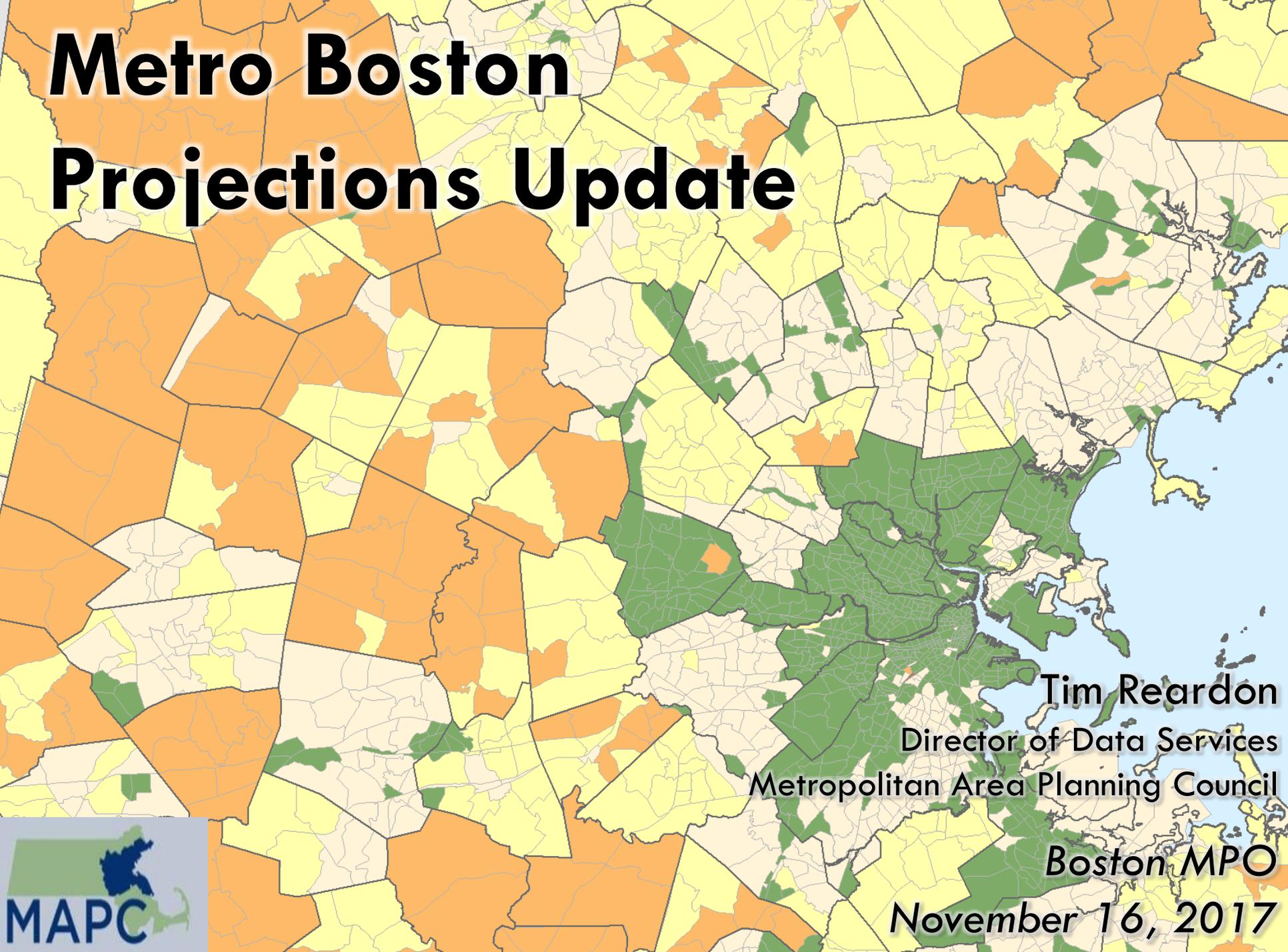
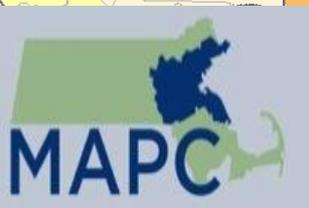


Metro Boston Projections Update



Tim Reardon
Director of Data Services
Metropolitan Area Planning Council

Boston MPO
November 16, 2017

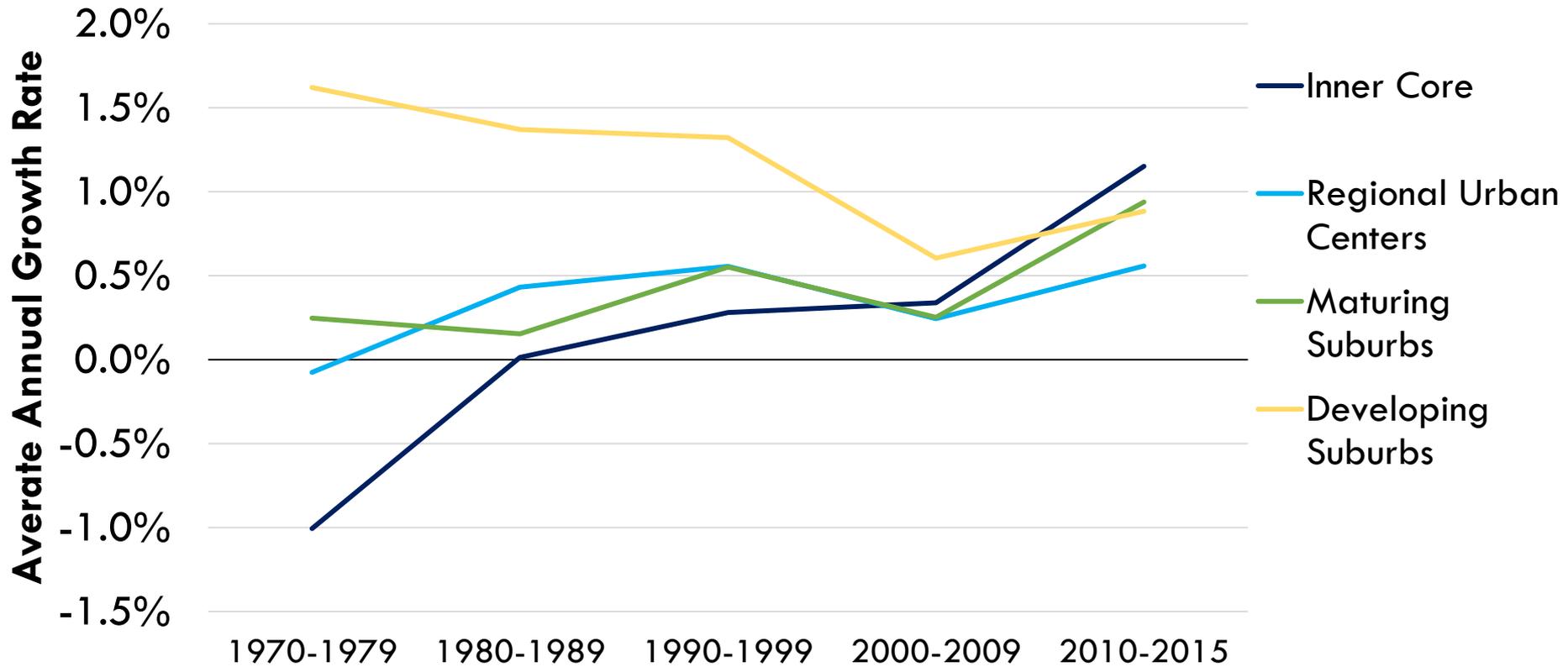


Presentation Outline

- Regional Growth since 2010
- Regional Population Projections
- Regional Household Projections
- Land Use Model
- Q & A

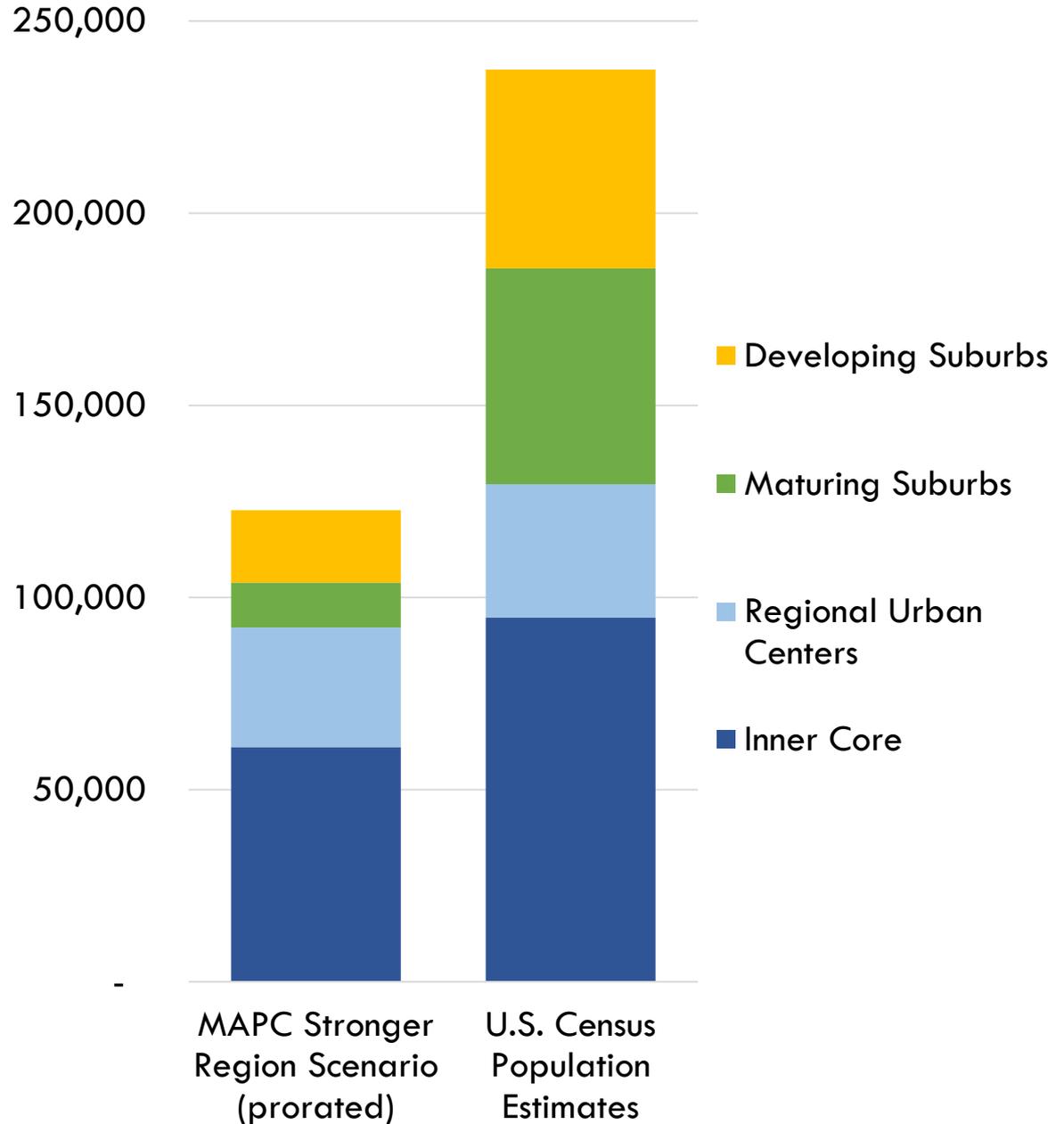
Population Growth Rates

**Annual Population Growth Rates
by Community Type, Metro Boston
1970 - 2015**



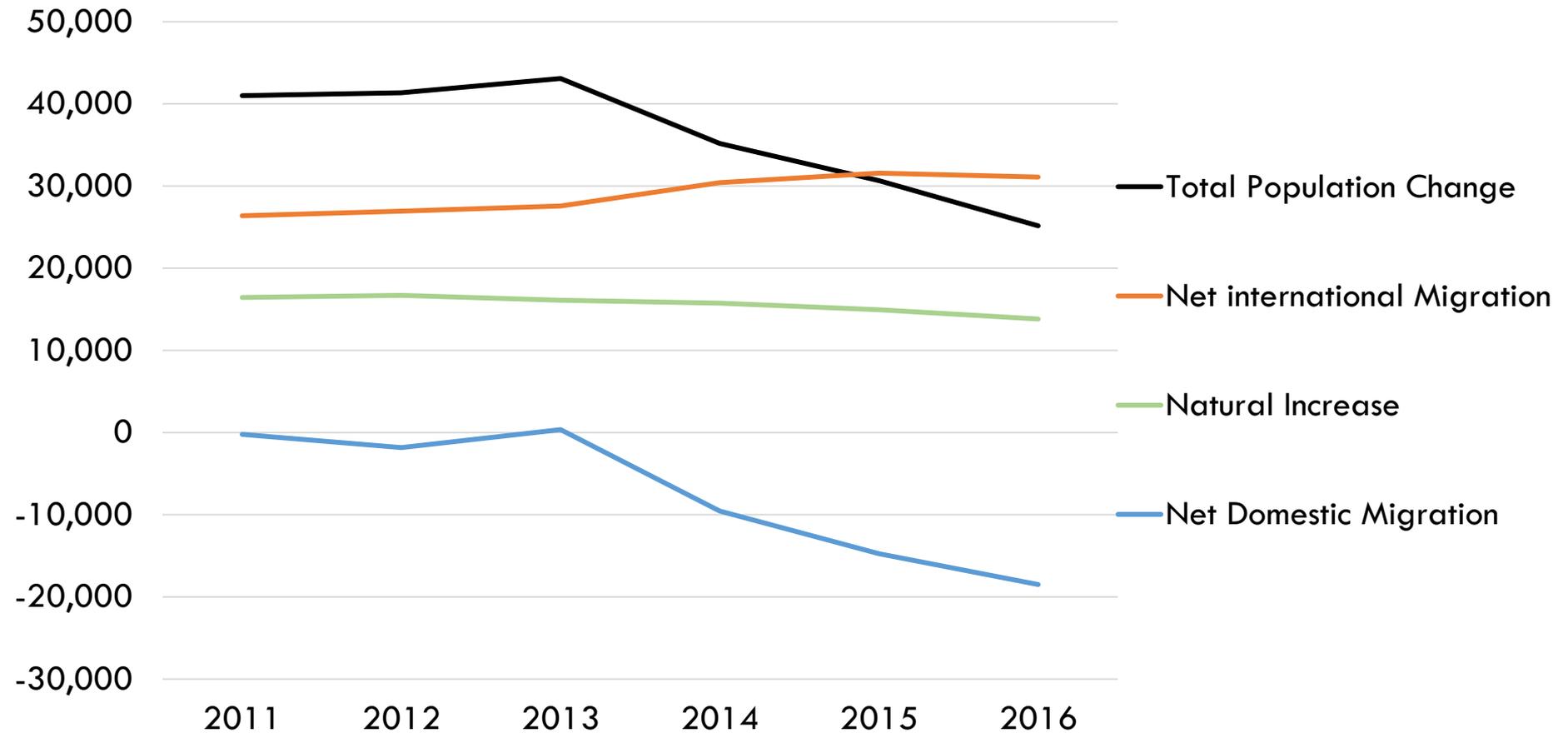
MAPC Projections vs Population Estimates 2010-2016, Metro Boston

Region has grown faster than projected, especially in suburban community types

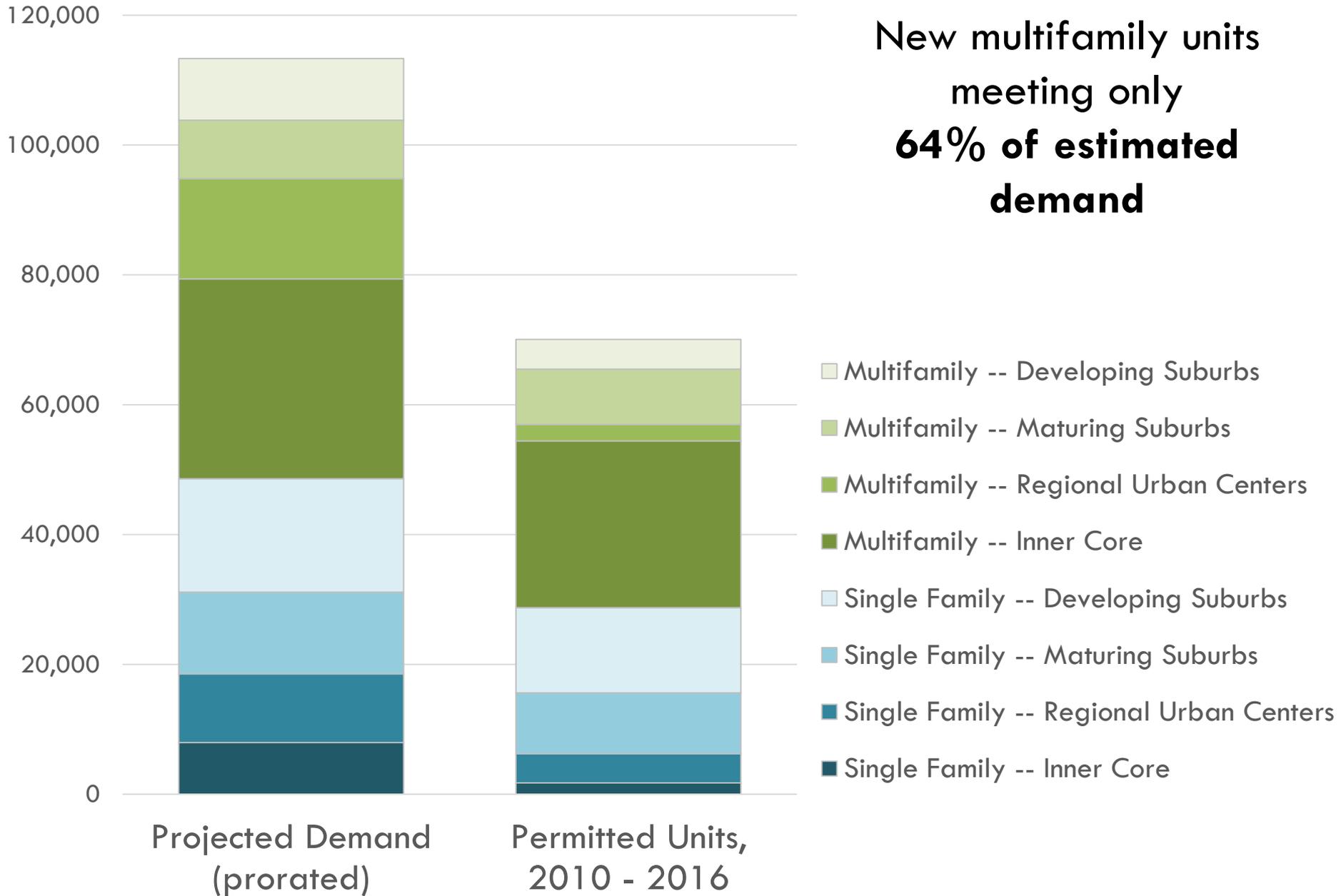


Domestic Outmigration is a Drag on Growth

Components of Population Change, 2011-2016
Metro Boston (5 County)

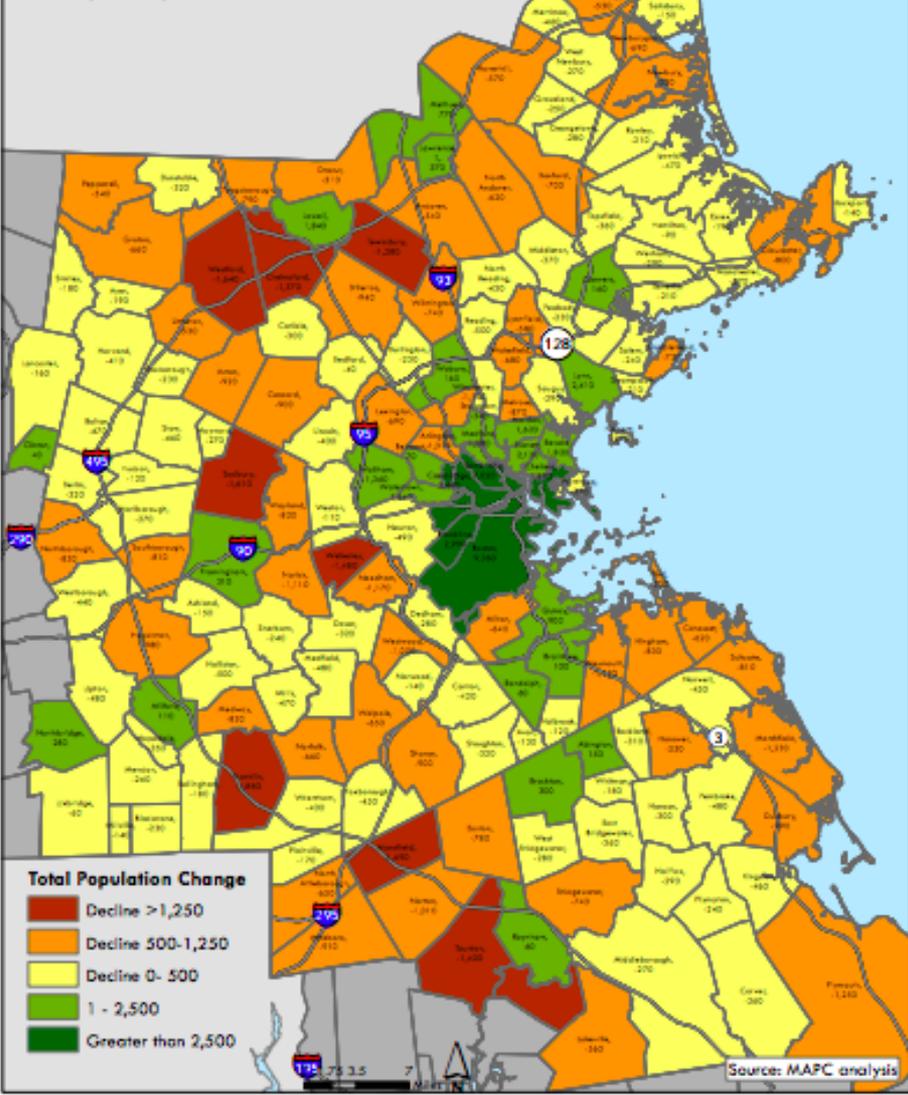


Projected Demand vs. Permitted Units, 2010 - 2016, Metro Boston



Total Population less than 15 yrs. age change, 2010-2030

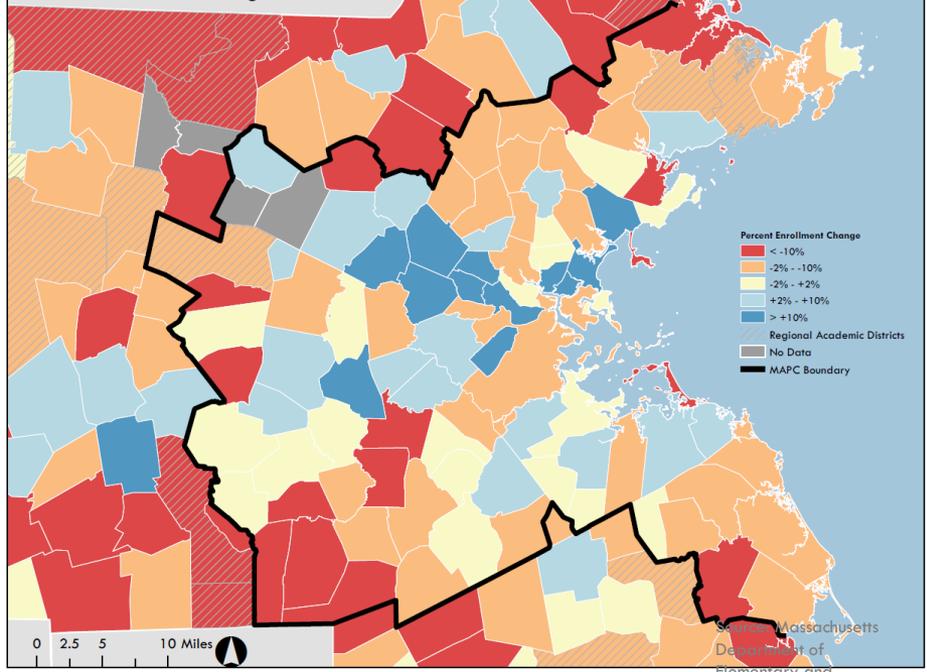
Stronger Region Scenario



Change School-age residents: projected vs. enrollment

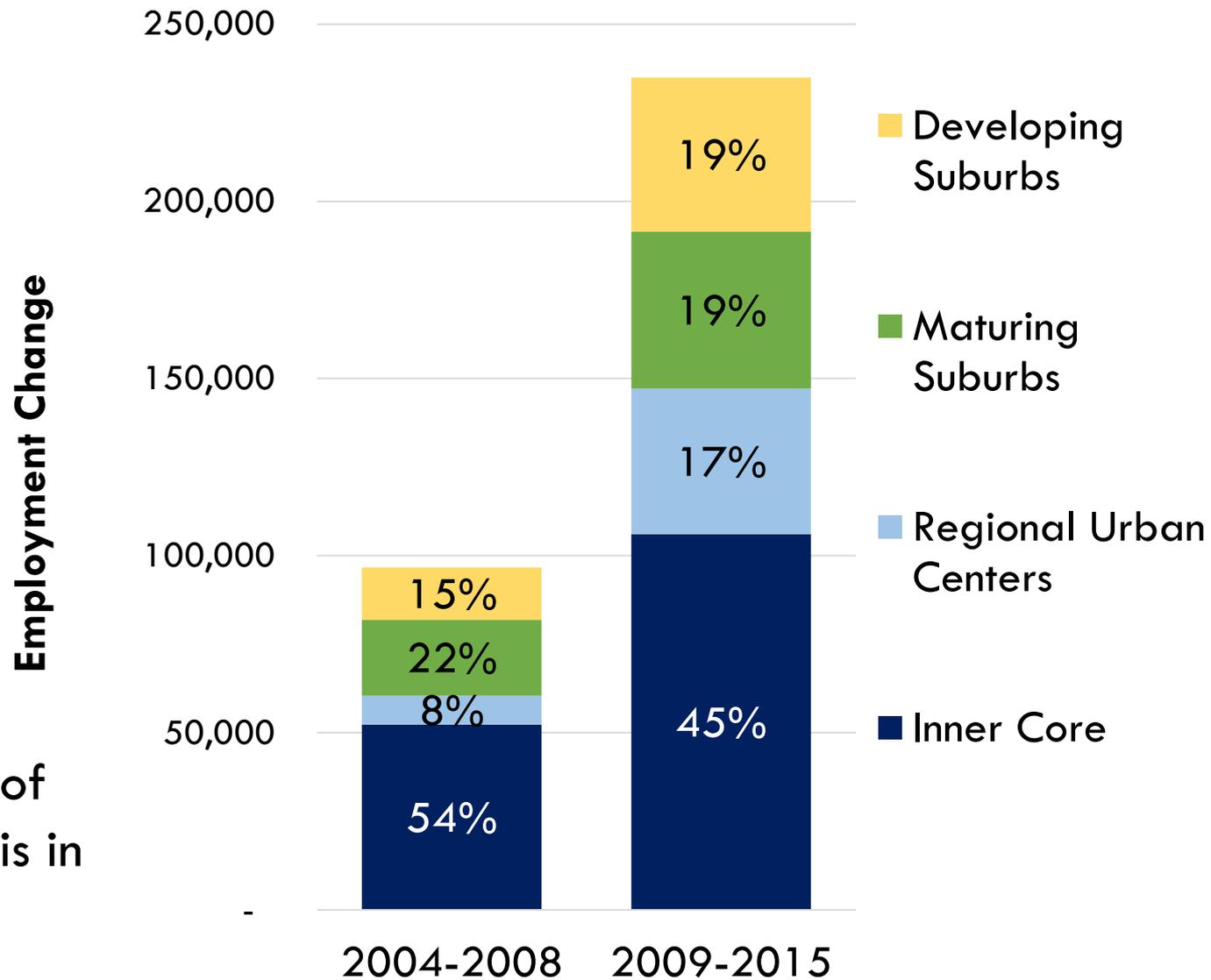


School Enrollment Change 2010 - 2016



South Massachusetts
Department of
Elementary and
Secondary Education,
MAPC Analysis

Post-Recession Employment Growth, by Community Type, Metro Boston (labeled with percent of total)



Nearly two-thirds of recent job growth is in urban communities

A large, diverse group of people of various ages and ethnicities, all smiling and looking towards the camera. The image is in grayscale. The text "Regional Population Projections" is overlaid in the upper center.

Regional Population Projections

MassDOT Projections Committee

Participants:

- MassDOT
- 13 Regional Planning Agencies / MPOs
- EOEEA, EOHED

Technical Consultant:

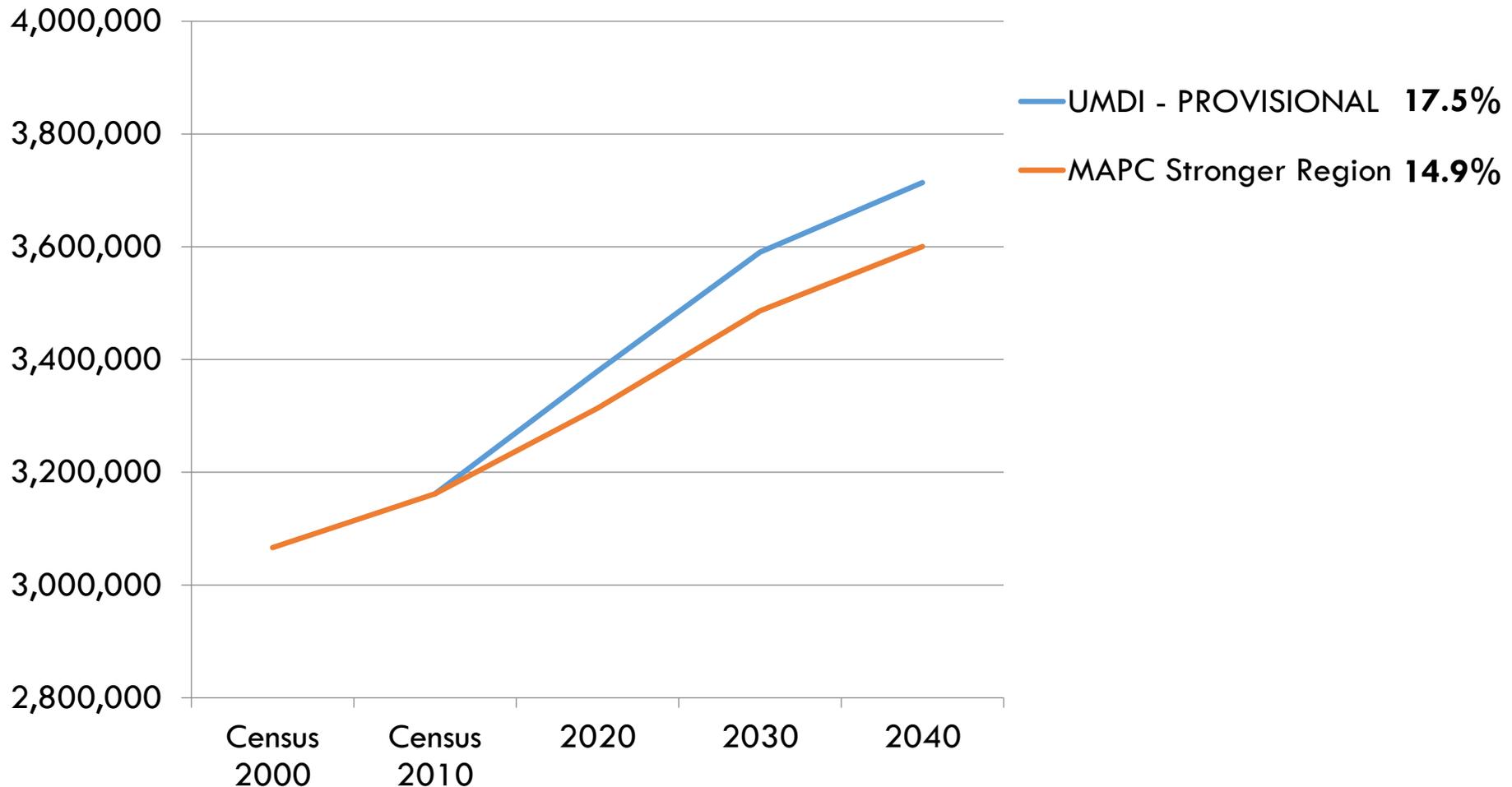
- Umass Donahue Institute – Population Estimates Program

Methods:

- Traditional Cohort Component: Births – Deaths + Migration
- Migration rates based on 2005 – 2011 period
- Calibrated to match 2015 population estimates
- “Benchmark” region → municipalities → RPAs
- Preliminary projections released November 10
- Future work: labor force estimates, employment by RPA

UMDI projections: An even Stronger Region?

**Historical Population and Projections, MAPC Region
2010 - 2040**



Household Projections



Labor Force and Household projections (MAPC)

Refine existing regional population and household model

Population detail:

- Race & Ethnicity
- Education*
- Labor force participation*
- Wage*
- Headship rate*

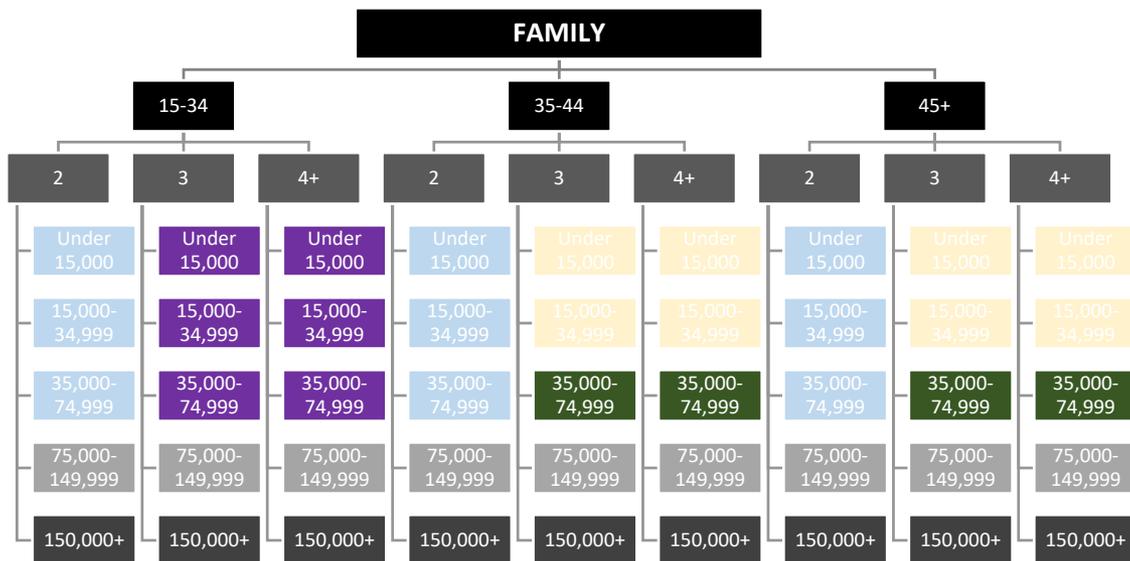
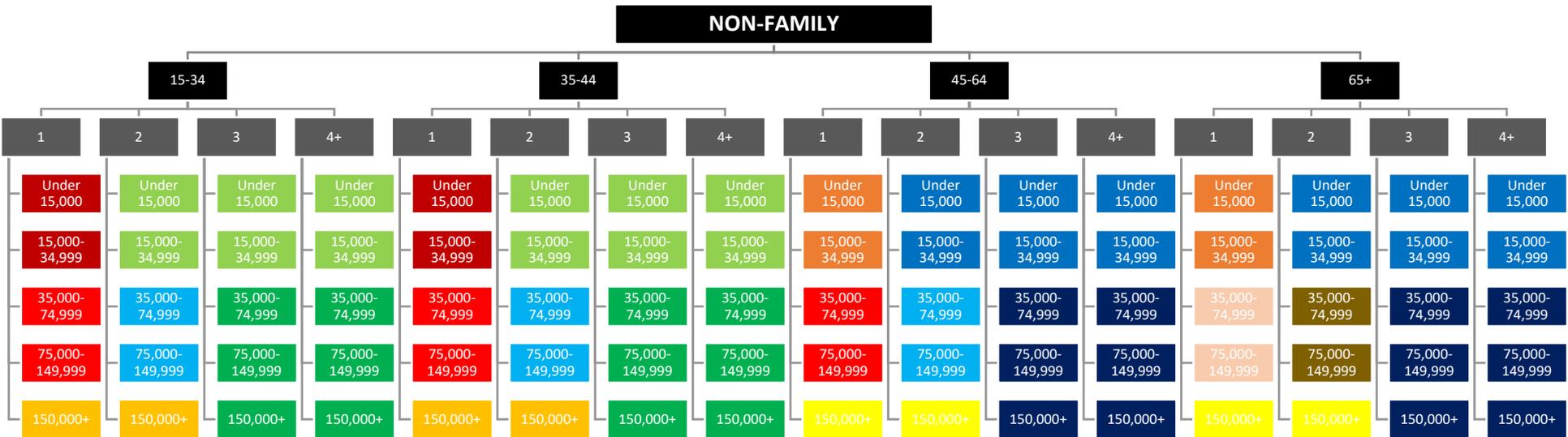
Household detail

- Age of householder
- Families with children
- Household size
- Income (\$)
- Workers
- Tenure *

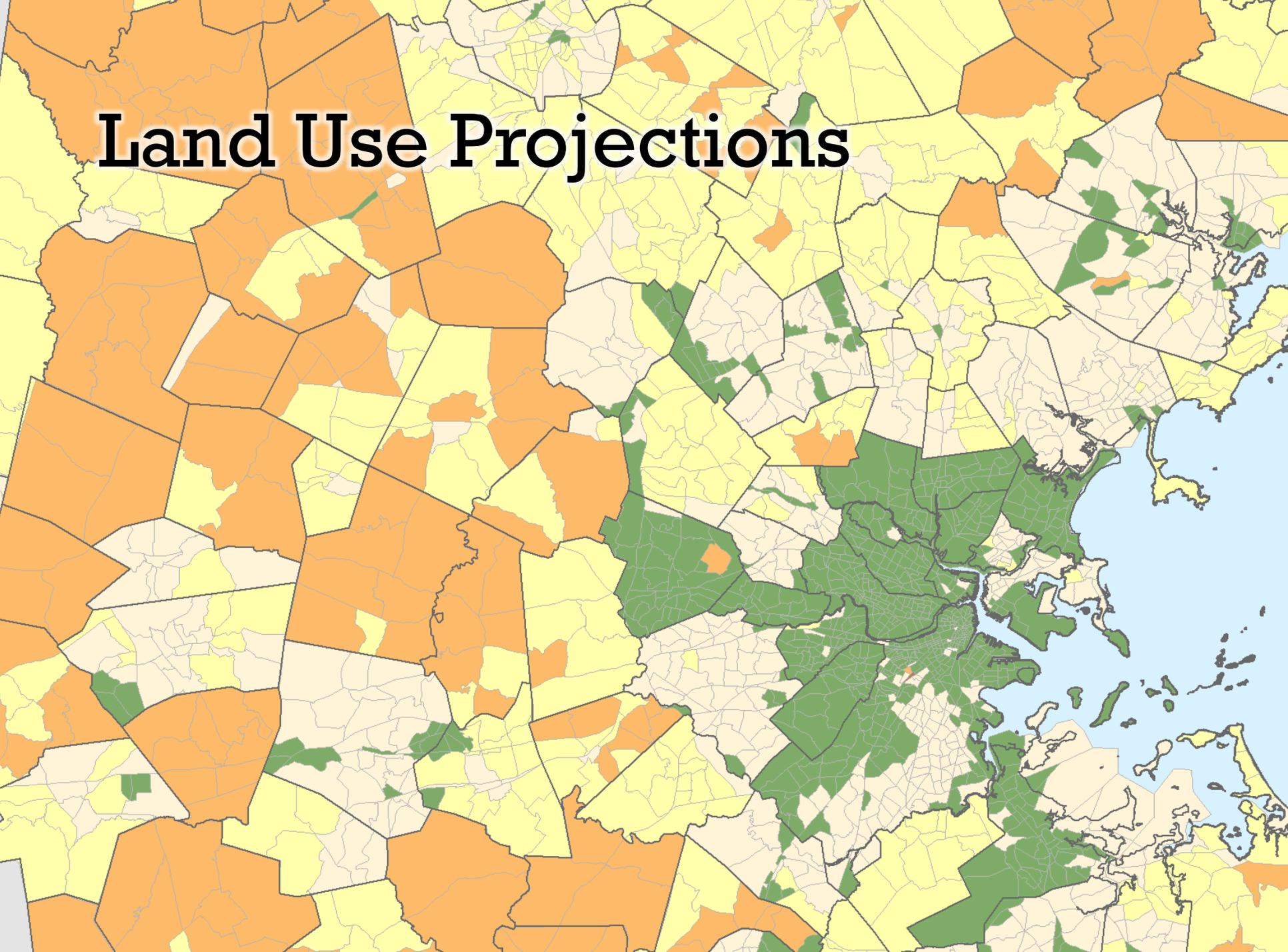
* These variables may be adjusted to test a range of assumptions and create multiple scenarios

Household Agents

Categorized by householder age, household size, household structure, income

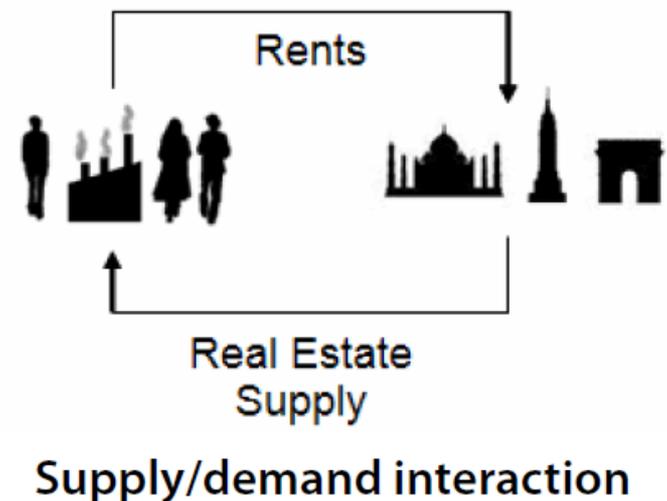
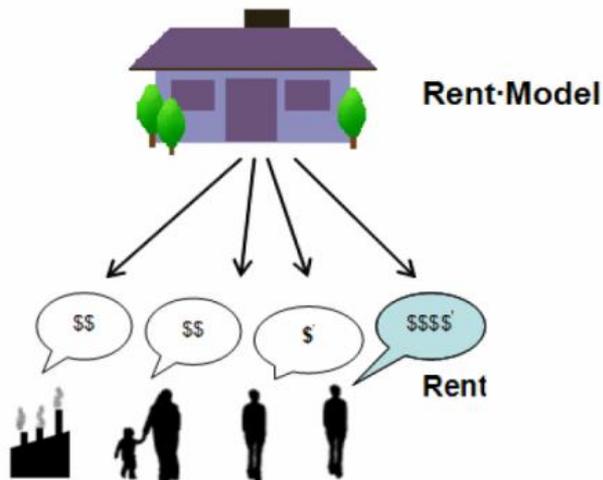


Land Use Projections

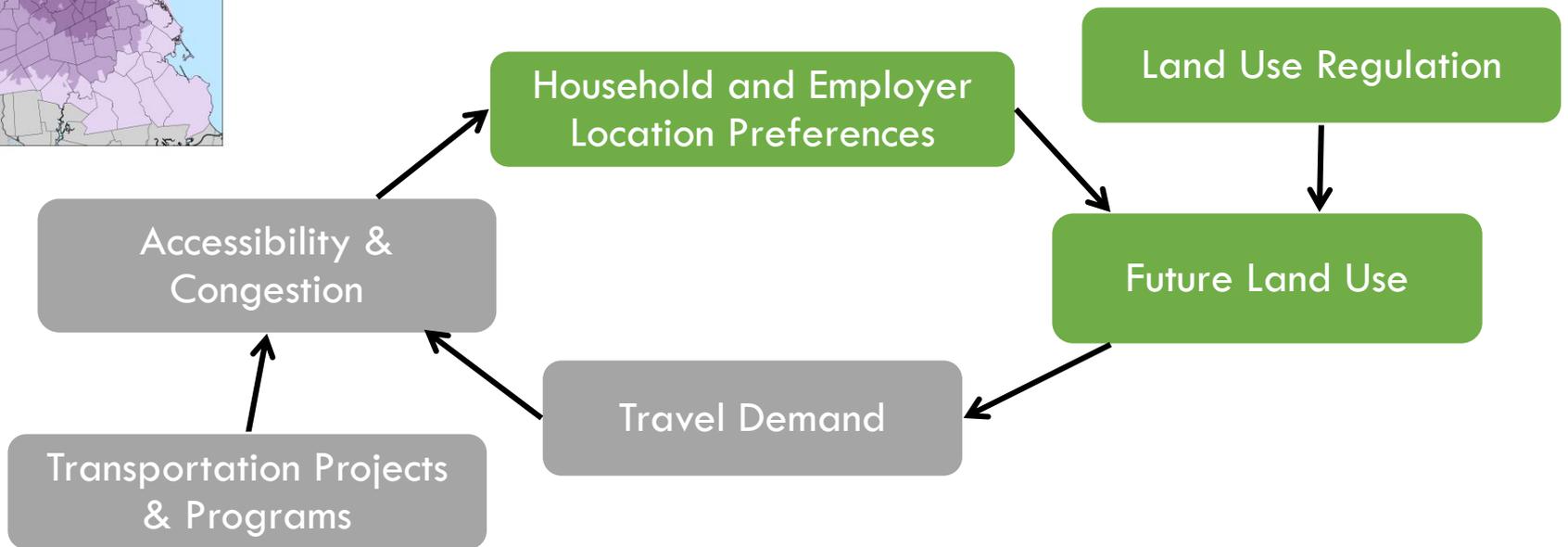
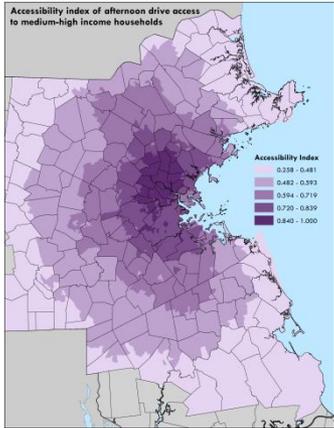


MAPC's Land Use Allocation Model

- Allocates growth to Traffic Analysis Zones (TAZs) using Cube Land modeling software.
- Real estate market equilibrium between suppliers (developers) and consumers (households and firms)
- Accessibility to jobs & labor is explicit factor in where firms/households locate
- Economic model assuming rational behavior
 - Real estate properties are occupied by the household or firm willing to pay the most
 - Developers maximize profits when deciding what type of buildings to provide



Integrated Land Use / Transportation Modeling



Land Use Allocation Model - Specifications

Model components

- 18 household agent types
- 11 employer/firm types (NAICS codes)
- 8 real estate types
- 2700+ TAZs

Key factors

- Peak period travel times to every other zone, by auto and transit
- Transit station proximity
- Neighborhood demographics
- Current rents and commercial lease prices, by zone

Land use inputs

- Development capacity, by real estate type
- Subsidies for certain households or firms
- Development pipeline / Real estate supply

Products

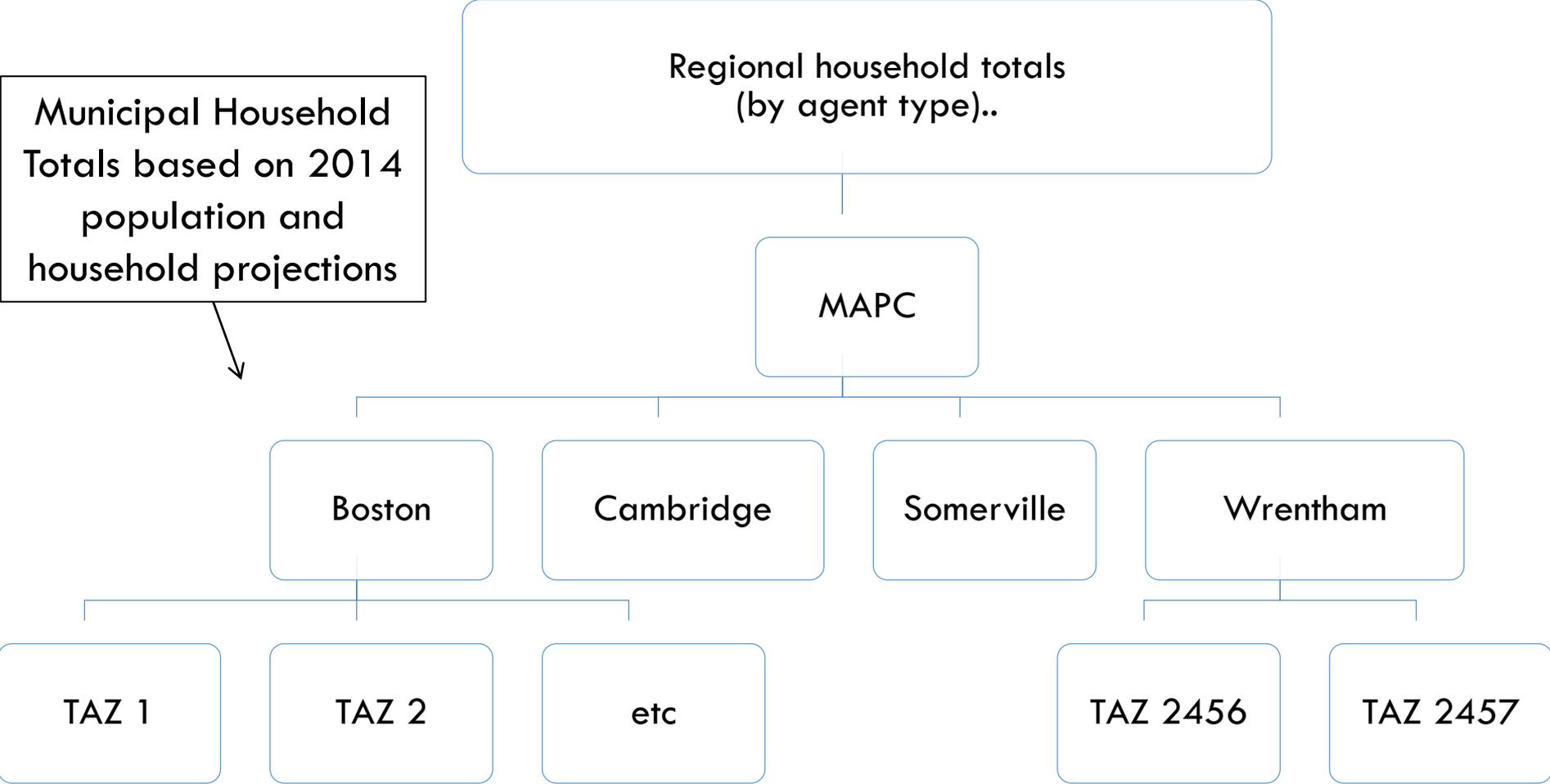
- Households classified by size, workers, income, auto availability
- Employment by sector
- New real estate square footage

Massbuilds – A key input

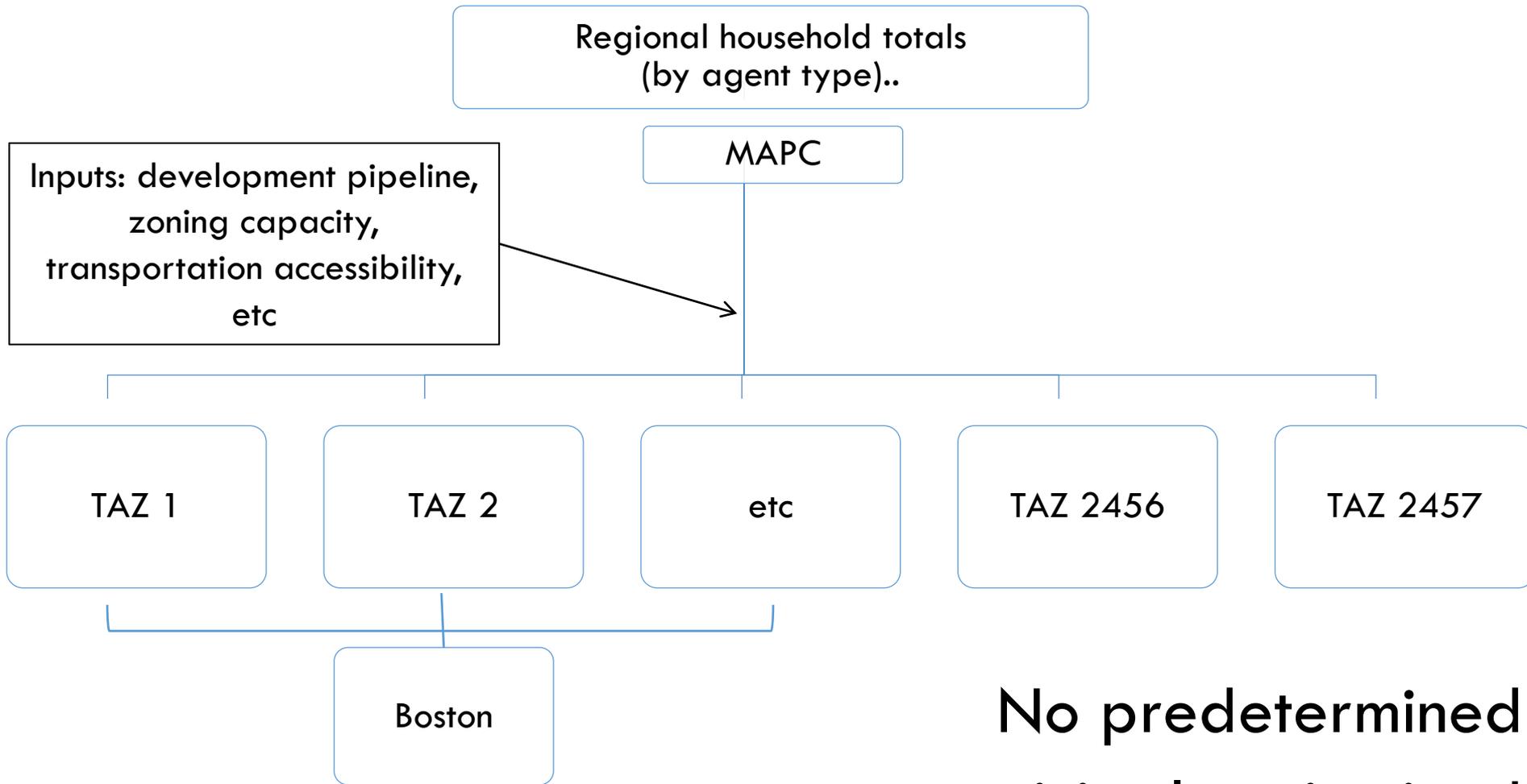


Zonal Allocation, 2015 LRTP projections (households)

Municipal Household Totals based on 2014 population and household projections



NEW Land Use Allocation Model



No predetermined municipal projections!

Creating Regional Scenarios

Modify assumptions regarding:

- Migration rates
- Headship rates and family formation
- Education levels and income
- Development pipeline
- Zoning capacity
- Public subsidies
- Household location preferences

Use scenarios for LRTP modeling, MAPC Regional Plan Update

Thank you

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