

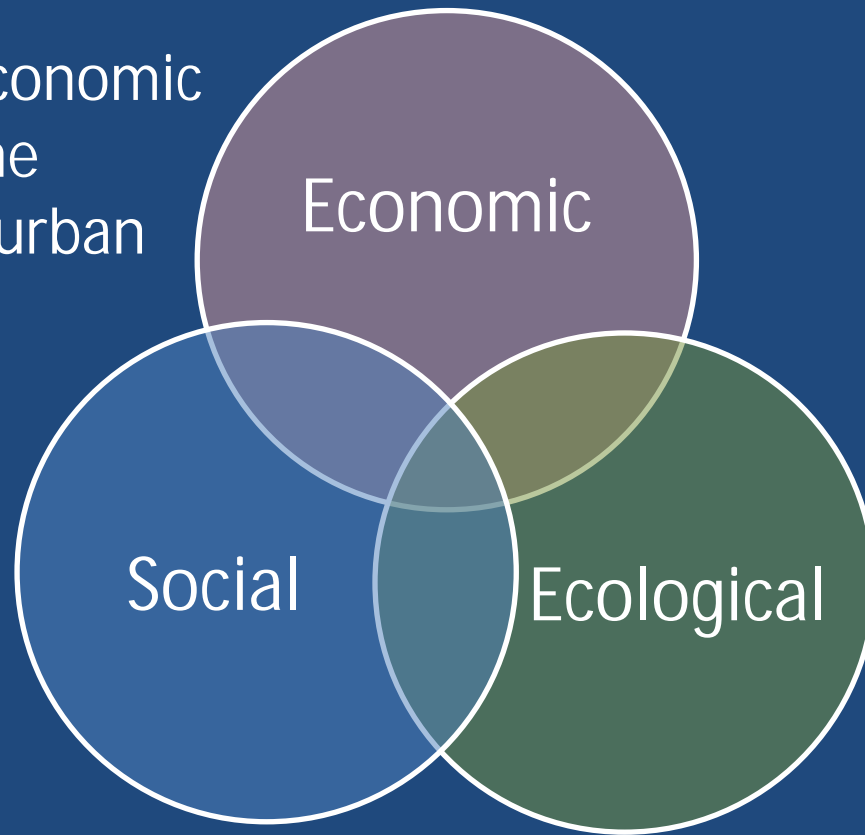
Maine's Sustainable Solutions Initiative: Sustainable Urban Regions Project (SURP) Ecological and Social Change: Adaptation, Place, and Evaluation (ESCAPE)

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- ✓ Charlie Colgan
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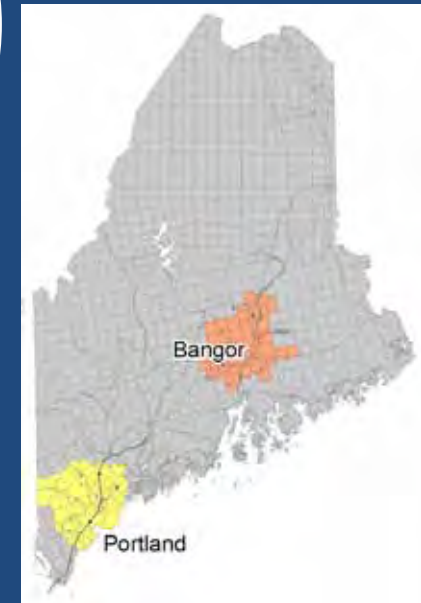
Research Questions

How are socio-economic forces shaping the development of urban regions?



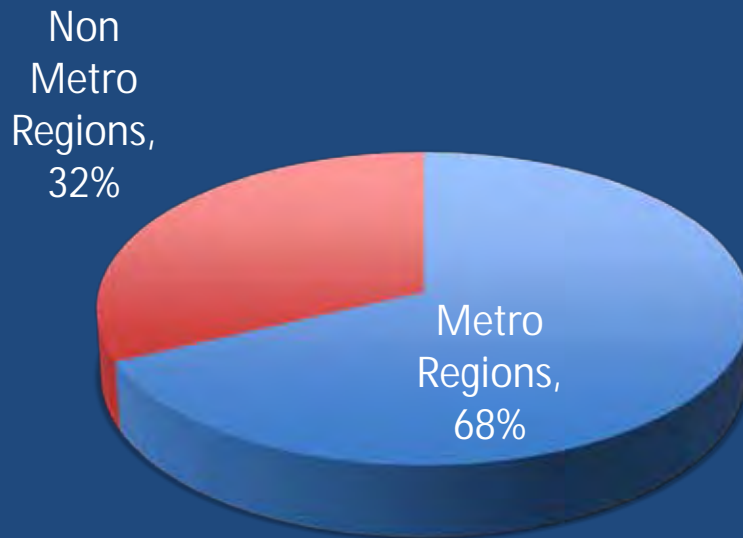
To what extent will development pressure continue to alter the functioning of terrestrial and aquatic ecosystems in urban areas?

How can citizens and decision-makers use information about these forces and non-linear and emergent systems to alter behaviors and policies?

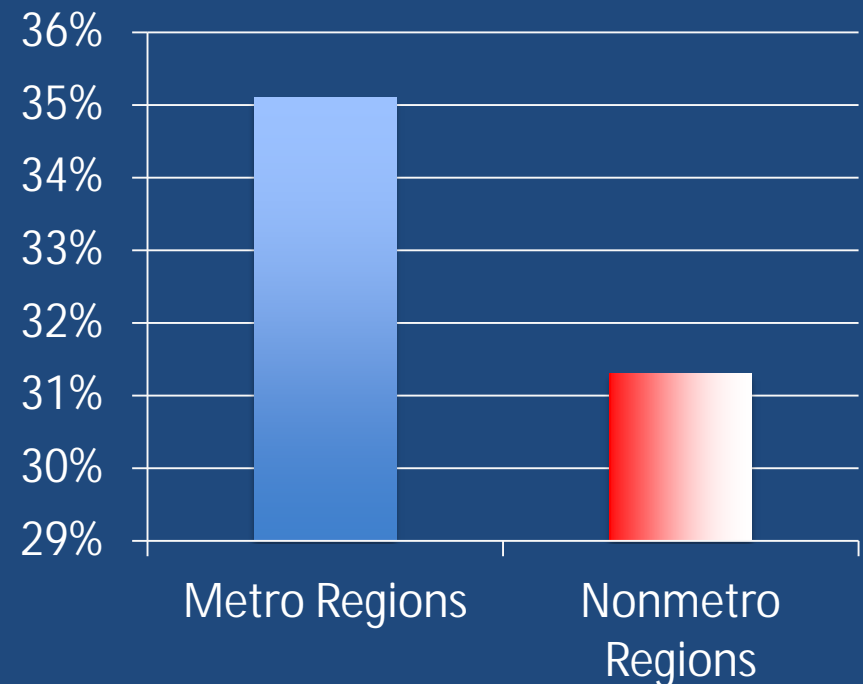


Why consider Urban Regions?

GDP 2008

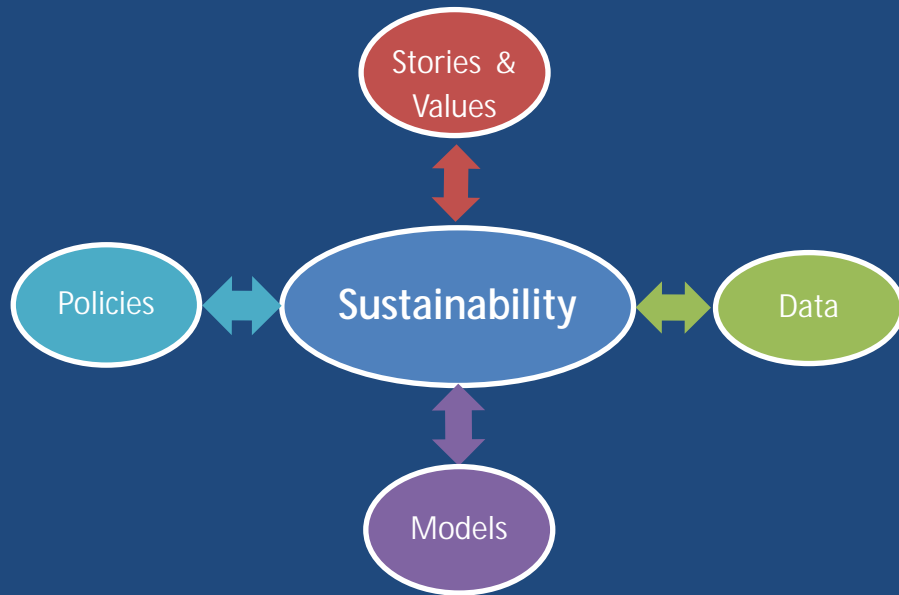


GDP Growth 2001-2008



Laying the Foundations:

If Portland or Bangor were a sustainable region, how would we know?



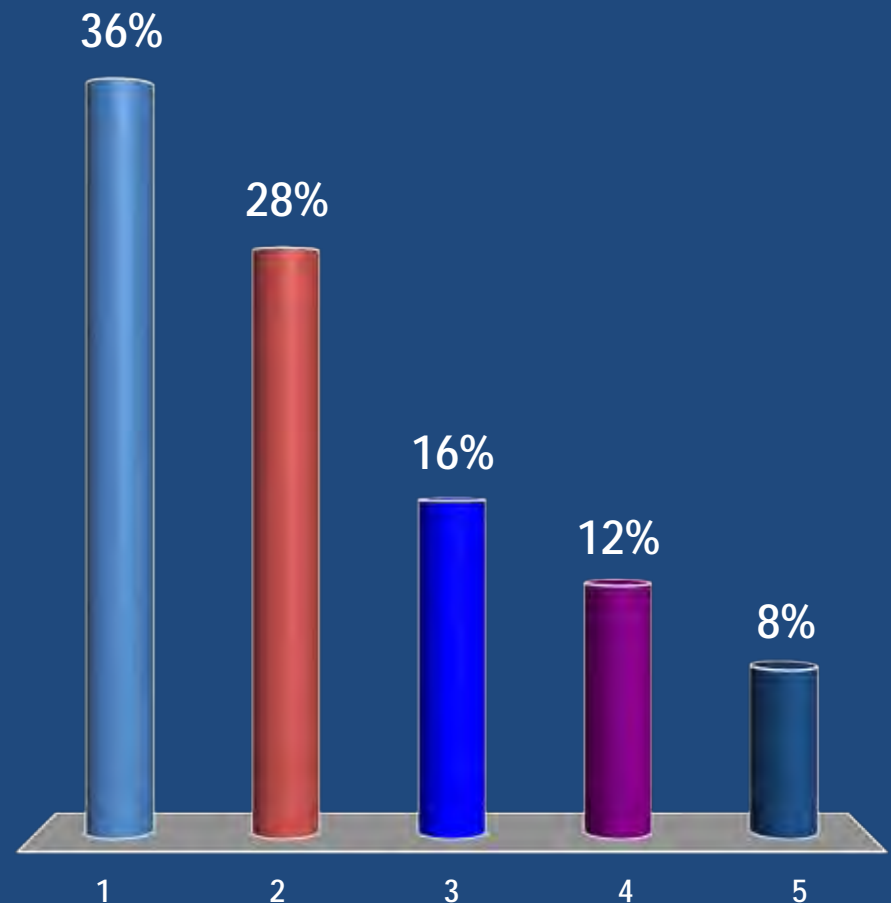
Gathering Stories



Gathering Values

How important is it to you that people are able to live close to their jobs

1. Very important
2. Somewhat Important
3. Not Very Important
4. Not at all Important
5. Not an issue for me



Collecting and Standardizing Town Level Data Zoning/Parcel

The screenshot displays the ArcMap interface with a map of a town area. The map shows various zoning districts in different colors: yellow for Residential, red for Mixed Use, purple for Industrial, green for Conservation, and black for Commercial. A specific parcel is highlighted in cyan. The Table of Contents on the left lists several zoning layers, with CumberlandZoning selected. The Attributes window on the right shows the properties for the selected parcel (OBJECTID 2). The Table window at the bottom displays a list of zoning parcels with their attributes.

OBJECTID	Shape	Shape_Length	Shape_Area	TownID	ZoneCode	PrimaryUse	GeneralUse
8	Polygon	14872.927646	4879183.520159	5060	Office Commercial (South)	Commercial	Comm
16	Polygon	14291.267931	6938139.373344	5060	Rural Industrial	MixedUse	Mixe
2	Polygon	129598.18694	191243329.514523	5060	Rural Residential 1	LowDensityRe	Resi
1	Polygon	179048.167316	305145485.464956	5060	Rural Residential 2	LowDensityRe	Resi
11	Polygon	14811.439876	5025835.000947	5060	Village Center Commercial	Commercial	Comm
12	Polygon	14416.579742	8593473.197445	5060	Village Medium Density Residential	HighDensityRe	Resi
17	Polygon	6659.483982	1631380.279985	5060	Village Mixed Use	MixedUse	Mixe
13	Polygon	12780.557162	3706493.092377	5060	Village Office Commercial 1	Commercial	Comm

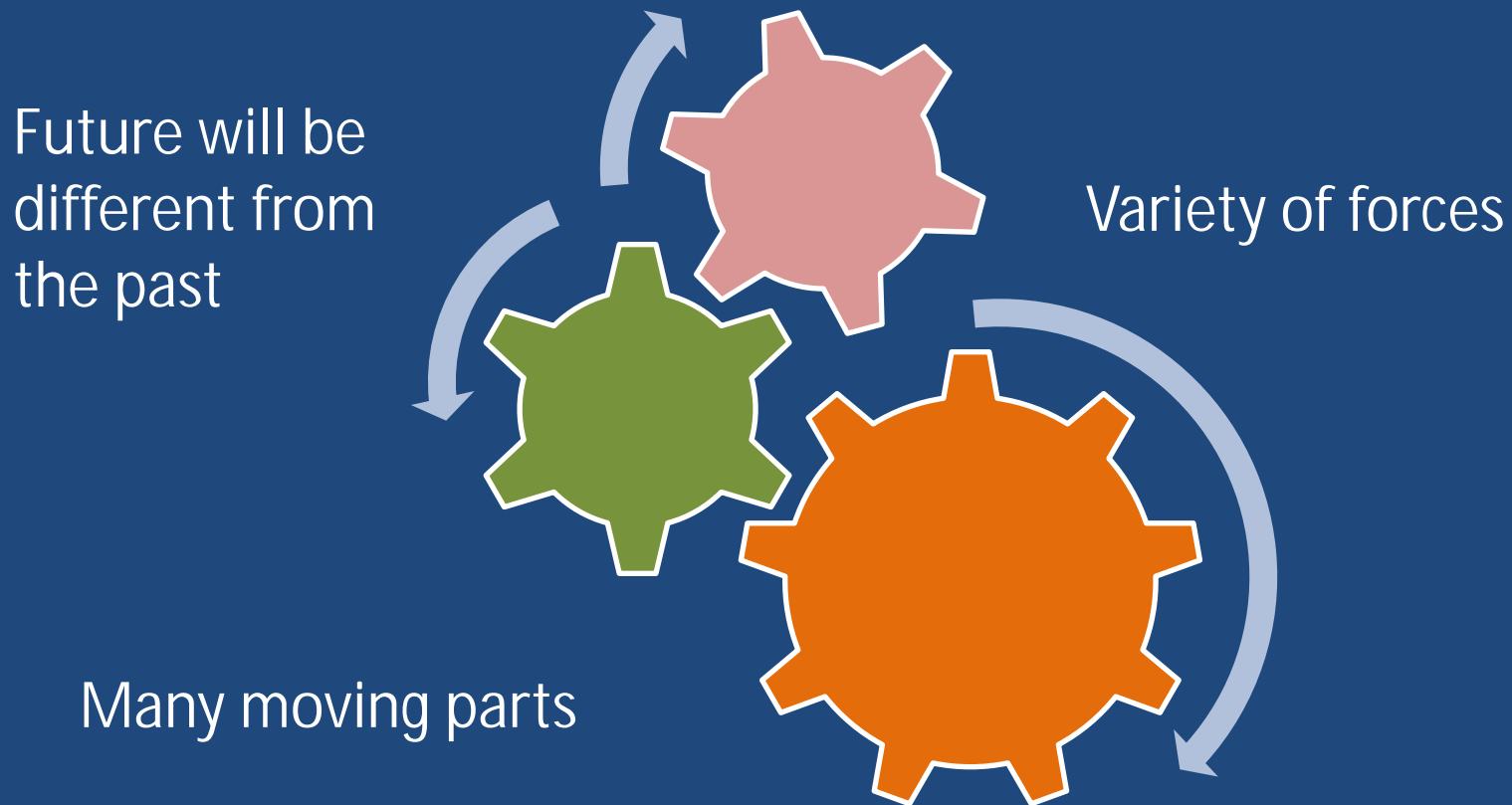
Attributes for OBJECTID 2:

OBJECTID	2
Shape_Length	129598.18694
Shape_Area	191243329.514523
TownID	5060
ZoneCode	Rural Residential 1
PrimaryUse	LowDensityResidential
GeneralUse	Residential
GrowthZone	Non Growth Area
LastEdited	<Null>
Source	Yes
CurrentAsOf	<Null>
YearApproved	<Null>
TownName	Cumberland

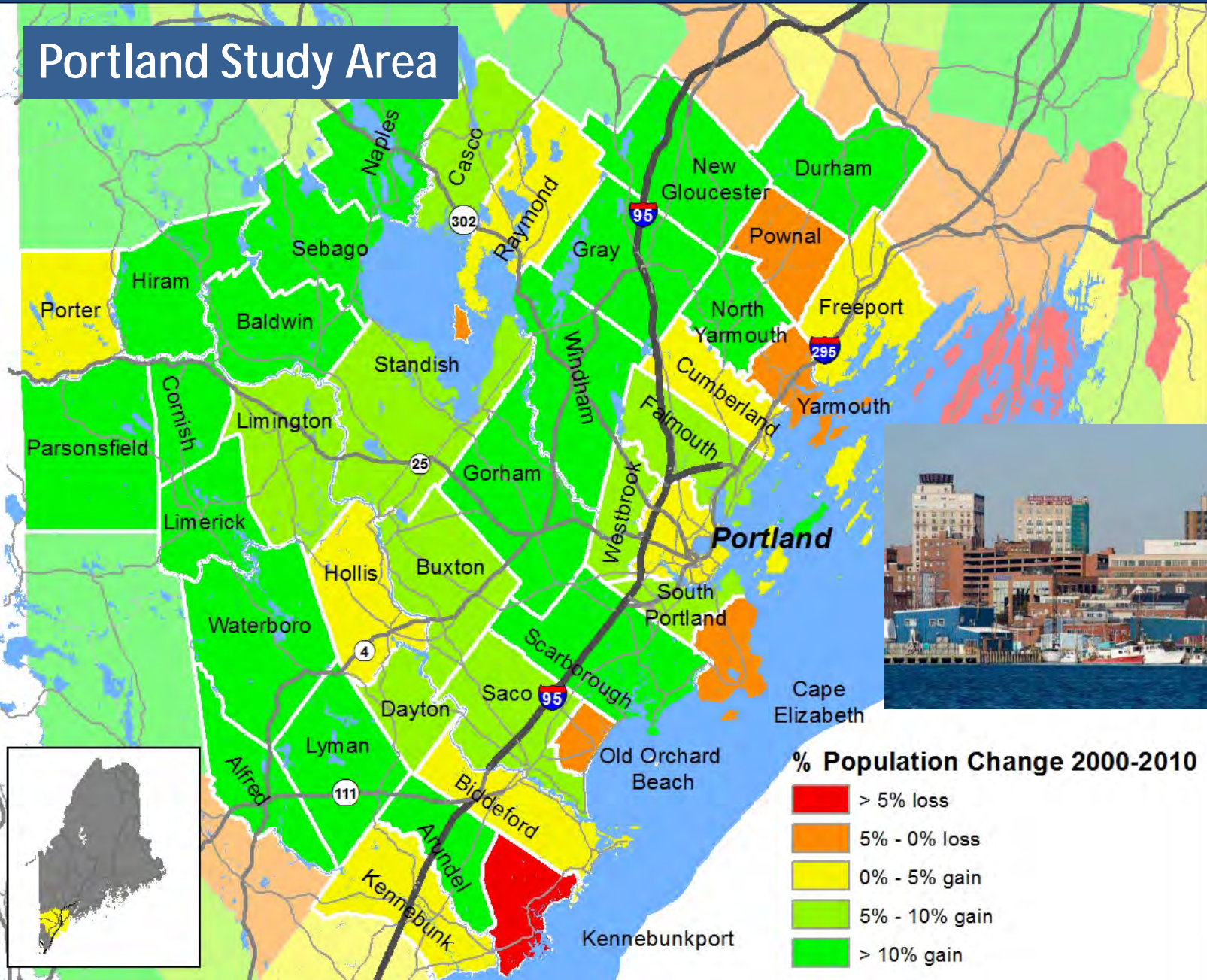
Table of Contents:

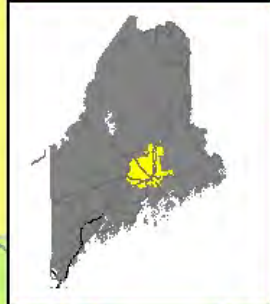
- Buildings2008
- CumberlandZoning
 - < all other values >
 - GeneralUse
 - Commercial
 - Conservation
 - Industrial
 - Mixed Use
 - Other
 - Residential
- CapeElizZoning
- FalmouthZoning
- FreeportZoning
- GrayZoning
- KbunkprtZoning
- NewGloucesterZoning
- NorthYarmouthZoning
- StandishZoning
- YarmouthZoning

Developing the Models: What will drive the region? How will we tell the story?

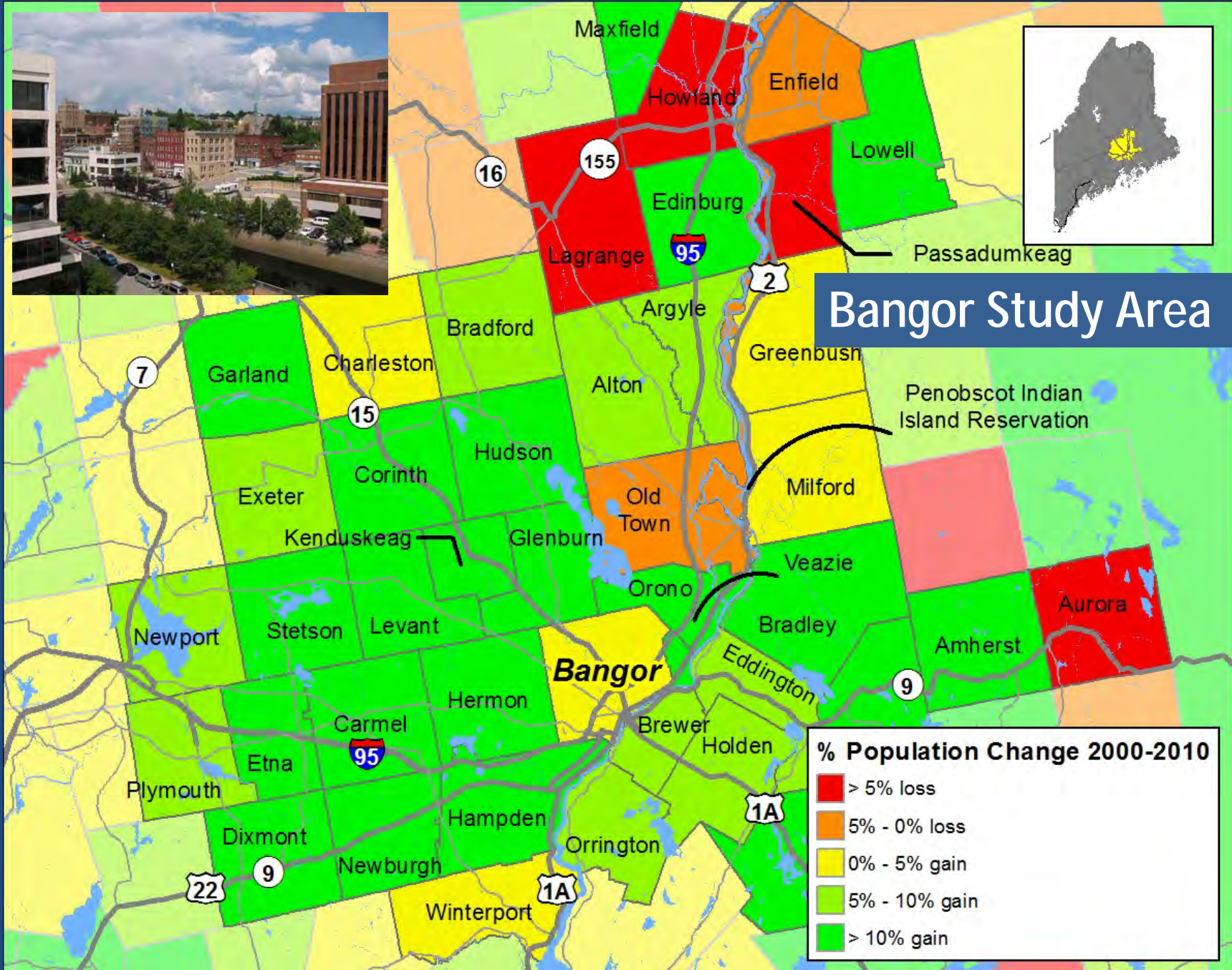


Portland Study Area





Bangor Study Area

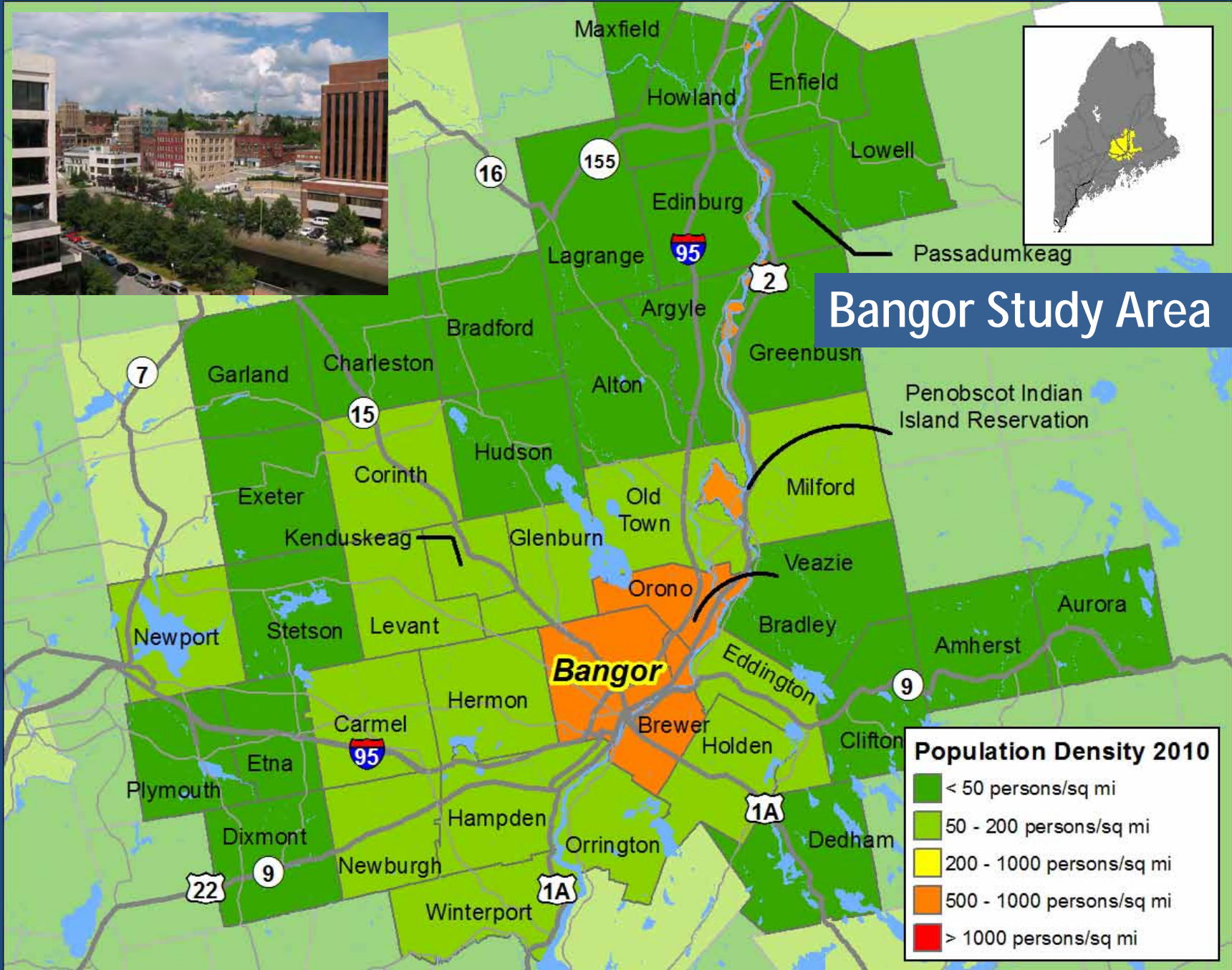


% Population Change 2000-2010

- > 5% loss
- 5% - 0% loss
- 0% - 5% gain
- 5% - 10% gain
- > 10% gain



Bangor Study Area

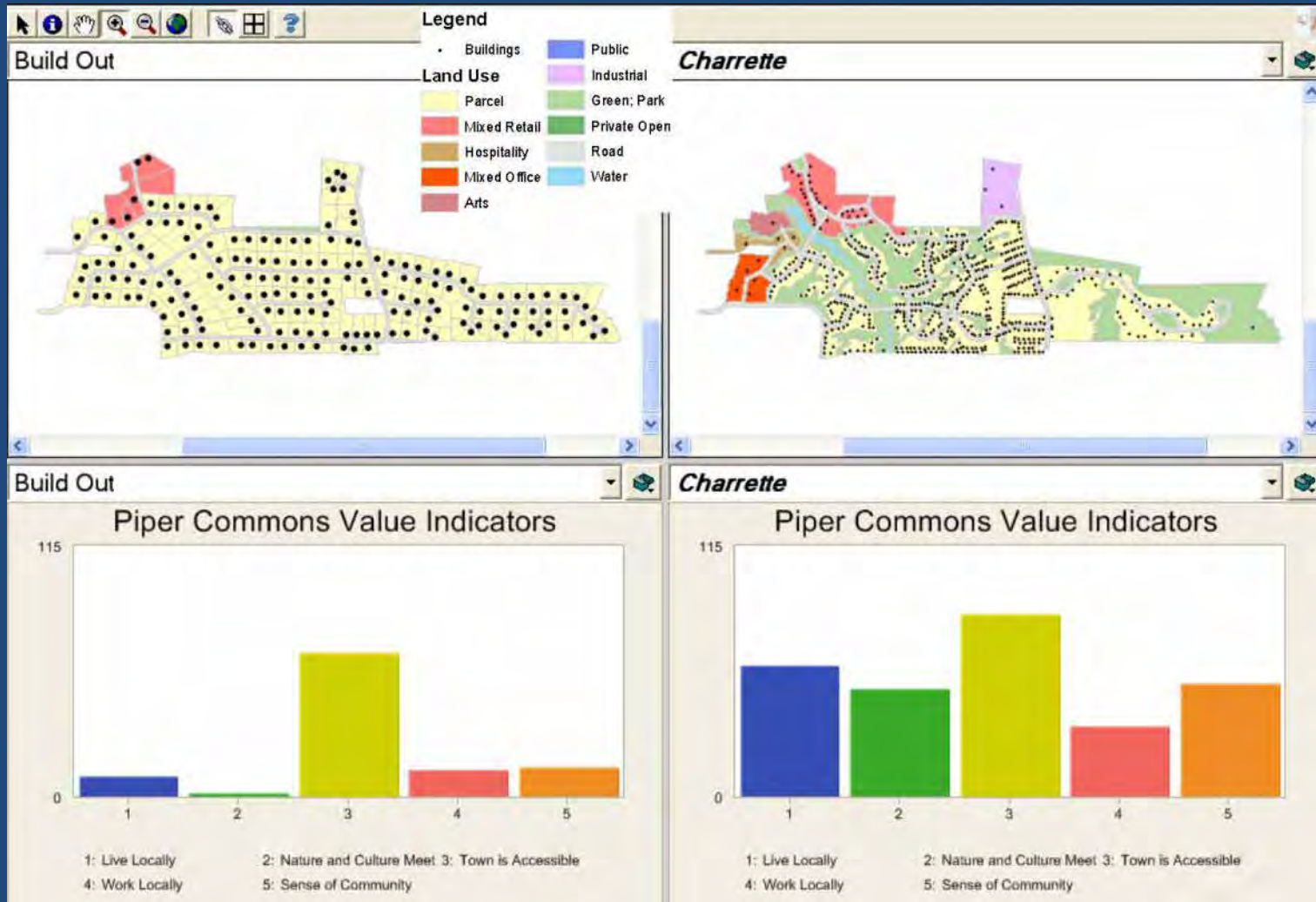


Tracking Landscape Level Change

How do people understand landscape level change?

- How do we figure this out:
 - Conduct a survey this spring of people who own between 10 and 1000 acres
 - Also survey people of smaller lot sizes
 - Conduct focus groups
-

Communicating with stakeholders



UrbanSim – Agent Based Model

Man
75
College
Poor
Apartment
Unemployed
Young Senior
...

Man
23
College

Woman
44
Middle School
Middle
Mansion
Actor
Chic
...

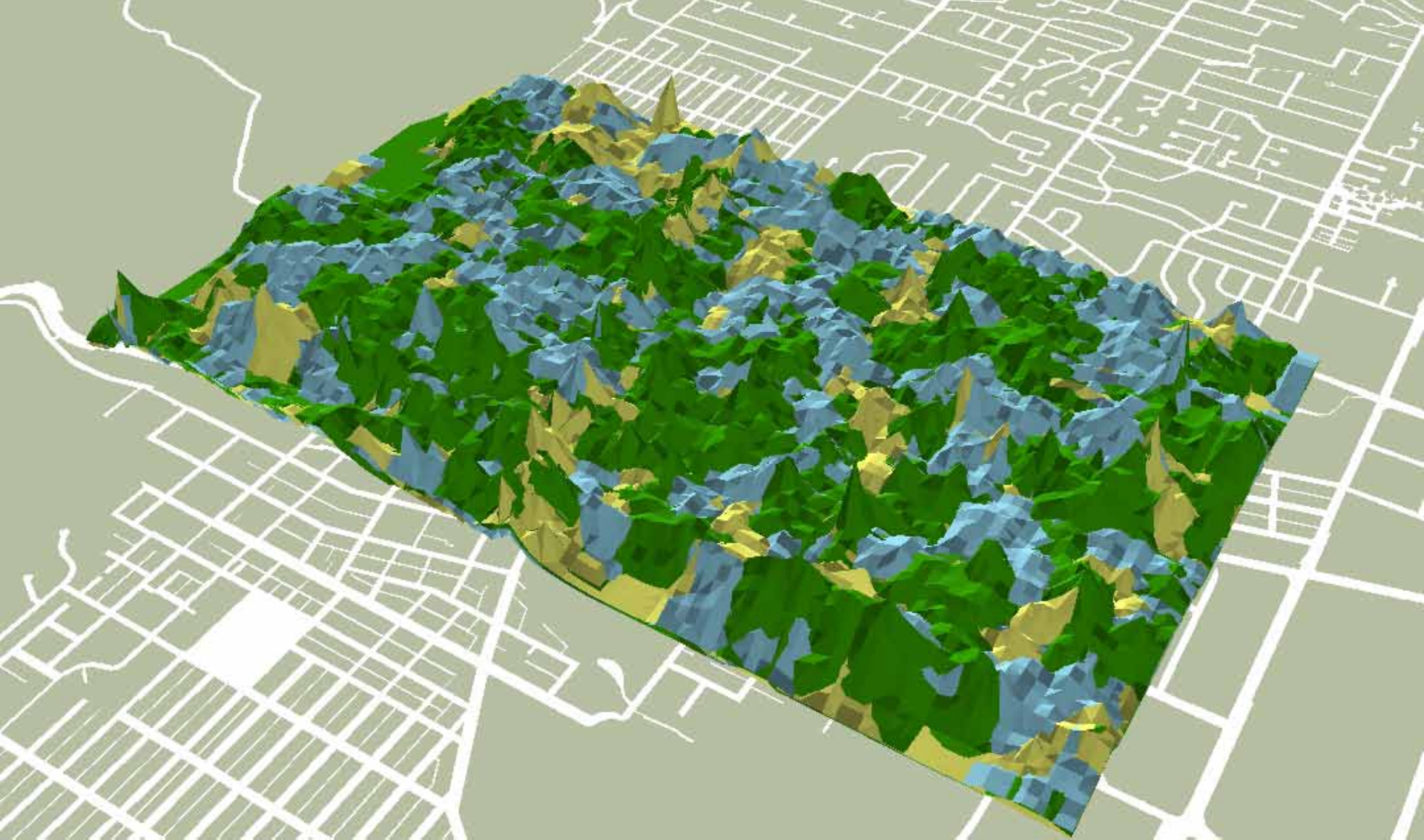


Man
45
Grad
Rich
Detached
CEO
Conservative
...

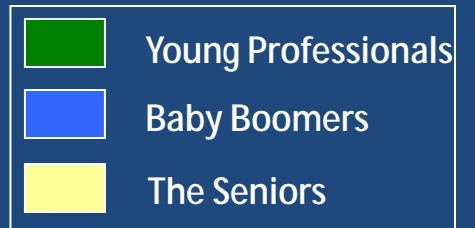
Woman
56
High School
Middle
Condo
Housewife
Trendy
...

Man
12
Elementary
Middle
Apartment
Student
Young
...

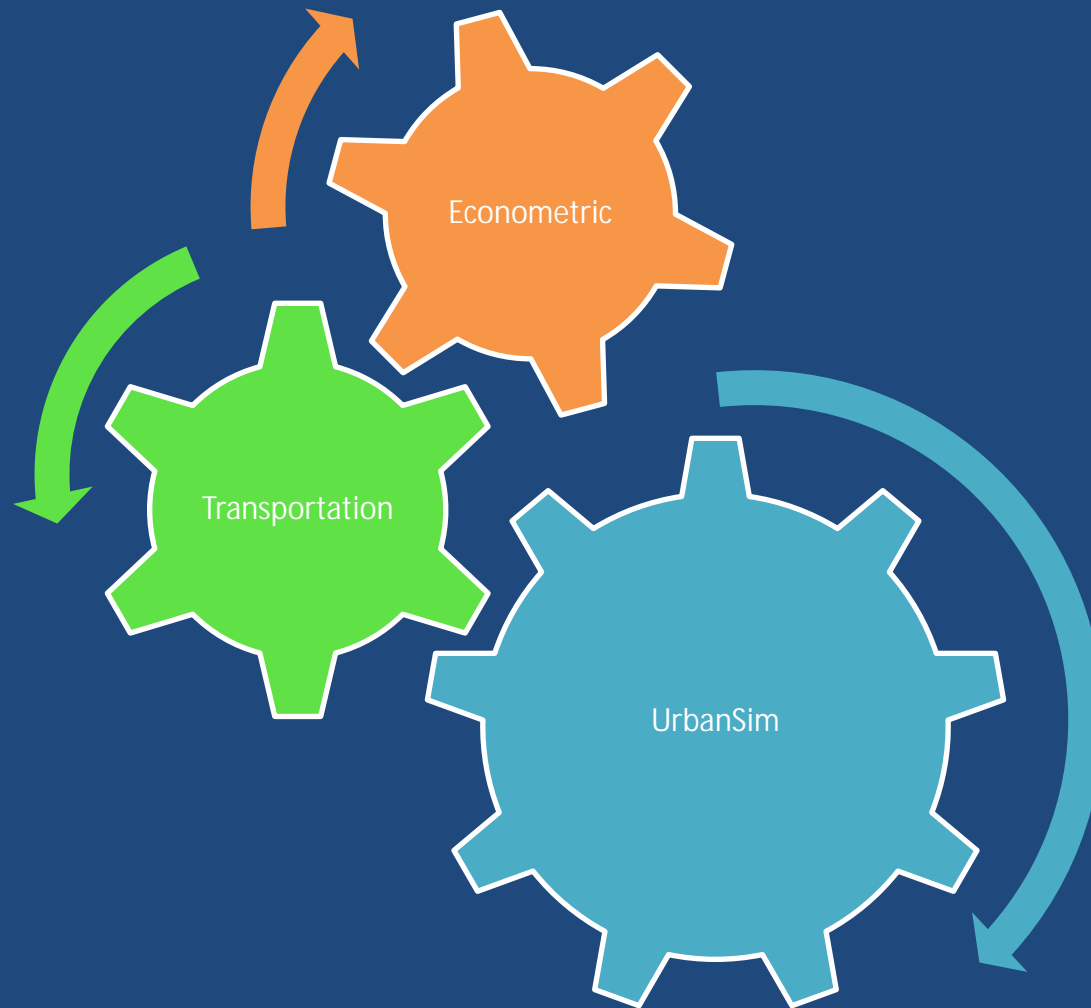
Woman
36
College



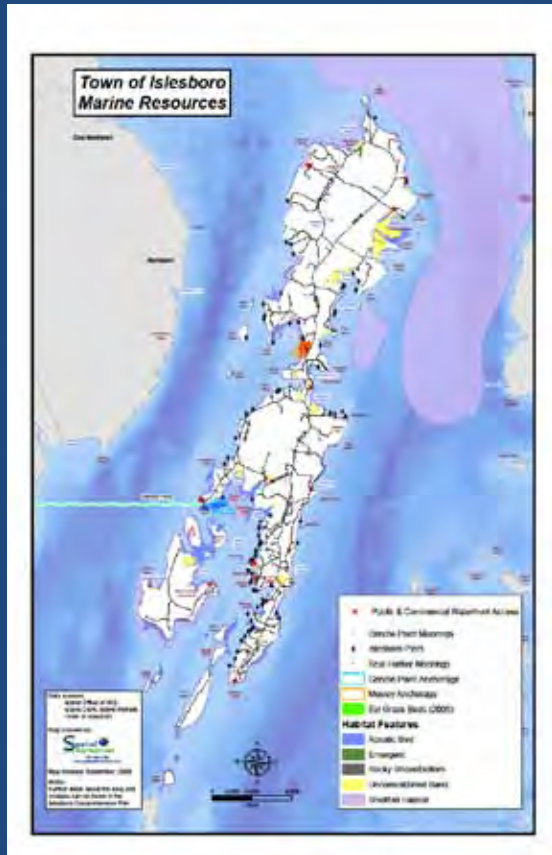
Comparison of Locational Preference



Using Multiple Models



Tracking Policies



What municipalities are using GIS?

How are they using it?

Is it having a qualitative or quantitative impact on land use policies?



