

# APPENDIX C.

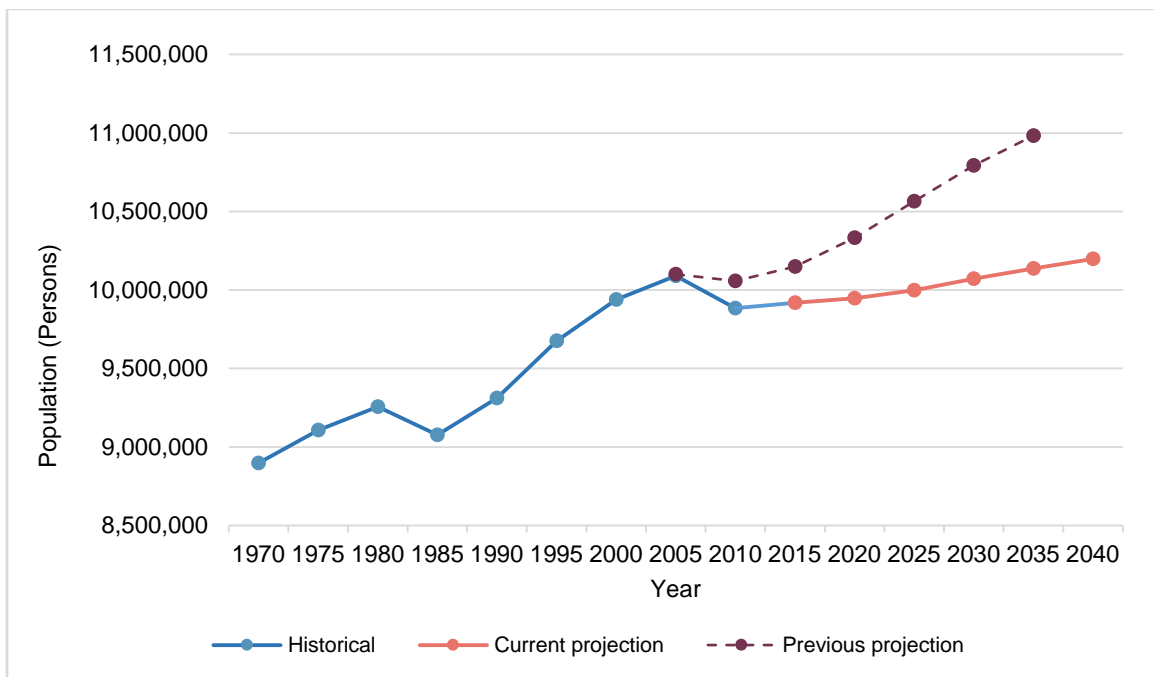
## Demographic Trends and Forecasts

Michigan’s demographic past and future add challenges to adequately funding its infrastructure systems. The demand for infrastructure is heavily shaped by population trends, and as communities grow, the need for greater infrastructure grows as well. As a community’s population declines, however, there is a profound impact on an area’s ability to maintain and operate its existing infrastructure systems.

### Population

According to *Moving Michigan Forward: 2040 State Long-range Transportation Plan*, between 2000 and 2010, Michigan lost approximately 55,000 residents, as the nation experienced a major economic recession. While continuing population loss is not expected, it has contributed to a much lower forecast of Michigan’s population growth than was previously projected.

EXHIBIT 28. Michigan Population, 1970–2040

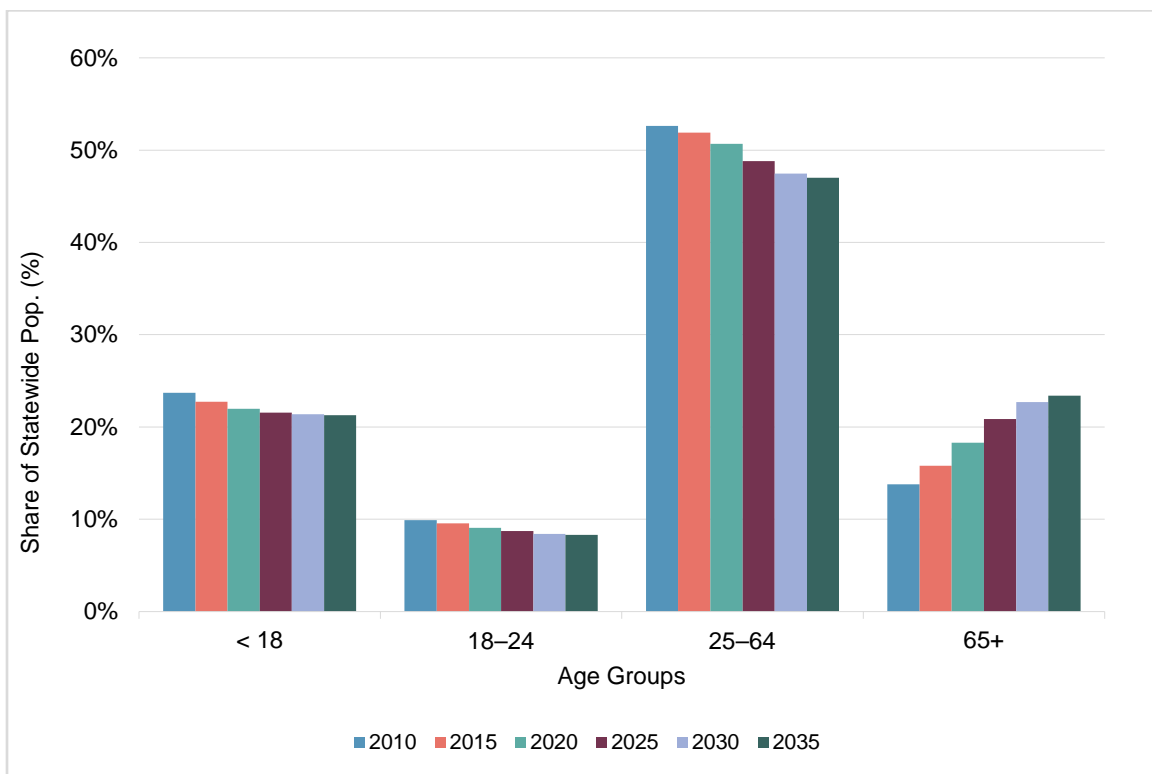


Source: MDOT July 2016.

Michigan’s population growth will be accompanied by a significant shift in the share of age groups:

- Michiganders aged 25–64 will still make up the largest share of the state’s population; however, this group will shrink from 51.9 percent of the population in 2015 to 47.2 percent by 2040. This decline will have important repercussions for Michigan, as it is also the largest working population and the most able to bear user fees and taxes to fund infrastructure service and delivery.
- All age groups will decline by 2040 except the group aged 65 years or older, which will increase by 82 percent from 2010 to 2040. An increase this significant will affect the types of infrastructure and services the state can provide to Michigan residents.

**EXHIBIT 29. Share of Statewide Population by Age Group, 2010–2040**



Source: MDOT July 2016.

Over the last four decades, Michigan has lost a significant number of residents who have moved to other states (domestic migration). The State Long Range Plan projects that net migration will remain negative through 2030, but migration overall will be positive. The bulk of this positive migration is due to international migration (people moving to Michigan from other countries), which is helping to offset outmigration and a shrinking labor force. Without international migration, Michigan would see declining populations through 2040.

**EXHIBIT 30. Domestic and International Migration: Michigan, 1980s-2030s**

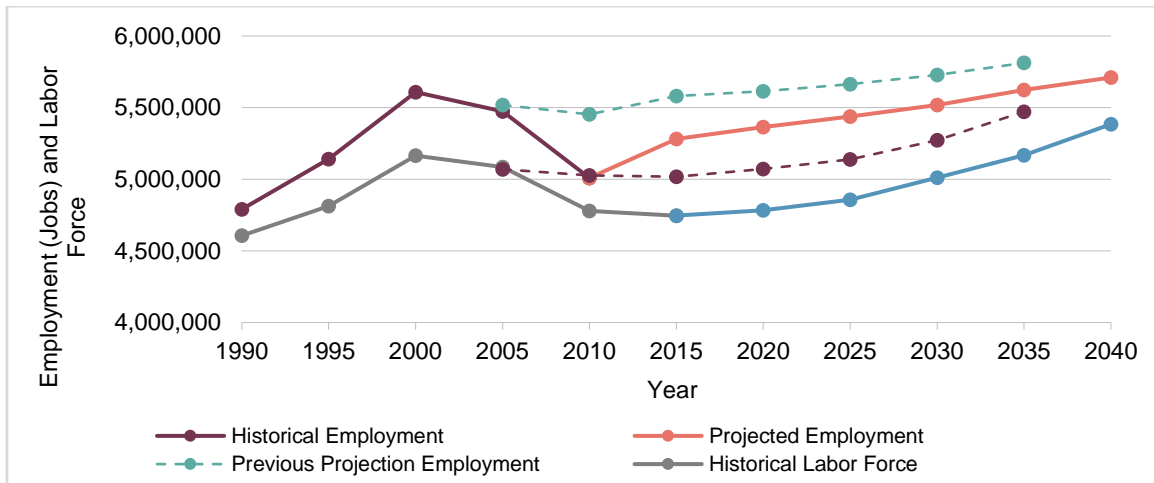
	1980s	1990s	2000s	2010s	2020s	2030s
International Migration	100,700	113,600	256,213	235,405	294,921	364,405
Domestic Migration (aged 65+)	-13,400	-20,400	-45,307	-35,091	-46,768	-44,172
Domestic Migration (aged < 65)	-658,500	-33,900	-690,100	-421,174	-291,795	-231,655
<b>Total Net Migration</b>	<b>-571,200</b>	<b>59,300</b>	<b>-479,194</b>	<b>-220,860</b>	<b>-43,642</b>	<b>88,578</b>

Source: MDOT July 2016.

## Employment

Michigan lost more than 450,000 jobs during the economic recession between 2000 and 2010.<sup>48</sup> However, the state is recovering from these losses, and employment is projected to rebound slowly in the coming decades. The State Long Range Plan projects that total employment will grow at an annual rate of 0.7 percent through 2020, after which the growth rate is projected to slow to 0.3 percent per year. Michigan’s total employment is expected to be constrained during this period due to a reduced projected labor force caused by the declining share of Michigan’s working-age population. The labor force is projected to grow at 0.5 percent annually from 2015 to 2040, recovering to peak labor force levels by 2035. Michigan’s total employment and labor force are shown below in Exhibit 31.

**EXHIBIT 31. Michigan Total Employment and Labor Force, 1990-2040**

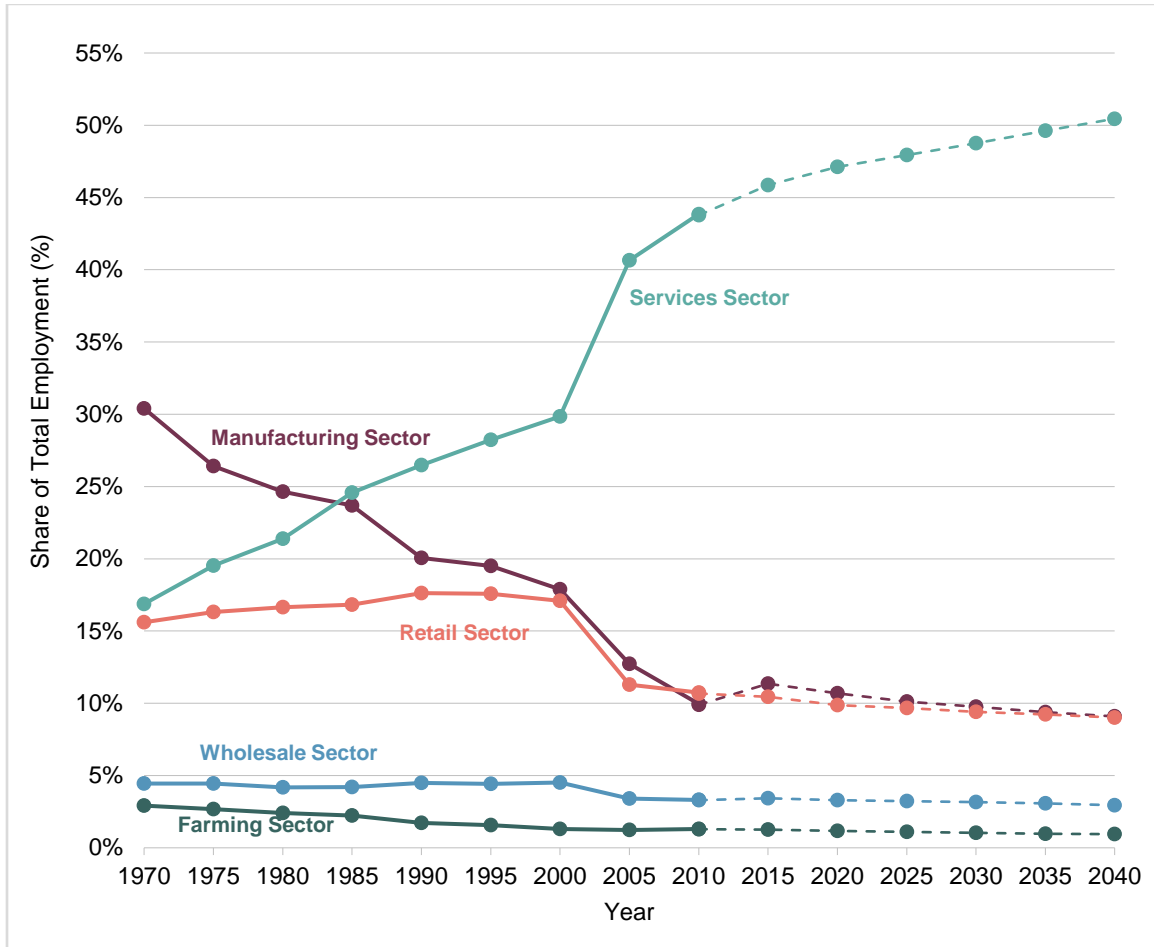


Source: MDOT July 2016.

<sup>48</sup> Monthly data on Michigan payroll jobs is also published by the U.S. Bureau of Labor Statistics (BLS). According to the BLS, Michigan recorded a sharp drop of 766,400 private sector payroll jobs from 2000 to 2010. However, the state has added 463,600 private sector jobs from December 2010 to September 2016.

The composition of Michigan’s employment has changed significantly during the last 40 years and will continue to change during the 2010–2040 forecast period (Exhibit 32). The manufacturing sector’s share of the employment base has dropped sharply and steadily, from 30 percent in 1970 to just 10 percent by 2010, and it is expected to continue to decline, though at a slower rate, to about 9 percent by 2040. The services sector, which includes healthcare, has increased dramatically from about 17 percent in 1970 to near 44 percent in 2010, and it is expected to grow to almost 50 percent by 2040.

**EXHIBIT 32. Share of Michigan Employment by Sector, 1970–2040**



Source: MDOT July 2016.

The projections of Michigan’s population and employment composition will frame the types and levels of infrastructure services that are planned for Michigan’s residents and businesses in the future.