



# BOSTON'S POPULATION PROJECTIONS: 2010 – 2050

BPDA Research Division

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development agency**

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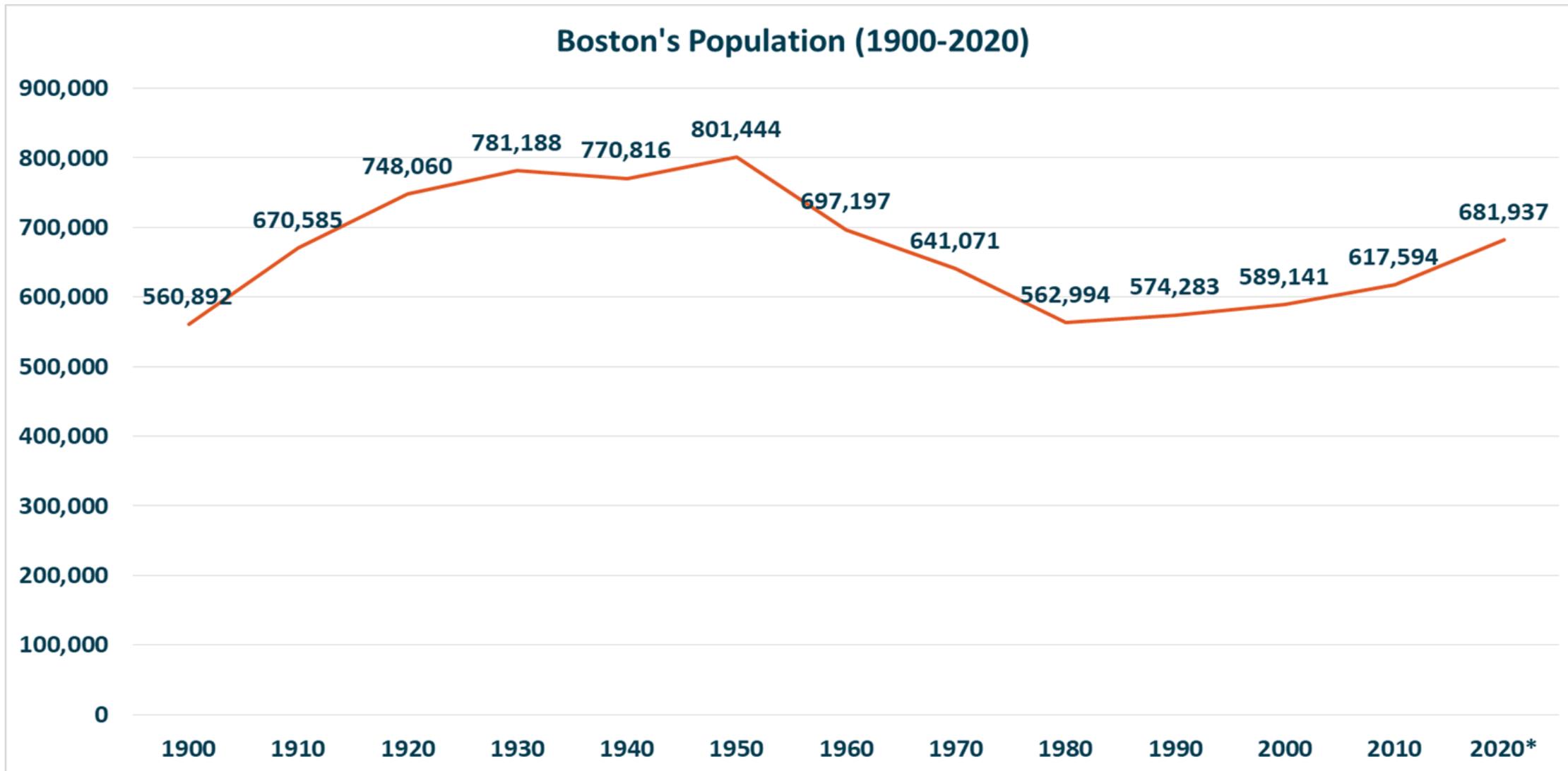
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# HISTORICAL POPULATION TRENDS



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- Boston's **population rose** through the first half of the 20<sup>th</sup> century to a **peak in 1950** of 801,444 people.
- From **1950 to 1980**, Boston's **population declined** by **almost 30 percent** to 562,994.
- From **1980 to the present**, Boston has experienced **steady population growth**.



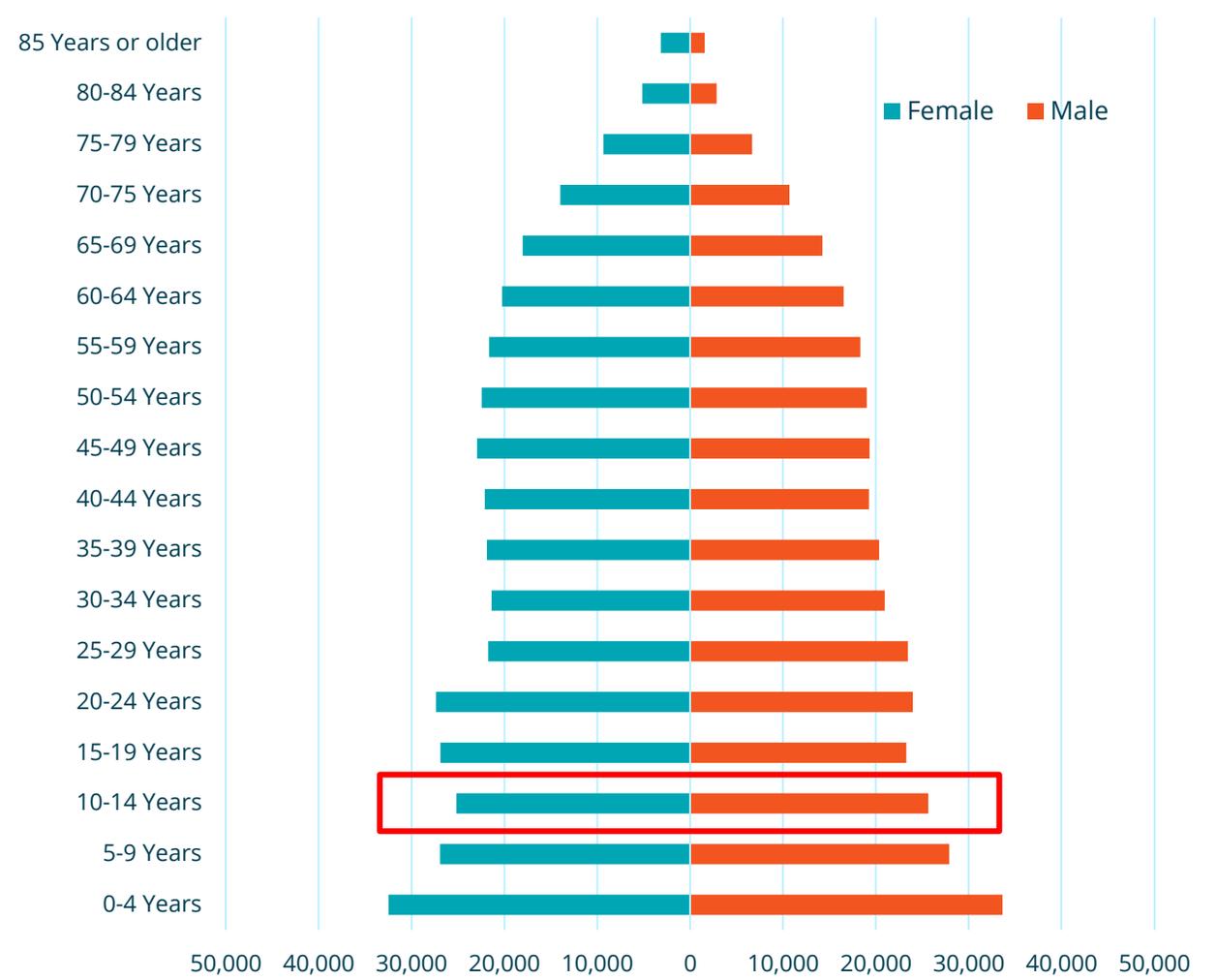
Source: U.S. Census Bureau, 1900-2020 Decennial Census, BPDA Research Division Analysis  
\* Accounts for Boston's successful Post Census Group Quarter Review of group quarters populations

- Boston’s population pyramids for **1950 and 1960** show **large numbers of young children** (the “Baby Boom”), some of whom **migrate out** of Boston **as they age**.
- For example: 70,236 0-4 year olds in 1950 became 50,812 10-14 year olds in 1960 for a net out-migration of over 25 percent.

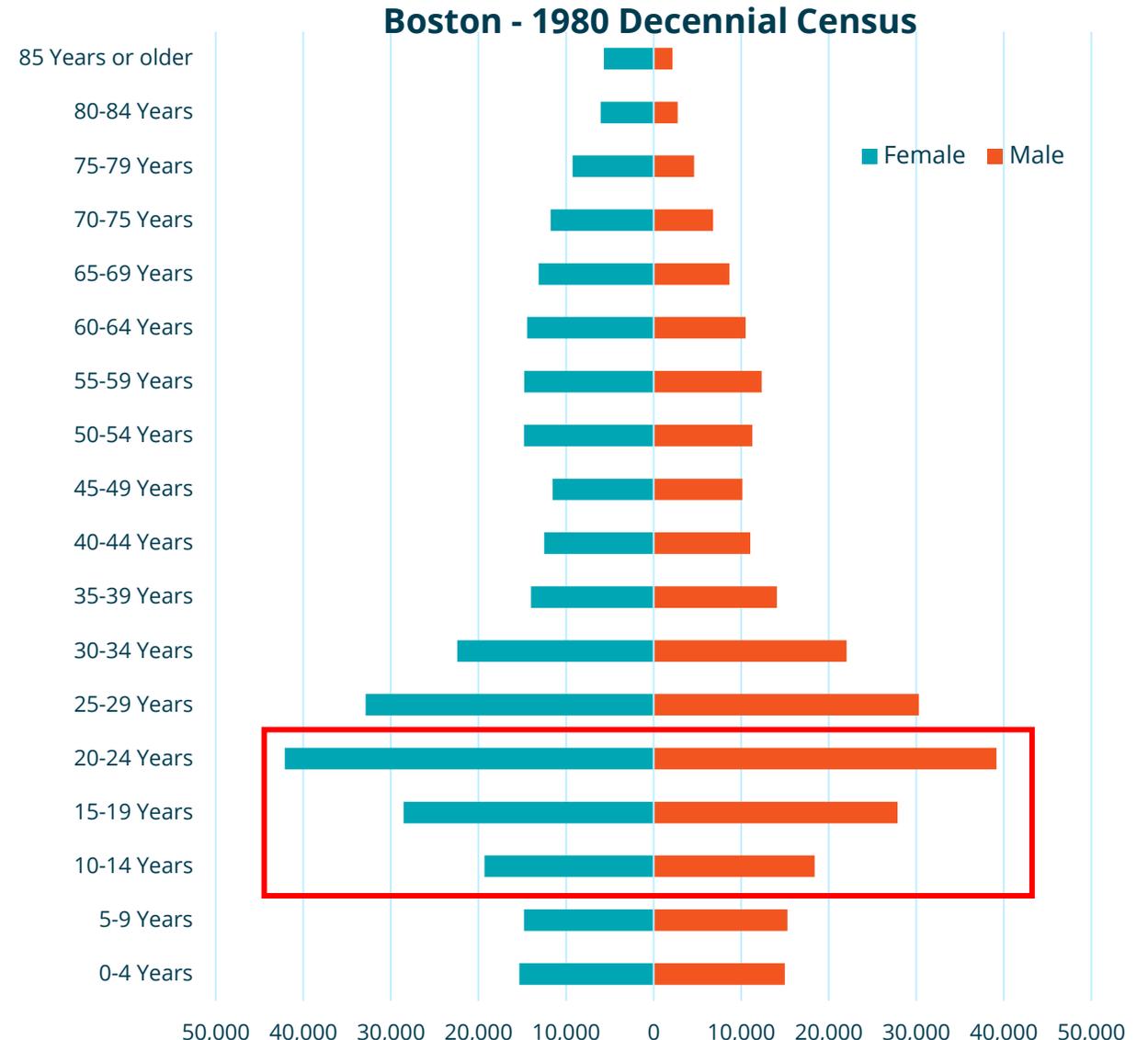
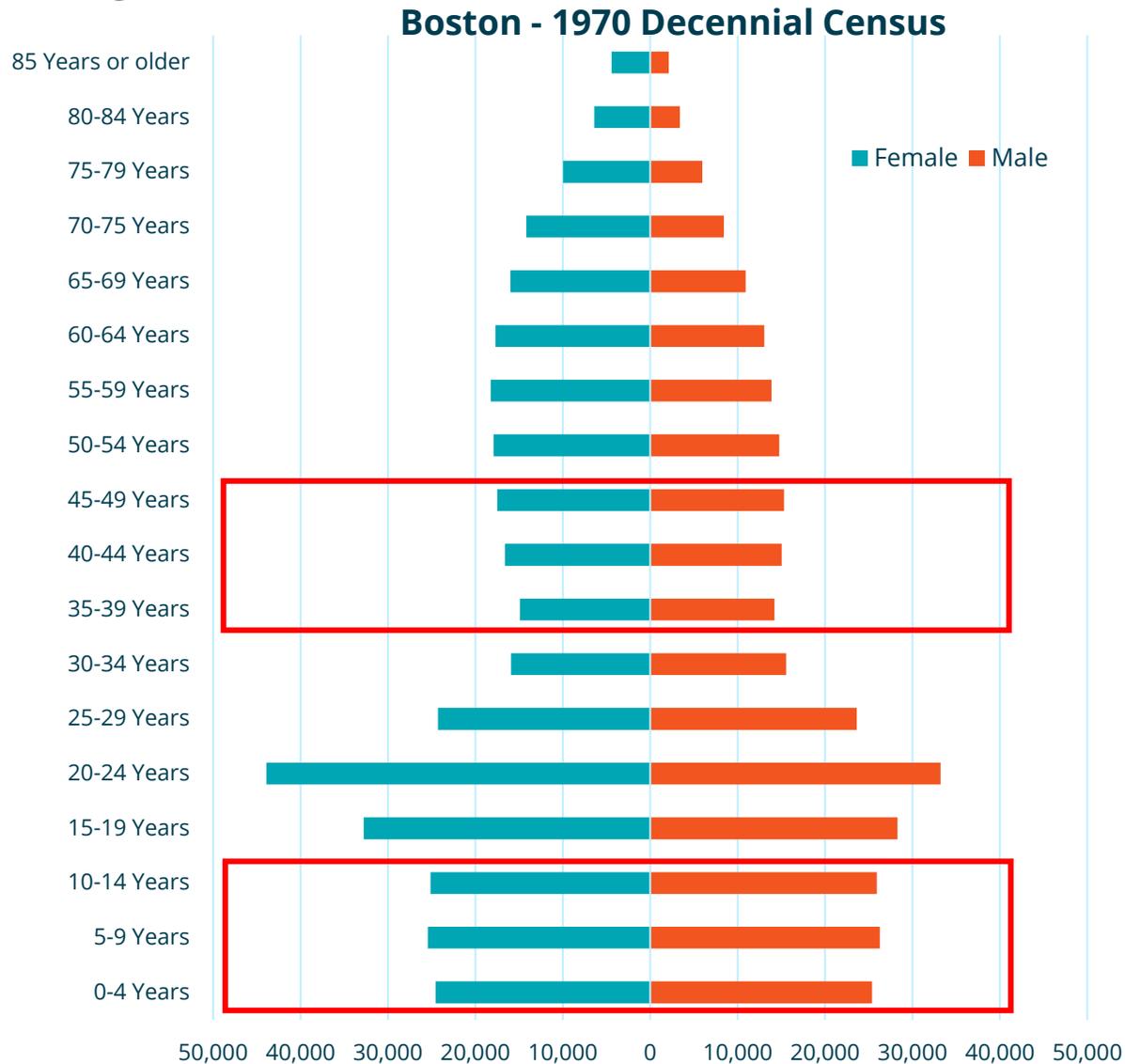
**Boston – 1950 Decennial Census**



**Boston - 1960 Decennial Census**

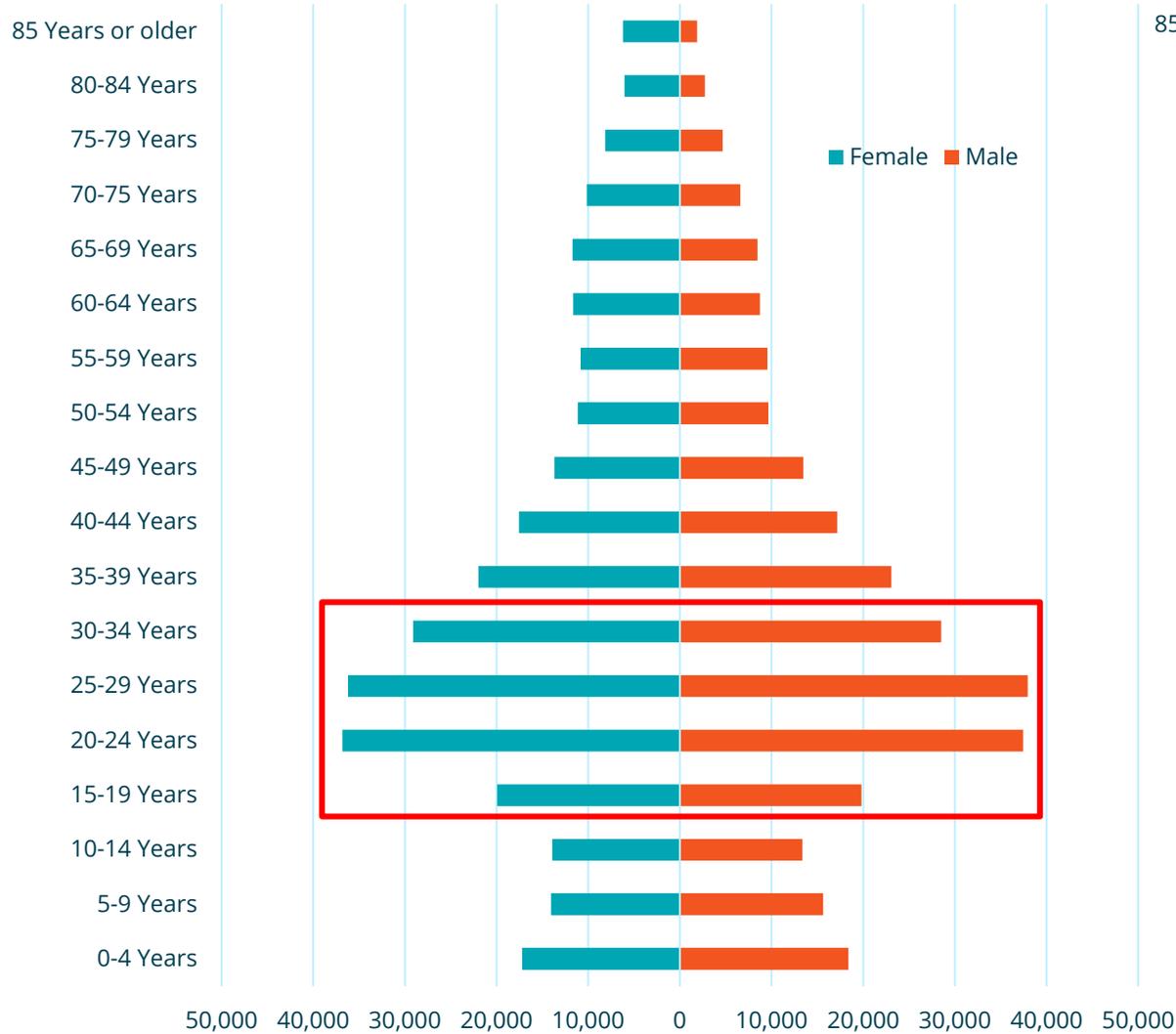


- By **1980**, Boston's population declined to 562,994, a **30 percent decline** from the peak in 1950.
- The **population loss** from 1970 was **particularly heavy in ages 0-14 and 35-49**, leaving a 1980 population skewed toward ages 15-34.



- Boston's population takes on a distinctive shape with **college enrollment** and **international migration** among the factors boosting the **young adult population**.

**Boston - 1990 Decennial Census**



**Boston - 2000 Decennial Census**



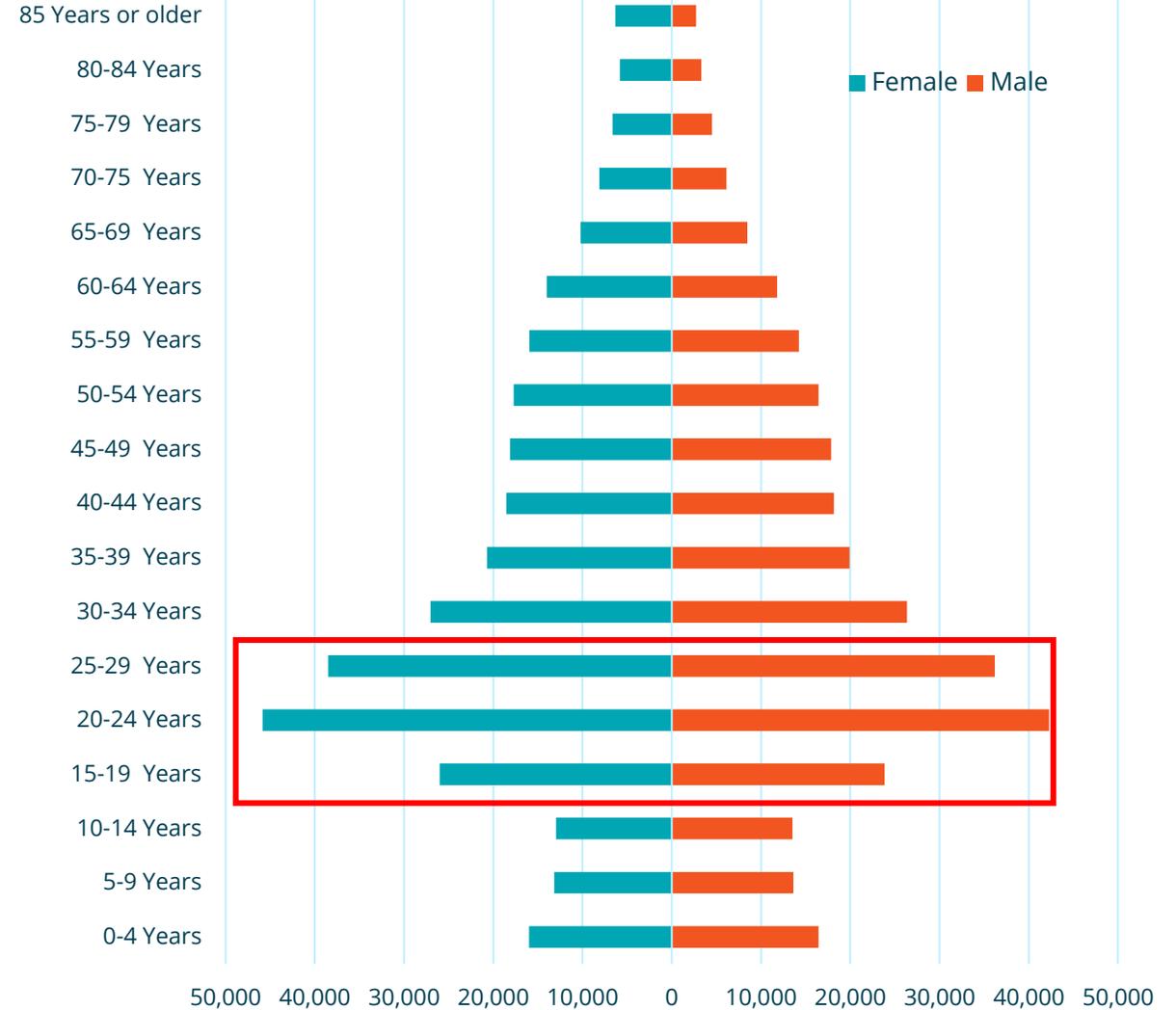
## Trends in Boston's age distribution 1950-2010:

(1) Decreasing population from birth to 14 years old; (2) Increasing population of residents age 15-29; and (3) Decreasing population age 30+.

### Boston - 1950 Decennial Census

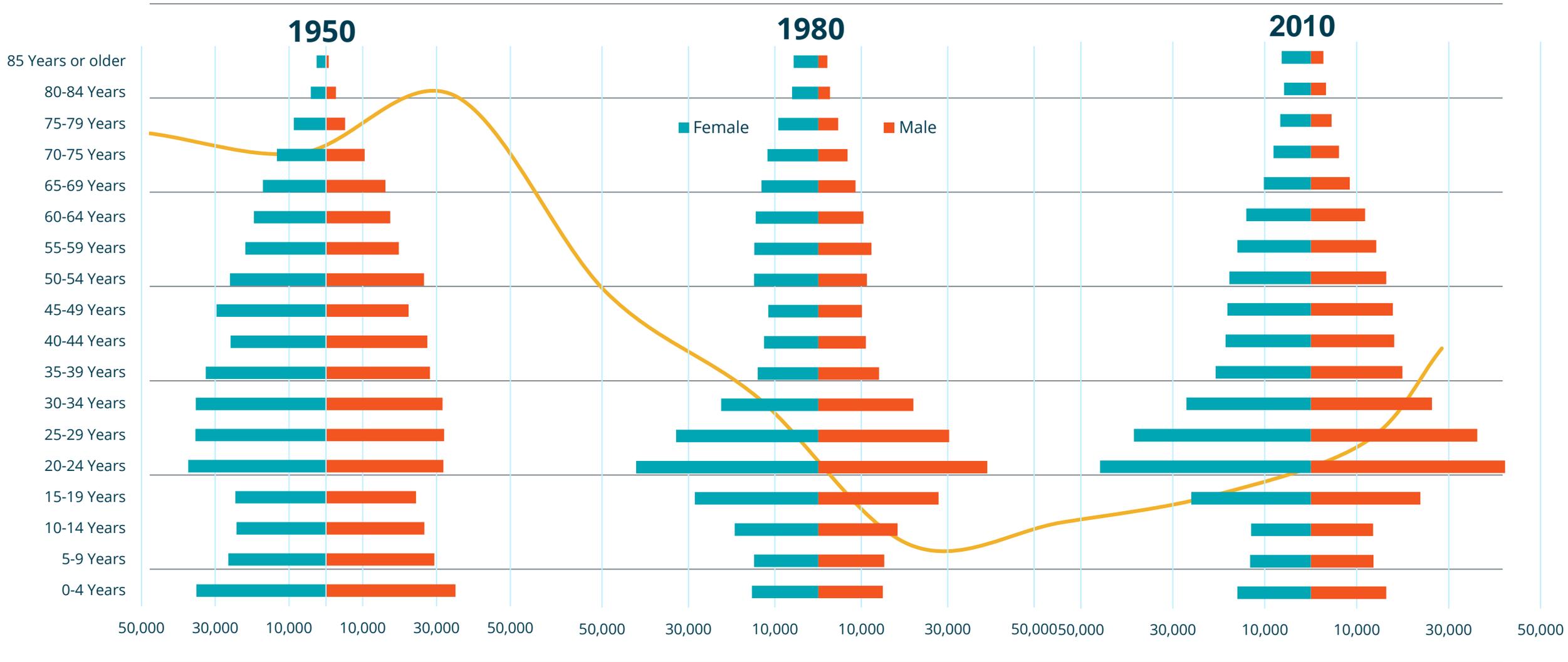


### Boston - 2010 Decennial Census



Source: U.S. Census Bureau, 1950 and 2010 U.S. Decennial Census, BPDA Research Division Analysis

# Summary of Boston's population change from 1950 to 2010

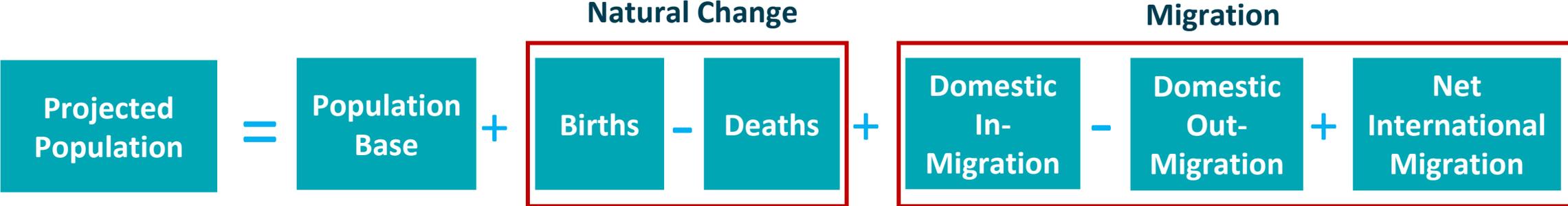


# POPULATION PROJECTION METHODOLOGY



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# COMPONENTS OF POPULATION CHANGE



# POPULATION BASE

$$\text{Projected Population} = \text{Population Base} + \text{Births} - \text{Deaths} + \text{Domestic In-Migration} - \text{Domestic Out-Migration} + \text{Net International Migration}$$

## Boston - 2010 Decennial Census



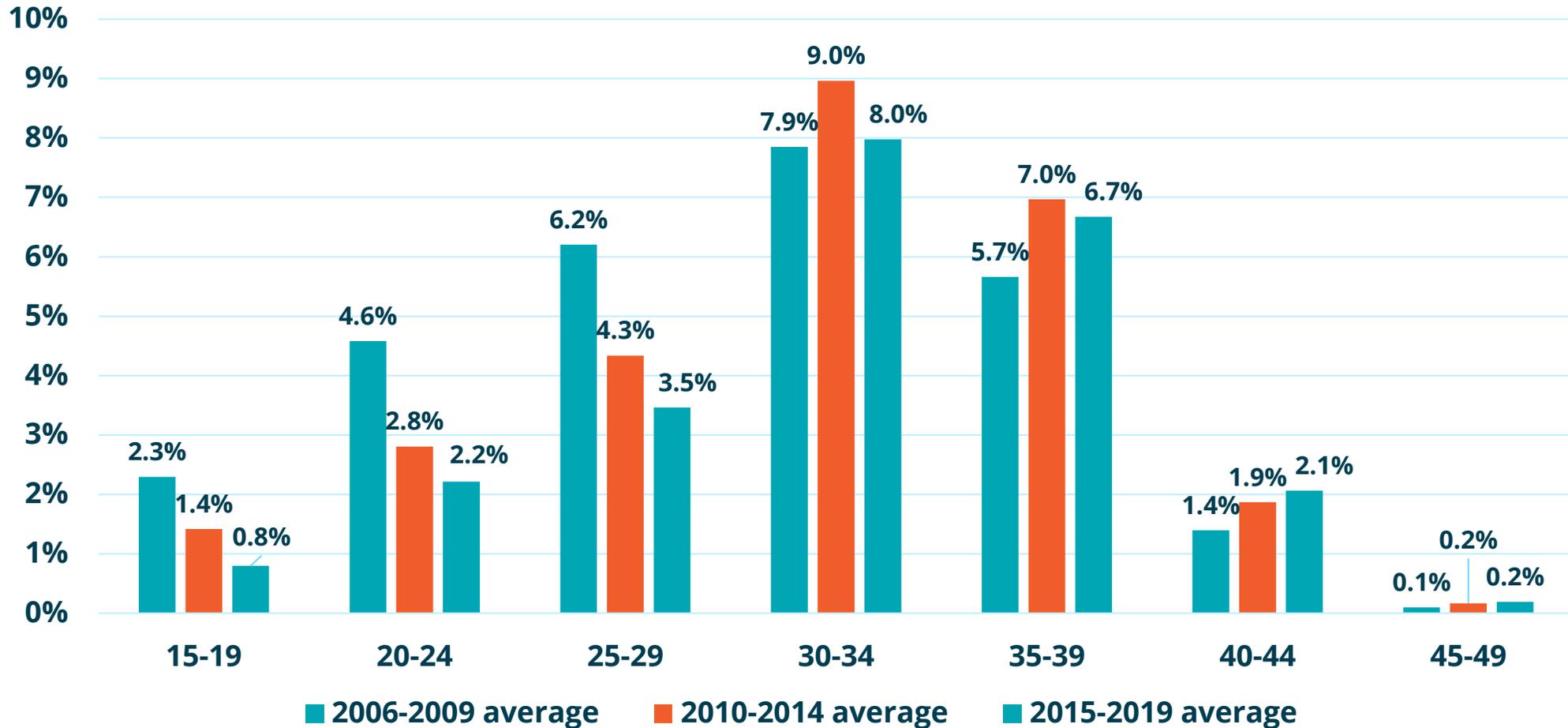
**Population Base:**  
Boston's 2010 population of 617,594 launches this projection.

# BIRTHS



- Boston has averaged **7,900 births a year** since 2000.
- Overall **fertility has declined slightly** from 2008 and shifted to **older mothers**.

## Boston's Annual Birth Rates by Age of Mother

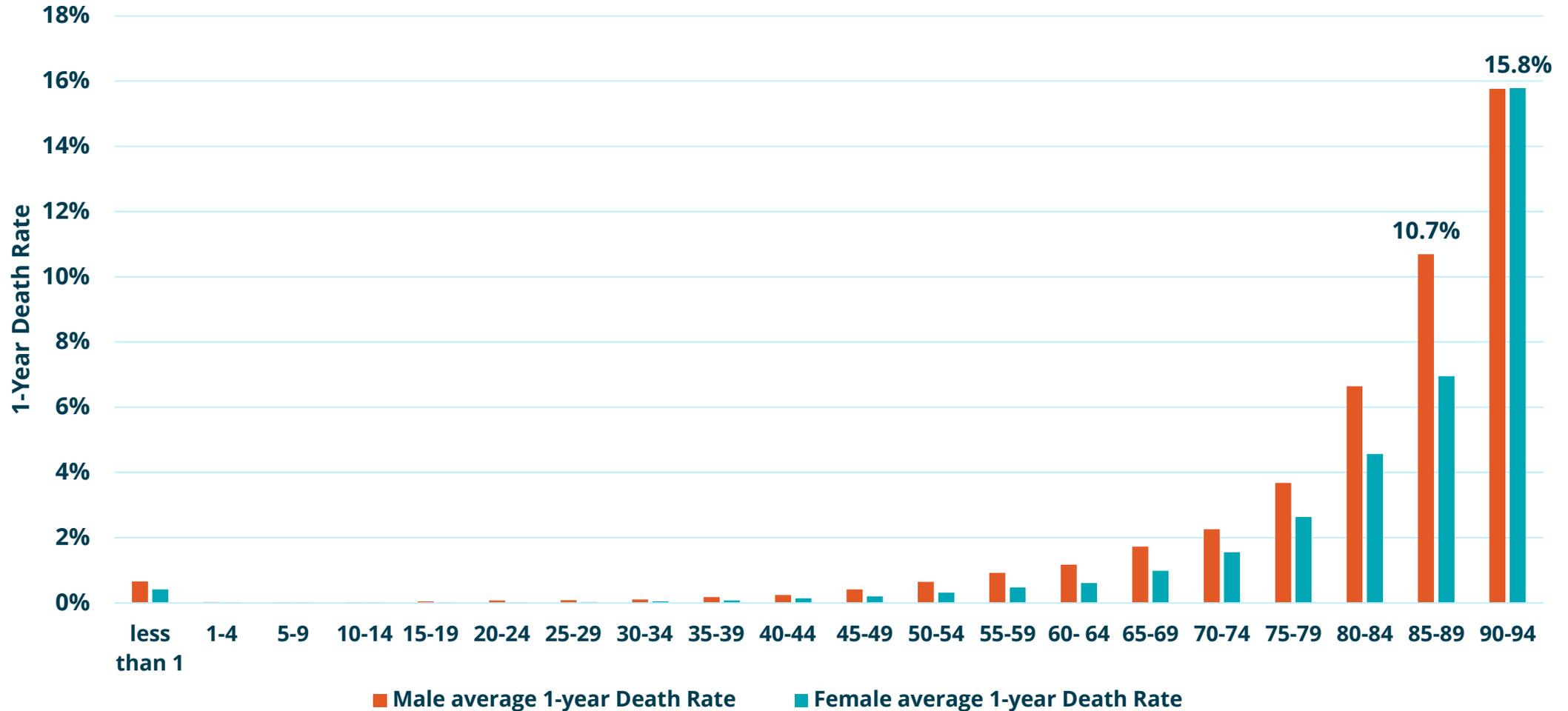


# DEATHS



- Boston **deaths** averaged **3,758 per year** from 2010 to 2019

**Boston Sex Specific One-Year Death Rates by Age, 2010-2019**

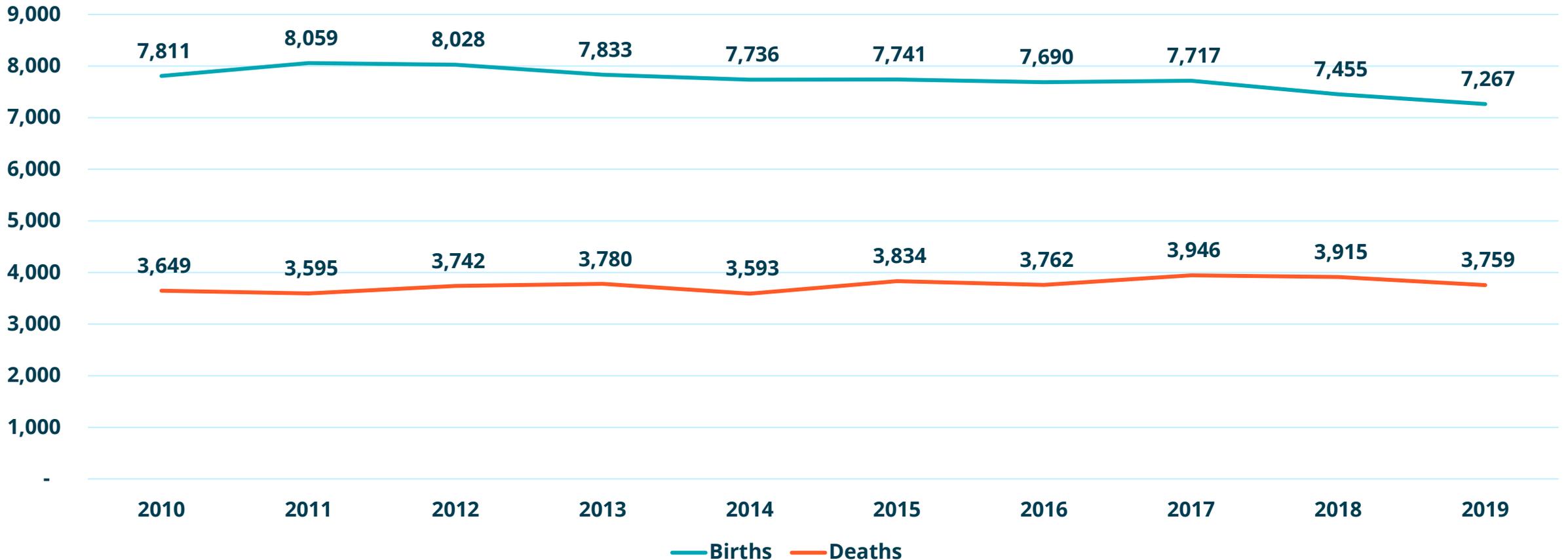


# NATURAL CHANGE IN POPULATION

$$\text{Projected Population} = \text{Population Base} + \text{Births} - \text{Deaths} + \text{Domestic In-Migration} - \text{Domestic Out-Migration} + \text{Net International Migration}$$

- Births outnumber deaths in Boston by about 3,400 to 4,400 a year
- In the absence of migration, Boston’s population would have grown by this amount through natural change

**Boston Births and Deaths, 2010-2019**

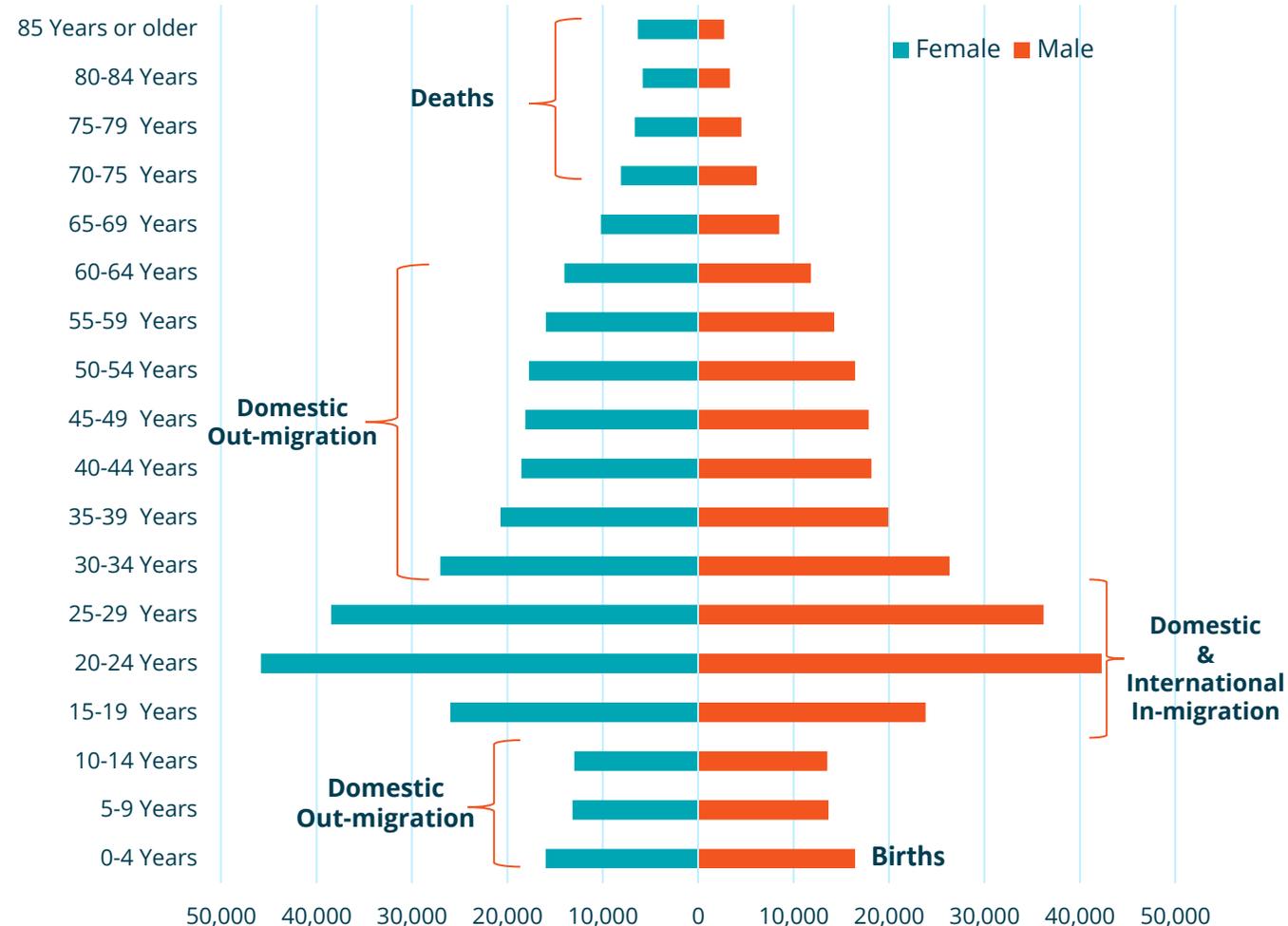


- **Natural change explains the U.S. population pyramid** well: births replenish the 0-4 cohort and deaths gradually diminish the older cohorts.
- However, **migration is a more important factor in Boston's population**, creating a bulge in the young adult years and making projections much more difficult.

**United States - 2010 Decennial Census**



**Boston - 2010 Decennial Census**



# MIGRATION RATES

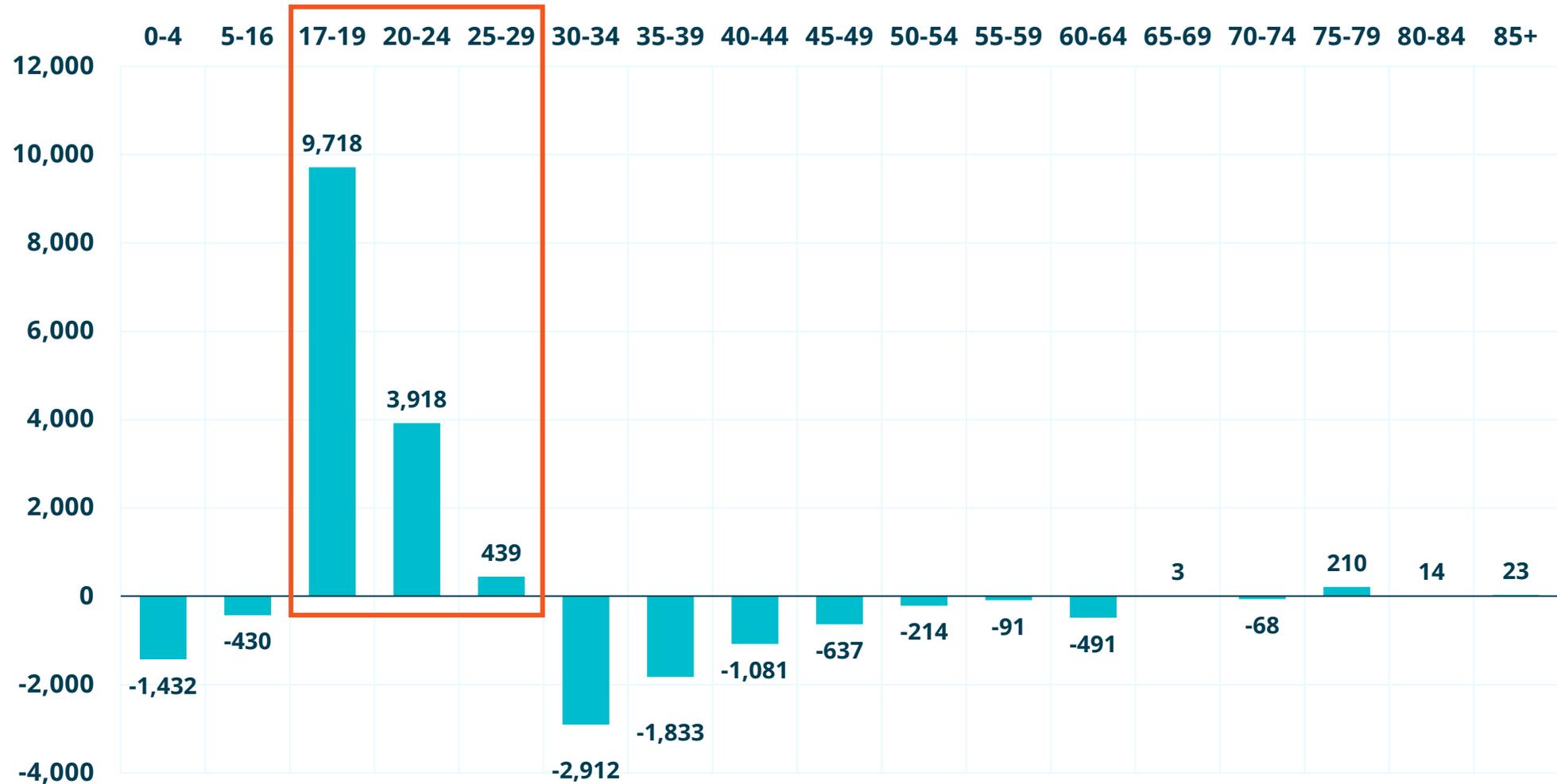
$$\text{Projected Population} = \text{Population Base} + \text{Births} - \text{Deaths} + \text{Domestic In-Migration} - \text{Domestic Out-Migration} + \text{Net International Migration}$$

- The BPDA migration methodology measures three types of migration.
- **Domestic in-migration:** people who move to Boston from elsewhere in the United States.
  - Domestic in-migration rate is the percentage of the U.S. population outside of Boston that moves to Boston.
- **Domestic out-migration:** people who move from Boston to elsewhere in the United States.
  - Domestic out-migration rate is the percentage of the Boston population that moves elsewhere in the United States.
- **Net international migration:** net movement of people to Boston from other countries and from Boston to other countries.
  - Net international migration rate is the net percentage of Boston residents who moved internationally.

# NET MIGRATION

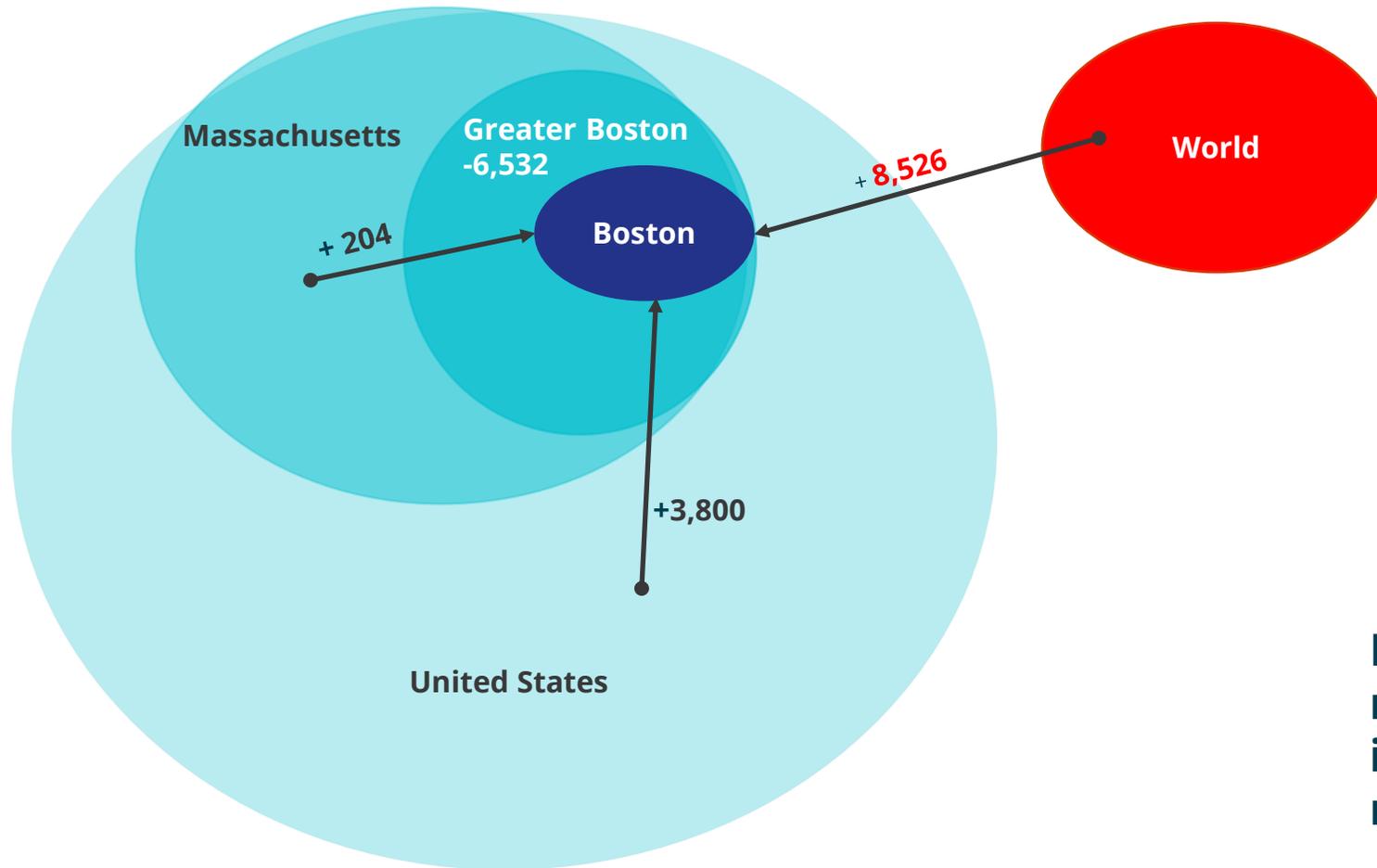
$$\text{Projected Population} = \text{Population Base} + \text{Births} - \text{Deaths} + \text{Domestic In-Migration} - \text{Domestic Out-Migration} + \text{Net International Migration}$$

- From 2010 to 2019, Boston had a net gain on average of approximately 5,100 people per year due to migration.
- This positive net gain is due to the large influx of 17-to-29 year-olds.



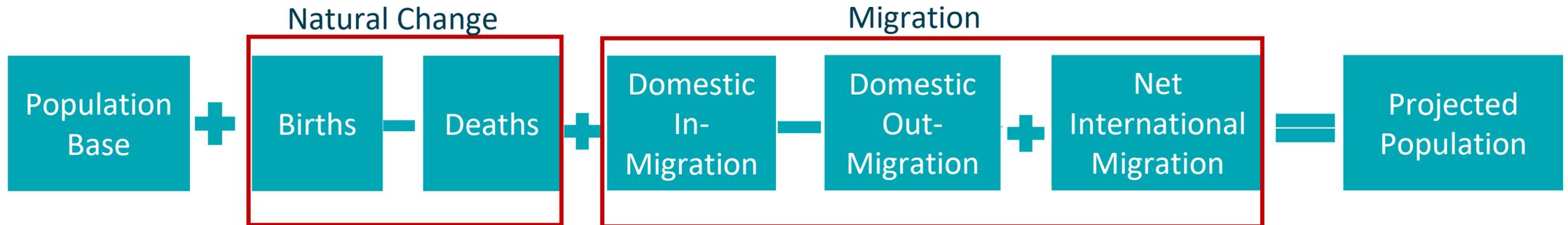
# NET MIGRATION FLOWS

$$\text{Projected Population} = \text{Population Base} + \text{Births} - \text{Deaths} + \text{Domestic In-Migration} - \text{Domestic Out-Migration} + \text{Net International Migration}$$



**Boston's migration patterns are marked by net positive international migration and net negative regional migration**

# POPULATION PROJECTION METHODOLOGY



- Create **age-specific fertility rates** from historical birth data 2019 from Massachusetts Public Health Commission and U.S. Census and ACS population data.
- Create **age- and gender-specific survival rates** from historical death data 2015-2019 from Massachusetts Public Health Commission and U.S. Census and ACS population data.
- Create **age- and gender-specific migration rates** from ACS migration and population data 2010-2019.
- Apply these rates to the population base (2010 Decennial Census) to project Boston's population through 2030

# POPULATION PROJECTIONS 2050

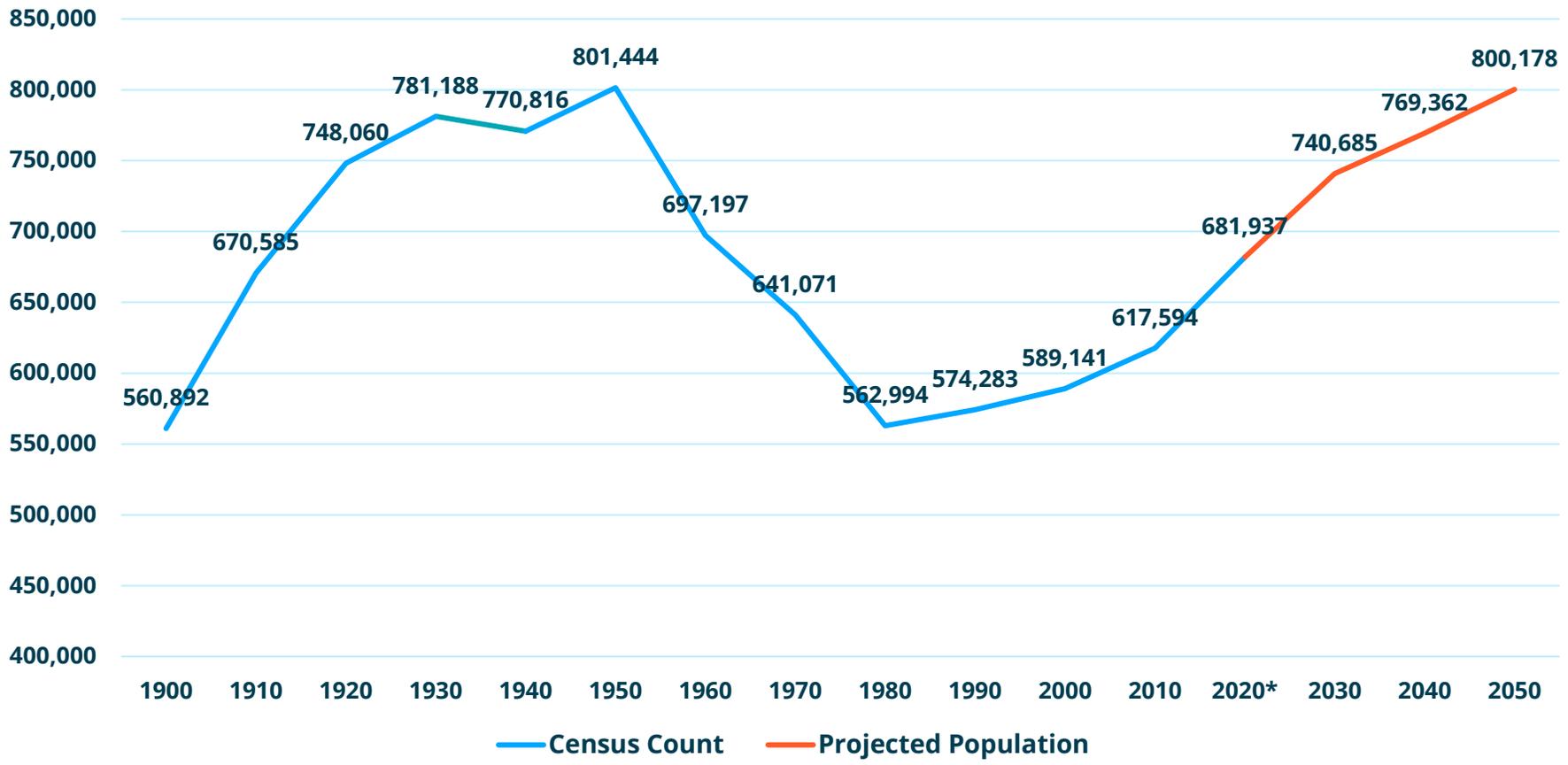


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# BPDA population projection methodology yields a projected Boston population of approximately 741,000 in 2030

$$\text{Projected Population} = \text{Population Base} + \text{Births} - \text{Deaths} + \text{Domestic In-Migration} - \text{Domestic Out-Migration} + \text{Net International Migration}$$

### Boston Population by Decade



Boston's population of 681,937 in the 2020 Census accounts for its successful Post Census Group Quarter Review.

Boston has continued its growth trend from a low point in 1980.

Boston is projected to have a population of approximately 741,000 in 2030 and 800,000 in 2050.

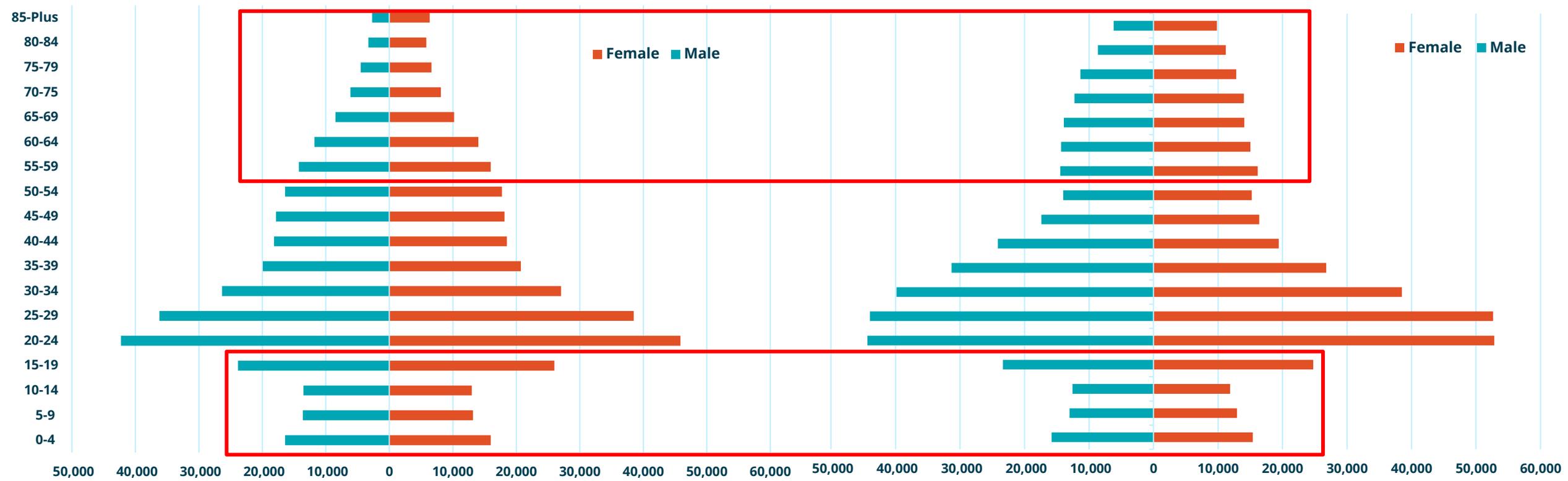
Source: U.S. Census Bureau, 1900-2020 Decennial Censuses & BPDA 2030-2050 Population Projection, BPDA Research Division Analysis

**Boston is projected to have fewer children under age 20 in 2030 than in 2010, with no growth projected through 2050. Age groups 55+ grow substantially.**



2010 Population - 617,549

2030 Population Projection - 740,000



## BPDA PROJECTIONS ARE BASED ON MOST UP-TO-DATE DATA:

- 2010 Census from U.S. Census Bureau (Population Base)
- 2015-2019 birth and death data from Massachusetts Department of Public Health (Natural Change)
- 2010-2019 migration data from U.S. Census Bureau, American Community Surveys (Migration)

THE PROJECTIONS DATABASE AND MODEL CAN BE UPDATED AS NEW DATA BECOME AVAILABLE

