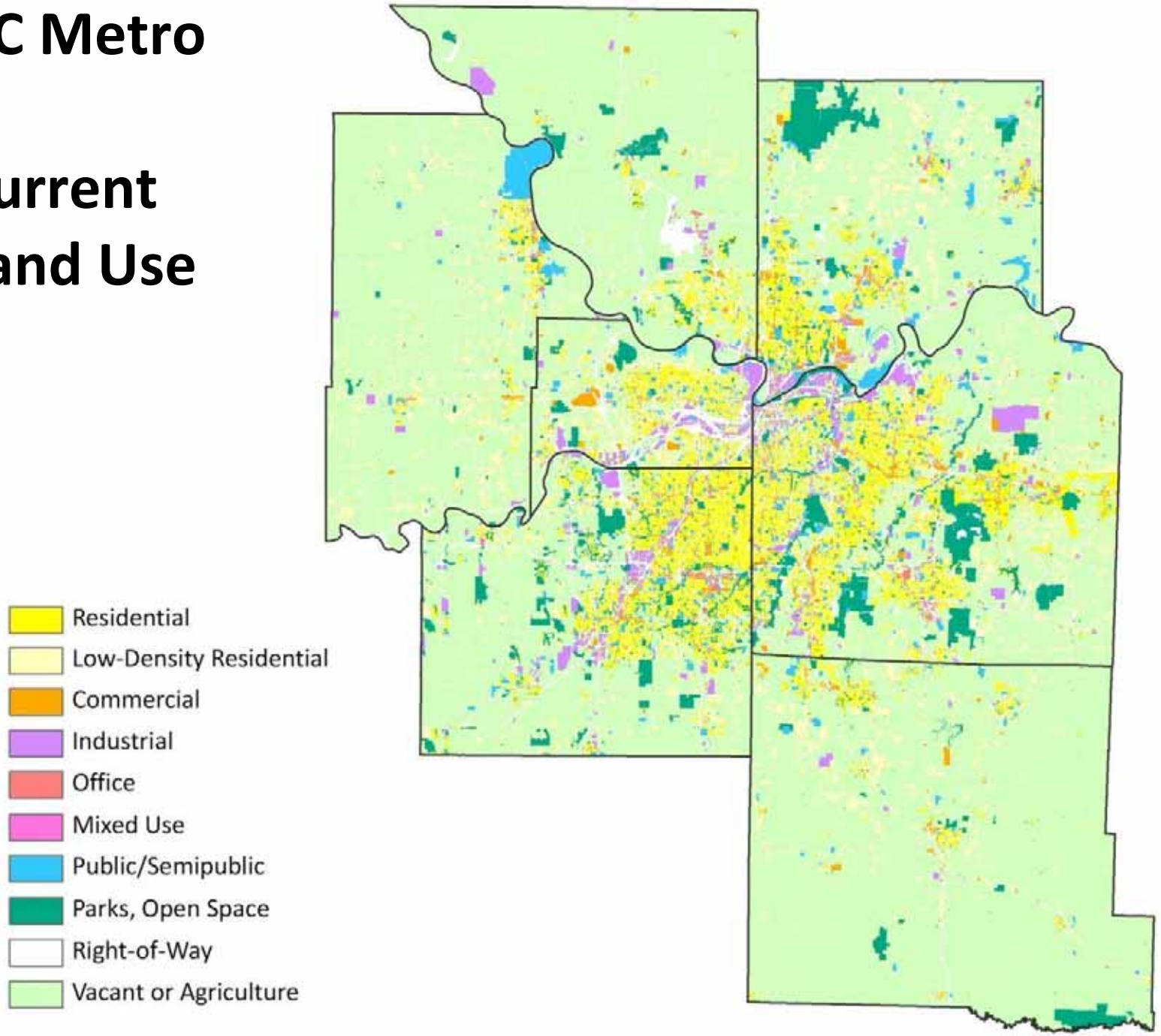
SCENARIO PLANNING IN KC

Making the macro to micro (and back to macro) connection

http://www.marc.org/sustainableplaces/index.htm

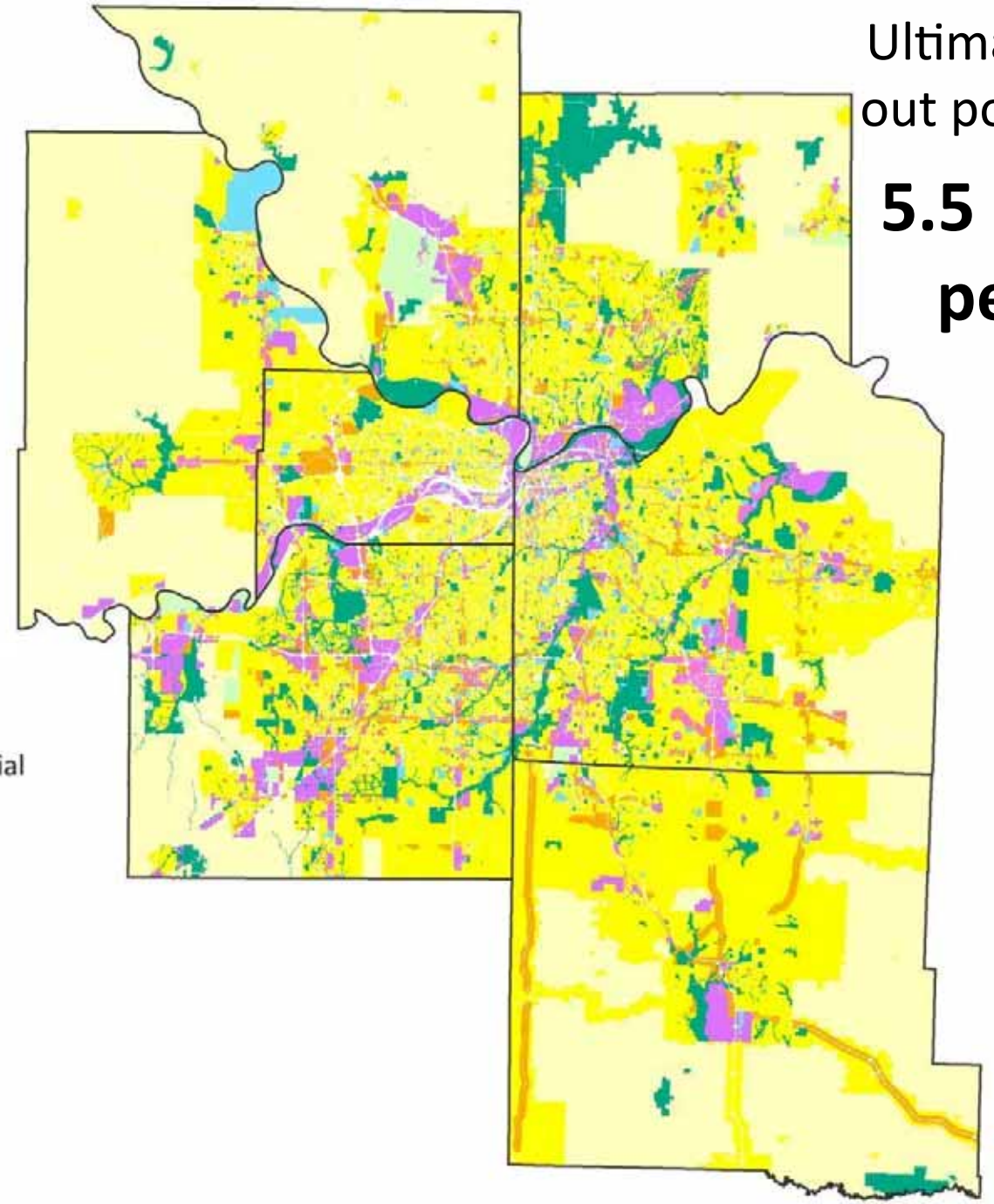
KC Metro

Current Land Use



Planned Land Use

Aggregate of city and county comprehensive plans



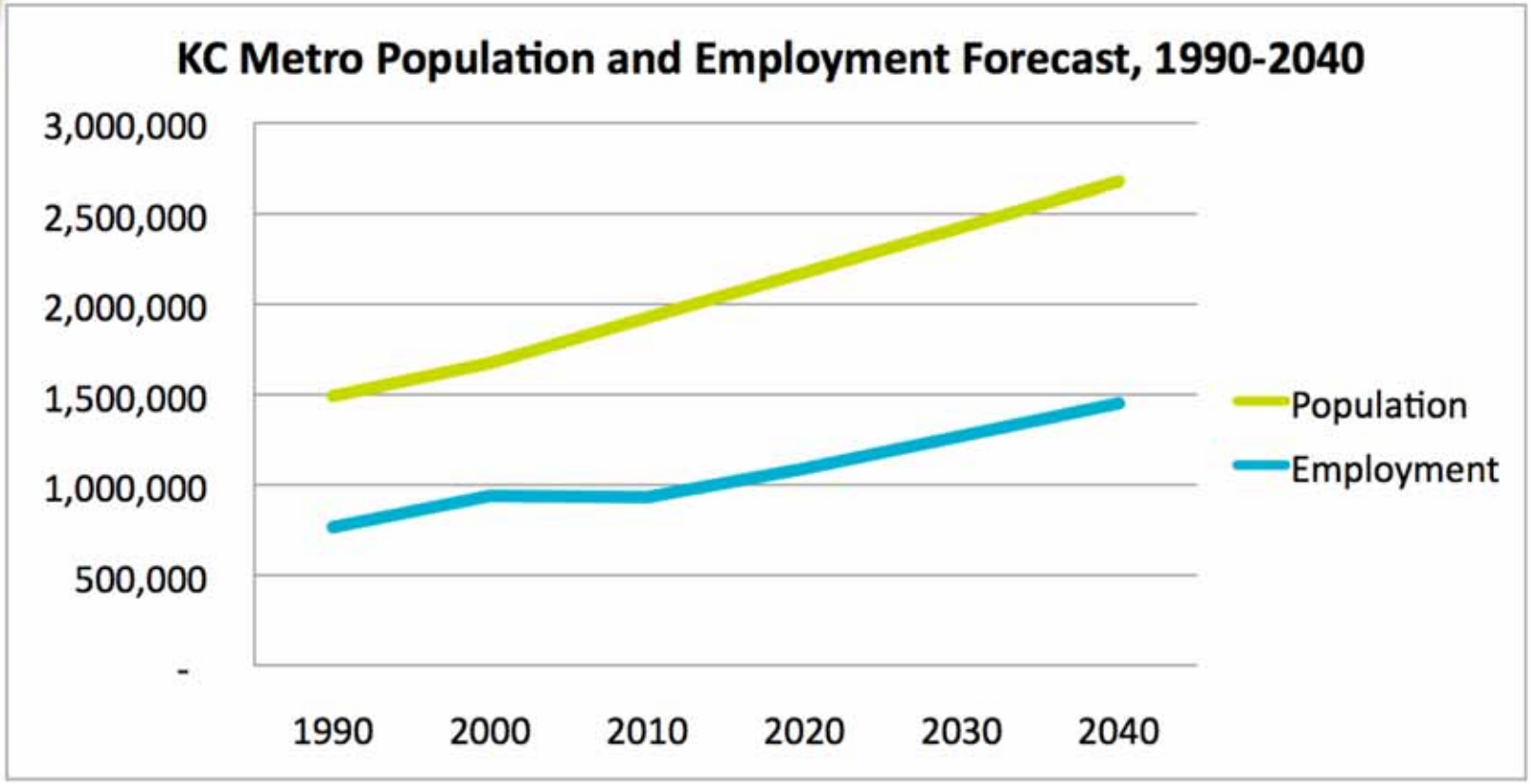
Ultimate build-out population:

5.5 million people

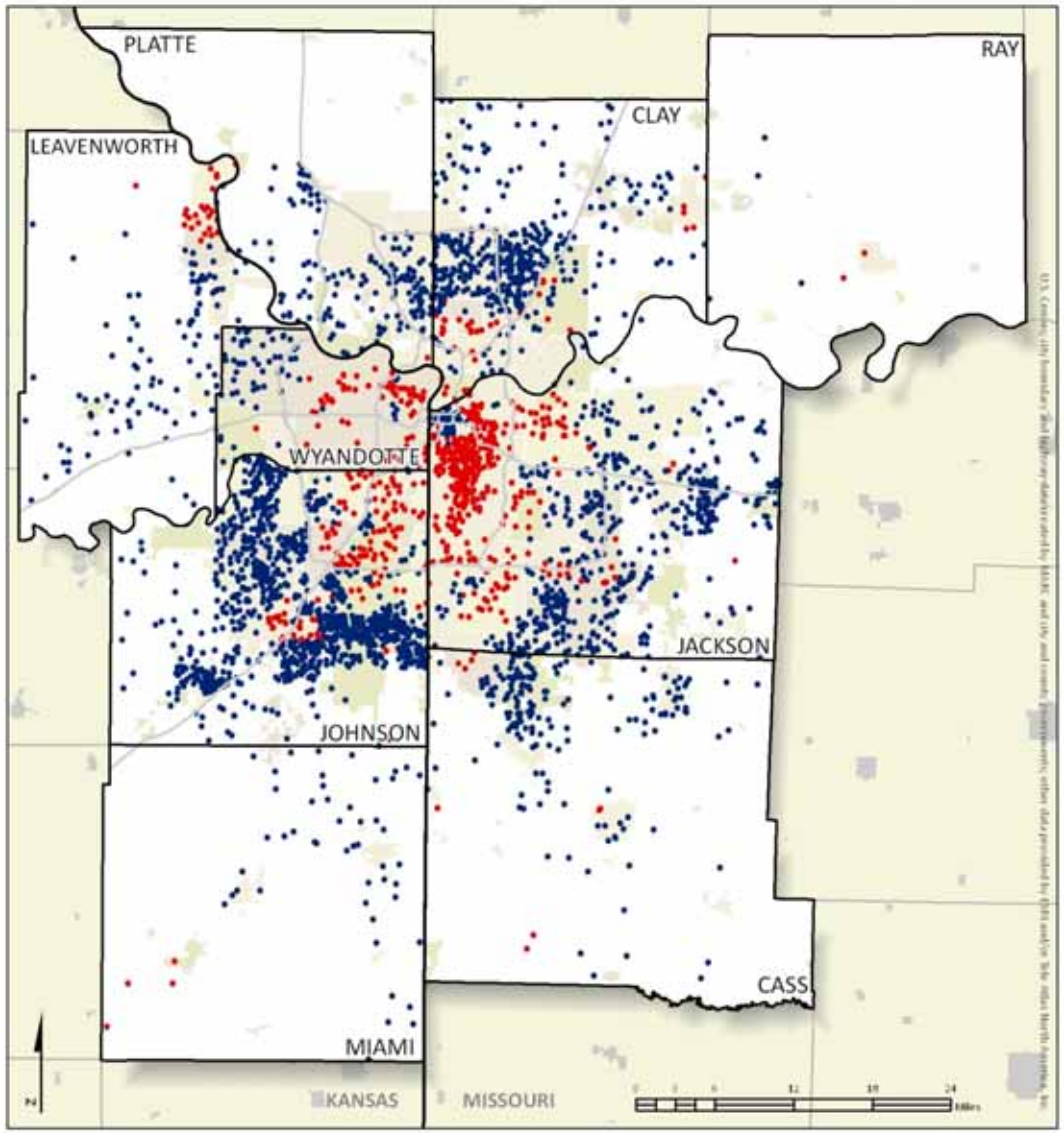
Transportation Outlook 2040

VISUALIZING THE FUTURE:

REGIONAL CONTROL TOTALS



2000-2010 Population Change



Population Change

- Gain
- Loss

MARCH 2010

MARC

Note: Data derived from PL94-171, table P2, which tabulates the Hispanic population and non-Hispanic population by race

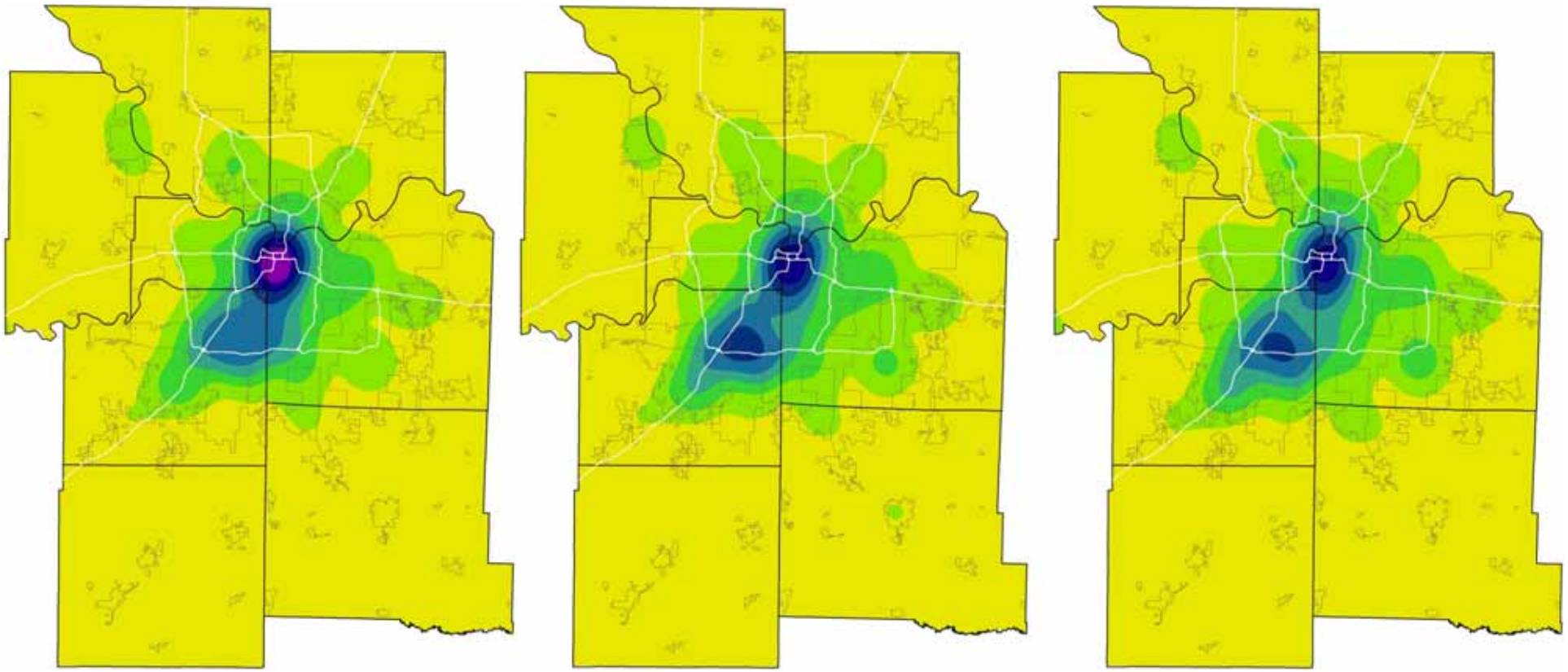
More information and data use policy available at www.marc.org/gis

Transportation Outlook 2040

FORECAST AND PLAN

DENSEMP90_5MI 00 10

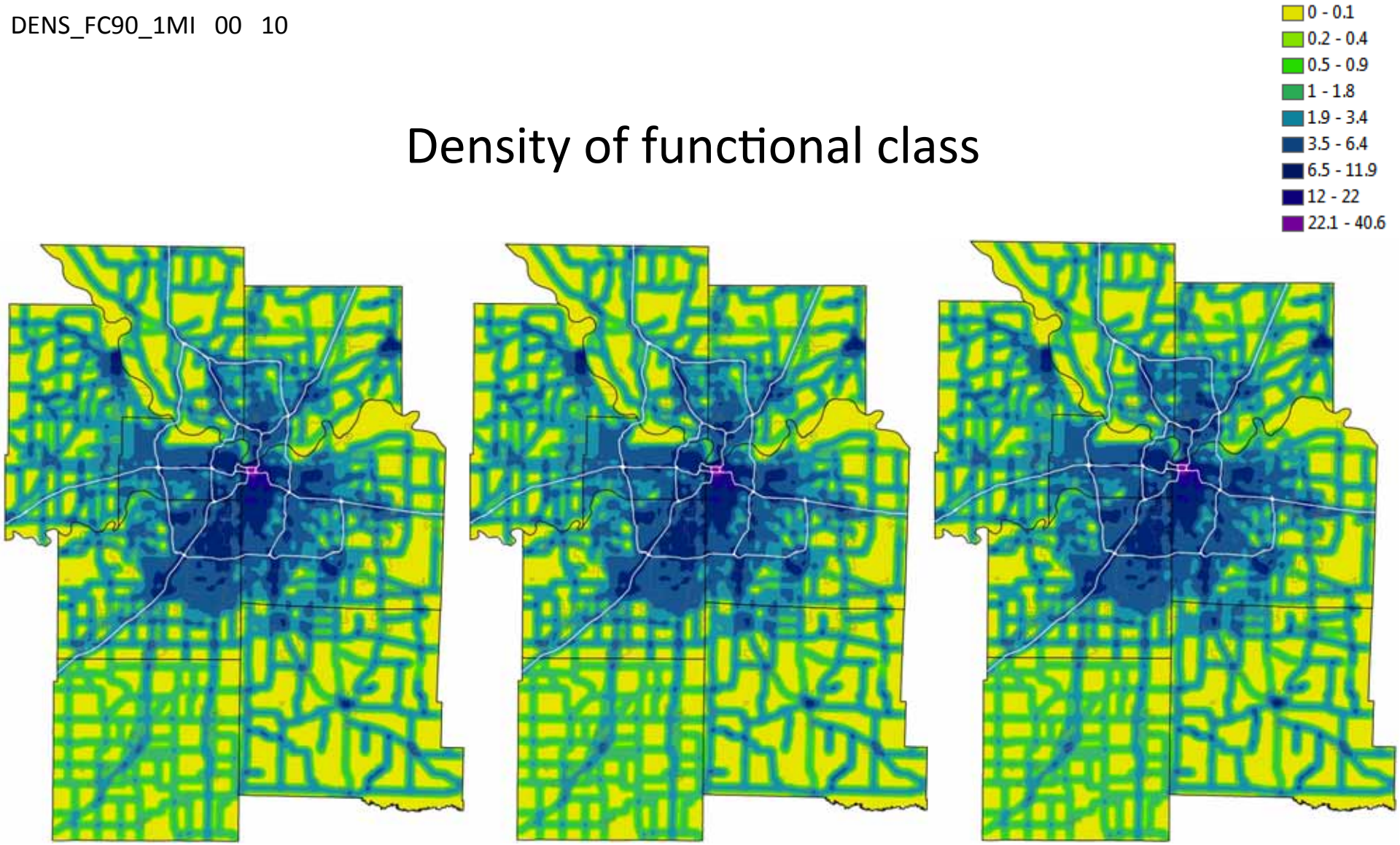
Density of employment, 5-mile search radius



1990 **2000** **2010**

DENS_FC90_1MI 00 10

Density of functional class

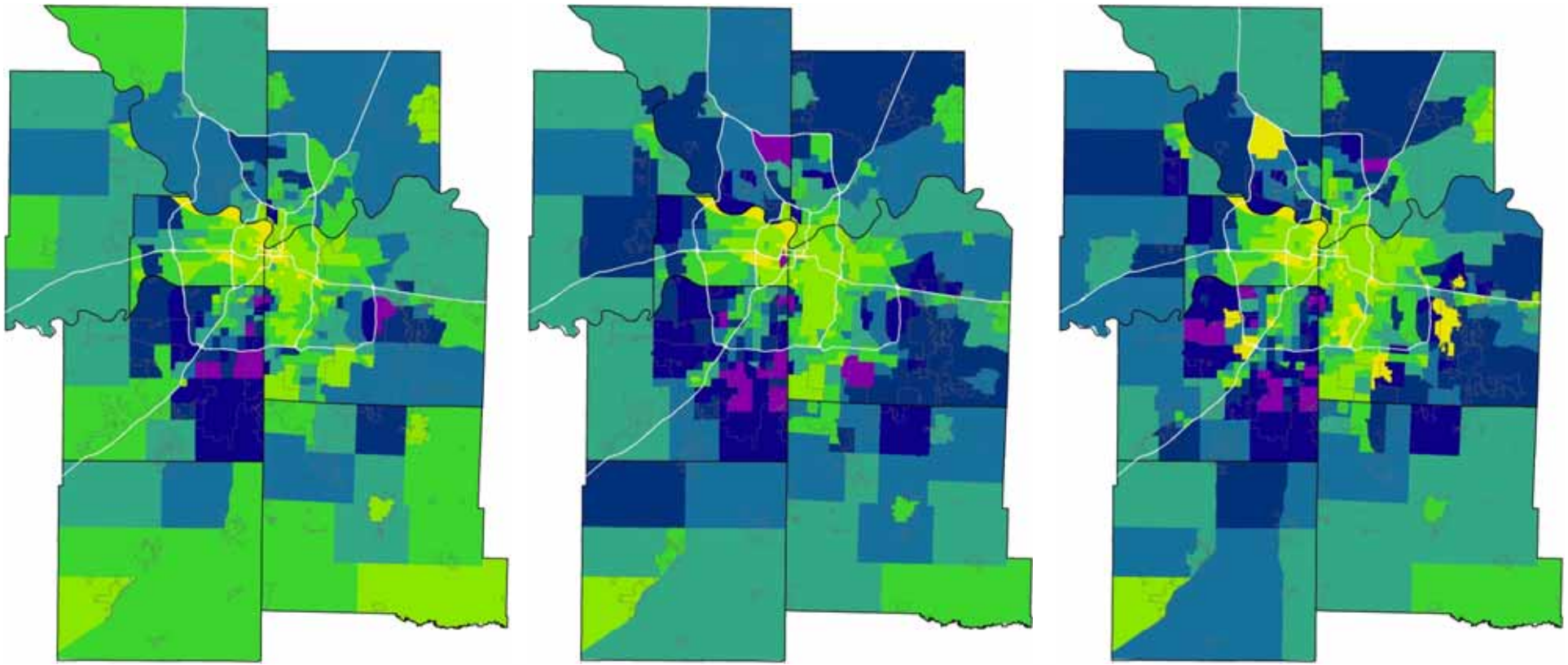


1990 **2000** **2010**

HHMEDINC10, HHINC_00_to10, HHINC_90_to10

1990 and 2000 values were converted to 2010 dollars

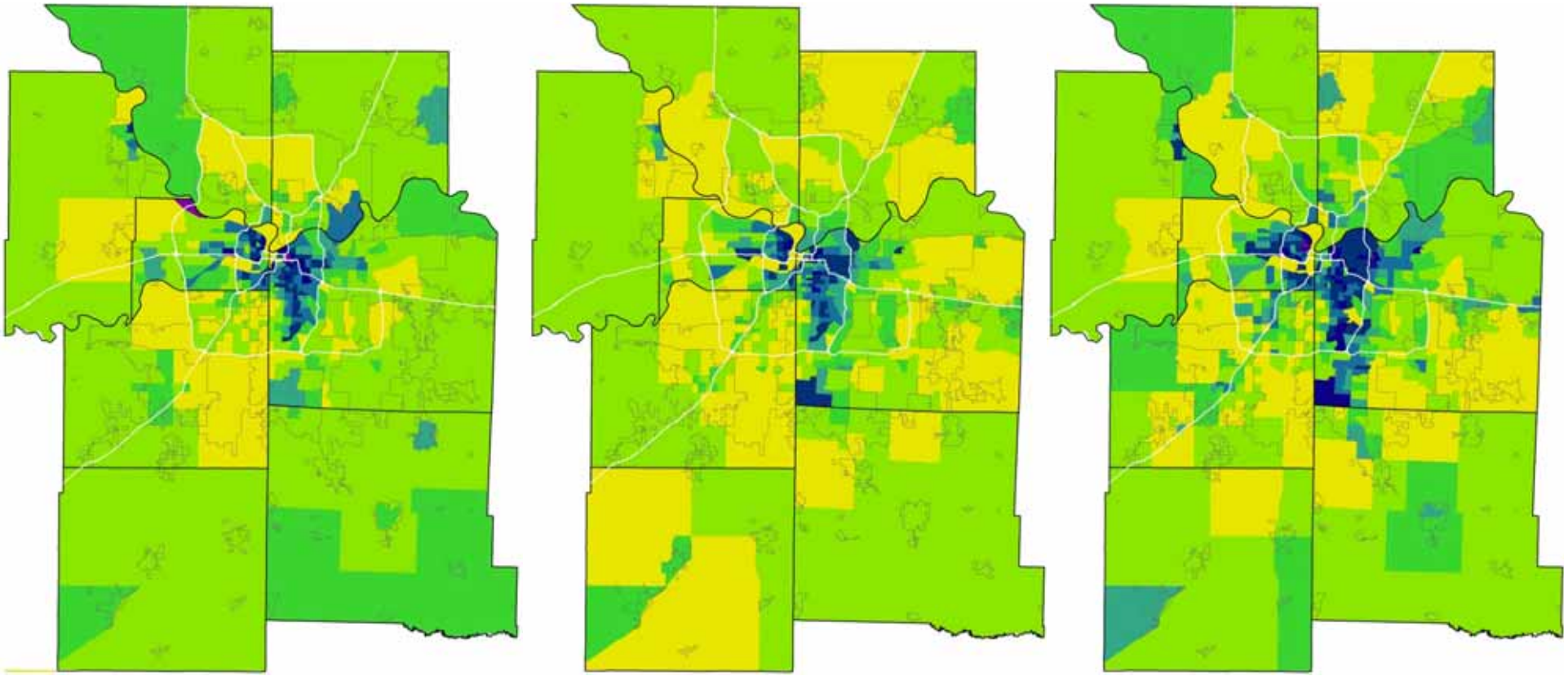
Median household income by tract



1990 **2000** **2010**

PCTBELOWPOV90 00 10

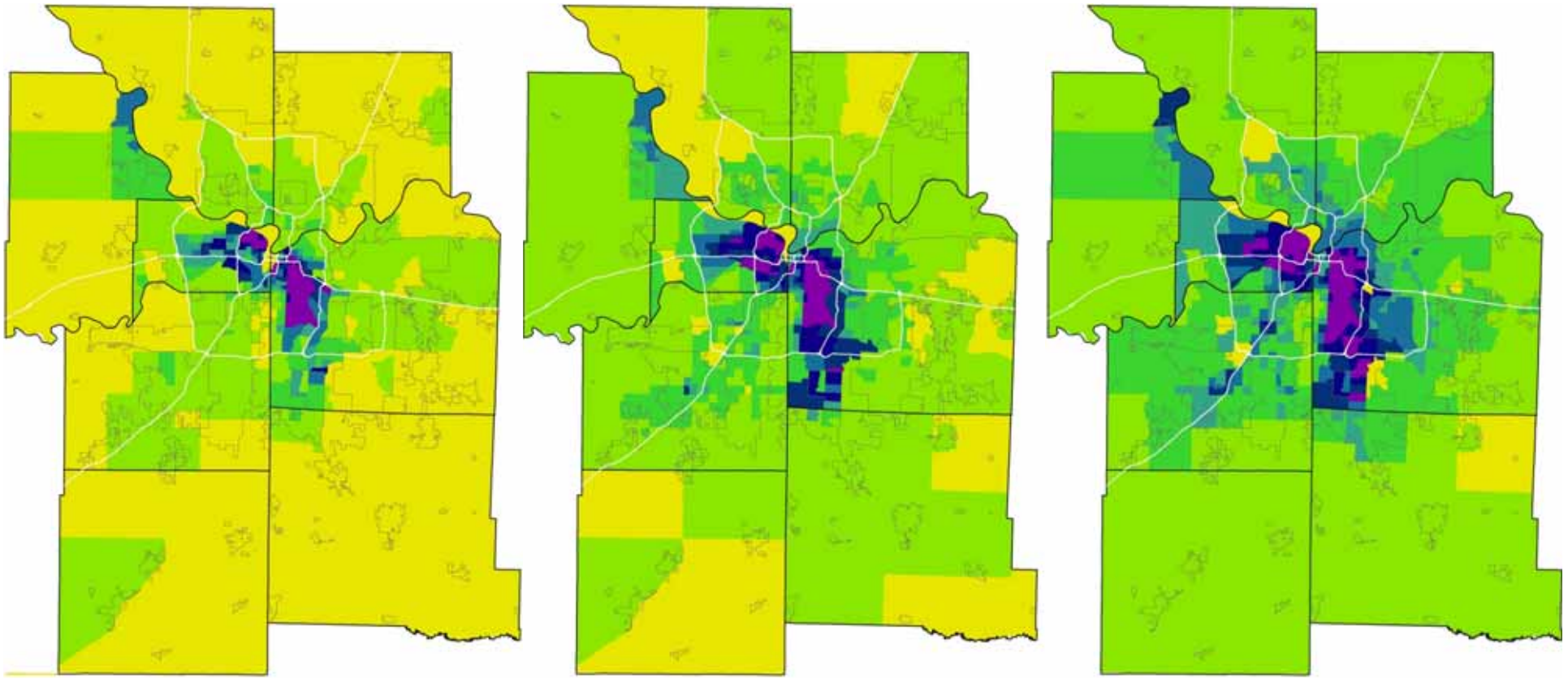
Percent of population below poverty



1990 **2000** **2010**

PCTNONWT_90 00 10

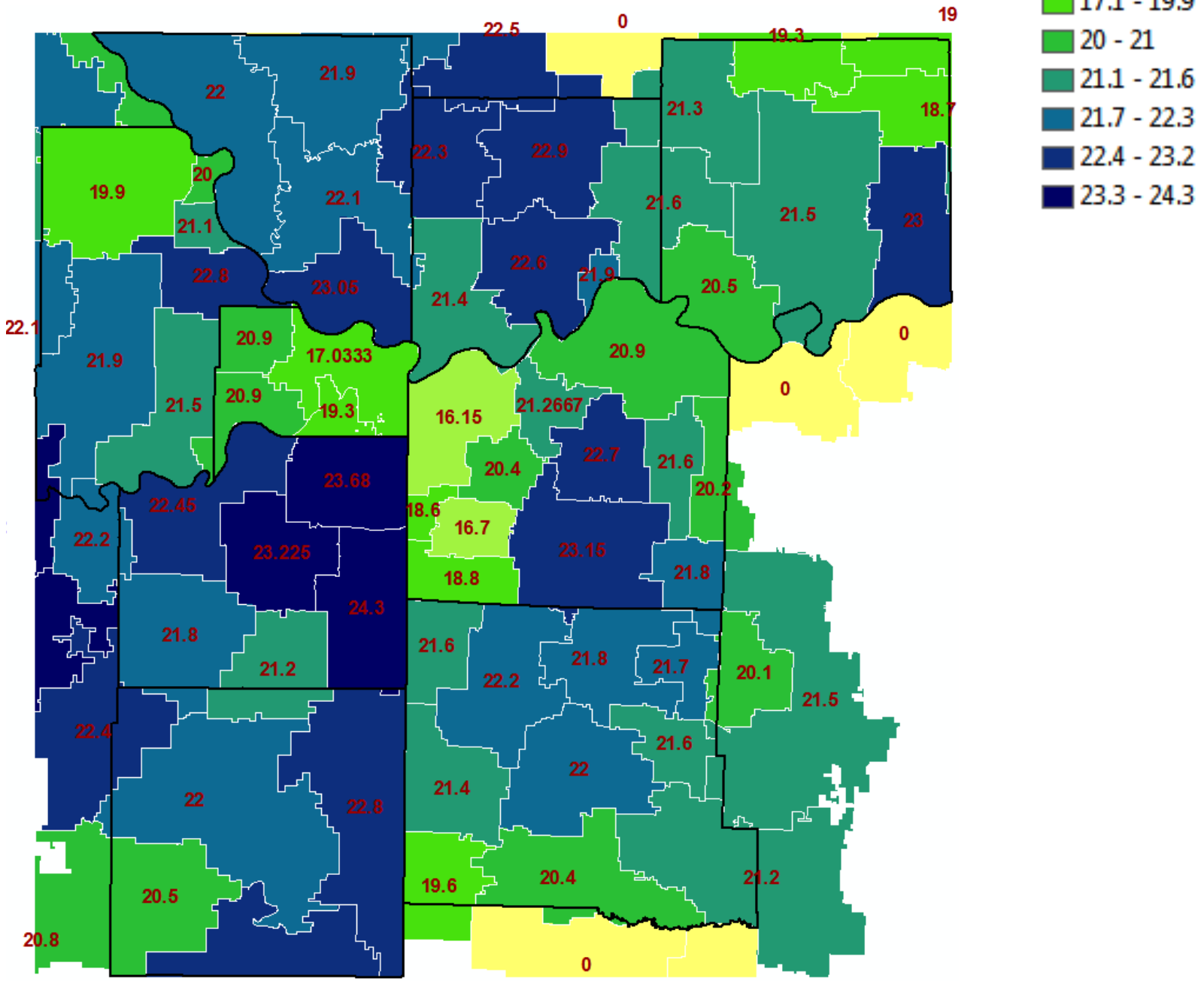
Percent of population not (White, Non-Hispanic)



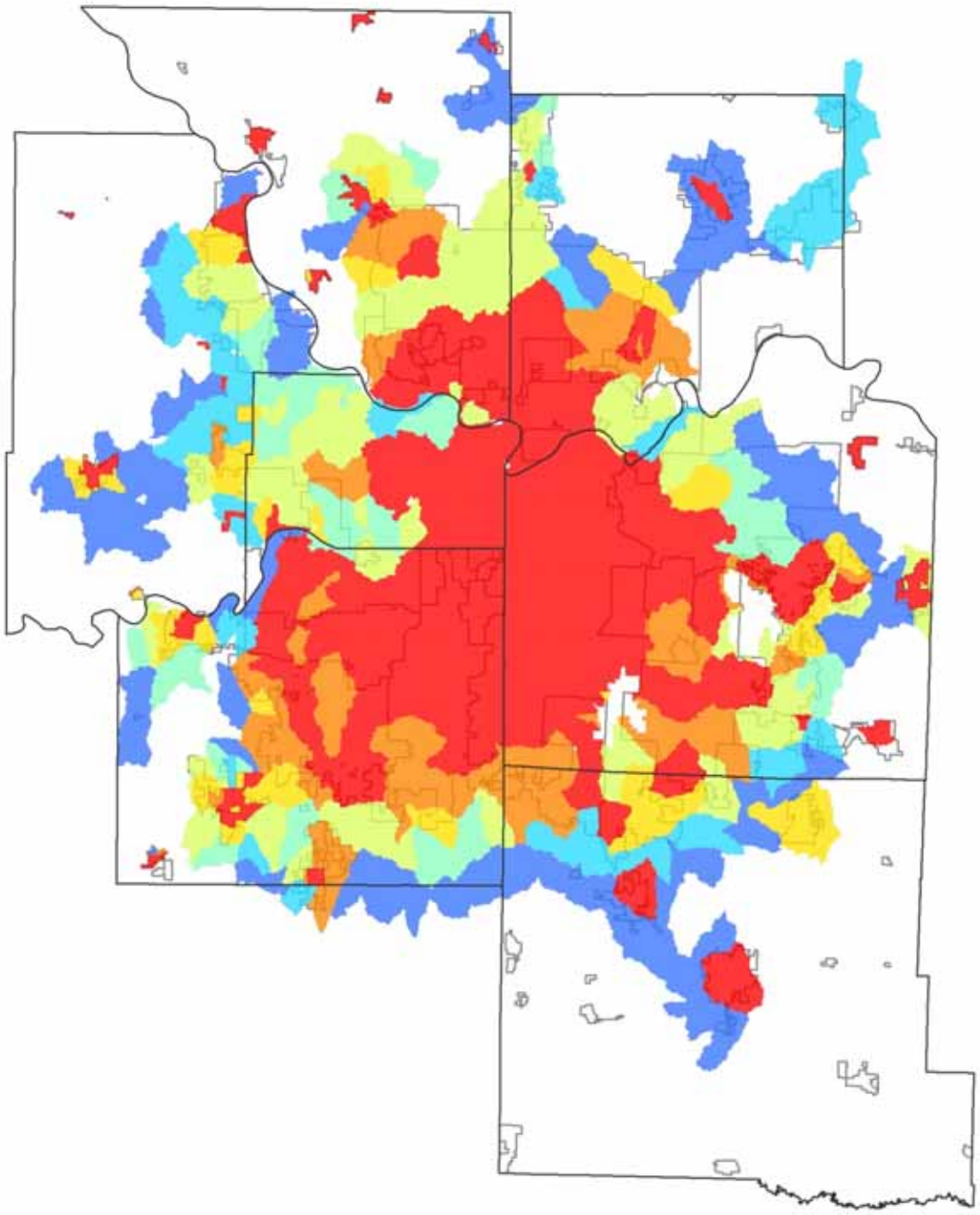
1990 **2000** **2010**

ACTSCORE09

2009 ACT Scores

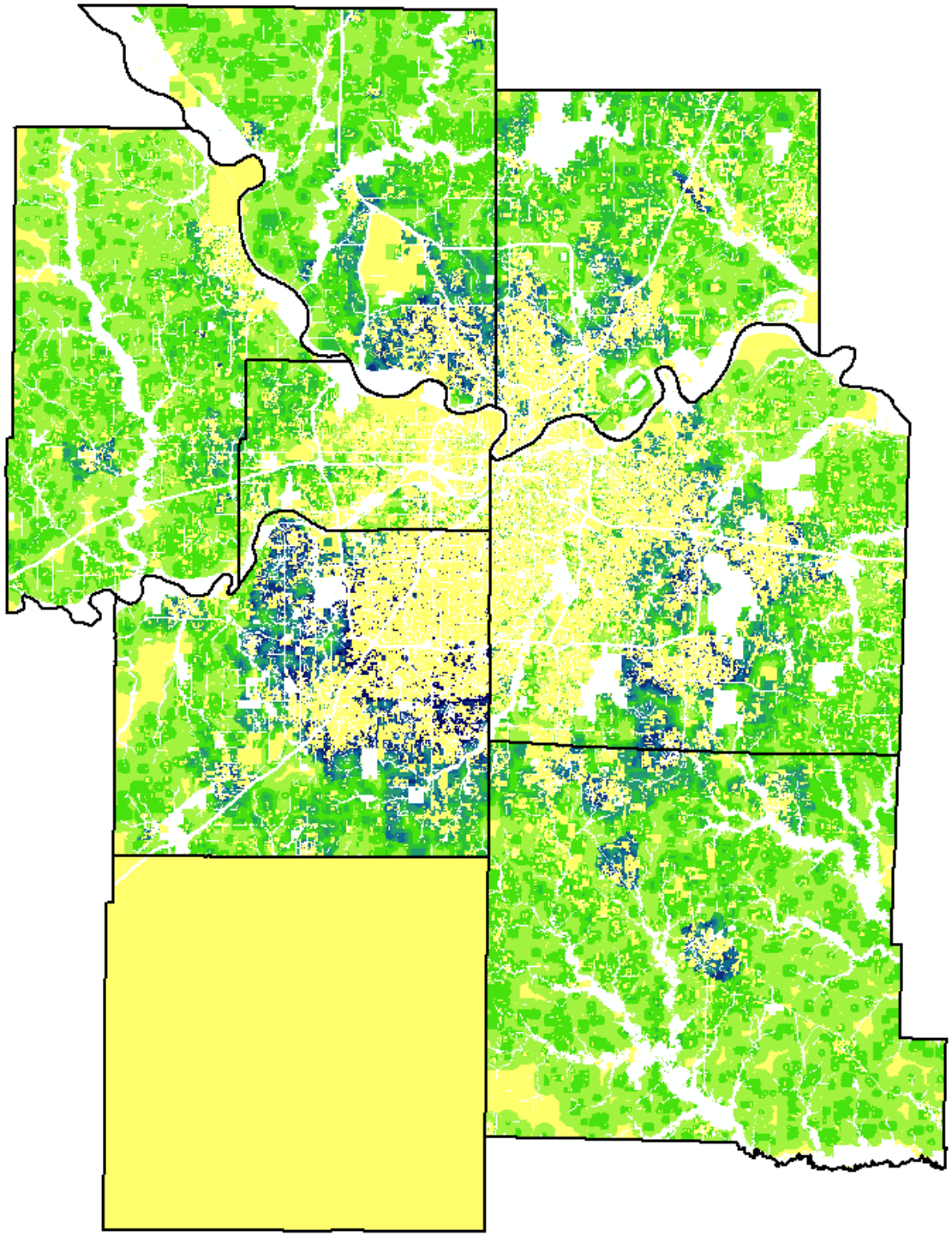


Sewer Service Availability



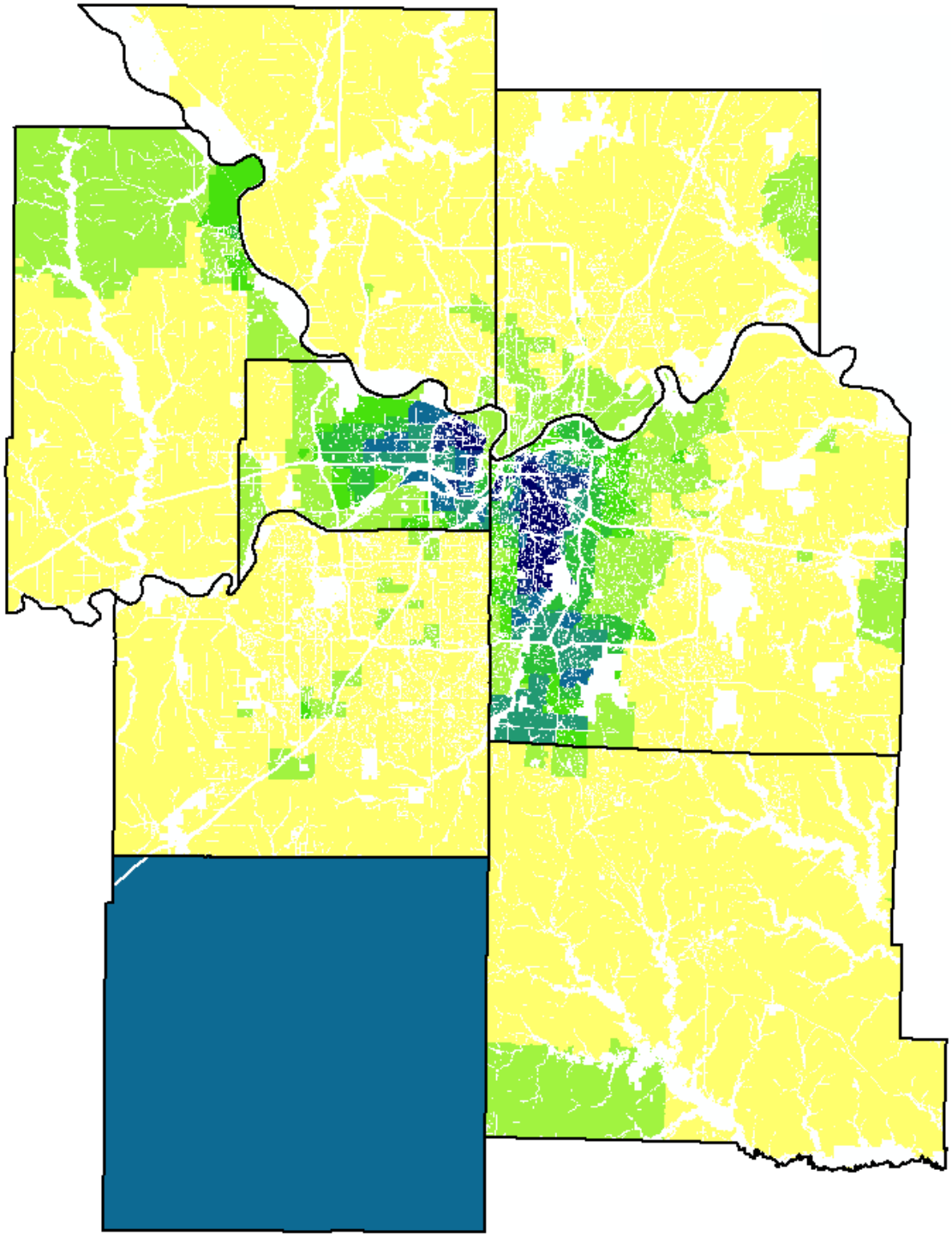
Prob_newdev1 –with dist_90

Probability of Greenfield Development



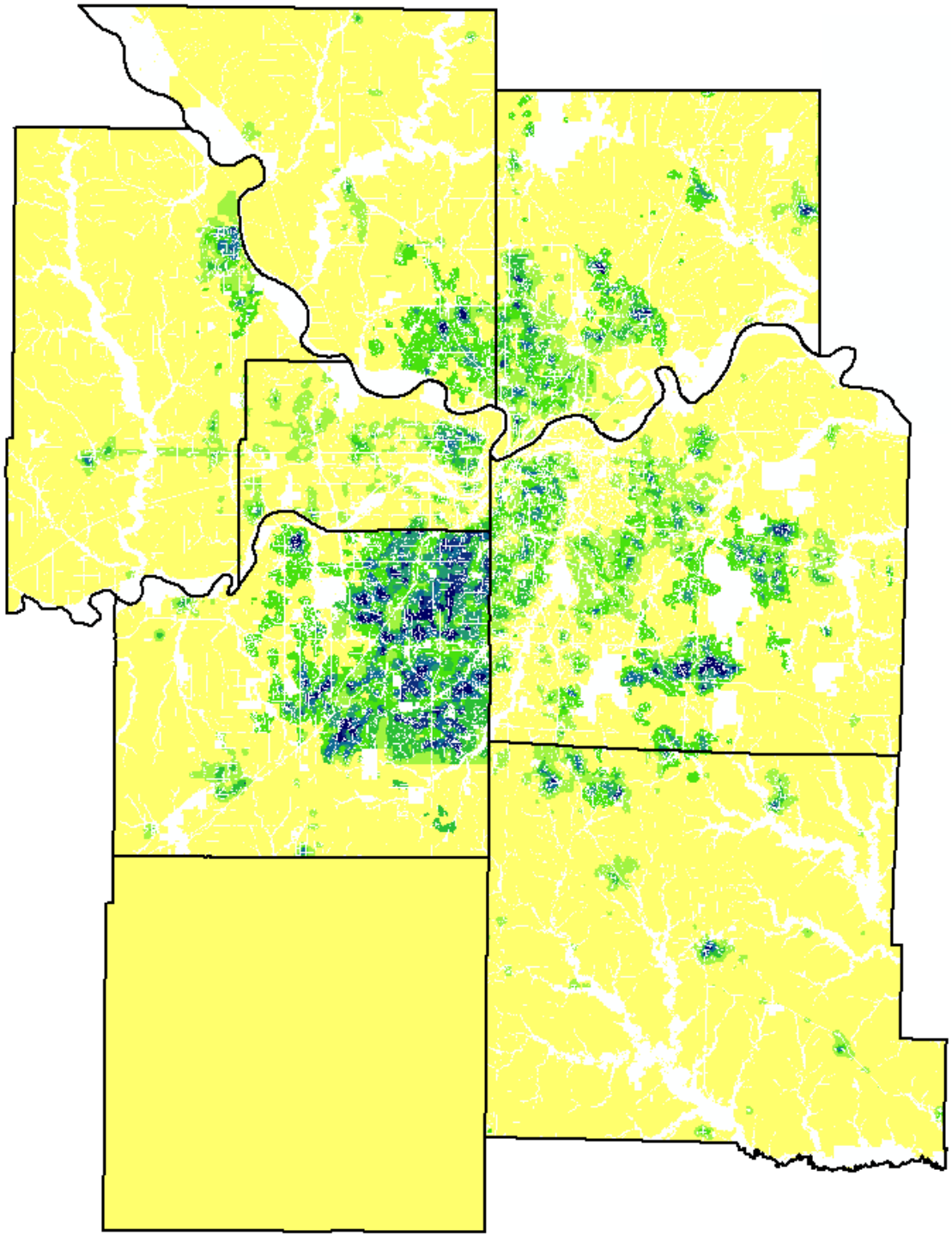
Prob_decl1

Probability of Structure Loss

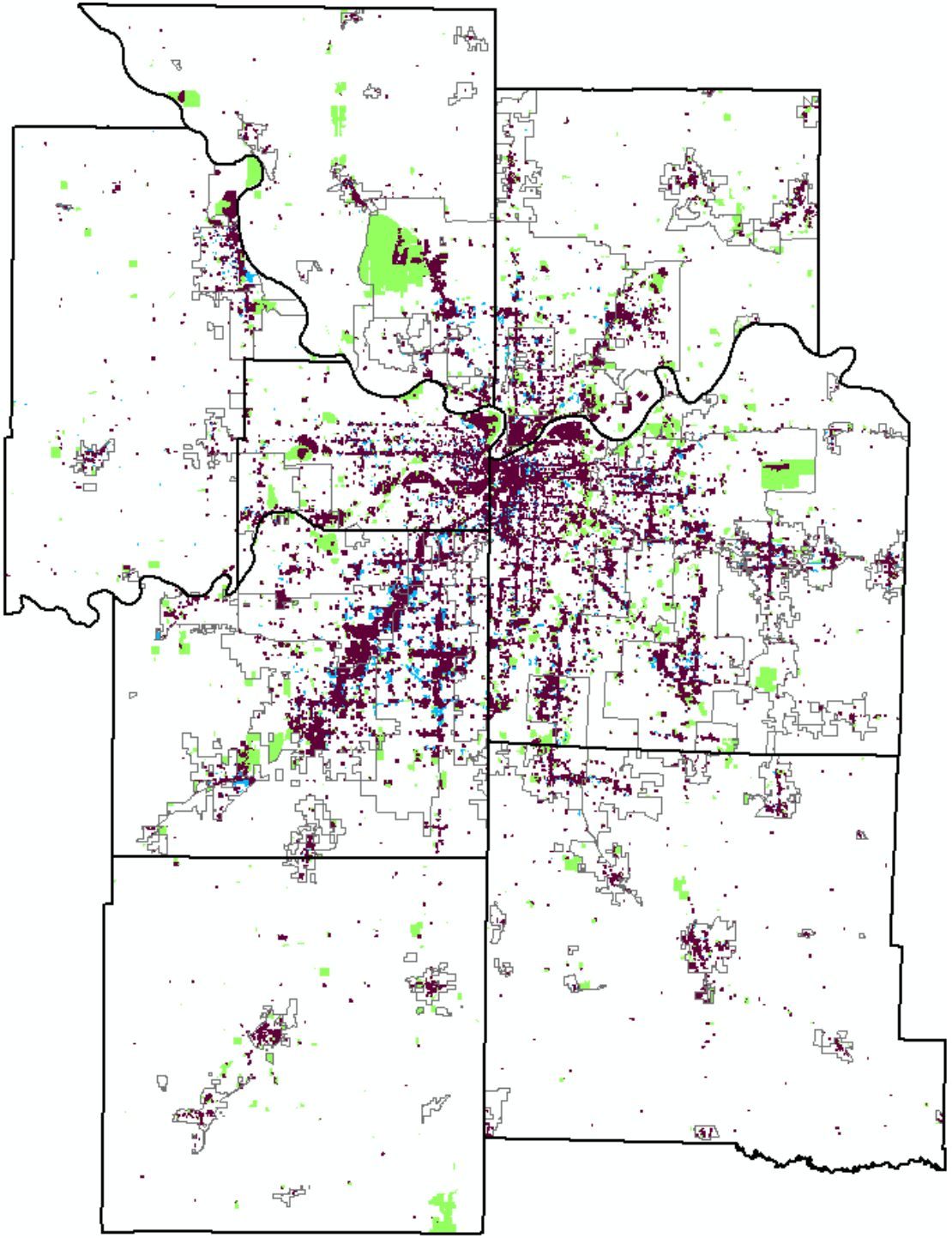


Prob_redev1 (2)

Probability Reinvestment and Refill



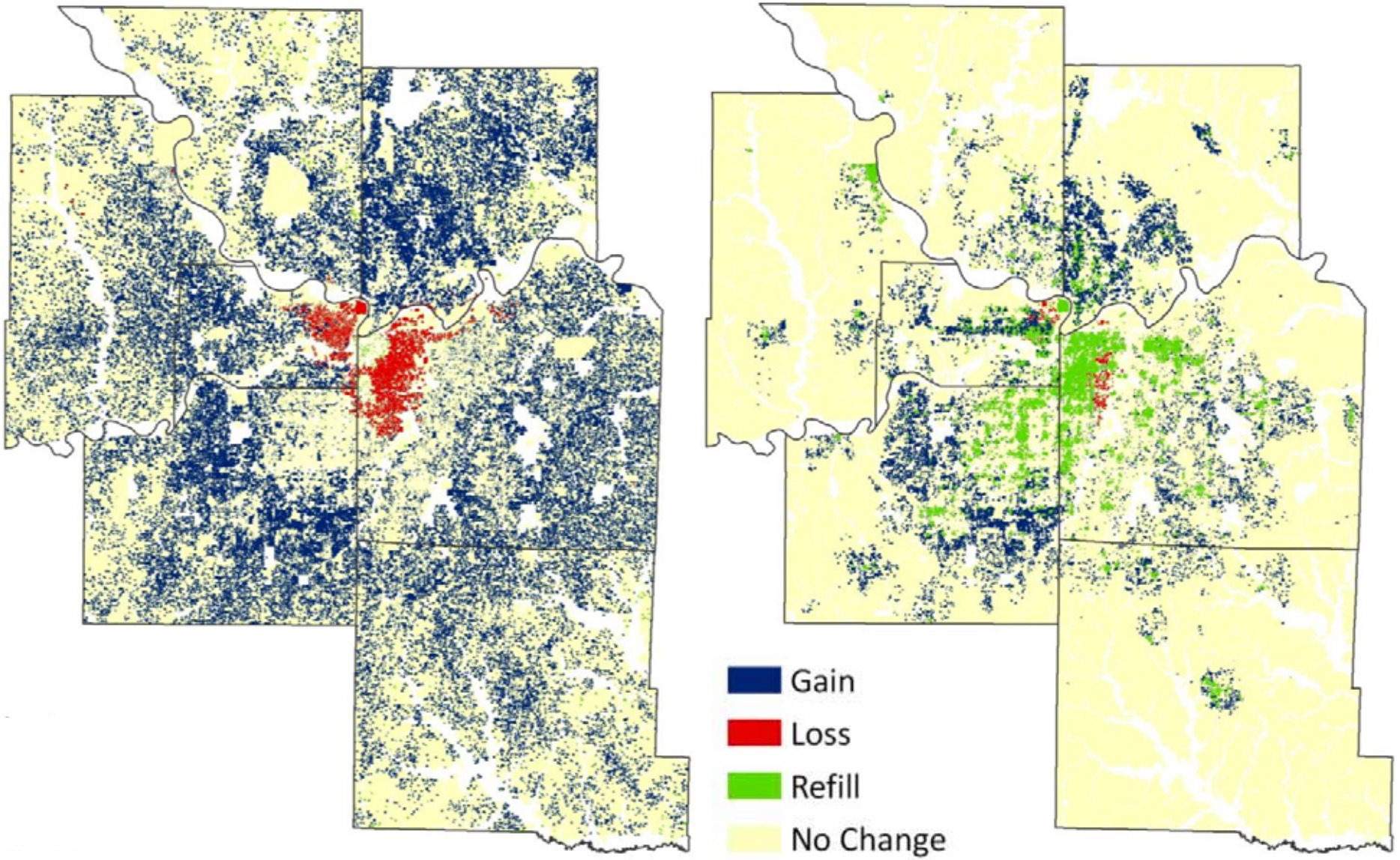
Polygons Used to Create Activity Centers



Change in Population or Employment

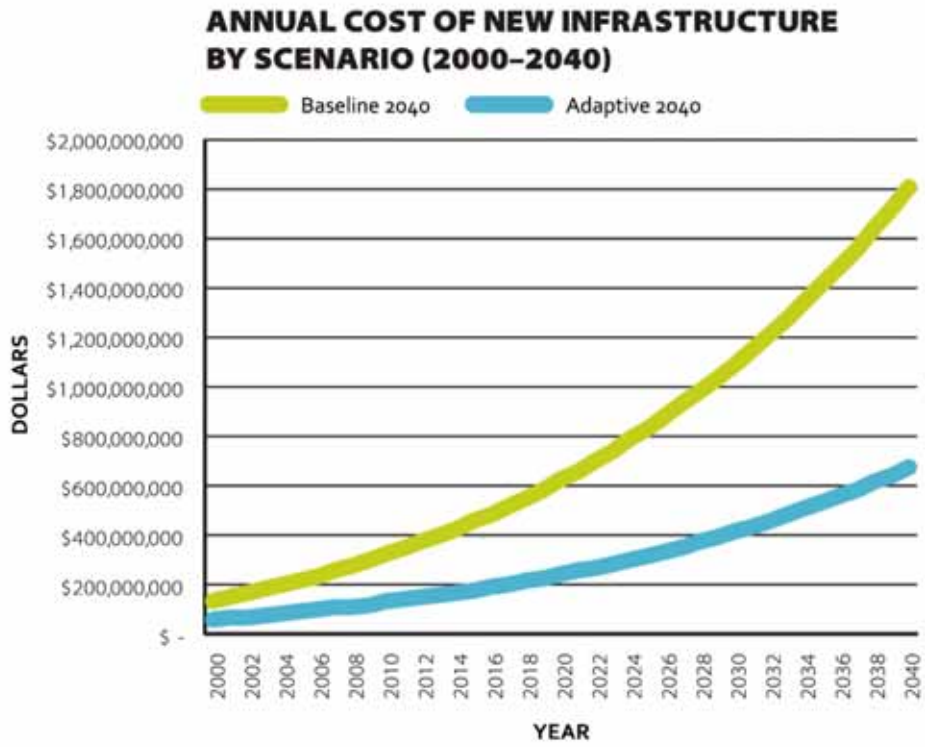
Baseline

Adaptive



Transportation Outlook 2040

SCENARIO COMPARISON



By the end of the period, the adaptive scenario costs $1 billion less for local roads, sewers, water, and stormwater.

Visual preference surveys:
We want to change this…

Source: Dover Kohl & Partners

to this…

Source: Dover Kohl & Partners

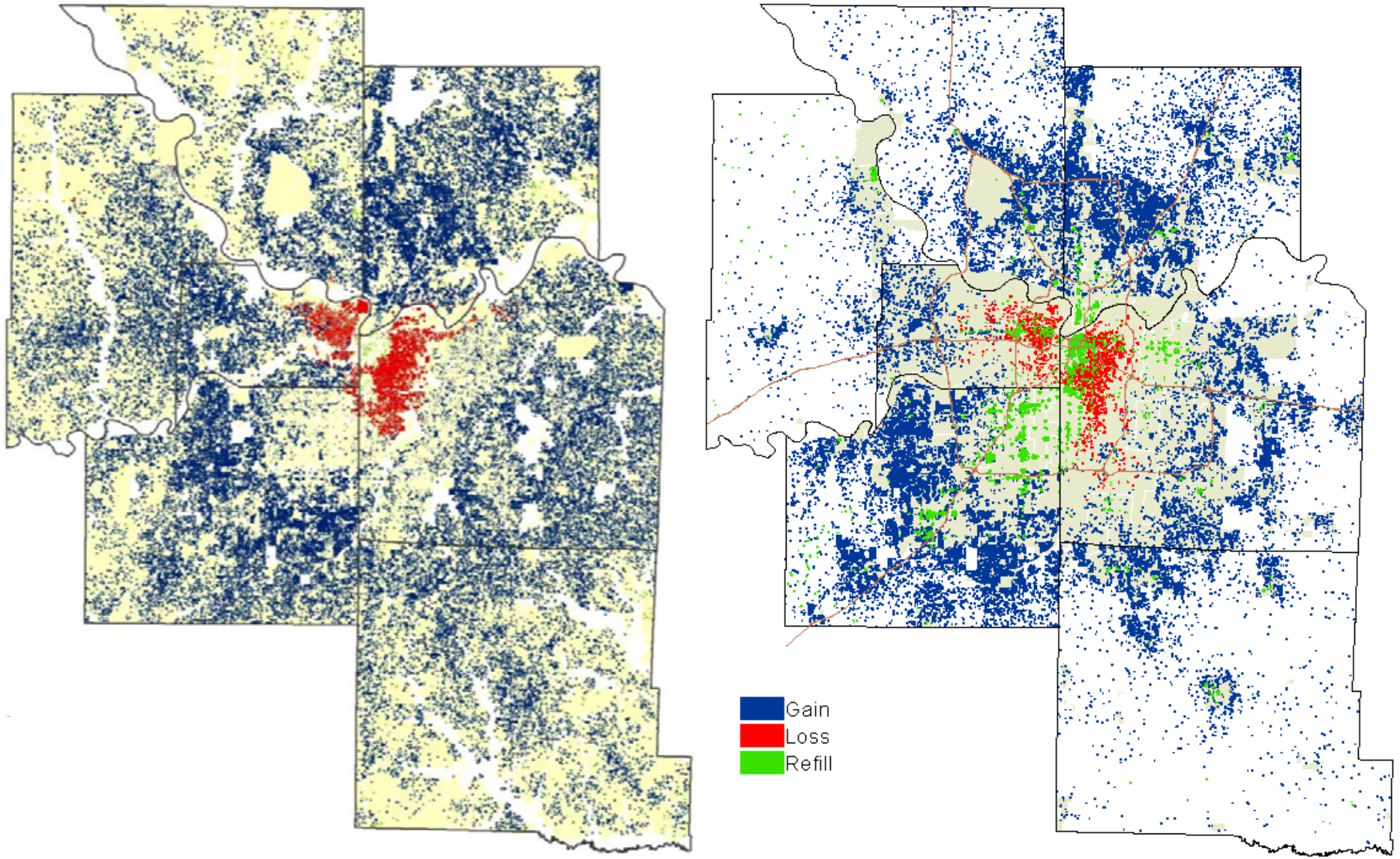
to this.

Source: Dover Kohl & Partners

Change in Population or Employment

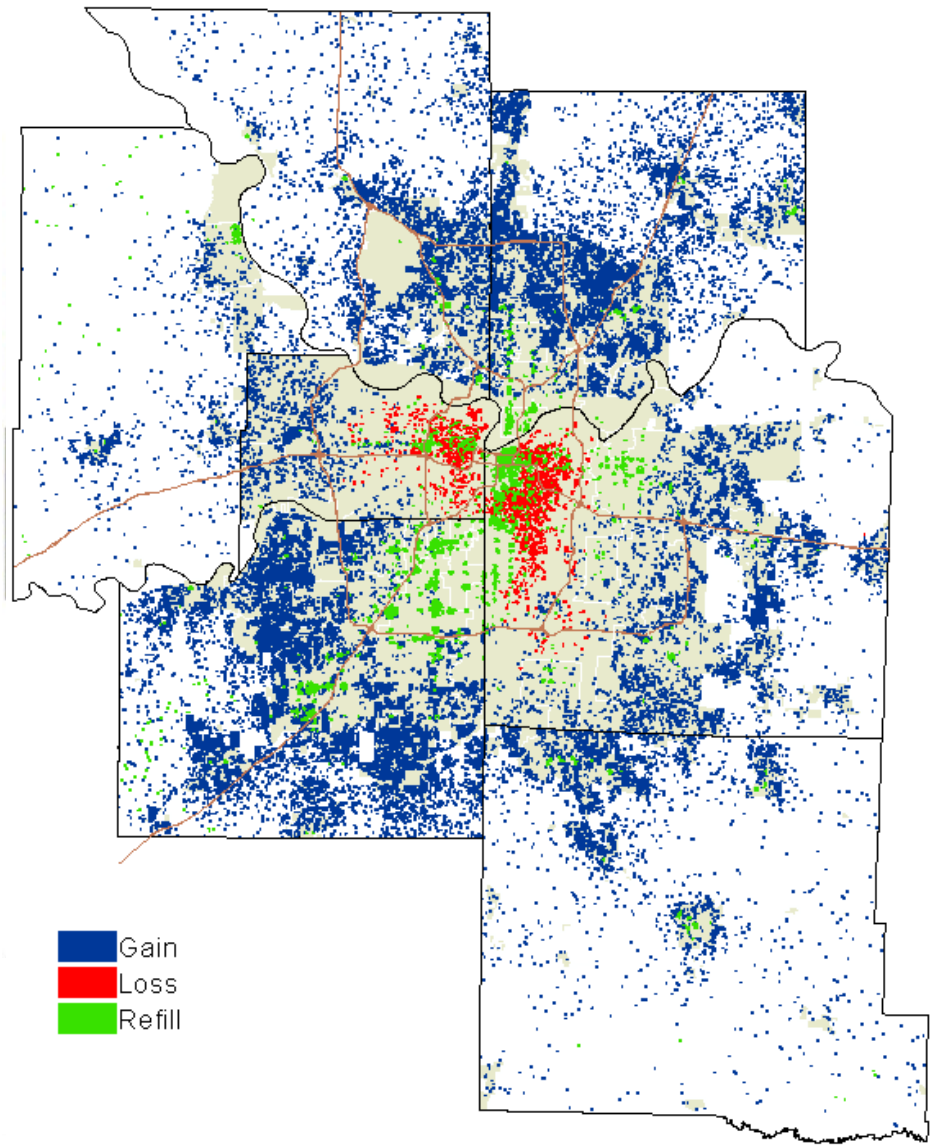
Baseline

Forecast

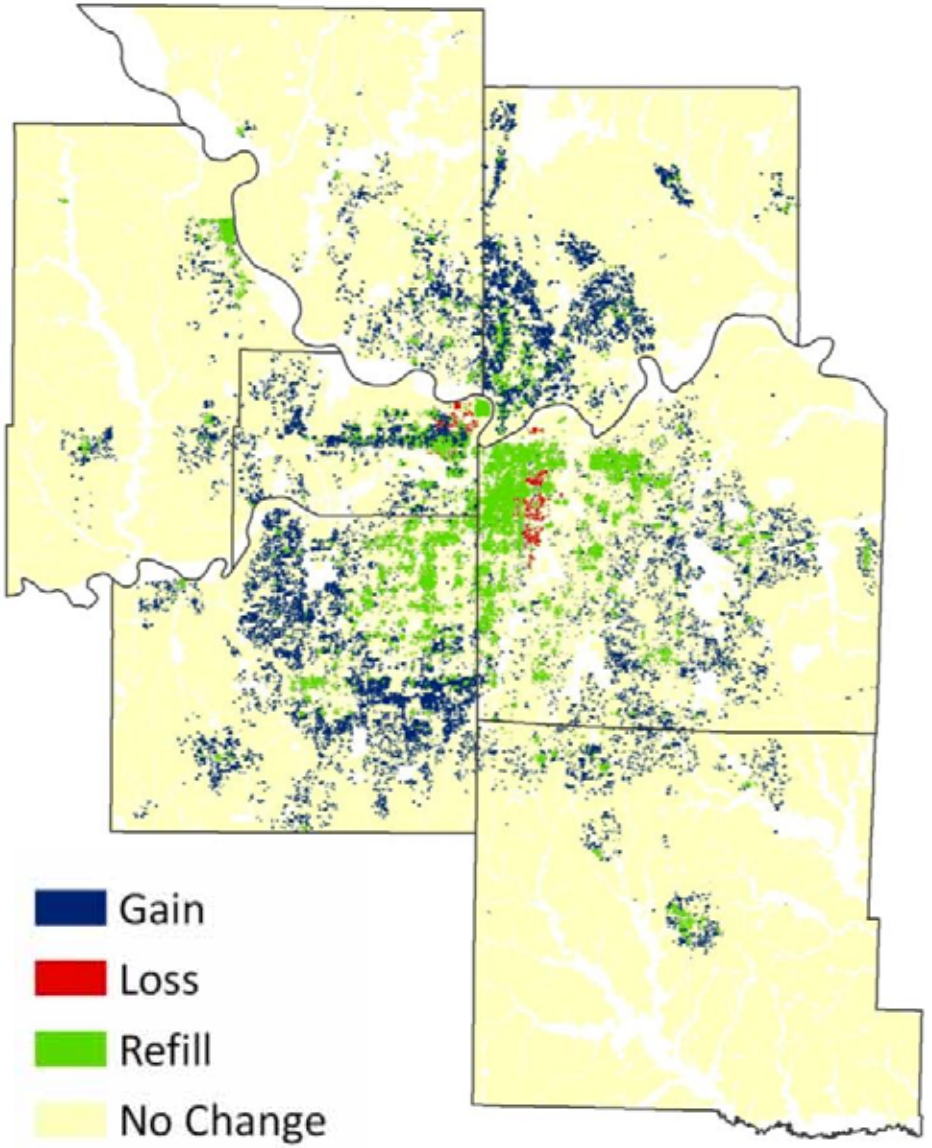


Change in Population or Employment

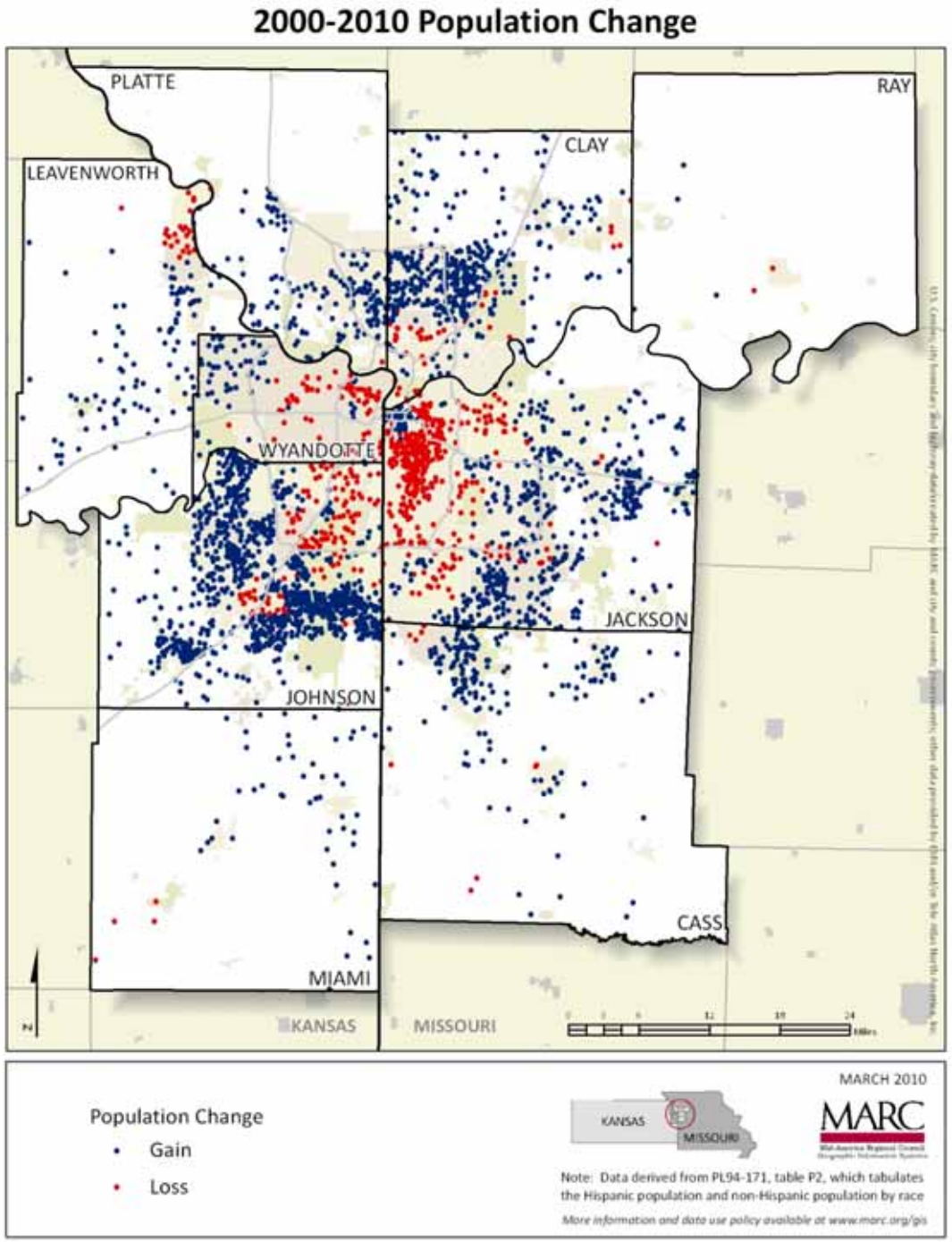
Forecast



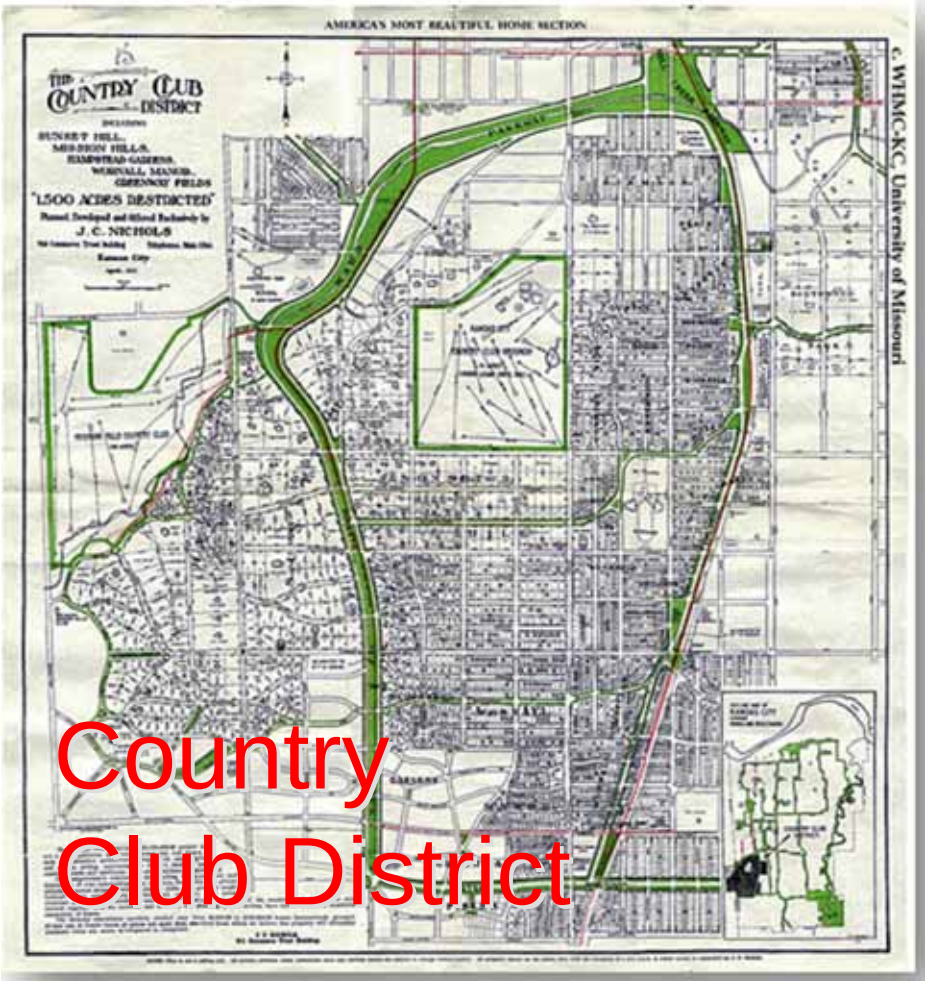
Adaptive



Some redevelopment occurred during the 2000s, particularly downtown KCMO



But losses still resulted in the area urbanized by 1990 accounting for -9.5% of the region's population growth

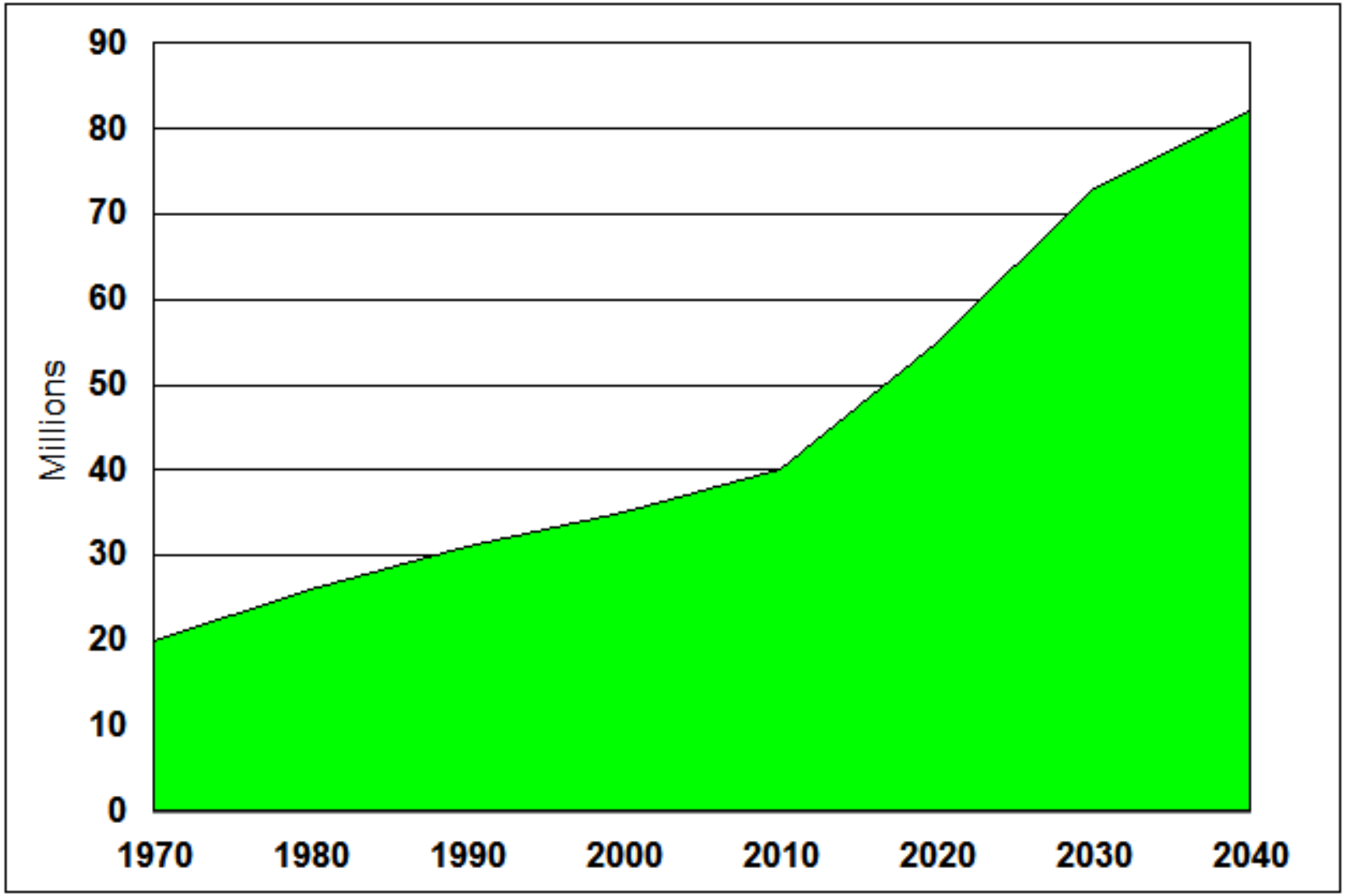


Country Club District

KC Streetcars, 1920

VIBRANT | CONNECTED | GREEN

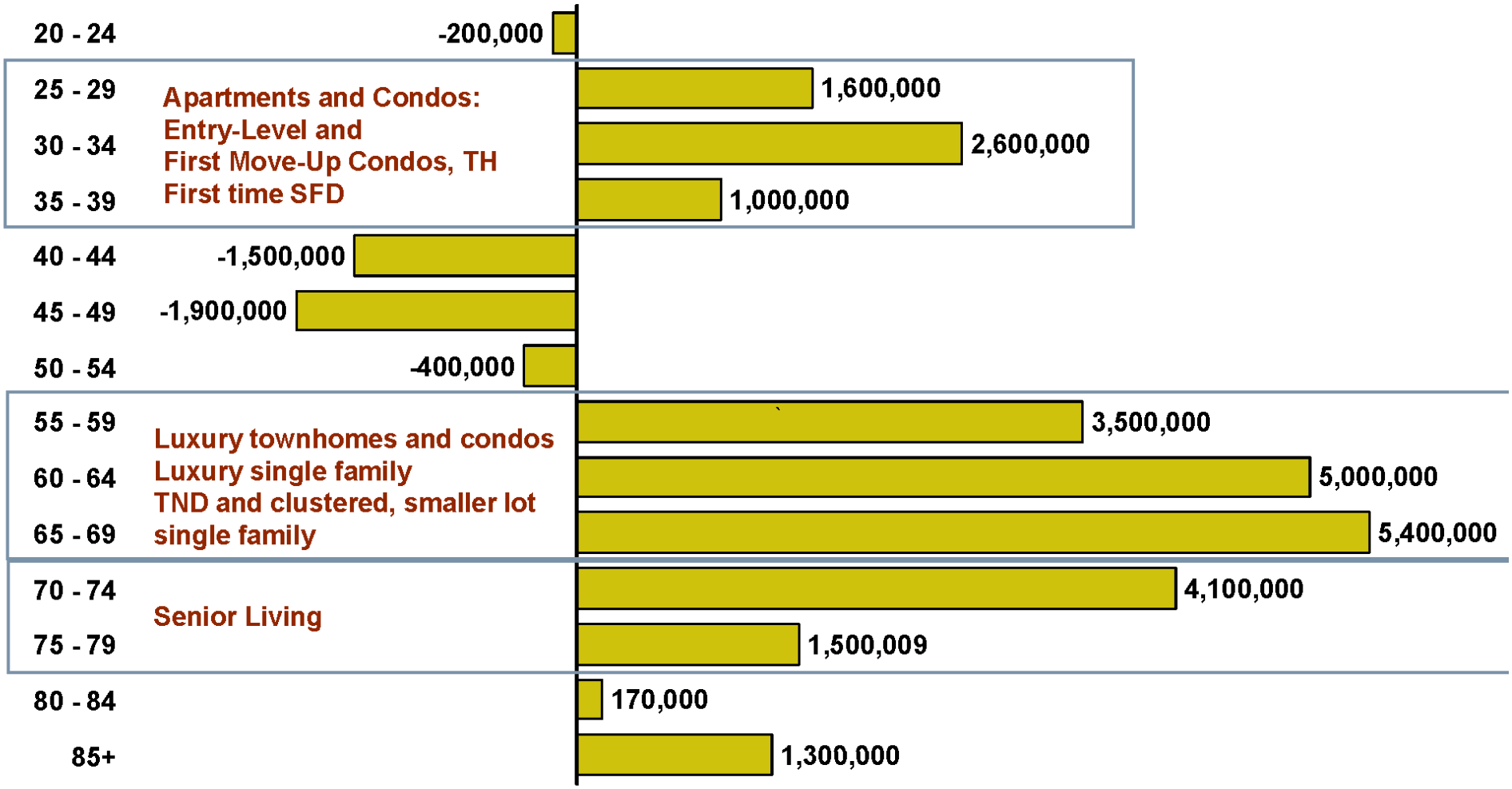
Number of Seniors 1970-2040



Source: Arthur C. Nelson, Metropolitan Research Center, University of Utah

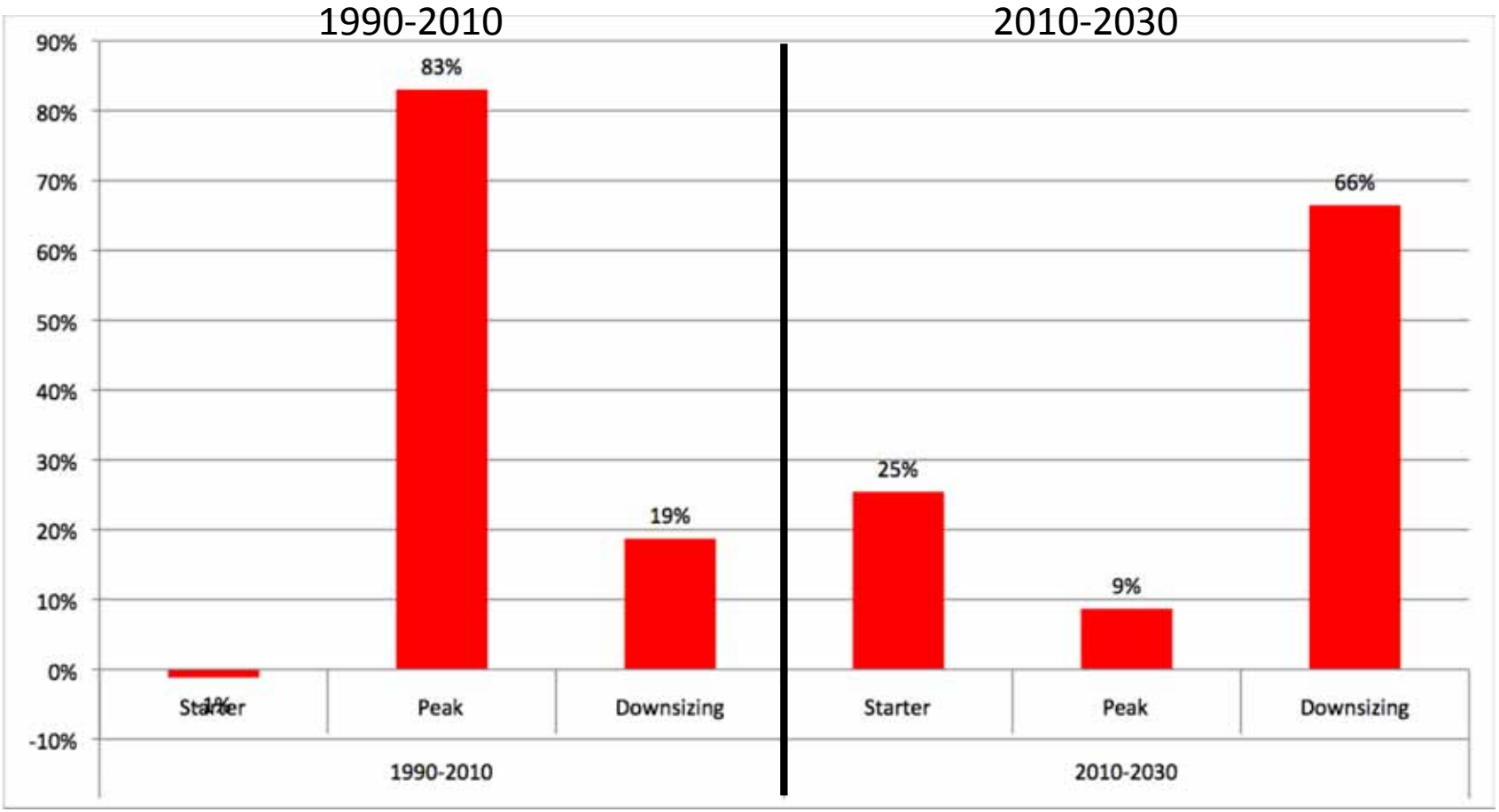
DEMOGRAPHIC SHIFTS AND HOUSING DEMAND
BUILT-IN DEMAND FOR HIGHER-DENSITY LIVING

Projected Total Population Growth Rate by Age
2010–2020



SOURCE: U.S. Census Bureau

What a Difference a Generation Makes – KC Metro



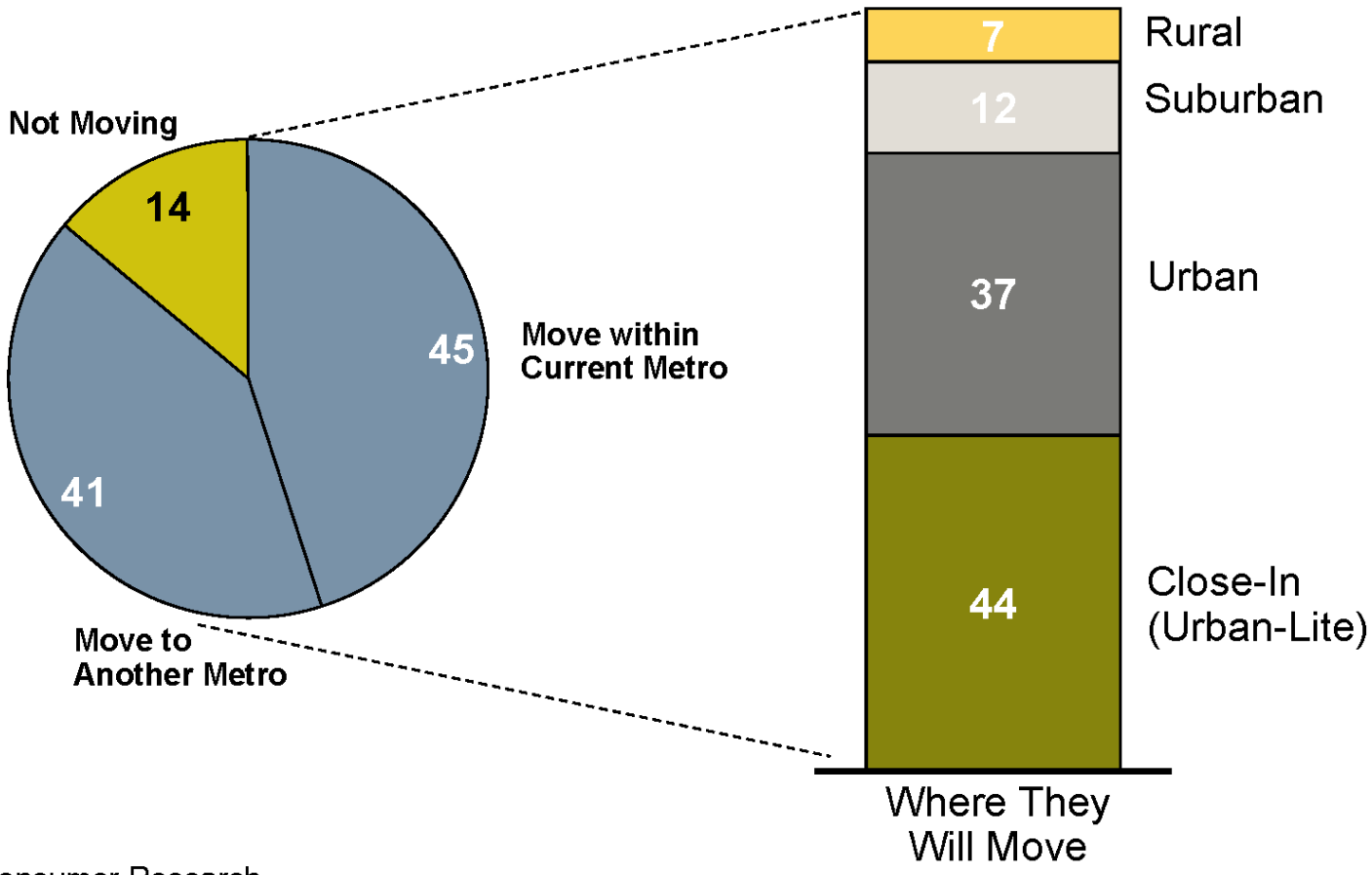
Emerging Paradigm

Characteristics

- Millennials (Gen Y) will power the next cycle of growth
- Less Demand for Space
- Larger Segments Want Walkable, Mixed Use, Transit-Friendly
- More Demand for Places that may be hard to find in KC

86% OF GEN Y RENTERS ARE MOVING MOSTLY GOING TO WALKABLE LOCATIONS

Movement of Gen Y Renters (%)

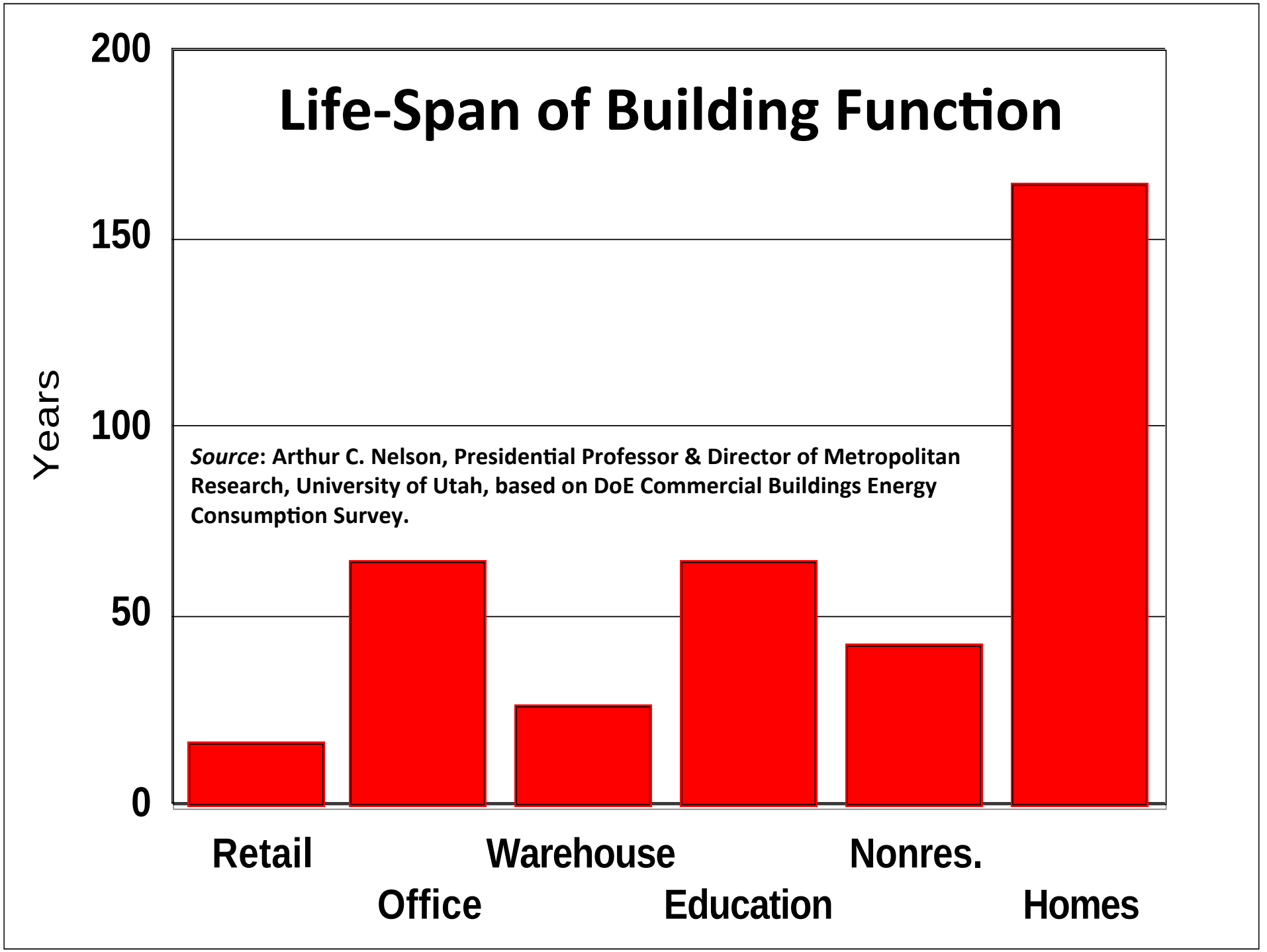


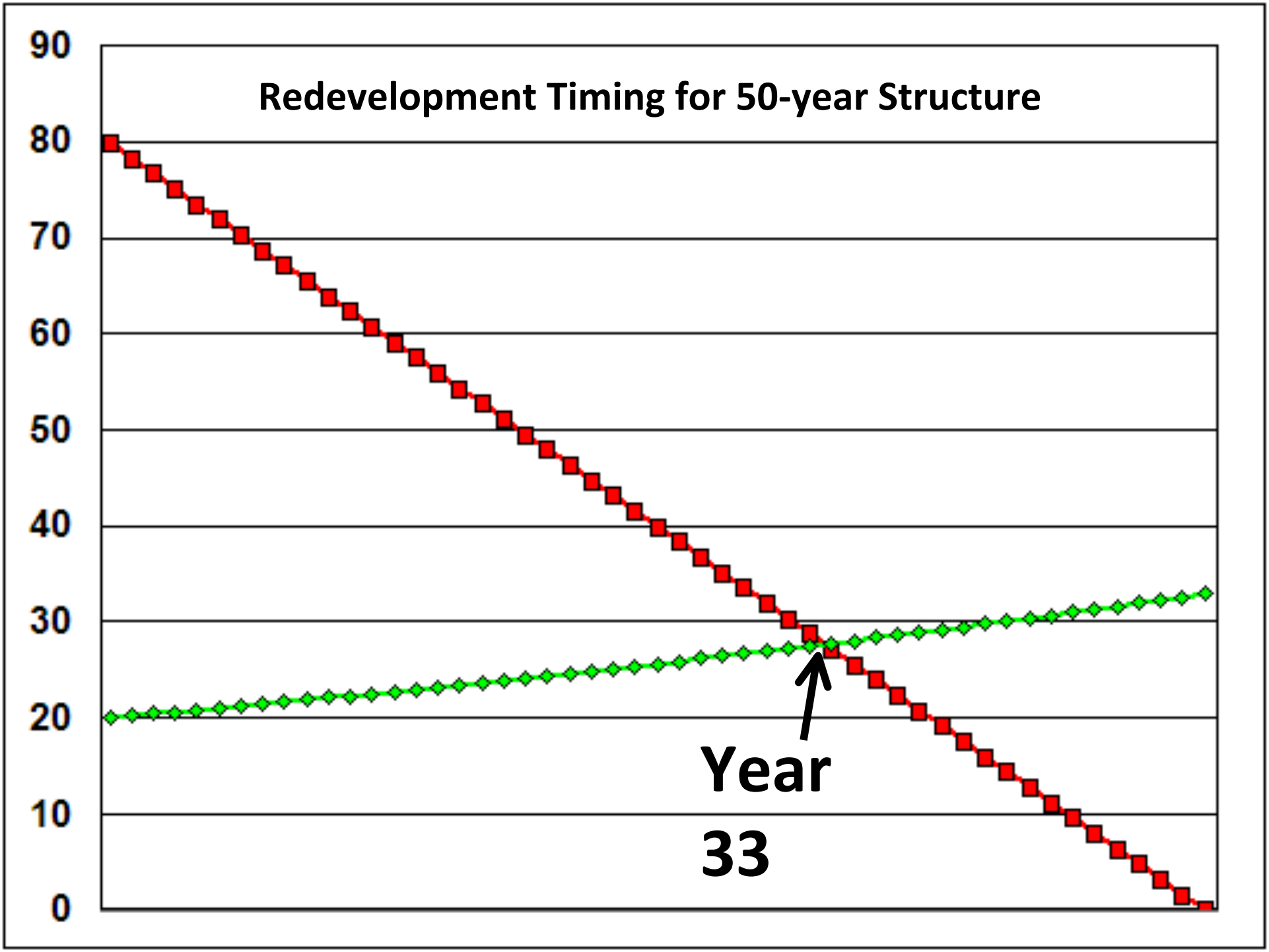
Source: RCLCO Consumer Research

SMART GROWTH NOT JUST FOR SINGLES

SOURCES OF DEMAND FOR SMART GROWTH IN KANSAS CITY

PREFERENCE FOR SMART GROWTH IN KANSAS CITY IN-LINE WITH NATIONAL AVERAGE


Life-Span of Building Function
200
150
100
50
0
Years
Source: Arthur C. Nelson, Presidential Professor & Director of Metropolitan Research, University of Utah, based on DoE Commercial Buildings Energy Consumption Survey.
Retail
Office
Warehouse
Education
Nonres.
Homes


Redevelopment Timing for 50-year Structure
90
80
70
60
50
40
30
20
10
0
Year
33

Opportunities

CSP INDICATOR STRUCTURE

A simple theory of change…

THE RIGHT **POLICIES** → PROMOTE **ACTIONS** → IN **PLACES** → THAT TRANSFORM REGIONAL **OUTCOMES**

CSP INDICATOR STRUCTURE

POLICIES

1. Adopt innovative incentives to promote sustainable development/redevelopment
2. Adopt sustainable development codes
3. Adopt inclusionary zoning
4. Utilize Envision Tomorrow ROI model to evaluate development
5. Change in parking policies
6. Give priority to maintaining existing infrastructure
7. Invest in infrastructure to promote a vital economy
8. Evaluate net economic return to infrastructure investment
9. Adopt Complete Streets policies
10. Adopt stormwater Best Management Practices
11. Adopt energy efficiency codes
12. Increase conservation areas
13. Adopt PACE - investment in energy efficiency paid back thru property tax levy
14. Adopt cluster economic development strategies with middle skill jobs

CSP INDICATOR STRUCTURE

POLICIES

LOCAL ACTIONS

VIBRANT

REINVESTMENT • square feet of commercial construction

HOUSING CHOICE • multifamily building permits

STREET LIFE • % federal funds spent on complete streets

LOCAL ECONOMY • all Actions contribute to this

CONNECTED

TRANSPORTATION CHOICE • transit capital expenditures

HEALTHY LIFESTYLES • increases in places to get healthy food

SOCIAL EQUITY • affordable housing units built

GREEN

ENERGY EFFICIENCY • number of LEED buildings constructed

GREEN INFRASTRUCTURE • number of trees planted

PLACES

OUTCOMES

CSP INDICATOR STRUCTURE

POLICIES

ACTIONS

PLACES IMPACTS

VIBRANT

REINVESTMENT • change in rents

HOUSING CHOICE • change in population density

STREET LIFE • estimated change in bike/pedestrian trips

LOCAL ECONOMY • employment change

CONNECTED

TRANSPORTATION CHOICE • transit ridership

HEALTHY LIFESTYLES • % pop w/i ½ mile of healthy food

SOCIAL EQUITY • jobs/housing balance – earnings vs. income

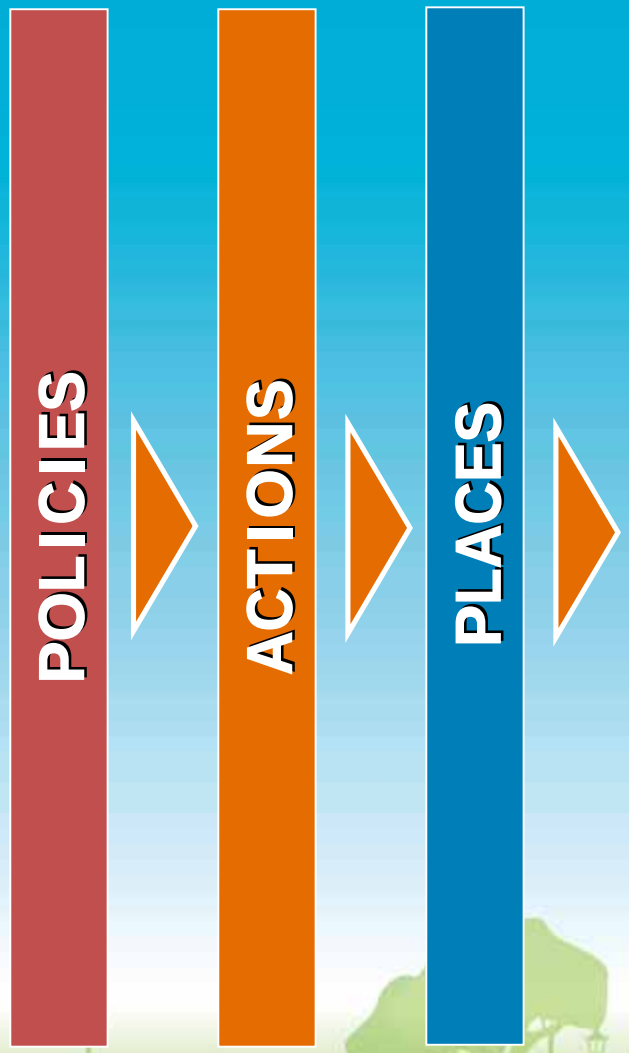
GREEN

ENERGY EFFICIENCY • estimated local building energy use

GREEN INFRASTRUCTURE • local tree canopy cover

OUTCOMES

CSP INDICATOR STRUCTURE



REGIONAL OUTCOMES

HEALTHY

INDIVIDUAL HEALTH• years of potential life lost

PLACE HEALTH• % regional population growth in existing areas

SOCIAL HEALTH• segregation indices

ENVIRONMENTAL HEALTH• estimated GHG emissions

ECONOMIC HEALTH• GDP/capita compared to peers

WEALTHY

SOCIAL CAPITAL• % believing most people are worth trusting

NATURAL CAPITAL• Regional pervious surface

ECONOMIC CAPITAL• real estate values

WISE

EDUCATION• % earning a college degree

INNOVATION• Employment in young businesses

RESOURCE USE• % change in developed land vs. population

CSP INDICATOR STRUCTURE

POLICIES

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2. Adopt sustainable development codes
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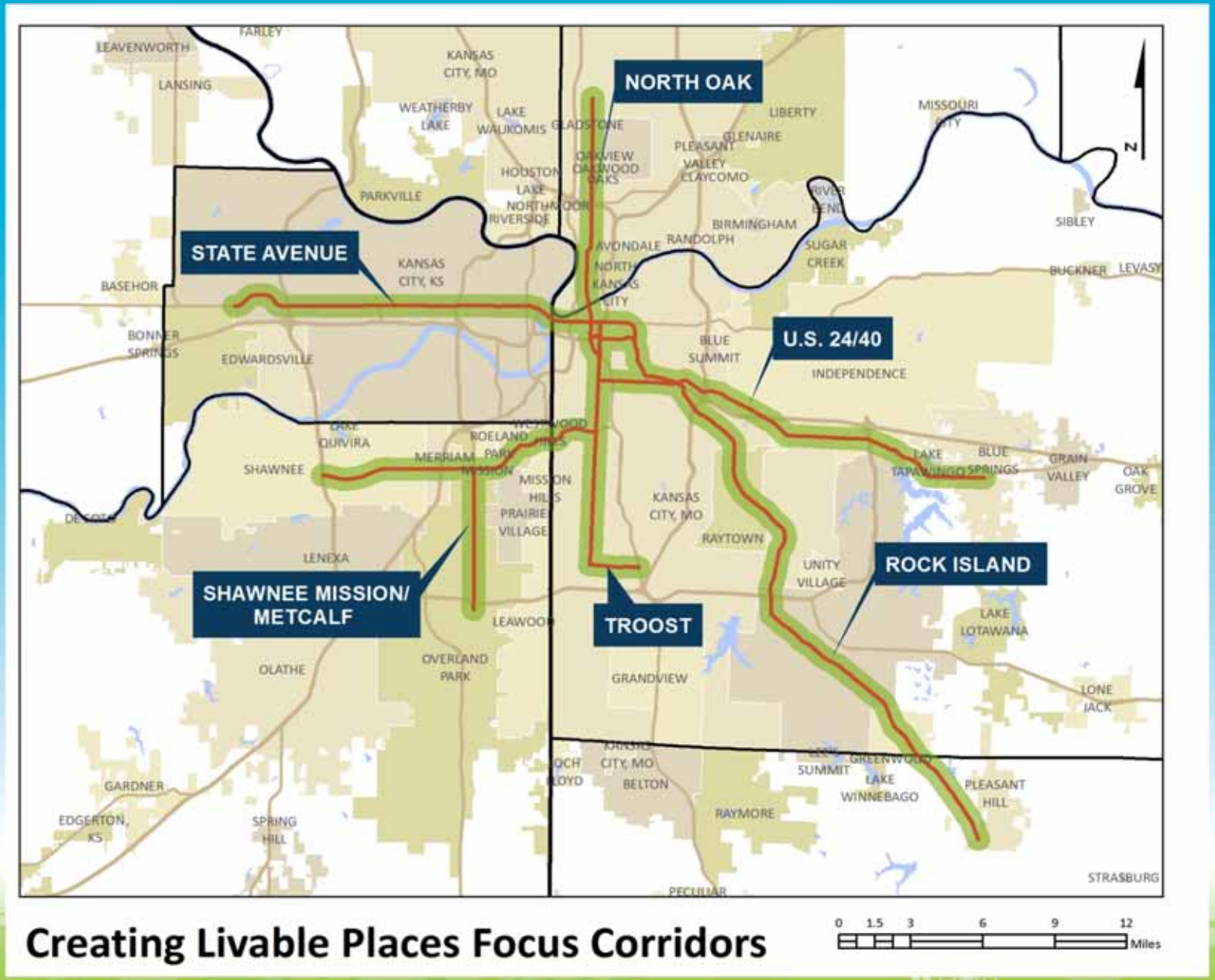
GREEN INFRASTRUCTURE • number of trees planted

PLACES

OUTCOMES

CSP CORRIDORS



Creating Livable Places Focus Corridors

What Planners Want

- Vertical mixed-use
- Underground parking
- Lots of greenery and parks

ROI for Kansas City

-$90 million dollars

What Planners Think Developers Want

- Cheap, monolithic construction
- Free parking for everyone
- A half-acre lot for every home

ROI for Kansas City

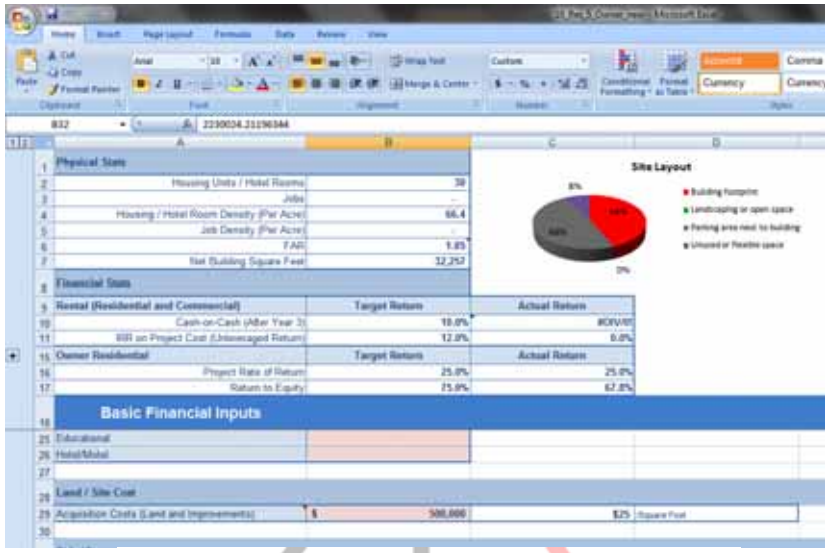
+$ 3 million

ROI for Kansas City

+$50,000 / lot

Tools for Planners to Understand Market Realities of Development

- ☐ **Building-Level Return on Investment (ROI) Model**
- ☐ Physical
  - ☐ Height
  - ☐ Unit sizes
  - ☐ Parking configurations
- Financial
  - Rents / sales prices
  - Construction costs
  - Land costs
- *"Form-based modeling meets market reality"*



Feasible?

Creating Market-Feasible New Centers

- **First draft: planner's dream**
  - 3-story vertical mixed use
  - Structured parking
  - 40% open space
  - **($37 million short)**
    - **65% of total project value**

- **Refinement in ROI Model**
  - Horizontal mixed use (main street retail with adjacent housing)
  - More cottage homes and small lot single family
  - Surface and on-street parking
  - +4% Return
    - $10 million short
  - But application of LIHTC and other incentives and a developer can make money at it

Short Term Market May Differ from Long Term Vision – Embrace Both.

- ***Allow inexpensive and/or interim building types that meet urban design standards***
- 1-story main street retail/office with no parking required
  - Increases street activity, generates downtown activity
  - Cheap to build, no subsidy required
  - Can be redeveloped when market heats up

Embrace the Market: Urban Single Family

- Cottage Homes
- Townhomes
- Compact Single Family
  - 12-20 units per acre
  - Potential for hundreds of new units near downtown cores
  - No subsidy required
  - Transit efficient and walkable/bikeable

Leverage What We Have

- Large stock of large old homes
- Difficult for single family to maintain alone
- Opportunity for owner-occupied rental conversion, ADUs – easily cover mortgage
- Housing solution for young urban pioneers and aging boomers alike.

Adaptive Reuse: a Viable Path Forward

- Streetcar retail repurposed
- Large homes re-imagined as flats

Repurposed Retail

1/3rd cost of new construction

Single Family to Duplex

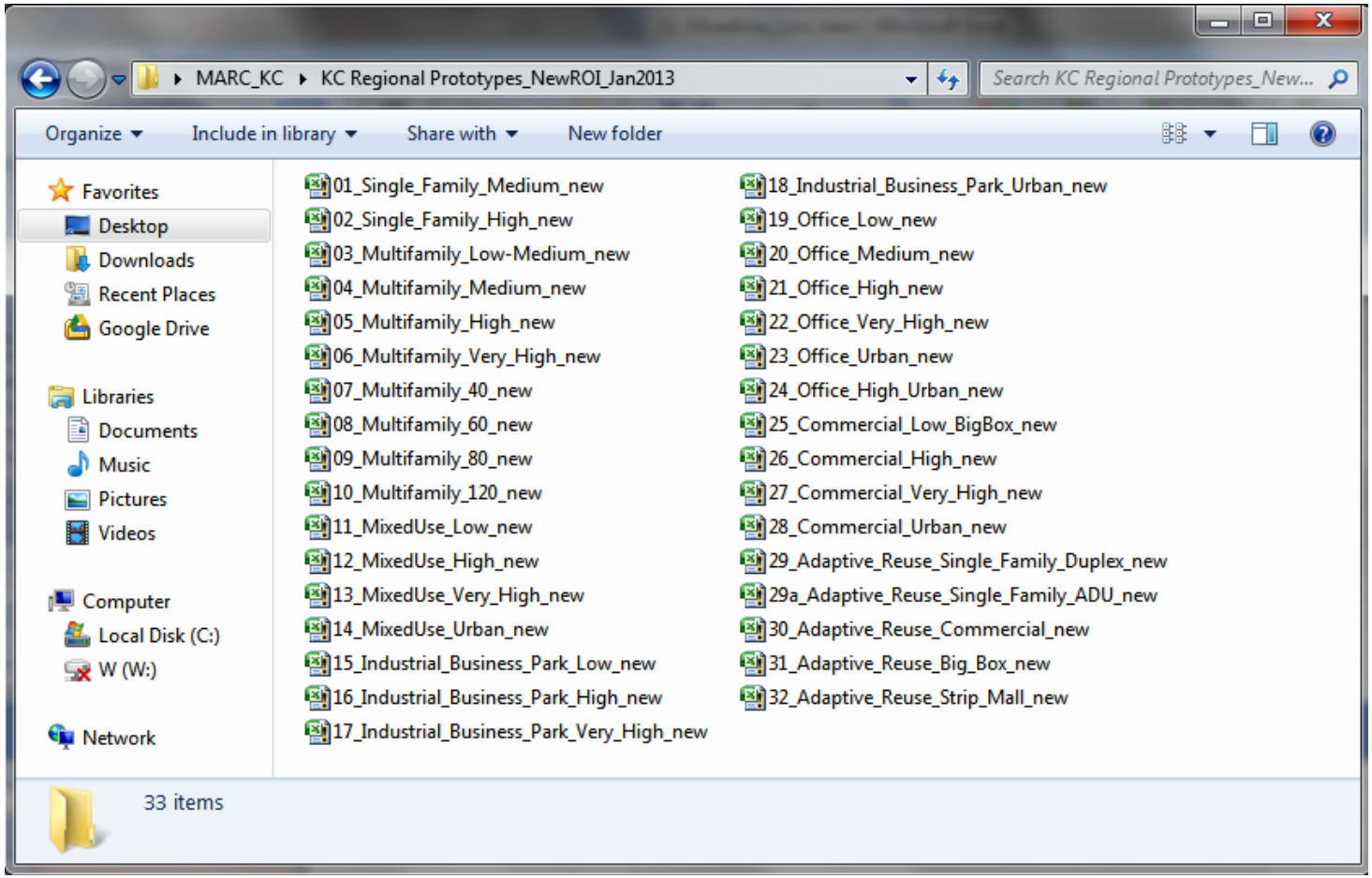
Half the cost of new construction

Embrace the Market: Food Carts

- Food Carts
  - Instant street activity
  - Low overhead
  - Incubator model for future brick and mortar

Screenshot of prototype library

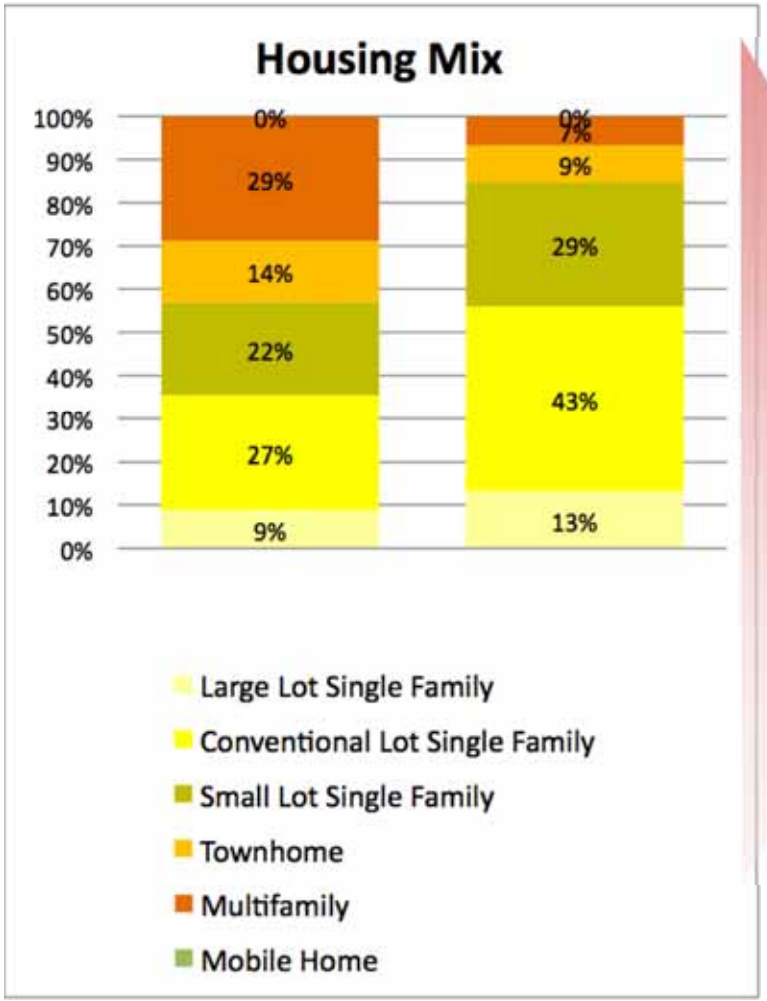
- 30+ Buildings in Prototype Library

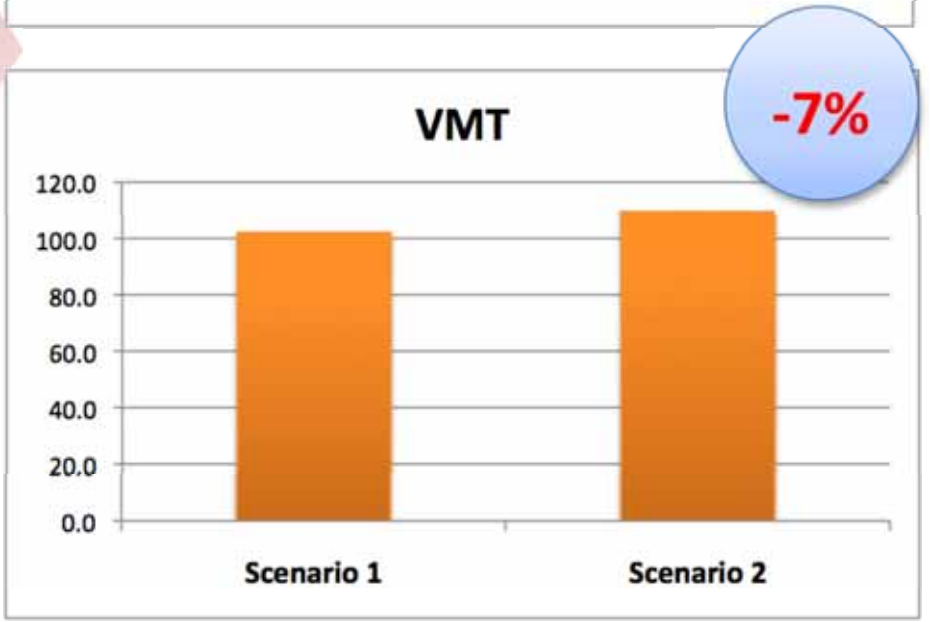


Building a Path to Sustainability: From micro back to macro

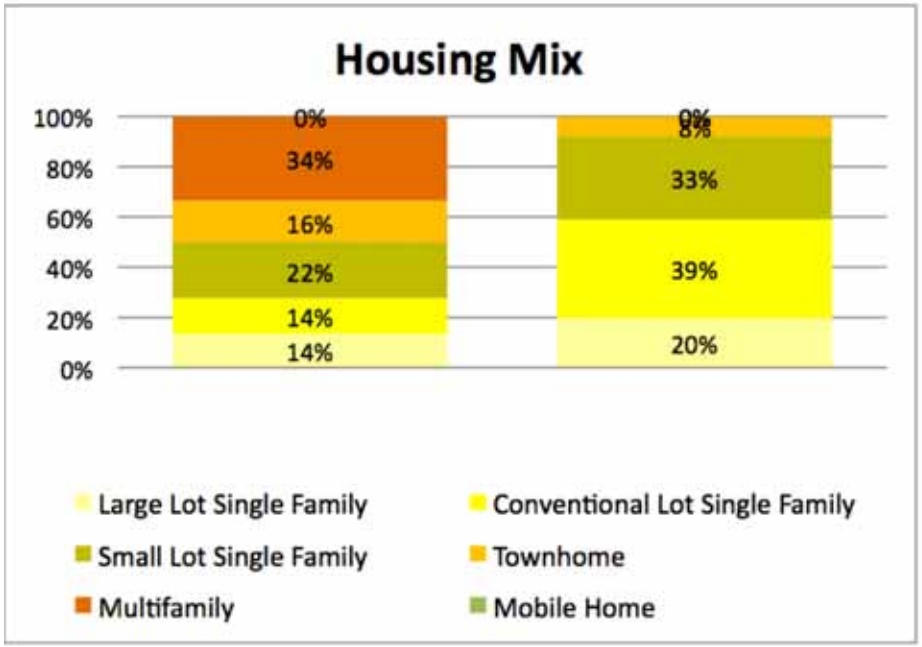
- Now that we have identified what works here, we can then apply it throughout a corridor, throughout the region
- Next round more believable than the last

Travel Behavior



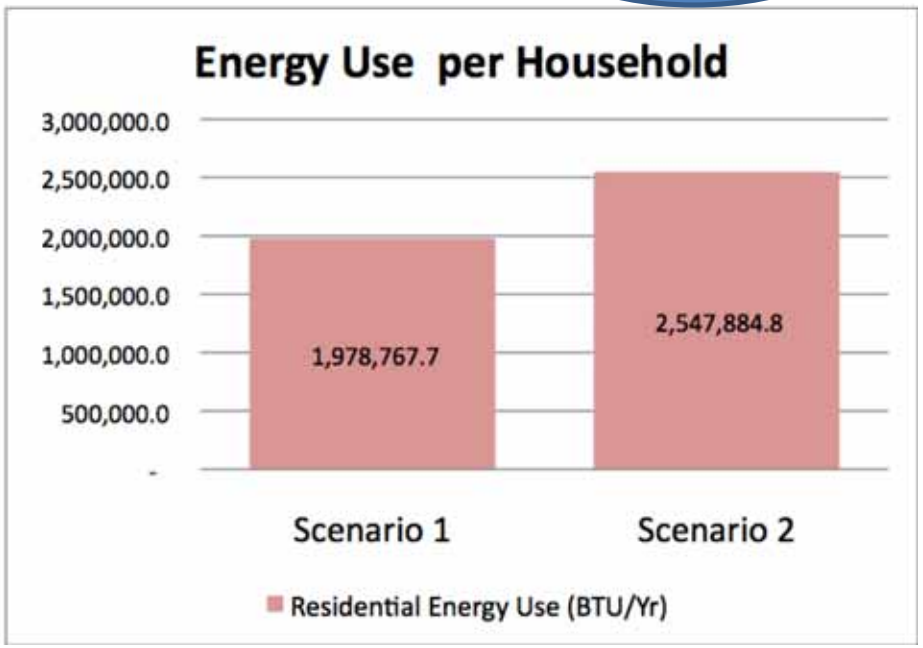


Building-Level Energy Use and Carbon Emissions



Housing Mix can influence energy use

22% More



Building a Path to Sustainability: From micro back to macro

- ET as an indicator generator to monitor progress. But this means:
  - Must be able to paint existing.
  - Change measured only if building prototype or development type changes.
  - Measurement systems must improve
    - How will we know when an SF house has been subdivided by the owner?
  - Scenarios operate with big changes while progress is incremental