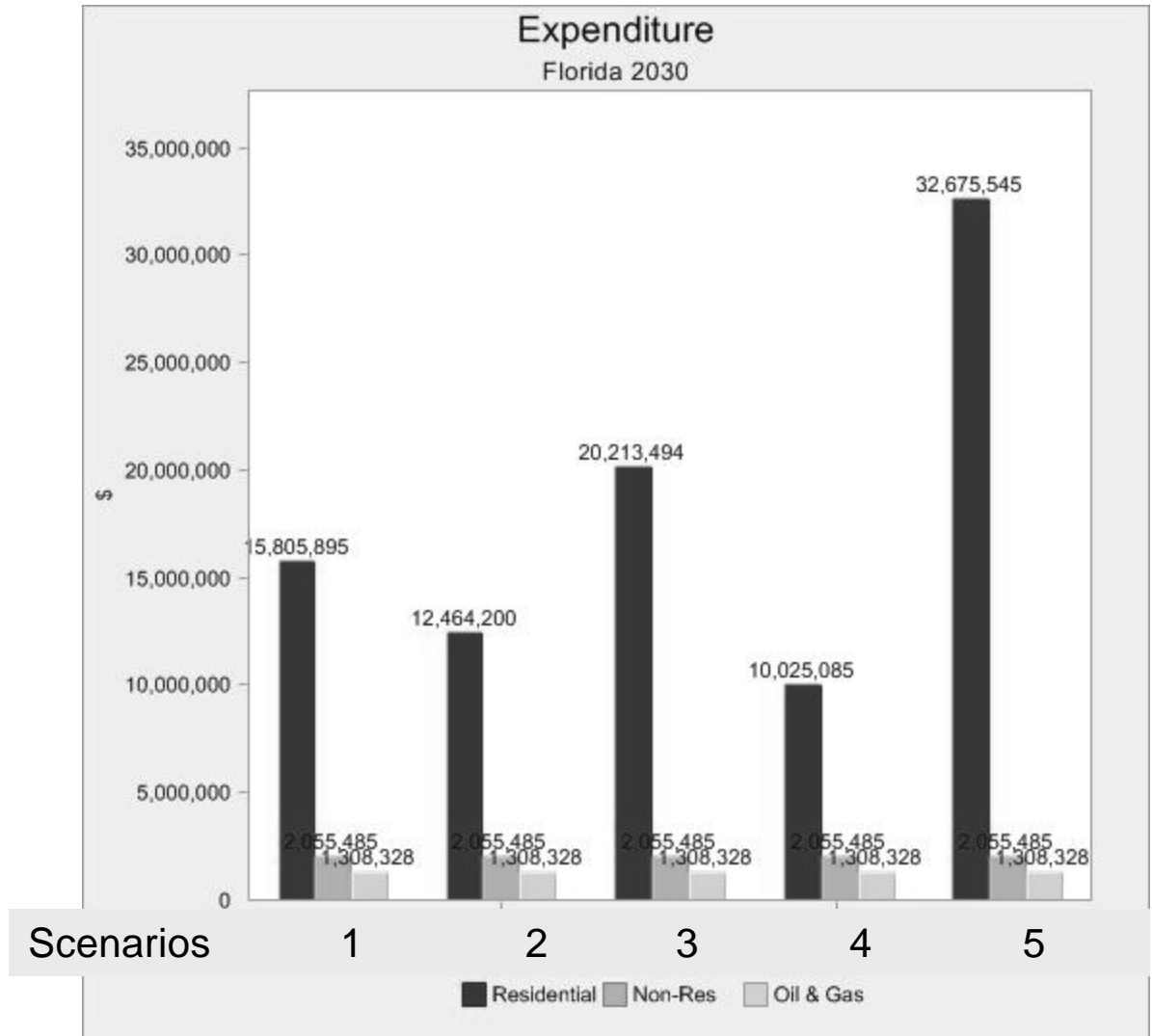
Florida Mesa Revenue

- \$664/dwelling unit
- Non-residential grows at population rate
- Oil & Gas unchanged
- Other unchanged



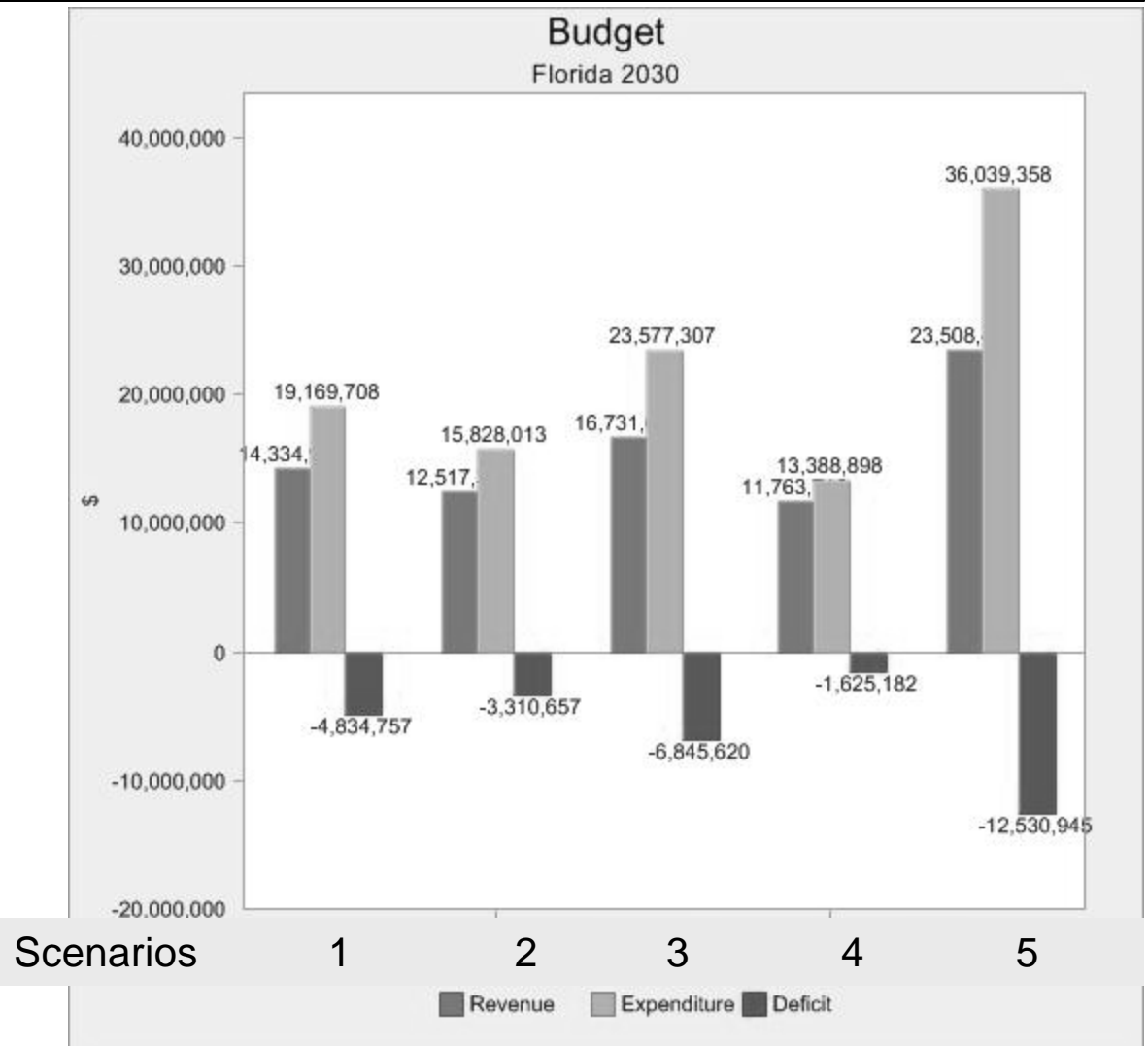
Florida Mesa Expenditure

- \$2149/
dwelling unit
- Non-
residential
grows with
population
rate
- Oil & Gas
unchanged



Florida Mesa Budget

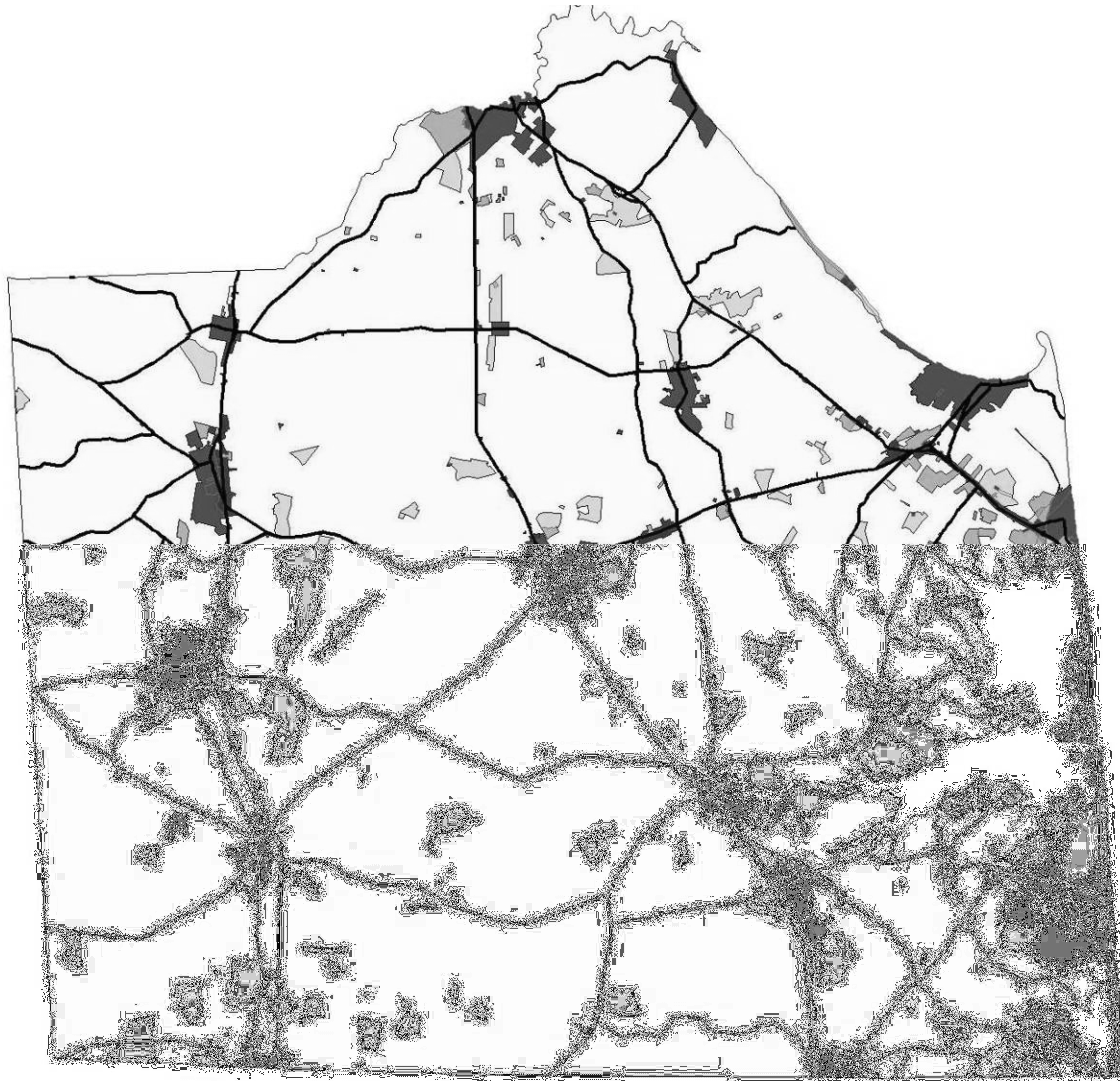
- Florida budget share is 14.7% of La Plata County
- Oil & Gas net revenues diluted by additional residential



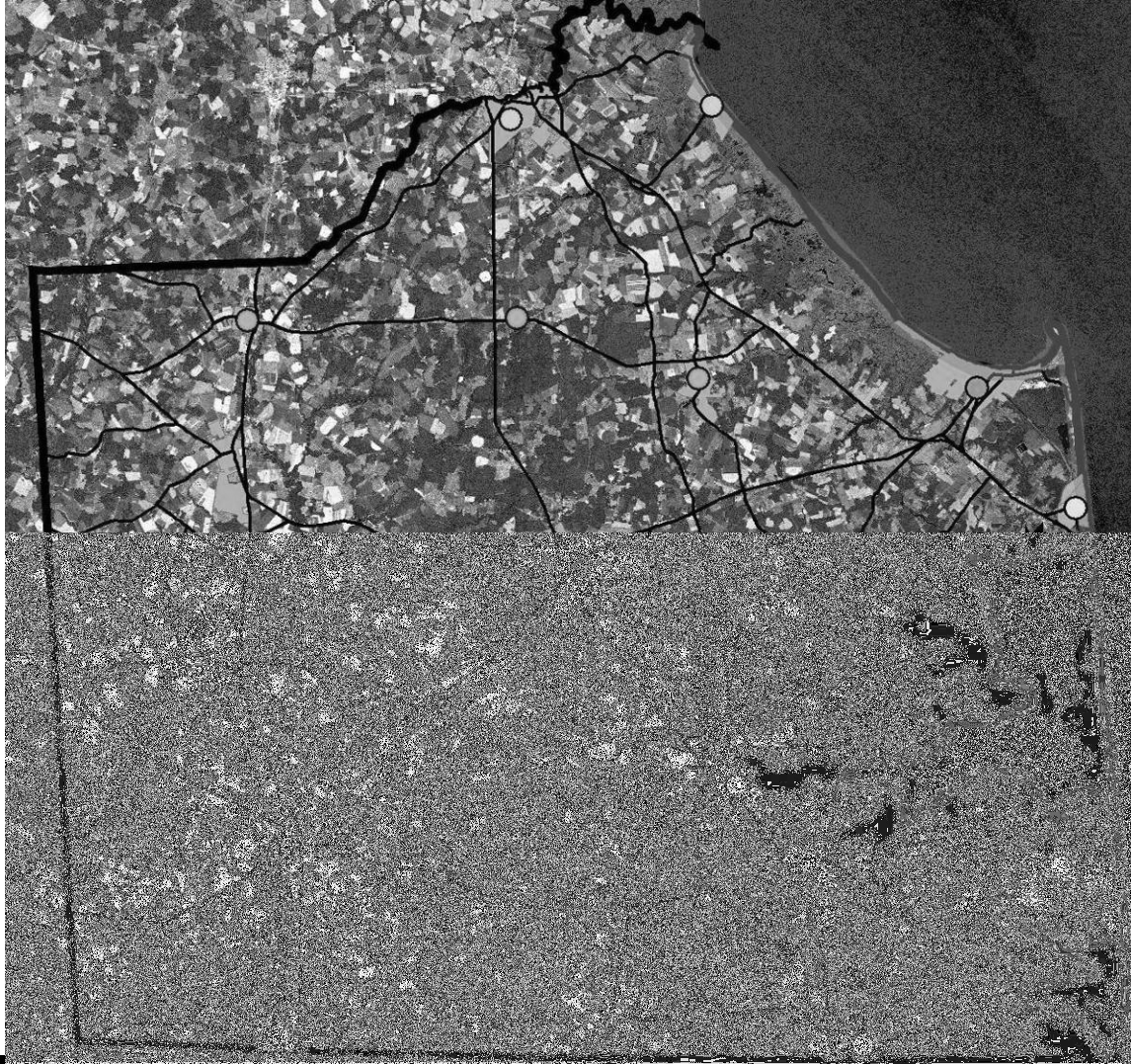
Basis or Unit of Analysis

- Florida Mesa: Build-out results- buildings
- Parcels: existing units, development basis
- Balance detail with processing limits
- Relevance to development pattern/impact
- Census blocks: include existing units
- TAZs: traffic analysis zones

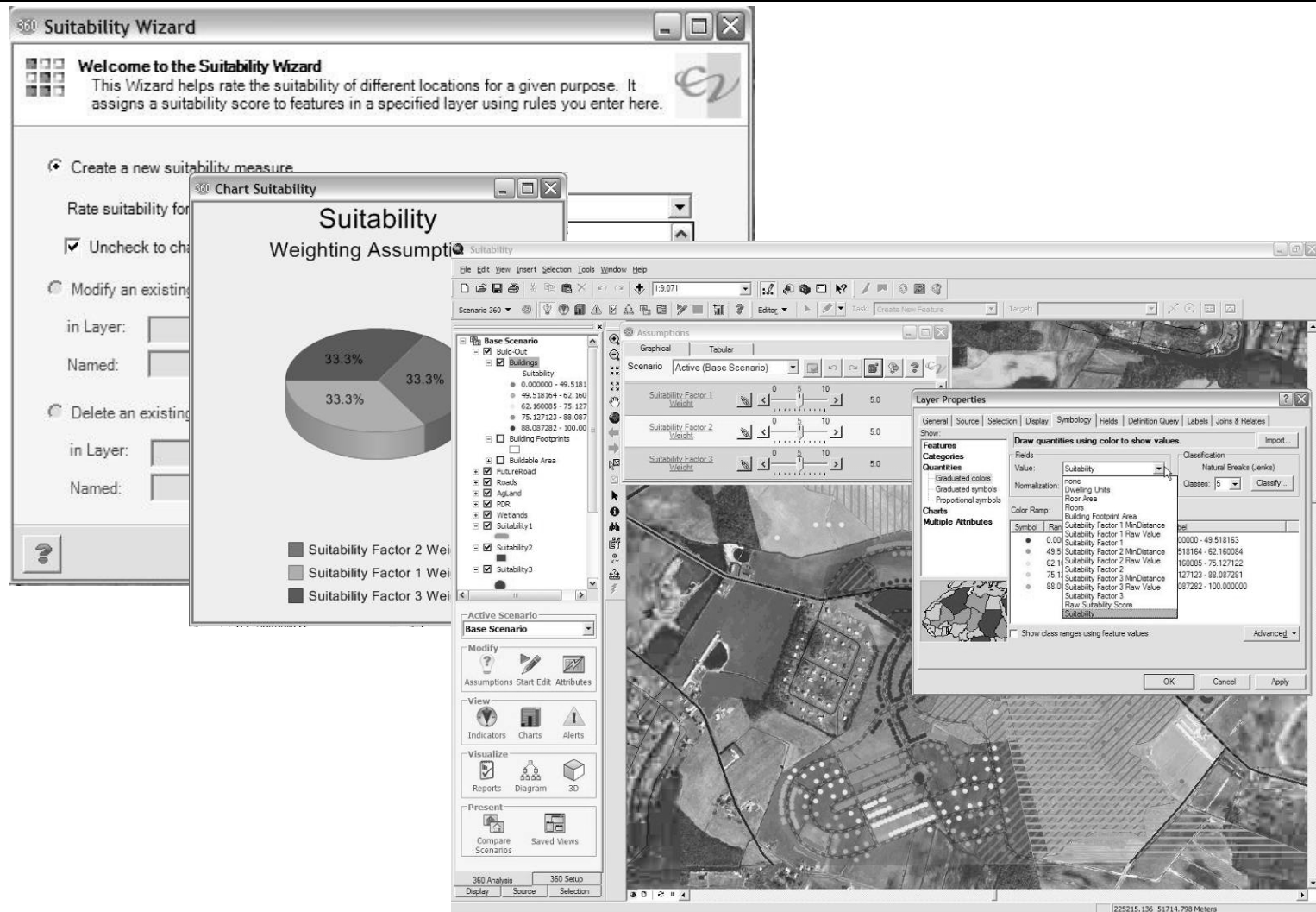
Build-out: Sussex, DE



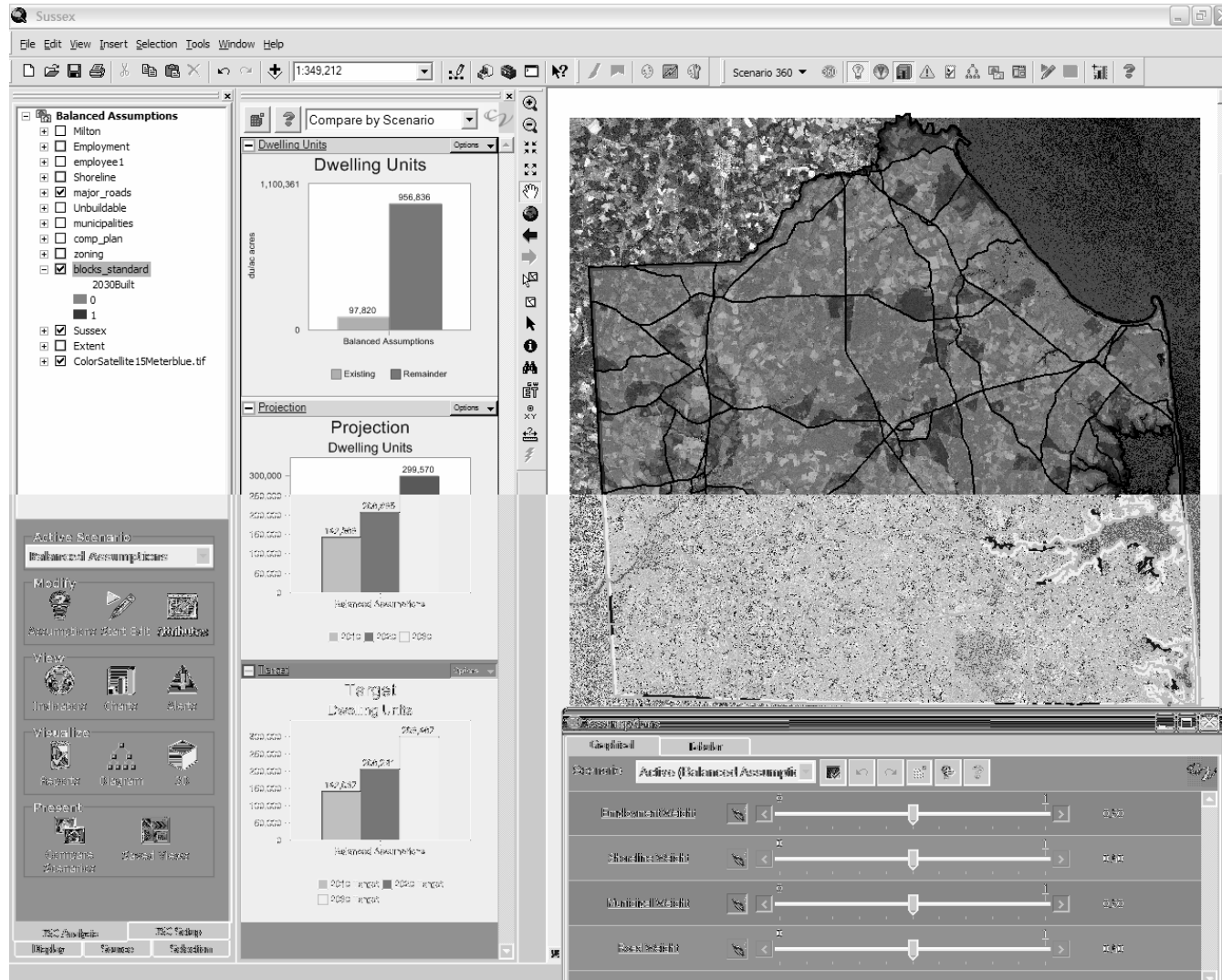
Sussex: Allocate Factors



Suitability Analysis



Sussex: Land Use Allocation



CV-Google Earth Build-out



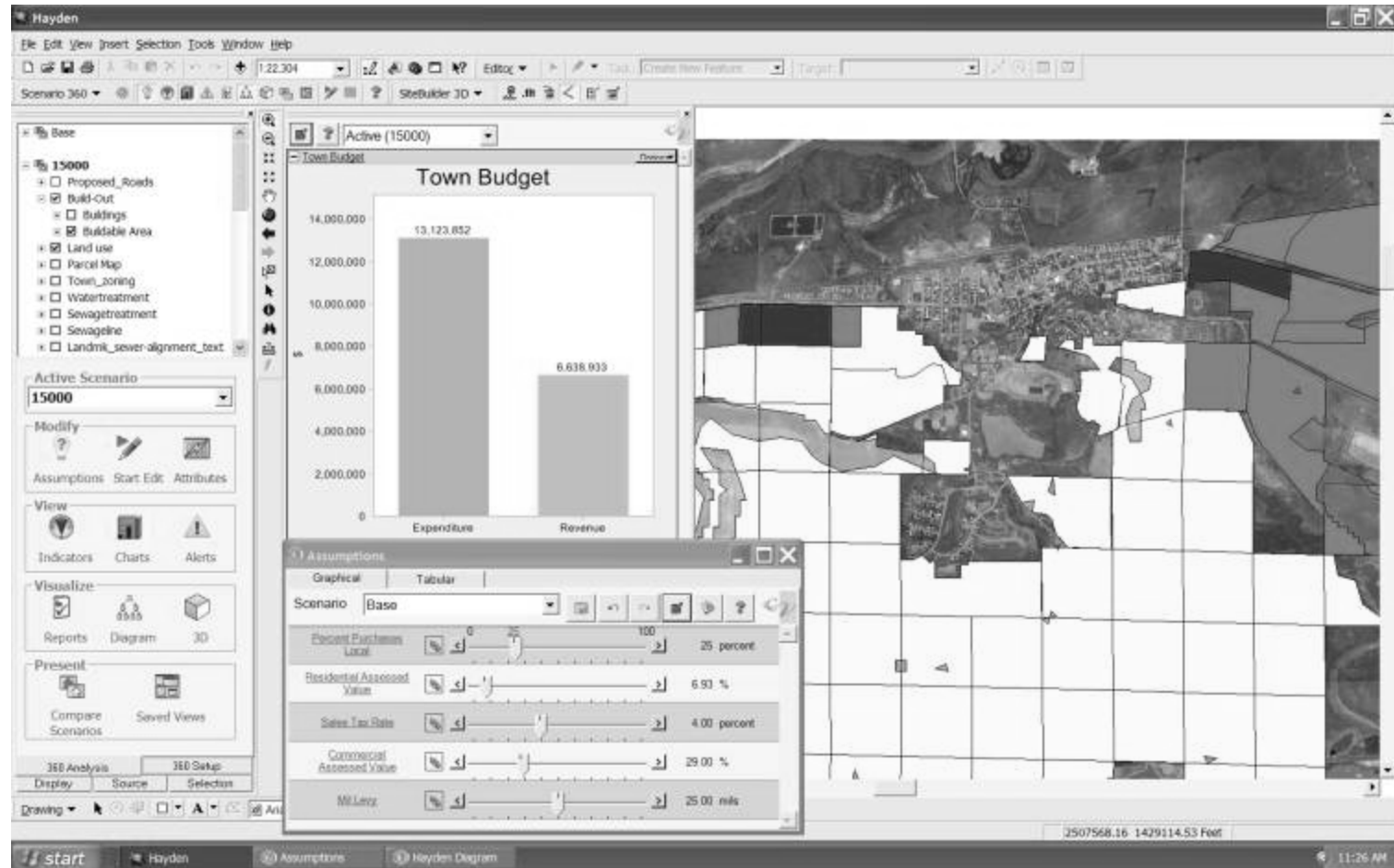
Impact Analysis

- Fiscal: revenue and expenditure
- Public Facility: capacity, demand, capital
- Multipliers: adjust coefficients
- CommunityViz Common Impacts Tool
- Resources: land lost- overlap analysis
- Cumulative effect

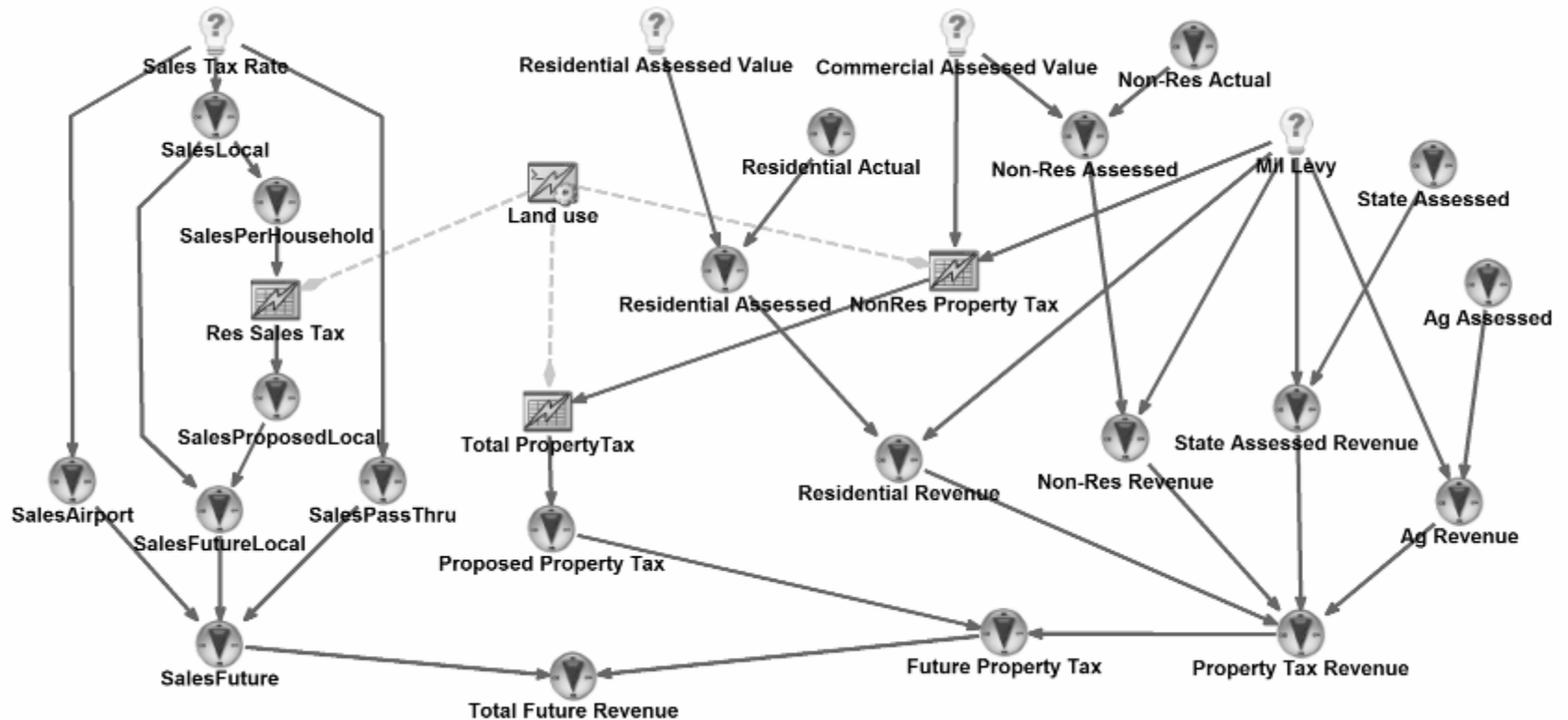
Hayden, CO



Hayden, CO- Budget Analysis



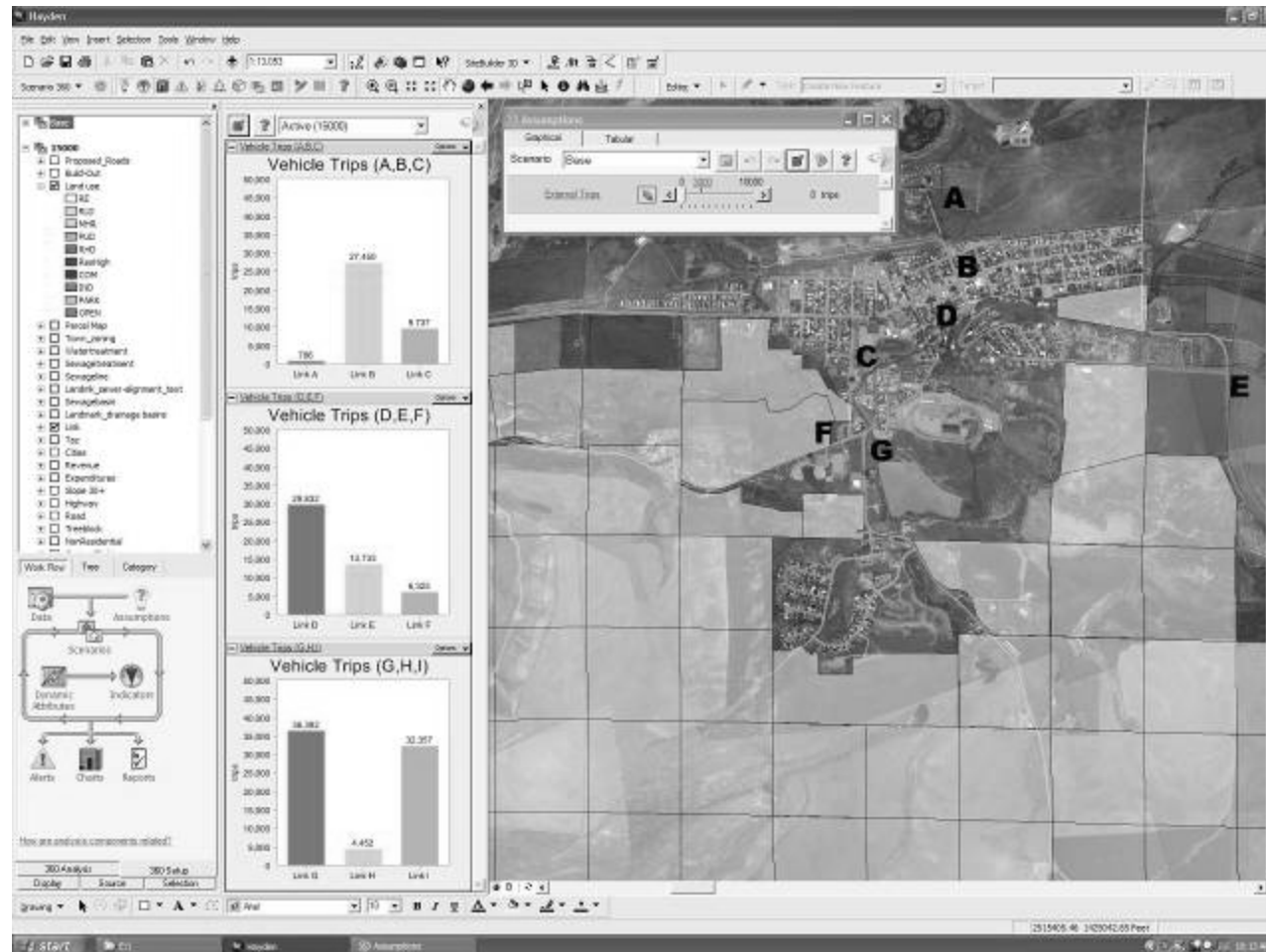
Budget-Diagram



Hayden, CO Scenarios



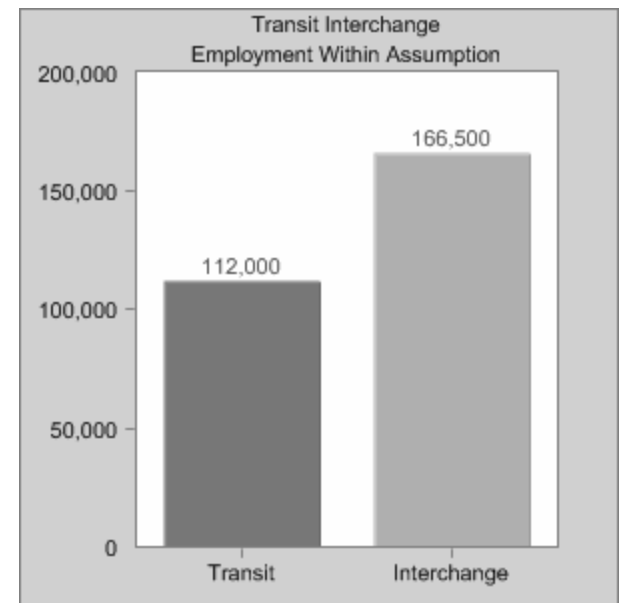
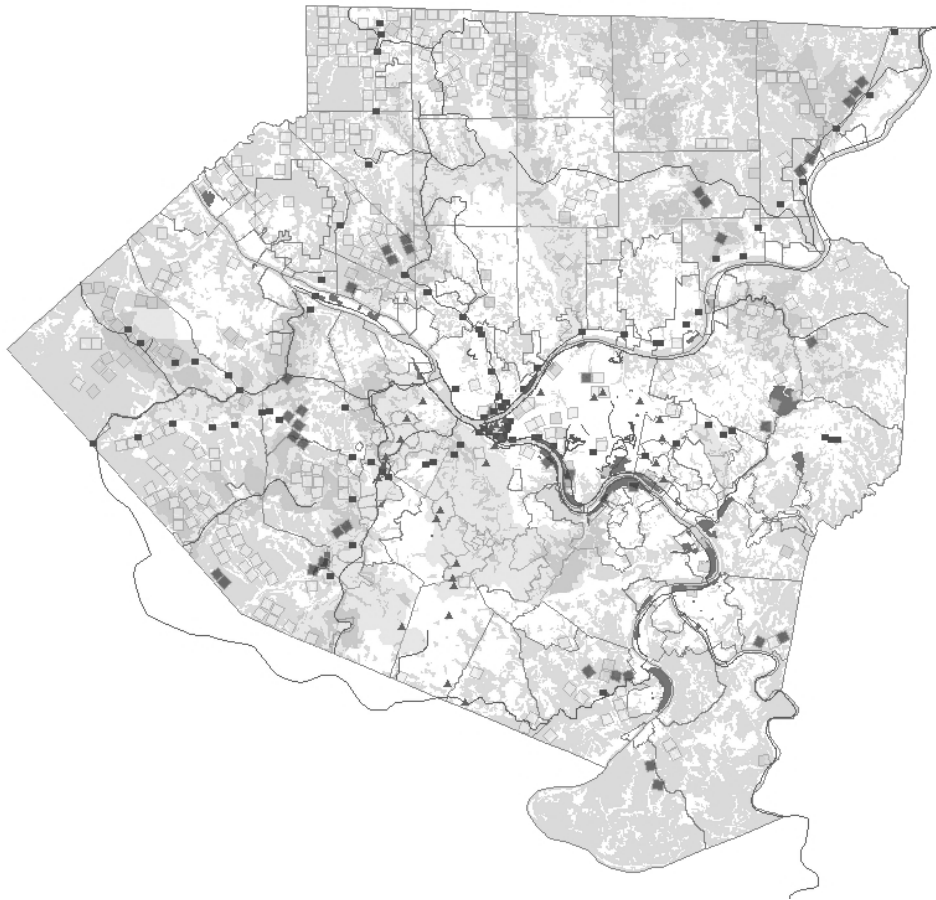
Hayden, CO- Traffic Study



Allegheny: McCormick Taylor

- Comprehensive Plan
- Five Scenarios- 300 Chips
 - Residential
 - Retail
 - Office
- Comparative Analysis- 10 Factors
- Added Hybrid- New analysis in few hours
- Brandi Roselli-WebEx Training & Support

Allegheny County, PA (Pittsburgh)



Summary

- Build-out: capacity of land for development
- Allocate: forecast growth by small area
- Suitability: allocate scoring or gravity
- Impact Analysis: facilities, budget, overlap
- Visualization: Google Earth or
CommunityViz SiteBuilder3D