Scenarios of the Demographic Impact of Climate Change in Minnesota

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Minnesota in 2019

- The total population was estimated to be **5,642,358**
- Minnesota's population grew 6.3% between 2010 and 2019, adding about 336,000 residents (net).

Sources: U.S. Census Bureau, Population Estimates Program, Vintage 2019
Population Growth 2010-2018

• Majority of the state’s growth (80%) occurred in the Twin Cities metro

• Hennepin and Ramsey added 153,000 jointly (46% of the state’s growth)
Nature of population projections

Projection – the numerical outcome of a particular set of assumptions regarding the future population

- (Births - deaths) + net migrants
- Total population change
- Recent estimates
- Share of national/regional population
- Economic trends, immigration law, climate change, etc.

Different scenario options

- Zero and moderate rates of migration (both currently published)
- Impact of related trends or laws
Natural change is relatively predictable

Sources: Minnesota Department of Health; Census Bureau, Population Estimates
Migration fuels growth in Minnesota

Sources: U.S. Census Bureau, Population Estimates Program, Vintage 2019
Minnesota’s Projected Population

Projection Under Current Assumptions

• 5.6 million in 2019 → 6 million by 2029
• Sustained growth to 6.8 million in 2070 requires an additional 20,000 net migrants per year
• Population begins to decline after 2035 in the absence of migration
The Shared Socioeconomic Pathways (SSPs)

SSP1: Sustainability
• Optimistic human development with a shift toward sustainability

SSP2: Middle of the Road
• Intermediate case between SSP1 and SSP3

SSP3: Regional Rivalry
• Less educational investment, lower health, unmitigated emissions, and slow technological change in the energy sector

SSP4: Inequality
• Less educational investment, lower health, unmitigated emissions, and rapid technological change in the energy sector

SSP5: Fossil-fueled Development
• Rapid economic development driven by high investments in human capital

Sources: O’Neill et al. 2013
Minnesota’s Population Pathways

Population in Millions

Year


SSP1  SS2  SSP3  SSP4  SSP5  Projection  Estimate

Sources: U.S. Census Bureau; Hauer, M. doi:10.1038/sdata.2019.5; Minnesota State Demographic Center
Average annual net migration required under each scenario

Sources: U.S. Census Bureau; Hauer, M. doi:10.1038/sdata.2019.5; Minnesota State Demographic Center
Minnesota’s labor force growth is projected to slow further over the next 10 years.

Average Annual Numeric Change in Minnesota’s Labor Force

<table>
<thead>
<tr>
<th>Period</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1980-1990</td>
<td>40,000</td>
</tr>
<tr>
<td>1990-2000</td>
<td>54,000</td>
</tr>
<tr>
<td>2000-2010</td>
<td>34,000</td>
</tr>
<tr>
<td>2010-2015</td>
<td>21,000</td>
</tr>
<tr>
<td>2015-2020</td>
<td>7,000</td>
</tr>
<tr>
<td>2020-2025</td>
<td>6,000</td>
</tr>
<tr>
<td>2025-2030</td>
<td>6,000</td>
</tr>
<tr>
<td>2030-2035</td>
<td>9,000</td>
</tr>
<tr>
<td>2035-2040</td>
<td>13,000</td>
</tr>
<tr>
<td>2040-2045</td>
<td>15,000</td>
</tr>
<tr>
<td>2045-2050</td>
<td>15,000</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau (1980—2015); Minnesota State Demographic Center Projections (2015-2045)
### Characteristics of recent arrivals to Minnesota

Compared to everyone else, recent arrivals are:

- More likely to have **lower** personal income

<table>
<thead>
<tr>
<th>Income Level</th>
<th>Did not move</th>
<th>Moved within MN</th>
<th>Moved from outside MN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than $25,000</td>
<td>42%</td>
<td>53%</td>
<td><strong>60%</strong></td>
</tr>
<tr>
<td>$25,000-$49,999</td>
<td>26%</td>
<td>27%</td>
<td>20%</td>
</tr>
<tr>
<td>$50,000-$74,999</td>
<td>16%</td>
<td>12%</td>
<td>10%</td>
</tr>
<tr>
<td>$75,000-$99,999</td>
<td>7%</td>
<td>4%</td>
<td>4%</td>
</tr>
<tr>
<td>$100,000 or more</td>
<td>9%</td>
<td>5%</td>
<td>6%</td>
</tr>
</tbody>
</table>

Sources: U.S. Census Bureau, American Community Survey 2013-2017; IPUMS
Characteristics of recent arrivals to Minnesota

Compared to everyone else, recent arrivals are:

- More likely to have lower personal income
- More likely to be a person of color

<table>
<thead>
<tr>
<th></th>
<th>Did not move</th>
<th>Moved within MN</th>
<th>Moved from outside MN</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>82%</td>
<td>73%</td>
<td>64%</td>
</tr>
<tr>
<td>POC/I</td>
<td>18%</td>
<td>27%</td>
<td>36%</td>
</tr>
</tbody>
</table>

Sources: U.S. Census Bureau, American Community Survey 2013-2017; IPUMS
Characteristics of recent arrivals to Minnesota

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<th>Moved within MN</th>
<th>Moved from outside MN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owned the home</td>
<td>75%</td>
<td>28%</td>
<td>20%</td>
</tr>
<tr>
<td>Renter</td>
<td>22%</td>
<td>53%</td>
<td>58%</td>
</tr>
<tr>
<td>N/A</td>
<td>3%</td>
<td>19%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Compared to everyone else, recent arrivals are:

- More likely to have **lower** personal income
- More likely to be a **person of color**
- More likely to be a **renter**

Sources: U.S. Census Bureau, American Community Survey 2013-2017; IPUMS
Median Household Income by Race (2018 dollars)
Minnesota, 2010-2018

- White: $73,608
- Black: $36,849
- Latin(x): $50,240
- Asian: $80,943
- Am. Indian: $35,148

Source: U.S. Census Bureau, American Community Survey
What do all these numbers mean?

• Population projections show us a future scenario given current assumptions. Large-scale disruptive events—like climate change—are sure to alter expectations.

• Expect big, ongoing change in social and government institutions and policies. The new normal is still unfolding before us.

• More cultural, racial, religious, language diversity ahead. Diversity fuels population and economic growth and challenges us to continuously re-align to new circumstances.

• Economic disparities have a strong hold in Minnesota—especially along racial lines. The social, economic, and geographic determinants of health are coming into greater focus everyday.
Keep in touch

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