

Moving Forward 2055

Connecting Communities, Creating Opportunities

APPENDIX B SOCIOECONOMIC & DEMOGRAPHIC FORECASTS



NYMTC Regional Transportation Plan
Adopted on September 5, 2025

MOVING FORWARD 2055

SOCIOECONOMIC & DEMOGRAPHIC FORECASTS



prepared by

THE NEW YORK METROPOLITAN TRANSPORTATION COUNCIL

SEPTEMBER 5, 2025



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LIST OF ACRONYMS

ACS	American Community Survey
CEMDAP	Comprehensive Econometric Microsimulator for Daily Activity-travel Patterns
CEMSELTS	Comprehensive Econometric Microsimulator of Socioeconomics, Land Use and Transportation Systems
CES	Current Employment Statistics
COVID-19	Coronavirus Disease 2019, caused by the SARS-CoV-2 virus
CPS	Current Population Survey
FWG	Forecasting Working Group
LIMA	Labor Induced Migration Adjustment
LIRR	Long Island Railroad
MTA	Metropolitan Transportation Authority
NYBPM	New York Best Practice Model
NYCDCP	New York City Department of City Planning
NYMTC	New York Metropolitan Transportation Council
PFAC	Program, Finance, and Administration Committee
PUMS	Public Use Microdata Sample
SED	Socioeconomic and Demographic
TAZ	Transportation Analysis Zone
TM	Technical Memorandum
QCEW	Quarterly Census of Employment and Wages

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ADJUSTED 2055 SOCIOECONOMIC AND DEMOGRAPHIC FORECASTS

1.1 OVERVIEW

This appendix describes the methodologies and technical tools used to produce New York Metropolitan Transportation Council's (NYMTC) Socioeconomic and Demographic (SED) forecasts described in Chapter 3 of *Moving Forward 2055* (or the Plan). NYMTC's latest SED forecasts through 2055 were adopted by NYMTC's Program, Finance, and Administration Committee (PFAC) on June 20th, 2024. The focus of this appendix is to present data and information on a wide range of recent socioeconomic and demographic trends and forecasts over the course of the Plan.

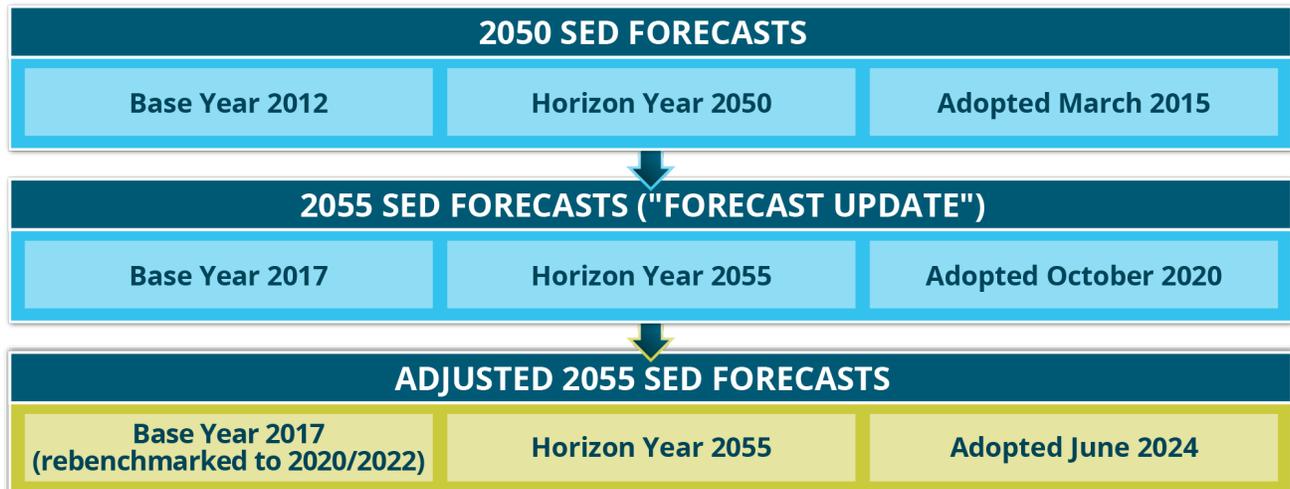
SED forecasts have been developed for a 31-county "forecast region" in the multi-state metropolitan region. The forecasts are generated at the county level and then aggregated into the following five subregions:

- » New York City's five boroughs
- » Nassau and Suffolk counties on Long Island
- » Dutchess, Orange, Putnam, Rockland, Sullivan, Ulster, and Westchester counties in the Hudson Valley
- » Bergen, Essex, Hudson, Hunterdon, Mercer, Middlesex, Monmouth, Morris, Ocean, Passaic, Somerset, Sussex, Union, and Warren counties in northern New Jersey
- » Fairfield, Litchfield, and New Haven counties in western Connecticut

As part of the forecasting effort, NYMTC convenes the Forecasting Working Group (FWG), which is composed of member agencies and representatives of other Metropolitan Planning Organizations (MPOs) and councils of government in the forecasting region who review work products related to development of SED forecasts.

In 2019, NYMTC updated the previous 2050 employment, population, household, and labor force forecast models, as well as the transportation analysis zone (TAZ) allocation process, from a 2012 to a 2017 base year using the same data sources as in the original 2050 SED forecast models, and then extended the forecast period from 2050 to 2055. This "Forecast Update" was adopted in October 2020. In 2023 it was decided that a further adjustment of these forecasts was warranted given the effects of the COVID-19 pandemic and the release of more recent data from the US Census and other sources. This adjusted set of 2055 forecasts was adopted in June 2024 and the methodology for this adjustment is detailed below. Figure 1.1 represents a progressive comparison of these last three SED forecast data sets.

Figure 1.1 Comparison of SED Forecast Data Sets



The 2050 forecasts prepared with a 2012 baseline will be referred to in this appendix as the "2050 SED Forecasts," the update of these models to the 2017 baseline will be referred to as the "Forecast Update" and the latest adjusted forecasts will be referred to as the "Adjusted 2055 SED Forecasts."

1.2 METHODOLOGY

NYMTC produces forecasts for the 31-county region. These county level forecasts are then disaggregated into TAZs to be used as inputs for NYMTC's regional travel demand forecasting model, the New York Best Practice Model (NYBPM). All analyses included in this appendix are for the 2022–2055 forecasting period.

In the following sections, the Adjusted 2055 SED Forecast methodology will be described for the following variables:

- » **Employment**—Total Employment (Wage and Salary Employment and Self-Employment)
- » **Population**—Total Population, Household Population, Group Quarters Population
- » **Labor Force**—Total Civilian Labor Force, Employed Civilian Labor Force
- » **Households**—Total Households, Average Household Size

For the Forecast Update, historical rates were used to inform each model's assumptions to project the socioeconomic and demographic variables, and the initial projections for each forecast were balanced to conform with county and municipal master plans where available, development opportunities, and planned development projects within the forecasting region. No changes have been made to the previously set adjustment factors. Details of the population, labor force, household, and employment models are described in Technical Memorandum 2: Baseline Model Update TM2 ([TM2: Baseline Model Update](#)).

1.2.1 POST-PANDEMIC SED FORECAST ADJUSTMENTS

Following the adoption of the 2055 Forecast Update in October 2020, the release of 2020 U.S. Census data and 2021 Longitudinal Employer-Household Dynamics commutation data revealed shifts in the distribution of population and employment across the region compared to the 2017 baseline used in the Forecast Update. These changes reflected both subregional development trends as well as pandemic-related alterations to the economy and labor. In response, NYMTC commissioned a study to assess the feasibility of using updated 2017 base-year SED forecasts along with a follow-up analysis of the finalized 2020 Census population counts and 2022 employment data.

The FWG reviewed the findings from these studies and while it was determined that the Forecast Update remained valid, the magnitude of the population and employment shifts were significant enough to warrant a re-benchmarking to the latest 2020 and 2022 data at both the county and TAZ levels.

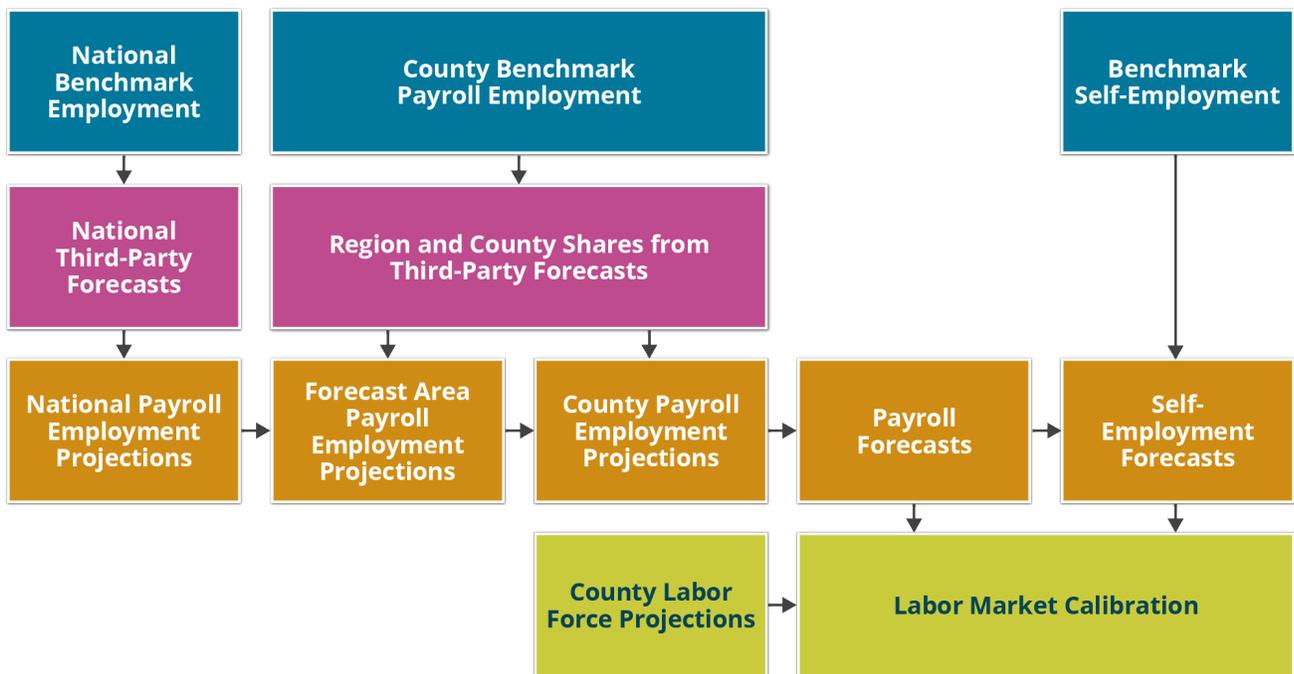
As part of this re-benchmarking process, two alternative methodologies were considered—incremental (arithmetic change) and rate of change (relative change). The incremental methodology employment and population results were deemed the more realistic and were selected as the basis for developing the adjusted 2055 SED projections from a 2020 and 2022 historical baseline for the non-New York City subregions prepared by Urbanomics. The New York City Department of City Planning's (DCP) Population Division formulated its own population projections for the years 2025–2055, utilizing updated baseline and housing data (completions, permits, and known future developments).

1.2.2 EMPLOYMENT MODEL OVERVIEW

Employment projections were developed using three SED models. As shown in Figure 1.2, historic employment benchmarks were established for national and county payroll employment and self-employment (modules in blue). Third-party forecasts were then used to develop national employment forecasts and region/county employment shares (modules in pink), followed by projections of payroll and self-employment for the NYMTC planning area and the subregions and counties within the planning area (modules in orange). Finally, place of work employment forecasts were calibrated against place-of-residence labor forecasts (modules in gold) established from the population forecast model. Adjustments were made based on FWG member feedback.

The employment forecasts are critical to the NYBPM; the number of jobs by place-of-work location provides the number of potential work trips and their destination location. The employment model interacts with the population and labor force models because employment opportunities influence migration rates and imply the level of employment demand for each subregion and county.

Figure 1.2 Overview of Employment Forecasting Methodology



Source NYMTC, 2015. Modeling Methodology Technical Memorandum (TM), p. 6.

1.2.3 POPULATION MODEL OVERVIEW

For the Adjusted 2055 SED Forecast, two separate population forecasts were developed for the 31-county forecast region using the same models prepared for the Forecast Update with recent demographic data. New York City's five boroughs were forecasted using DCP's model while Urbanomics updated the population model for the remaining 26 counties for each of the other four subregions listed in Section 1.1.

Both models are driven by a cohort-component approach (births, deaths, and net migration) based on 1990–2010 decennial censuses by age/sex, updated to 2015 in the original 2050 model. Additional data updates include annual births and deaths by county through 2017. The New York City model includes an extensive land use analysis to adjust the borough population projections to conform to their zoning constraints. The population model for the non-New York City subregions employs a demographic-economic method linked to employment demand to adjust for regional net migration in future years as shown in Figure 1.3. This linkage between the population and employment models balances labor supply with demand. As informed by land use constraints in New York City and labor-induced migration, these two models allocate potential workers in New York City that could not be housed there to the surrounding 26 counties in proportion with recent commutation patterns.

In the 2050 SED Forecast, the 2010 U.S. Census was the historic base year or launch point for the cohort-survival components, which were then extrapolated to 2012. For the Forecast Update, 2015 is used as the launch point for the cohort-survival components, which are extrapolated to 2017, the launch point of the employment forecast projections.

For the Adjusted 2055 SED Forecasts, the 2020 U.S. Census and 2022 1-Year Population Estimates serve as the historic base year or launch point. As described in Section 1.2, the incremental change method was used to revise the total population projections from the Forecast Update for the non-New York City subregions, whereas updated data on housing completions, permits, and known future developments were used to help revise the total population projections for the New York City subregion.

The primary outputs generated through the Population Model are Population in Households and the Group Quarters population, which together represent Total Population.

1-5

For the New York City subregion, DCP prepared the projections for population in households based on the difference between the total population projections minus the group quarters population. Due to the complex nature of forecasting the group quarters population in the New York City subregion (where growth is affected by factors in addition to mortality, fertility, and migration patterns), DCP's group quarters projections were maintained at 2020 levels.

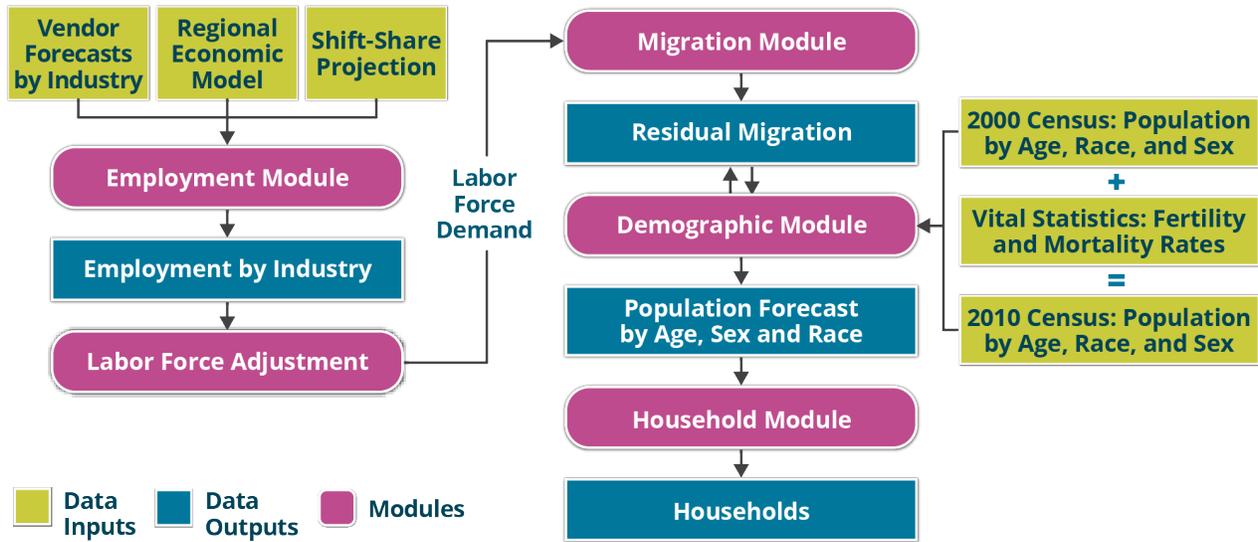
In the non-New York City subregions, the projections for the population in households were calculated by multiplying the ratio of the household population to the total population from the Forecast Update, multiplied by the total population from the Revised Forecast for each projection year and county. For example:

$$\left(\frac{\text{Forecast Update 2025 Household Population}}{\text{Forecast Update 2025 Total Population}} \right) \times \text{Revised Forecast 2025 Total Population}$$

The group quarters population projections were derived by subtracting the population in households from the total population from the Revised Forecast for each county and projection year.

The Population Model yields a forecast of travelers in the 31-county forecast region.

Figure 1.3 Population Model Structure for 26 Counties Outside New York City



Source NYMTC, 2014. County Level Forecast Methodology WP, p.36.

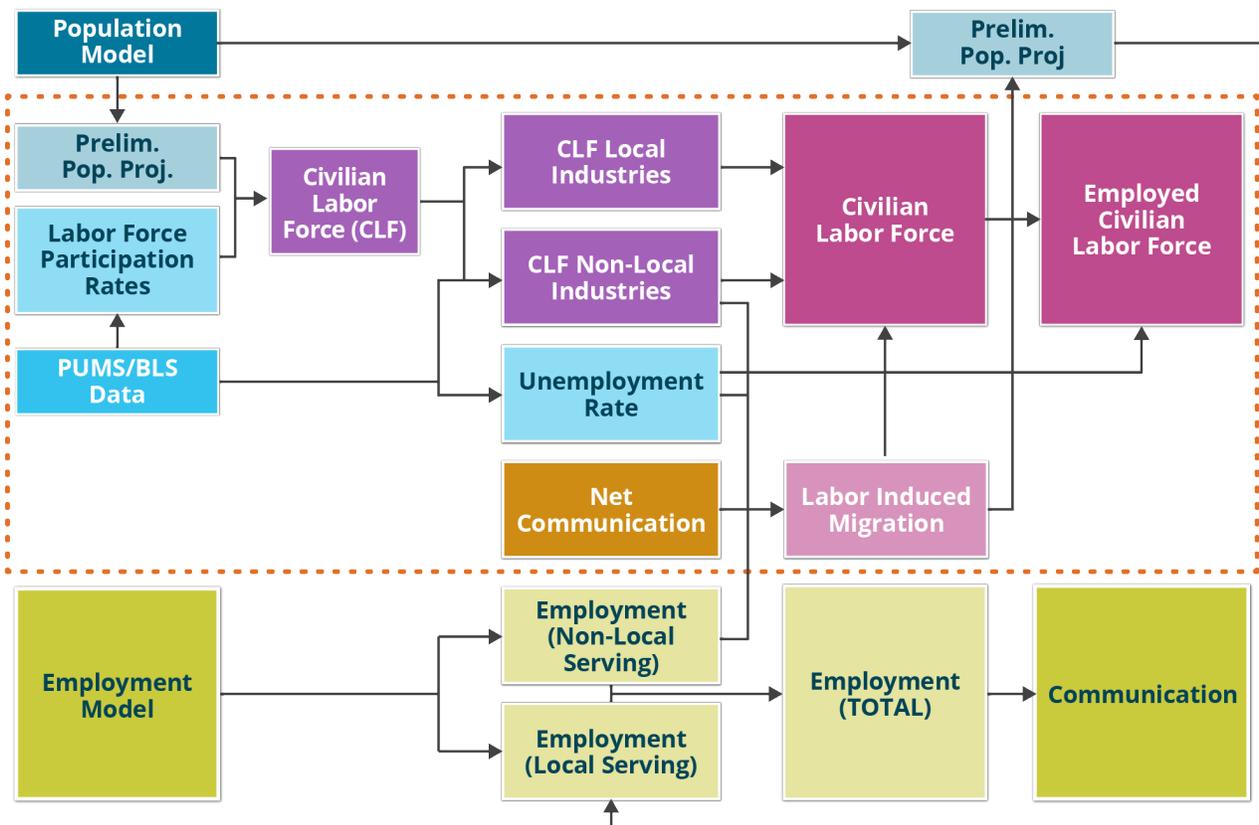
1.2.4 LABOR FORCE MODEL OVERVIEW

Labor force is defined as the resident population of a place, aged 16 years or older, that is employed or, if not employed, actively looking for work. The Population Model generates county-level forecasts of population distinguished by age and sex. As shown in Figure 1.4, the Labor Force Model then converts population projection inputs into estimates of civilian labor force by combining various other inputs through a series of calculations that forecast the following:

- » Civilian labor force
- » Labor Induced Migration Adjustment (LIMA)
- » Employed labor force by county of residence

The Population Model provides several methods for adjusting the components, the most powerful of which are the adjustments to migration. The LIMA adjustment within the Population Model increases the net migration component of population consistent with forecasted employment growth.

Figure 1.4 Labor Force Model Structure



Source NYMTC, 2015. Modeling Methodology TM, p. 84.

For the labor force forecast, the Forecast Update incorporated the same data inputs used in the 2050 SED Forecast model with new data points added for the years from 2011–2017. Labor force participation rates were adjusted to reflect more recent trends drawn from 2015 and 2017 census data.

The established methodology of the Labor Force model creates greater consistency with employment projections by linking migration to employment. Labor demand implied by the employment forecasts is reconciled against labor supply estimates generated from the conversion of preliminary population forecasts into labor force estimates. The volume of total economic migrants (workers and their dependents) that cannot be housed in New York City because of housing supply constraints are reallocated to the surrounding commuting shed to be compatible with commuting patterns observed in the data.

In the Adjusted 2055 SED Forecast, 2020 and 2022 American Community Survey (ACS) 1-Year Estimate data served as the historic baseline using county data or Public Use Microdata Sample (PUMS) aggregated to the county level. The total labor force was projected for 2025 through 2055 for all counties within the 31-county region by multiplying the ratio of total labor force to population in households from the Forecast Update against population in households from the Adjusted 2055 SED Forecast for each county and projection year. Like the total labor force, employed labor force data was also not released by the Census Bureau's ACS program in 2020. The methodology for the employed labor force baseline data was the same as that for the total labor force.

1.2.5 HOUSEHOLD MODEL OVERVIEW

The household is a key unit of analysis in demographic and travel demand forecasting. The Household Model forecasts the average household size and number of households for each geographic subregion. Derived from total population by age, the number of households is projected by applying historical headship rates by five-year age cohort. A headship rate is the ratio of household-heads (self-identified classification by census respondents) to the corresponding household population. It should be noted that the household model works on a five-year cohort basis and therefore defaults to the five-year period preceding the interim base year: in the case of the Forecast Update, the model defaults to 2015. There were no changes to the data inputs in the Household Model beyond the additional collection of the 2015 ACS PUMS data.

Separate household projections were generated for New York City and the other 26 counties, in keeping with the clear distinction of household formation patterns within New York City and the surrounding, more suburban, counties. New York City's average household size has declined over most of the last century but ticked upward in 1990 (2.54) and 2000 (2.59) before declining again in 2010 to 2.57. However, the changing population dynamics (i.e., the aging population or possible changes in immigration trends) at play in New York City make projecting the direction and magnitude of change difficult. Therefore, the 2010 average household size by county was held constant throughout the forecast period in the Forecast Update.

The household formation forecasts for the other 26 counties were derived somewhat differently. Because of differing trends in these counties (e.g., declining household size and an increasing number of single person households), the model for these subregions was based on age-specific headship rates from the previous three decennial censuses. Headship rates were then used to forecast the projected number of households, given the projected age-distribution of the population. The Forecast Update incorporated the same inputs used in the 2050 SED Forecasts with new population and headship rates added for 2015 and 2017.

For the Adjusted 2055 SED Forecast, the 2010 historic baseline was updated with the most recent data, including the 2020 U.S. Census and the 2022 ACS 1-Year estimate. In New York City, total households were projected by DCP from 2025 to 2055 by dividing the total household population by average household size by county. For the remainder of the forecast region's counties, the household forecast was adjusted in the same manner as total population—the 2022 ACS data was used as the new baseline to which the incremental change was applied for the interpolation of 2022 and 2025 and then between each of the projection years that follow. Post-2020 average household size has declined steeply and given the uncertainty in the trajectory, average household size for the New York City counties were held constant at the 2022 baseline through 2055, following the same methodology used in prior forecasting activities. In the subregions outside of New York City, average household sizes were derived from the population in households divided by total households from 2022 to 2055.

1.2.6 HOUSING CONSIDERATION

At the time of this adjustment effort, new Federal regulations were being developed to emphasize the importance of considering housing development and capacity in the development of MPOs' planning products. NYMTC made decisions to align its effort on the SED forecast adjustments with these Federal regulations by reviewing available housing information for reasonableness and validity of the future projections.

2055 FORECAST UPDATE

The New York City population forecast methodology puts significant emphasis on development capacity. The SED forecasts for the counties outside of New York City are unconstrained, yet housing units and residential development in the pipeline are used to distribute county forecasts to the TAZ level. Technical details on how this was accomplished can be found in the Zonal Allocation Methodology Technical Memorandum ([Zonal Allocation Methodology](#)).

ADJUSTED 2055 SED FORECASTS

In New York City, the adjusted population forecast continued to incorporate a development pipeline and evaluate zoning constraints. For counties outside of New York City, NYMTC and Urbanomics provided FWG members an estimate of the number of new housing units that would be required to house the total new households forecasted (based on forecasted total population in households and an average household size) as well as data showing the 10-year average annual number of building permits for new residential housing units (Table 1.1). These two resources were made available to FWG members to assist with their review and analysis of the adjusted population forecasts. It was noted that the building permit survey data has inherent limitations due to multiple factors including how permit data is defined and collected by the U.S. Census. This resource was available as a reasonableness check for members as they reviewed the adjusted forecasted numbers.

Table 1.1 Housing Development Constraint Analysis

	Adjusted SED Households		New Housing Units Needed		Annual Building Permits Issued (10-Year Average U.S. Census Building Permit Data)	Difference between New Housing Units needed and Building Permit Survey (new units)
	2022	2055	Net 2022-2055	Annual Demand		
Non-New York City Region Total¹	5,400,584	6,057,044	+656,460	-	36,183	+15,829
Nassau County	456,149	510,927	+54,778	+1,660	1,103	-557
Suffolk County	511,964	574,537	+62,573	+1,896	1,133	-763
Long Island Total	968,113	1,085,464	+117,351	+3,556	2,236	-1,320
Dutchess County	117,028	121,975	+4,947	+150	460	+310
Orange County	139,757	176,538	+36,781	+1,115	1,144	+29
Putnam County	36,104	38,515	+2,411	+73	79	+6
Rockland County	104,003	130,448	+26,445	+801	431	-370
Sullivan County	32,758	36,029	+3,271	+99	335	+236
Ulster County	75,187	75,065	-122	N/A	303	N/A
Westchester County	373,505	387,742	+14,237	+431	1,757	+1,326
Mid-Hudson Total	878,342	966,312	+87,970	+2,669	4,509	+1,840
New Jersey Total	2,789,616	3,182,046	+392,430	+11,892	26,281	+14,389
Connecticut Total	764,513	823,222	+58,709	+2,237	3,157	+920

¹ NYCDPC conducted a separate housing analysis for New York City counties in addition to this check.

Source: NYMTC Adjusted 2055 SED Forecast, U.S. Census Building Permit Survey.

Following a review of the SED projections in the context of new housing development necessary to house the projected population growth and solicitation of feedback for county-level adjustments from local stakeholders, the FWG reached a consensus on the final forecast projections in March 2024. PFAC approved the adjusted forecasts for the 31-county forecast region in June 2024.

1.3 TREND ANALYSES AND ASSUMPTIONS

An analysis was conducted of the forecast region’s demographic and economic trends, emerging issues, infrastructure changes, and transformational technologies that may influence the development of the Forecast Update. The purpose of this analysis was to assess the potential impact of these trends and technologies. Details of this trend analysis are described in Technical Memorandum 1: Existing Trends Analysis. [TM 1: Existing Trends Analysis](#).

To reach the consensus opinion of FWG members on the impact of current trends and developments, the analysis included a survey of FWG members. This survey assessed timing and extent of impacts from various trends and technologies. The survey results provided local insights on how adjustments could be applied to the Population and Employment models.

1.3.1 SIGNIFICANT TRENDS

On both a national and regional basis, the following trends will have significant impacts on the updated model results:

- » Declining fertility rates
- » Declining mortality rates
- » Aging population
- » Declining international immigration
- » Increasing housing costs
- » Stagnant or Decreasing personal income relative to inflation
- » Declining unemployment
- » Shifts in industry mix

In addition, other emerging issues may affect future land use, traffic, and transit. These include:

- » Transit and transportation trends such as ride-hailing through transportation network companies
- » Climate change and sea level rise
- » Land use trends (headquarter relocations, the growth of coworking spaces, conversions of office parks, malls, transit-oriented development, and golf courses)
- » Infrastructure considerations such as utility access including sewers and broadband
- » Congestion pricing in the region's core
- » Transformational technologies including e-commerce, alternative energy, vehicle automation, and smart cities
- » Changes in Telecommuting/Work from Home rates

Input from FWG members and others with local knowledge (e.g., county planners) helped to determine the extent to which these issues would affect the forecasting region as a whole and component counties individually. These individuals provided a higher-level perspective for the detailed information gathered from the development inventories and county planning meetings. The survey results, which are presented in Table 1.2 and ranked by anticipated level of influence and projected year of peak impact, were used to guide FWG members in making informed decisions about necessary forecast adjustments across the region.

Table 1.2 Local Impacts Survey Results Ranked by Anticipated Level of Influence

Topic	High/Med/Low Influence	Anticipated Average Year for Height of Impact (2020–2025)
High house costs/lack of affordability	High	2025
Sea level rise and climate change	High	2030
Senior housing choices	High	2030
Building boom	High	2030
Aging populations	Medium	2030
New York City congestion pricing	Medium	2025
E-commerce	Medium	2030
Shifting industry mix	Medium	2030
Millennial housing choices	Medium	2025
Ridesharing	Medium	2025
Changing regional malls	Medium	2030
Increasing sewer access	Medium	2030
Expansion of the freight industry	Medium	2030
Smart cities	Medium	2035
Reinventing office parks	Medium	2025
Electric vehicles	Medium	2030
Headquarter relocations	Medium	2030
Coworking spaces	Medium	2030
Declining housing value	Low	2030
Golf course conversions	Low	2030
Autonomous vehicles	Low	2040
Slow growth of gross domestic product	Low	2030
Autonomous terrestrial delivery vehicles	Low	2040
Short distance aerial delivery vehicles	Low	2035
Moratorium on Con-Ed Gas hookups/infrastructure constraints	Low	2030

Note: Survey results completed in 2019, prior to the COVID-19 pandemic.

Source: NYMTC 2050 SED Forecast Update, Technical Memorandum

1.3.2 DEMOGRAPHIC TRENDS

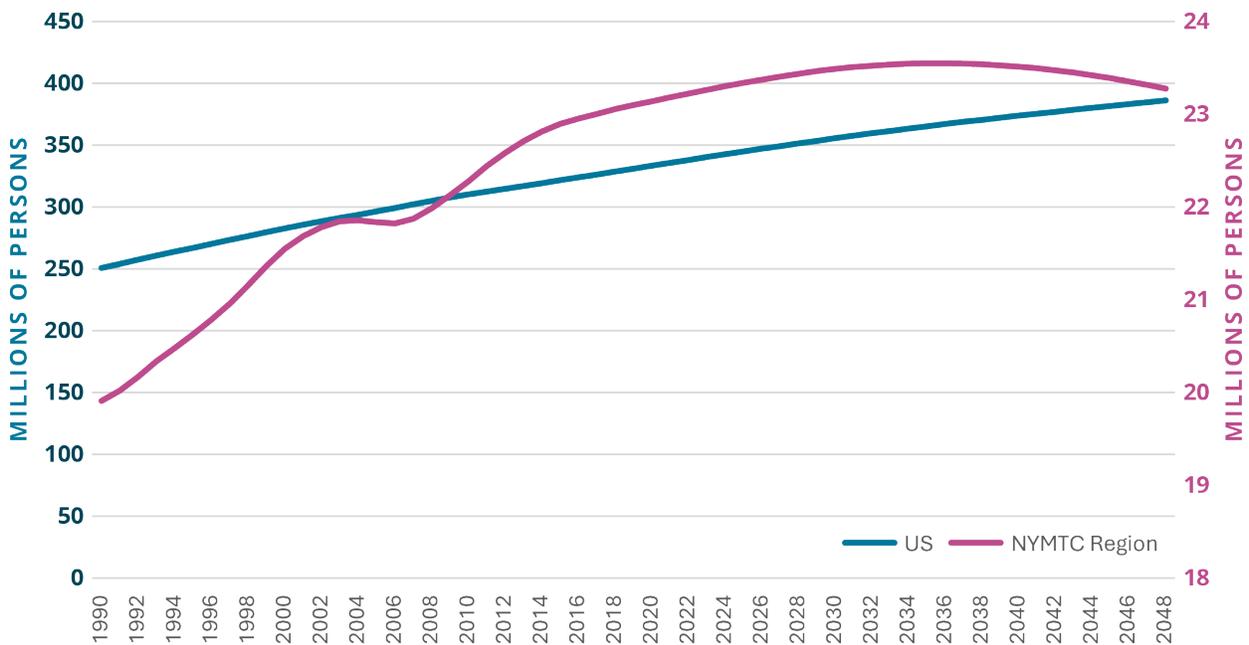
POPULATION

UNITED STATES

To better understand the historic context for the population forecasts driven by the population model, the historic population growth in the U.S. from 1990 to 2017 was compared against the 30-year forecast prepared by IHS Markit (now S & P Global) from 2018 to 2048. The IHS Markit population forecast serves as one of several population forecast drivers incorporated into the population model. For the forecast period, the primary purpose of the trend forecast is for planning. It purposefully does not indicate cyclical changes in the economy or try to pinpoint when they might occur.

The population of the United States grew from 248.7 million in 1990 to 308.7 million in 2010, increasing by 1.09 percent on average annually. From 2010 to 2022, the Nation’s population expanded to 333.3 million residents, increasing by 24.5 million with a 0.64 percent annual rate of growth. From 2022 to 2048, population growth is expected to trend down, from 0.6 percent annually between 2022 and 2040, to 0.5 percent a year from 2040 to 2048. Thus, from 2022 to 2048 the country will add 2.9 million residents per year, compared to a rate of 3.0 million per year from 1990 to 2010.

Figure 1.5 U.S. and NYMTC Region Population, Historic 1990–2017 and Forecasted 2018–2048



Source IHS Markit, Annual U.S. Population Estimates, Historic 1990–2017 and Forecasted 2018–2048.

31-COUNTY FORECAST REGION

The population of the entire forecast region grew from 20.1 million in 1990 to 23.5 million in 2020 and 23.3 million in 2022, an increase of 3.2 million during the 32-year period and an average annual growth rate of 0.46 percent a year. The IHS forecast projects very little population growth in the forecast period; almost all of which is expected to occur in the New Jersey subregion.

From 2010 to 2022, New York City has seen a population increase of 1.1 percent, while the population of northern New Jersey increased by 6.2 percent. The Hudson Valley subregion saw more modest population growth with an increase of 4.5 percent, followed by the Long Island subregion at 2.7 percent, and the western Connecticut subregion at 2.5 percent.

Between 1990 and 2022, the downtrend in the birth rate (births per 1,000 residents) and aging of the population are possible reasons for the expected decline in population growth nationally and regionally.

UNITED STATES HOUSEHOLDS AND HOUSEHOLD SIZE

As the Baby Boom generation and Generation X aged over time, the number of new households formed each decade in the United States shrank from a high of nearly 16 million from 1970 to 1980 to 12.5 million between 1980 and 1990, to fewer than 10 million per decade between 1990 and 2010. The number of household formations will average about 10 million per decade from 2020 to 2048.

1-14

Household size shrank from an average of 3.3 persons per household in 1960 to about 2.6 between 1990 and 2010, and 2.5 in 2022. The IHS forecasts expect average household size to resume a minimally downward direction in the forecast period, ending the forecast period at 2.4 persons per household. Combined with relatively stable mortgage rates—hovering primarily between 3 and 7 percent for 30-year loans over the past two decades—this trend will likely maintain single-family homes at approximately 70 percent of the housing stock, with multifamily units comprising about 30 percent during the forecast period.

REGIONAL HOUSEHOLDS AND HOUSEHOLD SIZE

In most counties in the forecasting region, the total number of households grew similar to population growth between 1990 and 2022. Within both the forecasting region and the smaller New York State 14-county subregion, which encompasses the New York City, Long Island, and Hudson Valley subregions, household size shifted from 2.7 persons per housing unit over the years from 1990 to 2020 down to 2.6 as of 2022. Household size differed considerably among counties in 2022—with the smallest average size in New York County at 1.8 and the largest in Rockland County at 3.0. The IHS forecast, which projects little population growth, subsequently shows household size falling in all counties within the New York State 14-county subregion through 2048. This reduction in household size is likely driven by an aging population, as older adults tend to live in smaller households, often consisting of one or two people.

LABOR FORCE

The U.S. labor force increased at a rate of 0.9 percent per year between 1990 and 2022, less than half the rate in the previous three decades when women entered the labor force in large numbers. The labor force declined slightly during the “Great Recession” of 2007–2009, with the decline confined to workers between 16 and 54 years old who were less protected against cyclical employment trends; workers aged 55 and older increased in number as they retained their jobs and delayed retirement.

The number of people in the labor force who are 65 years old or older has been increasing since 1960. By 2022, older adults were 6.3 percent of the labor force, up from 2.7 percent in 1990. This increase in participation by older adults is likely the result of a combination of factors, including rising costs of living and changes to the national economy’s industrial structure and workforce environment, resulting in fewer workers involved in physical labor.

According to the IHS forecast, the increase in participation by older adults is expected to continue during the forecast period, so that by 2048, more than 11 percent of the labor force will be age 65 or older. However, the growth of the labor force will fall to only 0.5 percent a year between 2022 and 2048, primarily because of the concomitant decline in population growth in the United States as well as the likely stability of women’s participation rate.

1.3.3 ECONOMIC TRENDS

EMPLOYMENT

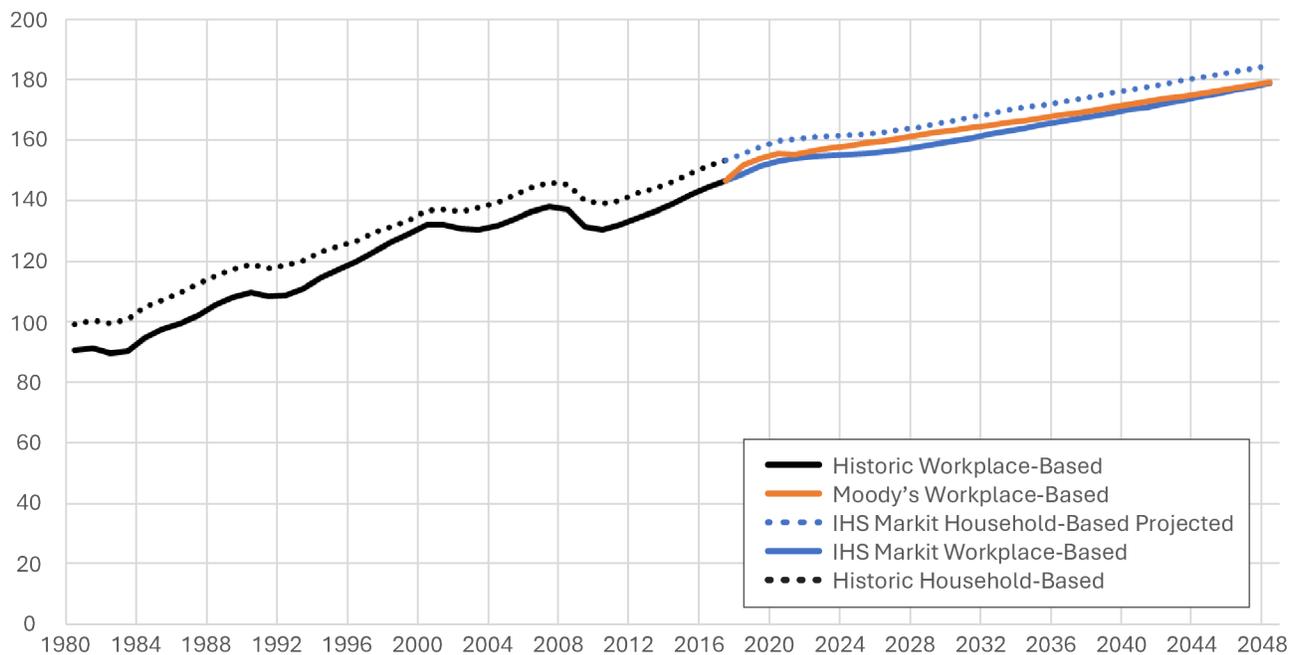
Total workplace employment, in the United States rose from 90.5 million in 1980 to 152.5 million in 2022 (Figure 1.6). The impact of the recessions of the early 1980s and early 1990s can be seen in the dips in employment in those periods. The recovery from the much larger dip following the 2001 recession ended in 2004, while the recovery after the “Great Recession” of 2007 to 2009 lasted until 2014. Employment dropped sharply in the early 2020 months of the COVID-19 pandemic, reaching pre-pandemic levels at some point in 2022.

Total employment, as estimated by the Bureau of Labor Statistics’ Current Population Survey (CPS), includes proprietors, which are business owners and classified as self-employed workers, as well as agricultural jobs, neither of which is included in the non-agricultural data. Total employment numbers from the CPS survey, a household-based survey, have always been higher than employment as estimated by the Bureau of Labor Statistics’ Current Employment Statistics (CES) workplace-based survey of businesses and Government agencies, but its reaction to the business cycle tends to be more muted, falling more slowly in downturns and rising more slowly in upswings.¹ That pattern will continue in the forecast period according to forecasts by IHS Markit. Between 2022 and 2048, employment is expected to increase by approximately 0.61 percent annually under the workplace-based CES measure and 0.59 percent under the household-based CPS measure, with an overall increase of about 26.4 million jobs. Moody’s, a data analytics firm that serves financial institutions, businesses, and governments, projects slightly stronger average annual growth in non-agricultural employment at 0.62 percent over that period.

Employment trends for the forecasting region and its component subregions are similar in some ways but quite different in others. Figure 1.6 shows the percentage growth in employment by subregion compared to the forecasting region as a whole and to the United States.

Over the historic trend period, New York City was the growth leader in the forecasting region, with employment increasing at an annual average rate of 0.75 percent (see Figure 1.7). Long Island added jobs at a rate of 0.51 percent a year, while the Hudson Valley and northern New Jersey subregions lagged at only 0.34 percent and 0.33 percent per year, respectively. The western Connecticut subregion had the smallest growth at 0.04 percent. All were considerably slower than the United States, which added jobs at a rate of 1.04 percent a year.

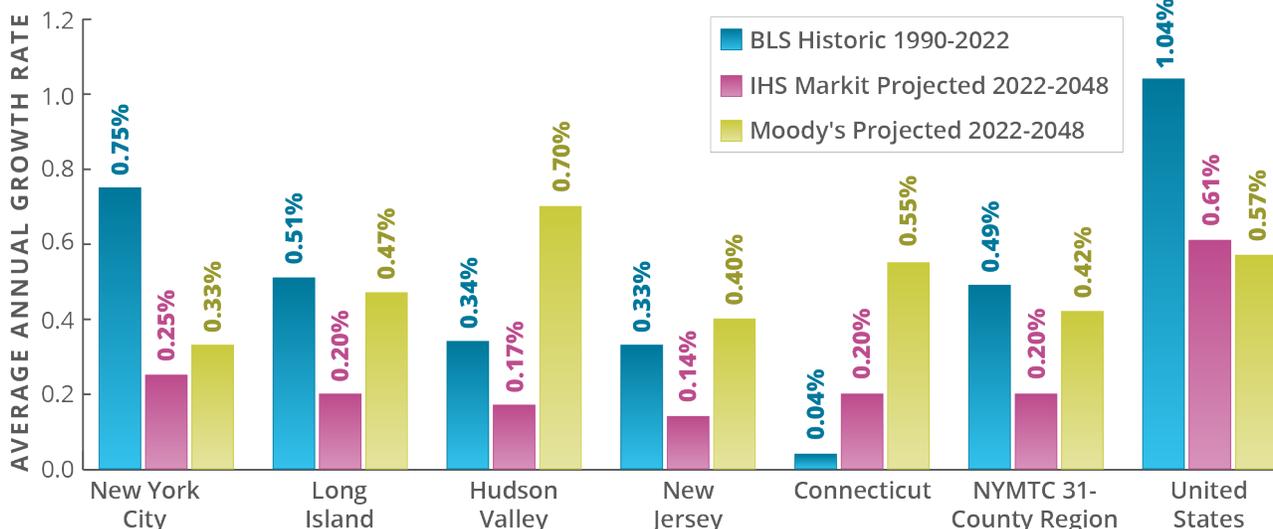
Figure 1.6 U.S. Employment, Historic 1980–2017 and Forecasted 2018–2048 (In Millions)



Note: IHS Markit and Moody's U.S. employment projections, based on workplace and household survey-based data, are early-stage forecasting products used in the SED 2055 forecasts. These products, along with others, contribute to the national forecasting component of the model, which feeds into the 31-county planning region forecast.

Source: USBLS, CES Survey, Current Population Survey, IHS Markit & Moody's Employment Forecasts Historic 1980–2017 & Forecasted 2018–2048.

Figure 1.7 Regional Nonfarm Payroll Employment Growth Rates, Historic 1990–2022 and Forecasted 2022–2048



Source: USBLS, CES Survey, IHS Markit & Moody's Employment Forecasts.

Future growth forecasts developed by IHS Markit and Moody's were similar at the national level but diverged for the forecasting region and its subregions. Moody's forecasts projected double the rate of growth forecasted by IHS Markit in the forecasting region (+0.42 percent and +0.20 percent, respectively). In New York City, both forecasts projected annual average growth of roughly 0.3 percent, while Moody's forecasts far exceeded growth projections in all other subregions.

1-17

The differences in the growth rates are, to a large extent, attributable to the varying impacts of the Great Recession, rather than the pandemic and following recovery, which occurred after the release of these forecast series in 2018. Between 1990 and 2007, all five subregions grew less than 1 percent a year, with western Connecticut and New York City at the low end of the range and the more suburban areas in New York and New Jersey at the high end. Employment in New York City peaked in 2008, a year after the national peak, and the jobs previously lost in the Great Recession (by number not industry) were recovered by 2011. The number of jobs lost during the recession were recovered nationwide by 2014. Outside of New York City, the number of jobs lost during the recession were recovered in the Long Island subregion by 2013, in the Hudson Valley subregion by 2015, and in the northern New Jersey subregion by 2016. As of 2023, a full job recovery has not yet occurred in the western Connecticut subregion.

1.4 COVID-19 IMPACTS ON FORECASTS

The global novel coronavirus (COVID-19) pandemic that began in 2020 has affected cities throughout the world, as many urban cores became epicenters for the pandemic. The forecasting region was no exception, with higher infection and death rates due to a complex combination of factors, including population density and national and international connectivity. However, as of this writing, while the ability to fully discern medium-term or longer-term effects of the COVID-19 pandemic and economic shock remains limited, some impacts have emerged. These include shifts in work patterns such as the widespread adoption of remote

work and hybrid work schedules, changes in housing demand with increased interest in popular second home and vacation communities, and disruptions to supply chains and labor markets. Affected industries range from construction and food services to retail, health care, child care, and transportation, all of which may have lasting effects on urban development and economic trends.

To determine how to address this ongoing public health emergency in the forecasts, in the spring and summer of 2020 the FWG considered the potential impacts of the pandemic. The forecast process had already incorporated assumptions of multiple economic cycles into its long-term outlook. However, in light of the pandemic-related economic impacts beginning in 2020, some adjustments were made to reflect economic conditions.

As part of the 2055 SED forecasting process, the 2050 SED Model was updated with the latest employment data. This process included several major updates such as the incorporation of re-benchmarked employment data from 2010 through 2017 and the incorporation of the latest series of employment forecast drivers from the IHS Markit, Moody's, and the Bureau of Labor Statistics.

Further, consistent with the scope of work, the resulting forecasts were projected to 2055, using a simple least squares linear trend of the forecast based on the years 2000 to 2050. In 2024, the adopted forecasts were adjusted based on the year 2020 and 2022 historic demographic and economic data.

1.5 ADJUSTED 2055 31-COUNTY REGION FORECASTS

From 2022 to 2055 total employment is projected to expand by 1.78 million jobs (+14.4 percent) in the 31-county forecast region, reaching a high of 14.20 million jobs and a population of 26.11 million residents.

1.5.1 EMPLOYMENT

The 2055 SED employment forecasts total jobs (both payroll and proprietor) by place of work as modeled by the update of the 2050 SED Employment Model and adjusted to reflect the insights of the FWG.²

COUNTY-LEVEL ADJUSTMENTS

To get closer to the regional target and reflect changes in regional land use, including significant development in New York City and northern New Jersey, the county-level forecasts were adjusted within the model consistent with the established methodology used in the 2050 SED Model. Employment forecasts for each county from forecast years 2020 to 2055 were adjusted varying in level from minor to substantial in response to feedback from local stakeholders to determine the appropriate level of control for forecasts deemed too aggressive or weak given local knowledge of historic trends and planned development activity. Several iterations of adjustments occurred to ensure that county-level adjustments were reasonable, compared to subregional and regional targets.

COVID-19 ADJUSTMENTS

Throughout 2020, the project team coordinated closely with FWG members to consider the impact of COVID-19 on the Forecast Update. After several scenarios and adjustments, the agreed-upon forecasts reflect a uniform adjustment applied at the county-level in the employment model to create a “lag” in employment in 2020, roughly back to 2017 levels. After the employment lag was created, employment was reconciled with population and labor force distributions.

REGIONAL EMPLOYMENT MODEL RESULTS

From 2022 to 2055, total employment is projected to increase by 1.79 million jobs (+14.41 percent) in the 31-county forecast region, (see Table 1.3). Despite the significant job losses from the pandemic, total employment in 2022 had already surpassed 2017 levels in most counties, except for Bronx, New York, and Ulster counties in New York, Warren County in New Jersey, and New Haven County in Connecticut.³ By 2025, all counties, except Bronx and New York counties, are expected to have exceeded 2017 employment levels. These two New York City counties are projected to fully recover by 2030. Across the forecast region, growth will be driven by a continuation of the current cyclical expansion, which will transition into a period of moderate long-term growth.

From 2030 to 2055, employment gains will slow to moderate growth levels, reflecting less robust economic drivers. Employment in the region is expected to grow at a rate of 0.39 percent per year, slightly less than New York City’s rate of 0.46 percent per year. Of the 847,100 jobs projected to be added in New York City from 2022 to 2055, the largest number will be added in Queens County (259,600), followed by Kings County (227,400), and New York County (223,100), reflecting an increased decentralization of the city’s growing workforce. Though growth in New York County is anticipated to slow, it will retain the largest share of total employment in the region. Among the suburban subregions, the New Jersey subregion will add the largest number of jobs during this period (519,900), followed by Long Island with a gain of 171,600 jobs, the Mid-Hudson (121,200), and the Connecticut subregion (127,900).

Table 1.3 Total Employment 2022–2055

Year	New York City	Long Island	Mid- Hudson	New Jersey	Connecticut	Region
2022	5,055,523	1,479,326	1,090,516	3,765,680	1,016,828	12,407,872
2025	5,114,388	1,494,409	1,102,627	3,807,140	1,028,071	12,546,635
2030	5,266,610	1,533,511	1,125,823	3,914,995	1,053,649	12,894,587
2035	5,391,775	1,565,631	1,147,513	4,003,472	1,075,807	13,184,199
2040	5,513,051	1,585,957	1,164,588	4,066,748	1,091,744	13,422,087
2045	5,623,938	1,606,925	1,183,409	4,136,042	1,108,705	13,659,019
2050	5,763,267	1,628,917	1,197,551	4,210,794	1,126,712	13,927,241
2055	5,902,596	1,650,910	1,211,693	4,285,545	1,144,718	14,195,462

Source: NYMTC Adjusted 2055 SED Forecast.

The pandemic significantly altered the distribution of employment across the forecast region, with New York City's share falling from 42.6 percent in 2017 to 40.7 percent in 2022. However, over the 33-year forecast period from 2022 to 2055 (see Table 1.4), the employment distribution across the region is projected to remain relatively stable, with the subregions outside New York City experiencing only slight decreases in their shares. New York City will maintain the largest share of employment through 2055, increasing from 40.7 percent in 2022 to 41.6 percent by 2055, approaching early 2010s levels but remaining below its pre-pandemic peak.

Table 1.4 also shows the average annual growth rate for each forecast period. It indicates that regional employment is forecast to grow at a rate of 0.41 percent each year on average over the forecast period, with New York City having the highest average rate at 0.47 percent, and the Mid-Hudson having the lowest rate at 0.39 percent.

Table 1.4 Adjusted 2055 SED Forecasts—Total Employment Distributions and Annual Average Change by Forecast Period, 31-County Forecast Region and Subregions

	Distribution of Total Employment							
	2022	2025	2030	2035	2040	2045	2050	2055
Forecast Region	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
New York City Total	40.7%	40.8%	40.8%	40.9%	41.1%	41.2%	41.4%	41.6%
Long Island Total	11.9%	11.9%	11.9%	11.9%	11.8%	11.8%	11.7%	11.6%
Mid-Hudson Total	8.8%	8.8%	8.7%	8.7%	8.7%	8.7%	8.6%	8.5%
New Jersey Total	30.3%	30.3%	30.4%	30.4%	30.3%	30.3%	30.2%	30.2%
Connecticut Total	8.2%	8.2%	8.2%	8.2%	8.1%	8.1%	8.1%	8.1%
	Annual Average Change by Forecast Period							
	2022–2025	2025–2030	2030–2035	2035–2040	2040–2045	2045–2050	2050–2055	2022–2055
Forecast Region	0.37%	0.55%	0.45%	0.36%	0.35%	0.39%	0.38%	0.41%
New York City Total	0.39%	0.59%	0.47%	0.45%	0.40%	0.49%	0.48%	0.47%
Long Island Total	0.34%	0.52%	0.42%	0.26%	0.26%	0.27%	0.27%	0.33%
Mid-Hudson Total	0.37%	0.42%	0.38%	0.30%	0.32%	0.24%	0.24%	0.32%
New Jersey Total	0.37%	0.56%	0.45%	0.31%	0.34%	0.36%	0.35%	0.39%
Connecticut Total	0.37%	0.49%	0.42%	0.29%	0.31%	0.32%	0.32%	0.36%

Source: Bureau of Labor Statistics' CES and Quarterly Census of Employment and Wages (QCEW); ACS; NYMTC 2055 SED Forecasts.

1.5.2 POPULATION

OVERVIEW OF POPULATION TRENDS

The Adjusted 2055 SED Forecast shows population growing at an annual average rate of 0.38 percent for the 31-county forecast region, reaching a total of 26.1 million by 2055. Reflecting growth constraints and an aging population in a mature region, the forecast rates of growth slow in later years of the projection.

REGIONAL POPULATION MODEL RESULTS—ADJUSTED 2055 SED FORECAST

As shown in Table 1.5, between 2022 and 2055, the 31-county forecast region is projected to increase from 23.03 million to 26.11 million residents. This growth considers recent past trends in natural increases and net migration coupled with a downward trajectory in the long-term rate of employment growth.

Table 1.5 Total Population 2022–2055

Year	New York City	Long Island	Mid-Hudson	New Jersey	Connecticut	Region
2022	8,335,897	2,909,191	2,392,957	7,376,343	2,018,589	23,032,977
2025	8,428,604	2,923,288	2,412,040	7,447,375	2,027,935	23,239,242
2030	8,763,033	2,963,016	2,454,557	7,574,073	2,051,644	23,806,323
2035	8,963,676	3,078,552	2,526,197	7,824,074	2,104,855	24,497,355
2040	9,136,058	3,156,775	2,580,400	8,023,790	2,139,179	25,036,202
2045	9,294,677	3,190,788	2,612,065	8,183,811	2,156,092	25,437,432
2050	9,418,456	3,238,359	2,641,192	8,340,120	2,169,149	25,807,277
2055	9,471,214	3,285,931	2,670,318	8,496,429	2,182,207	26,106,100

Source: NYMTC Adjusted 2055 SED Forecast.

Table 1.6 Adjusted 2055 SED Forecasts—Total Population Distributions and Annual Average Change by Forecast Period, 31-County Forecast Region and Subregions

	Distribution of Total Population							
	2022	2025	2030	2035	2040	2045	2050	2055
Forecast Region	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
New York City Total	36.2%	36.3%	36.8%	36.6%	36.5%	36.5%	36.5%	36.3%
Long Island Total	12.6%	12.6%	12.4%	12.6%	12.6%	12.5%	12.5%	12.6%
Mid-Hudson Total	10.4%	10.4%	10.3%	10.3%	10.3%	10.3%	10.2%	10.2%
New Jersey Total	32.0%	32.0%	31.8%	31.9%	32.0%	32.2%	32.3%	32.5%
Connecticut Total	8.8%	8.7%	8.6%	8.6%	8.5%	8.5%	8.4%	8.4%
	Annual Average Change by Forecast Period							
	2022–2025	2025–2030	2030–2035	2035–2040	2040–2045	2045–2050	2050–2055	2022–2055
Forecast Region	0.30%	0.48%	0.57%	0.44%	0.32%	0.29%	0.23%	0.38%
New York City Total	0.37%	0.78%	0.45%	0.38%	0.34%	0.26%	0.11%	0.39%
Long Island Total	0.16%	0.27%	0.77%	0.50%	0.21%	0.30%	0.29%	0.37%
Mid-Hudson Total	0.27%	0.35%	0.58%	0.43%	0.24%	0.22%	0.22%	0.33%
New Jersey Total	0.32%	0.34%	0.65%	0.51%	0.40%	0.38%	0.37%	0.43%
Connecticut Total	0.15%	0.23%	0.51%	0.32%	0.16%	0.12%	0.12%	0.24%

Source: NYMTC Adjusted 2055 SED Forecast.

1.5.3 LABOR FORCE

Labor force refers to the residents of a location that are over the age of 16, civilian, and are attached to the labor force (employed, or unemployed and actively searching for work). Like population, labor force is a place-of-residence factor, with trends driven by the age distribution of the working population, strength of the local economy, and residents' access to jobs.

The total labor force in the 31-county region is projected to grow steadily from 12.2 million in 2022 to 13.5 million by 2055 (see Table 1.7). New York City is expected to see the most significant increase by sheer number of jobs, with its labor force growing by over 503,000 individuals (+11.6%). The Mid-Hudson will lead the region in relative labor force growth, increasing by 11.9%. Other subregions are projected to experience somewhat lesser relative growth, including New Jersey (+11.5%), Long Island (+10.6%), and Connecticut (+9.9%). Table 1.8 presents labor force distribution and change by subregion by forecast period.

Table 1.7 Total Labor Force 2022–2055

Year	New York City	Long Island	Mid- Hudson	New Jersey	Connecticut	Region
2022	4,327,231	1,567,961	1,215,729	3,979,470	1,065,269	12,155,660
2025	4,337,623	1,517,446	1,222,566	3,903,417	1,096,489	12,077,541
2030	4,471,720	1,516,444	1,231,292	3,920,756	1,089,149	12,229,361
2035	4,572,899	1,587,103	1,260,502	4,051,562	1,107,716	12,579,783
2040	4,676,383	1,636,516	1,290,420	4,145,620	1,125,053	12,873,991
2045	4,759,024	1,668,153	1,318,706	4,249,120	1,145,003	13,140,007
2050	4,804,629	1,709,839	1,346,533	4,356,931	1,164,258	13,382,191
2055	4,830,712	1,734,701	1,360,366	4,438,176	1,171,050	13,535,004

Source: NYMTC Adjusted 2055 SED Forecast.

Table 1.8 Adjusted 2055 SED Forecasts—Total Labor Force Distributions and Annual Average Change by Forecast Period, 31-County Forecast Region and Subregions

	Distribution of Total Labor Force							
	2022	2025	2030	2035	2040	2045	2050	2055
Forecast Region	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
New York City Total	35.6%	35.9%	36.6%	36.4%	36.3%	36.2%	35.9%	35.7%
Long Island Total	12.9%	12.6%	12.4%	12.6%	12.7%	12.7%	12.8%	12.8%
Mid-Hudson Total	10.0%	10.1%	10.1%	10.0%	10.0%	10.0%	10.1%	10.1%
New Jersey Total	32.7%	32.3%	32.1%	32.2%	32.2%	32.3%	32.6%	32.8%
Connecticut Total	8.8%	9.1%	8.9%	8.8%	8.7%	8.7%	8.7%	8.7%
	Annual Average Change by Forecast Period							
	2022–2025	2025–2030	2030–2035	2035–2040	2040–2045	2045–2050	2050–2055	2022–2055
Forecast Region	-0.21%	0.25%	0.57%	0.46%	0.41%	0.37%	0.23%	0.33%
New York City Total	0.08%	0.61%	0.45%	0.45%	0.35%	0.19%	0.11%	0.33%
Long Island Total	-1.09%	-0.01%	0.92%	0.62%	0.38%	0.49%	0.29%	0.31%
Mid-Hudson Total	0.19%	0.14%	0.47%	0.47%	0.43%	0.42%	0.20%	0.34%
New Jersey Total	-0.64%	0.09%	0.66%	0.46%	0.49%	0.50%	0.37%	0.33%
Connecticut Total	0.97%	-0.13%	0.34%	0.31%	0.35%	0.33%	0.12%	0.29%

Source: NYMTC Adjusted 2055 SED Forecast.

1.5.4 HOUSEHOLDS

As described in Section 1.2.5, household projections are derived by the projected relationship between the population in households and average household size. Shown in Table 1.9, the 31-county region is forecasted to add 1.1 million households between 2022 and 2055.

Among the subregions (as shown in Table 1.10), New York City will add the largest share, 42.3 percent of the growth, equating to 480,700 households, with Kings County accounting for 158,000 of those. The New Jersey subregion will add 392,400 households, or 34.5 percent, driven by growth in Hudson, Bergen, Essex, and Ocean counties. The Long Island, Mid-Hudson, and Connecticut subregions will account for 10.3 percent, 7.7 percent, and 5.2 percent of the total gain, respectively.

Average household sizes over the next several decades are projected to remain stable (see Table 1.11). The average household size for the New York City subregion was held constant from 2022 through 2055, reflecting uncertainty in the average household size trajectory. In the other subregions, a minimal increase is expected through 2055, ranging from 0.1 percent in Connecticut to 0.4 and 0.6 percent in Long Island and the New Jersey subregions, with a gain of 1.3 percent in the Mid-Hudson subregion. Through 2030, the suburban subregions are all projected to experience slight declines in average household sizes. However, these declines are small and are expected to be followed by modest increases in later years, bringing household sizes just beyond current levels. By 2055, the regional average household size will be 2.56 in the forecast region. Long Island will have the highest average at 2.97 persons per household followed by the Mid-Hudson (2.66) and New Jersey (2.61), Connecticut (2.58), and New York City (2.37).

Table 1.9 31-County Forecast Region Households 2022–2055

Year	New York City	Long Island	Mid-Hudson	New Jersey	Connecticut	Region
2022	3,426,810	968,113	878,342	2,789,616	764,513	8,827,394
2025	3,465,042	976,434	886,539	2,817,099	771,654	8,916,768
2030	3,608,132	994,676	905,052	2,878,557	786,589	9,173,006
2035	3,693,591	1,025,931	928,459	2,969,532	805,445	9,422,958
2040	3,766,649	1,046,535	942,899	3,034,142	813,791	9,604,015
2045	3,833,731	1,055,350	950,447	3,082,684	816,455	9,738,666
2050	3,885,703	1,070,407	958,380	3,132,365	819,838	9,866,693
2055	3,907,543	1,085,464	966,312	3,182,046	823,222	9,964,587

Source: NYMTC Adjusted 2055 SED Forecast.

Table 1.10 Adjusted 2055 SED Forecasts—Total Households Distributions and Annual Average Change by Forecast Period, 31-County Forecast Region and Subregions

	Distribution of Total Households							
	2022	2025	2030	2035	2040	2045	2050	2055
Forecast Region	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
New York City Total	38.8%	38.9%	39.3%	39.2%	39.2%	39.4%	39.4%	39.2%
Long Island Total	11.0%	11.0%	10.8%	10.9%	10.9%	10.8%	10.8%	10.9%
Mid-Hudson Total	10.0%	9.9%	9.9%	9.9%	9.8%	9.8%	9.7%	9.7%
New Jersey Total	31.6%	31.6%	31.4%	31.5%	31.6%	31.7%	31.7%	31.9%
Connecticut Total	8.7%	8.7%	8.6%	8.5%	8.5%	8.4%	8.3%	8.3%
	Annual Average Change by Forecast Period							
	2022–2025	2025–2030	2030–2035	2035–2040	2040–2045	2045–2050	2050–2055	2022–2055
Forecast Region	0.34%	0.57%	0.54%	0.38%	0.28%	0.26%	0.20%	0.37%
New York City Total	0.37%	0.81%	0.47%	0.39%	0.35%	0.27%	0.11%	0.40%
Long Island Total	0.29%	0.37%	0.62%	0.40%	0.17%	0.28%	0.28%	0.35%
Mid-Hudson Total	0.31%	0.41%	0.51%	0.31%	0.16%	0.17%	0.17%	0.29%
New Jersey Total	0.33%	0.43%	0.62%	0.43%	0.32%	0.32%	0.32%	0.40%
Connecticut Total	0.31%	0.38%	0.47%	0.21%	0.07%	0.08%	0.08%	0.22%

Source: NYMTC Adjusted 2055 SED Forecast.

Table 1.11 Average Household Size 2022–2055

Year	New York City	Long Island	Mid-Hudson	New Jersey	Connecticut	Region
2022	2.37	2.96	2.62	2.60	2.57	2.55
2025	2.37	2.94	2.62	2.59	2.56	2.54
2030	2.37	2.92	2.61	2.58	2.54	2.53
2035	2.37	2.94	2.62	2.58	2.55	2.54
2040	2.37	2.96	2.63	2.59	2.56	2.54
2045	2.37	2.96	2.64	2.60	2.57	2.55
2050	2.37	2.96	2.65	2.61	2.57	2.55
2055	2.37	2.97	2.66	2.61	2.58	2.56

Source: NYMTC Adjusted 2055 SED Forecast.

1.6 NYMTC PLANNING AREA FORECASTS

The NYMTC planning area is a subset of the larger 31-county forecast region that includes all five counties in New York City, two counties in Long Island, and Putnam, Rockland, and Westchester counties of the Mid-Hudson region. In this section, an analysis of trends in the NYMTC planning area will be presented. To distinguish the subset of the Mid-Hudson region that falls within the NYMTC planning area, the subset will be referred to as the Lower Hudson Valley. See NYMTC's [Moving Forward 2055 Interactive Map](#) for visualization of the Adjusted 2055 SED forecasts at the Transportation Analysis Zone (TAZ) level.

1.6.1 NYMTC PLANNING AREA EMPLOYMENT

Employment in the NYMTC planning area is expected to grow through the forecast period. In New York City, the Adjusted 2055 SED Forecast projects stronger growth over each five-year forecast period as a result of the significant growth seen since 2010. Growth rates in the Adjusted 2055 SED forecast are strongest in the 2025 to 2030 and 2030 to 2035 recovery years and moderate somewhat in later years. Of the 847,100 jobs projected to be added in New York City from 2022 to 2055, the largest number will be in Queens County (259,600), followed by Kings County (227,400) and New York County (223,100), reflecting recent growth in the outer boroughs' employment hubs. Though its growth is anticipated to slow, New York County will retain the largest share of total employment in the region.

In the long term, both Nassau and Suffolk counties in Long Island are anticipated to experience steadily rising job growth, adding 171,600 jobs from 2022 to 2055. Several factors have contributed to an expansion of employment growth in Nassau County, including increased local multifamily housing development and the completion of major transportation investments such as East Side Access and the Metropolitan Transportation Authority (MTA) Long Island Rail Road (LIRR) Expansion Project (which includes a third track between Floral Park and Hicksville), which are both expected to result in reverse commute benefits as well as commuting ease from Long Island to New York City.

As shown in Table 1.12, the Adjusted 2055 SED forecast projects increasing employment in all counties of the Lower Hudson Valley subregion with gains of 78,500 jobs from 2022 to 2055. Over that period, Westchester County will add nearly 53,200 jobs and Rockland County will add another 22,400 jobs. New office development activity anticipated to drive employment growth in future years is expected to be concentrated in downtown New Rochelle, White Plains, and other urban centers in Westchester County.

Table 1.12 Total Employment 2022–2055 (In Thousands)

	2022	2025	2030	2035	2040	2045	2050	2055
NYMTC Planning Area Forecast	7,220	7,302	7,507	7,678	7,831	7,977	8,147	8,318
Bronx	398	407	422	437	450	462	483	503
Kings	1,021	1,040	1,080	1,115	1,151	1,182	1,215	1,248
New York	2,626	2,644	2,696	2,737	2,765	2,793	2,821	2,849
Queens	853	864	902	930	973	1,006	1,059	1,112
Richmond	158	160	167	172	176	180	185	189
New York City Total	5,056	5,114	5,267	5,392	5,513	5,624	5,763	5,903
Nassau	728	737	762	781	794	807	821	835
Suffolk	751	758	772	784	792	800	808	816
Long Island Total	1,479	1,494	1,534	1,566	1,586	1,607	1,629	1,651
Putnam	34	34	35	35	36	36	36	36
Rockland	148	150	154	158	161	164	167	170
Westchester	504	509	518	527	536	546	552	557
Lower Hudson Valley Total	685	693	707	721	732	746	755	764

Source: NYMTC Adjusted 2055 SED Forecast.

1.6.2 NYMTC PLANNING AREA POPULATION

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The population of the New York City subregion is projected to reach 9.47 million by 2055, an increase of 1.14 million people between 2022 and 2055. Table 1.13 includes New York City's population by county, which shows large increases from 2022 to 2030 as a result of the significant number of housing permits issued in recent years and expected to be completed throughout the decade. After this period, the population of all boroughs in New York City are still forecasted to grow but at a decreasing rate.

The Long Island subregional forecast shows a gain of 376,700 residents between 2022 and the 2055 forecast year. Long Island's population forecast by county shows flat growth in both counties through 2030, then increases after 2030 through 2055, supported, in part, by infrastructure investment on the MTA LIRR, including the LIRR Expansion Project, and East Side Access. Population growth throughout Long Island is slower in the 2022 to 2030 period because of an aging population and a slowed economy.

The Lower Hudson Valley subregional population will grow by 142,500 between 2022 and the 2055 forecast year, largely as a result of anticipated labor-induced migration.

Table 1.13 Total Population 2022–2055 (In Thousands)

	2022	2025	2030	2035	2040	2045	2050	2055
NYMTC Planning Area Forecast	12,673	12,786	13,180	13,536	13,818	14,027	14,213	14,327
Bronx	1,380	1,430	1,495	1,536	1,574	1,608	1,634	1,647
Kings	2,591	2,612	2,723	2,792	2,853	2,910	2,957	2,980
New York	1,596	1,604	1,674	1,714	1,745	1,772	1,791	1,797
Queens	2,278	2,291	2,376	2,423	2,462	2,499	2,529	2,537
Richmond	491	491	495	499	502	505	508	510
New York City Total	8,336	8,429	8,763	8,964	9,136	9,295	9,418	9,471
Nassau	1,384	1,389	1,409	1,466	1,505	1,518	1,546	1,573
Suffolk	1,525	1,534	1,554	1,613	1,652	1,673	1,693	1,713
Long Island Total	2,909	2,923	2,963	3,079	3,157	3,191	3,238	3,286
Putnam	98	98	100	103	106	107	107	108
Rockland	339	345	357	374	390	404	419	435
Westchester	990	991	997	1,017	1,030	1,031	1,029	1,028
Lower Hudson Valley Total	1,427	1,434	1,454	1,494	1,525	1,542	1,556	1,570

Source: NYMTC Adjusted 2055 SED Forecast.

1.6.3 NYMTC PLANNING AREA TOTAL LABOR FORCE AND EMPLOYED LABOR FORCE

In the planning area, the Adjusted 2055 SED Forecast shows a slight dip in the total labor force in 2025 as labor force participation returns to historic levels after the unusually tight labor market of 2022, driven by the pandemic recovery and wage inflation. By 2030, the total labor force is projected to expand again due to overall population growth. Throughout the NYMTC planning area, the labor force is aging, which limits the ability of the labor supply (workers) to meet demand (jobs) as labor force participation rates decrease as the population ages.

As shown in Table 1.14, New York City will add 503,500 participants from 2022 to 2055. Long Island will add 166,700 participants, followed by the Lower Hudson Valley, which will add approximately 87,800 participants during the forecast period. In total, the NYMTC planning area is expected to have nearly 7.4 million labor force participants.

The employed labor force refers to residents of a geographic location who are employed regardless of employment location. For the NYMTC planning area in 2055, the employed labor force is projected to total 7.0 million people, an increase of 794,500 from 2022 to 2055 (Table 1.15). The employed labor force will continue to grow during the 2025 to 2055 forecast term.

Table 1.14 Labor Force 2022–2055 (In Thousands)

	2022	2025	2030	2035	2040	2045	2050	2055
NYMTC Planning Area Forecast	6,628	6,593	6,735	6,925	7,096	7,225	7,328	7,386
Bronx	624	651	673	689	709	726	738	744
Kings	1,338	1,284	1,330	1,367	1,401	1,424	1,435	1,447
New York	925	969	1,003	1,028	1,054	1,074	1,082	1,085
Queens	1,198	1,202	1,236	1,258	1,280	1,298	1,311	1,315
Richmond	242	231	230	231	233	237	239	240
New York City Total	4,327	4,338	4,472	4,573	4,676	4,759	4,805	4,831
Nassau	739	724	730	776	804	817	838	853
Suffolk	829	794	786	811	832	851	872	882
Long Island Total	1,568	1,517	1,516	1,587	1,637	1,668	1,710	1,735
Putnam	53	52	52	53	54	55	56	57
Rockland	158	169	175	184	193	202	211	219
Westchester	522	517	520	528	536	541	546	545
Lower Hudson Valley Total	733	738	747	765	783	798	814	820

Source: NYMTC Adjusted 2055 SED Forecast.

Table 1.15 Employed Labor Force 2022–2055 (In Thousands)

	2022	2025	2030	2035	2040	2045	2050	2055
NYMTC Planning Area Forecast	6,249	6,296	6,487	6,662	6,799	6,899	6,989	7,044
Bronx	563	584	610	627	643	656	667	672
Kings	1,246	1,256	1,309	1,343	1,372	1,399	1,422	1,433
New York	872	876	915	936	953	968	978	982
Queens	1,133	1,140	1,182	1,206	1,225	1,243	1,258	1,262
Richmond	231	231	233	235	236	238	239	240
New York City Total	4,045	4,087	4,249	4,346	4,429	4,505	4,564	4,589
Nassau	709	711	720	750	770	776	790	805
Suffolk	797	800	810	840	860	870	880	890
Long Island Total	1,506	1,511	1,531	1,590	1,629	1,646	1,670	1,694
Putnam	51	51	51	53	54	55	55	55
Rockland	149	152	157	164	171	177	184	191
Westchester	498	496	500	510	516	516	515	514
Lower Hudson Valley Total	698	698	708	727	741	748	754	760

Source: NYMTC Adjusted 2055 SED Forecast.

1.6.4 NYMTC PLANNING AREA HOUSEHOLDS AND AVERAGE HOUSEHOLD SIZE

Table 1.16 presents the household forecasts based on the Adjusted 2055 SED forecast's population projections for each subregion. The NYMTC planning area is projected to add nearly 641,200 households from 2022 to 2055.

Households are expected to increase at a higher rate in New York City (+14.0%) compared with Long Island (+12.1%) and the Lower Hudson Valley (+8.4%) over the same period.

Most of the growth will occur in New York City, especially in Kings County. Long Island is expected to add 117,400 households, of which about 62,600 will be in Suffolk County. The Lower Hudson Valley will add nearly than 43,100 households by 2055.

Table 1.16 Households 2022–2055 (In Thousands)

	2022	2025	2030	2035	2040	2045	2050	2055
NYMTC Planning Area Forecast	4,909	4,958	5,127	5,256	5,357	5,437	5,508	5,550
Bronx	533	553	579	596	611	625	635	640
Kings	1,032	1,041	1,085	1,114	1,138	1,162	1,181	1,190
New York	826	830	869	890	907	922	932	935
Queens	862	867	899	918	933	947	958	961
Richmond	174	174	175	177	178	179	180	181
New York City Total	3,427	3,465	3,608	3,694	3,767	3,834	3,886	3,908
Nassau	456	459	466	480	489	492	502	511
Suffolk	512	517	528	546	558	563	569	575
Long Island Total	968	976	995	1,026	1,047	1,055	1,070	1,085
Putnam	36	36	37	38	38	39	39	39
Rockland	104	105	108	113	118	121	126	130
Westchester	374	375	379	385	388	388	388	388
Lower Hudson Valley Total	514	517	524	536	544	548	552	557

Source: NYMTC Adjusted 2055 SED Forecast.

Table 1.17 presents trends in average household size, showing stability in the NYMTC planning area for 2.52 persons per household during forecast period from 2022 through 2055. While New York City held average household size constant for the forecast period due to the uncertainty in the trajectory, Long Island and the Lower Hudson Valley will see modest declines through 2030, followed by minimal growth through 2055, which reflects household turnover of older 1- and 2-person households in single-family homes to younger families. In Westchester and Suffolk counties, the average household size will decrease by 0.5 and 1.3 percent respectively over the forecast period, while Putnam, Rockland, and Nassau counties will increase by 2.5, 1.8, and 1.3 percent respectively.

Table 1.17 Average Household Size 2022–2055

	2022	2025	2030	2035	2040	2045	2050	2055
NYMTC Planning Area Forecast	2.52	2.52	2.51	2.51	2.52	2.52	2.52	2.52
Bronx	2.49	2.49	2.49	2.49	2.49	2.49	2.49	2.49
Kings	2.47	2.47	2.47	2.47	2.47	2.47	2.47	2.47
New York	1.84	1.84	1.84	1.84	1.84	1.84	1.84	1.84
Queens	2.60	2.60	2.60	2.60	2.60	2.60	2.60	2.60
Richmond	2.78	2.78	2.78	2.78	2.78	2.78	2.78	2.78
New York City Total	2.37							
Nassau	2.99	2.98	2.97	3.01	3.03	3.03	3.03	3.03
Suffolk	2.92	2.90	2.88	2.89	2.90	2.90	2.91	2.91
Long Island Total	2.96	2.94	2.92	2.94	2.96	2.96	2.96	2.97
Putnam	2.65	2.62	2.61	2.64	2.67	2.69	2.70	2.71
Rockland	3.19	3.20	3.21	3.22	3.23	3.24	3.25	3.25
Westchester	2.29	2.32	2.29	2.27	2.26	2.25	2.26	2.26
Lower Hudson Valley Total	2.71	2.70	2.69	2.70	2.72	2.73	2.73	2.74

Source: NYMTC Adjusted 2055 SED Forecast.

2

NEW YORK BEST PRACTICE MODEL

NYMTC uses the NYBPM, an activity-based and tour-based travel demand model, to predict and simulate detailed travel patterns for every household in the 28-county study area, over a 24-hour weekday period, based on their travel behavior. Activity-based modeling is an approach that recognizes that people need or want to travel to perform activities that are part of daily life at different locations. The choices (such as whether to go out, when to go, where to go, how to travel, whether to travel with other family members, and how to combine trips) associated with the travel needed to complete the activities are simulated, and the results are summed to get the results needed for planning analyses.

The NYBPM simulates the daily activities (i.e., work, school, or leisure travel) of all individuals residing in a household using intra-household interactions that are constrained by choice of travel with regard to mode, cost, time, and space to predict the travel characteristics of that household. The model uses tours (travel between two primary locations including stops) as a unit of travel rather than just home-to-work trips.

Geographic information system software is used to map the existing and proposed transportation networks that are used by models to predict tour generation, destination and mode choice, time of day travel, and trip assignment/route choice to simulate travel patterns.

2.1 MODEL COMPONENTS

The NYBPM contains network files that represent the roadway and transit system in the area covered by the model. The roadway network file includes all freeways and major arterials, most minor arterials, and some local and collector roadways. The transit network representation integrates the many diverse transit services in New York City, Long Island, northern New Jersey, and the Lower Hudson Valley, as well as Fairfield and New Haven counties in Connecticut into a single TransCAD (version 9.0) route system.

The activity-based model components of the NYBPM are CEMSELTS (Comprehensive Econometric Microsimulator of Socioeconomics, Land Use, and Transportation Systems) and CEMDAP (Comprehensive Econometric Microsimulator for Daily Activity-travel Patterns), which each consist of several components (submodels). The overall activity-based model system is defined by the integration of three key components:

1. PopGen (Population Generator) generates the population and related socioeconomic attributes (i.e., age, sex) for the entire region by expanding the data from a known sample population, such as U.S. Census Bureau data.
2. CEMSELTS is the component used to produce additional socioeconomic and demographic attributes for each person in the synthetic population to develop a rich set of input data for the activity-based microsimulation model system.
3. CEMDAP is a microsimulation implementation of a continuous-time activity-travel modeling system.

Several auxiliary models are used in the NYBPM's transportation simulation, as outlined below:

- » The Visitor Submodel is a visitor model that estimates the average weekday travel by people within the model region but who do not live in the region.
- » Truck and Commercial Van Submodels estimate long distance and short distance truck trips and commercial vans trip tables outside the main model to create forecasts for future years.
- » The External Auto Submodel accounts for trips leaving the study area, trips from the neighboring region coming into the study area, and through-trips passing through the study area, by using external trip tables based on data collected at the cordon lines and other resources.

2.2 THE NYBPM TRAVEL MODEL PROCESS

2.2.1 GENERATION OF A SYNTHETIC POPULATION FOR THE REGION

PopGen takes basic sociodemographic attributes that are available for a sample of the population and uses algorithms to predict these attributes for every person and household in the 28-county model area. This output is known as the synthetic population and is used as input into CEMSELTS, which is the next step in the NYBPM travel demand model process.

2.2.2 PREDICTION OF ADDITIONAL SOCIOECONOMIC CHARACTERISTICS

CEMSELTS is customized for the 28-county region to comprise approximately 15 submodels that take the synthetic population from PopGen as input to predict additional demographic characteristics, such as employment status, income, and car ownership for each person in the model region.

2.2.3 PREDICTION OF PERSON LEVEL DAILY ACTIVITY TRAVEL PATTERNS

In the NYBPM, CEMDAP takes, as inputs, the person-level sociodemographic information from CEMSELTS, land use patterns (i.e., population density), transportation system level-of-service characteristics (i.e., travel time and cost), and model parameters and provides the detailed individual level daily activity-travel patterns as outputs. The final output of CEMDAP are individual trip rosters, which are combined into trip tables for use in aggregate highway and transit assignment processes.

NOTES

- ¹ These forecasts do not attempt to predict the timing of business cycles but are driven by the long-term historical drivers as described in Technical Memorandum 1, inclusive of cycles, which moderate expansion.
- ² Payroll employment drawn from the Quarterly Census of Employment and Wages includes all jobs, both full- and part-time.
- ³ By some employment measures, job losses from the pre-pandemic era have already been recovered. NYMTC's definition of employment is based on an average of several employment metrics, including data from the U.S. Census Bureau's ACS 5-Year Survey, as well as job counts from the U.S. Bureau of Labor Statistics' CES survey and QCEW.