PlanIt

Webinar Series for Comprehensive Plan Updates

Population Estimates

Presented by Matt Schroeder
April 20, 2017
Today’s topics

- Background
- The estimates model: three steps
  - Housing units
  - Households
  - Population
- Timeline and process for commenting
- Looking ahead to the 2020 Census
Background: What estimates are (and are not)

Forecasts look ahead to 2040

Estimates look back in time to the previous year
## Background: What estimates are (and are not)

<table>
<thead>
<tr>
<th>Survey Type</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Decennial Census</strong></td>
<td>● Complete count of people</td>
</tr>
<tr>
<td></td>
<td>● Every 10 years</td>
</tr>
<tr>
<td></td>
<td>● Limited characteristics</td>
</tr>
<tr>
<td><strong>American Community Survey (ACS)</strong></td>
<td>● Sample of people</td>
</tr>
<tr>
<td></td>
<td>● Every year</td>
</tr>
<tr>
<td></td>
<td>● Detailed characteristics</td>
</tr>
<tr>
<td><strong>Population Estimates</strong></td>
<td>● Best approximation of population</td>
</tr>
<tr>
<td></td>
<td>● Every year</td>
</tr>
<tr>
<td></td>
<td>● No characteristics</td>
</tr>
</tbody>
</table>

Background: What estimates are (and are not)
Background

- Each year, the Metropolitan Council estimates population for April 1 of the *previous* year
  - Most recent set: Estimates for April 1, 2015, calculated in 2016
  - In progress: Estimates for April 1, 2016, to be released in 2017
- Performed since the formation of the Council
- Governed by *Minnesota Statutes* 473.24
Background: Roles

- Population estimates for seven-county region
- Population estimates for Greater Minnesota (outside 7-county region)
- Review preliminary population estimates
- Comment if desired

Metropolitan Council
State Demographic Center
Local governments
Background: Why the Council estimates population

Official estimates for state government purposes
- Local Government Aid
- Local street aid

Local purposes
- Determining the number of liquor licenses
- Ordering road signs
Background: Why the Council estimates population

Council purposes

• Intuitively understandable way to think about growth and development

• Where might more regional investments be needed?

• “Reality check” on demographic forecasts
Background: Small areas

- Transportation Analysis Zones (TAZs)
- Census tracts
- Transitway station areas
- Other geographies (wards, school districts, etc.)

Cities and townships
The estimates model

Balancing four priorities:

- Validity
- Accuracy
- Transparency
- Fairness
The estimates model: Key terms

- **Housing unit**: a unit where one or more people can live
  - Can be occupied or vacant

- **Household**: A person or a group of people living in a housing unit
  - Household = occupied housing unit
The estimates model: Key terms

- **Population**: Two components
  - In households
  - In group quarters
The estimates model: Key questions

1. How many **housing units** does each community have?

2. How many **households** live in these housing units? (= How many housing units are occupied?)

3. How many **people** live in these households?
The estimates model: Overview of calculations

How many **housing units**?

How many **households**?

How many **people**?

Housing units in 2010

+ Changes to housing stock since 2010

Occupancy rate

Average household size

(Persons per household)
The estimates model: Overview of calculations

- Single-family detached
- Townhomes
- Duplex/3-plex/4-plex
- Multifamily
- Manufactured homes
- Other
Model: Housing units

- Start with 2010 housing units
- Incorporate changes since 2010
  - Residential construction permit data submitted by communities
    - New construction
    - Conversions
    - Demolitions
  - Annexations
- Council’s annual manufactured housing parks survey
Model: Housing units

Units permitted in these years…


... affect the estimates for April 1 of this year...

... which are developed the following year
## Model: Housing units

<table>
<thead>
<tr>
<th></th>
<th>(A) Census, 2010</th>
<th>(B) Permitted and built, 2010-2015</th>
<th>(C) Other changes, 2010-2015</th>
<th>(D) Estimate, 4/1/2016 (A+B+C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-family detached</td>
<td>2,700</td>
<td>350</td>
<td>-50</td>
<td>3,000</td>
</tr>
<tr>
<td>Single-family attached</td>
<td>475</td>
<td>25</td>
<td>0</td>
<td>500</td>
</tr>
<tr>
<td>Duplex/triplex/quadplex</td>
<td>200</td>
<td>0</td>
<td>0</td>
<td>200</td>
</tr>
<tr>
<td>Multifamily</td>
<td>500</td>
<td>500</td>
<td>0</td>
<td>1,000</td>
</tr>
<tr>
<td>Manufactured homes</td>
<td>325</td>
<td></td>
<td>-25</td>
<td>300</td>
</tr>
<tr>
<td>Other units</td>
<td>0</td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,200</strong></td>
<td></td>
<td></td>
<td><strong>5,000</strong></td>
</tr>
</tbody>
</table>
Model: Households

- Households = Housing units × Occupancy rates
- Occupancy rates come from two sources
  - Council’s annual manufactured housing park survey (manufactured homes)
  - American Community Survey (all other housing types)
Model: Households

Problem: ACS represents a five-year period
Solution: Economic cycle adjustments to make sure occupancy rates reflect current market conditions

Problem: ACS is a sample and subject to error
Solution: Adjustments to reconcile occupancy rates with 2010 Census and U.S. Postal Service data
### Model: Households

<table>
<thead>
<tr>
<th></th>
<th>(D) Housing units, 4/1/2016</th>
<th>(E) Estimated Occupancy Rates</th>
<th>(F) Households, 4/1/2016 (D × E)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-family detached</td>
<td>3,000</td>
<td>98.0%</td>
<td>2,940</td>
</tr>
<tr>
<td>Single-family attached</td>
<td>500</td>
<td>97.0%</td>
<td>485</td>
</tr>
<tr>
<td>Duplex/triplex/quadplex</td>
<td>200</td>
<td>96.0%</td>
<td>192</td>
</tr>
<tr>
<td>Multifamily</td>
<td>1,000</td>
<td>95.0%</td>
<td>950</td>
</tr>
<tr>
<td>Manufactured homes</td>
<td>300</td>
<td>94.3%</td>
<td>283</td>
</tr>
<tr>
<td>Other units</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>5,000</strong></td>
<td></td>
<td><strong>4,850</strong></td>
</tr>
</tbody>
</table>

\[\frac{4,850}{5,000} = 97.0\%\text{ overall occupancy}\]
Model: People in households

- Population in households = Households × Average household size

- Two sources for average household sizes:
  - Council’s annual manufactured housing park survey (manufactured homes only)
  - American Community Survey (all other housing types)
Model: People in households

Problem: ACS is a sample and subject to error

Solution: Adjustments to reconcile average household sizes with 2010 Census

Problem: Housing stock-based estimates do not incorporate other data on births/deaths/migration

Solution: Adjustments to reconcile resulting population estimates with Census Bureau’s county-level estimates
### Model: People in Households

<table>
<thead>
<tr>
<th></th>
<th>(F) Households, 4/1/2016</th>
<th>(G) Estimated Average HH Size</th>
<th>(H) People in HHs, 4/1/16 (F × G)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single-family detached</td>
<td>2,940</td>
<td>3.00</td>
<td>8,820</td>
</tr>
<tr>
<td>Single-family attached</td>
<td>485</td>
<td>3.00</td>
<td>1,455</td>
</tr>
<tr>
<td>Duplex/triplex/quadplex</td>
<td>192</td>
<td>2.50</td>
<td>480</td>
</tr>
<tr>
<td>Multifamily</td>
<td>950</td>
<td>2.00</td>
<td>1,900</td>
</tr>
<tr>
<td>Manufactured homes</td>
<td>283</td>
<td>3.00</td>
<td>849</td>
</tr>
<tr>
<td>Other units</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,850</strong></td>
<td></td>
<td><strong>13,504</strong></td>
</tr>
</tbody>
</table>

13,504 ÷ 4,850 = 2.78 overall average HH size
The estimates model: Overview of calculations

- How many housing units?
- How many households?
- How many people?

Housing units in 2010 + Changes to housing stock since 2010 → Occupancy rate → Average household size (Persons per household)
The estimates model: Key terms

- Total population
- Population in households
- Population in group quarters

2010 units + Hsg changes \( \times \) Occ. rate \( \times \) Avg HH size
Model: Group quarters population

- Total population also includes people in **group quarters**
  - Correctional facilities
  - Nursing homes
  - Group homes
  - College dormitories

- Data sources
  - Annual surveys of facilities with 10+ residents
  - Department of Human Services lists of licensed facilities
**Model: Group quarters population**

<table>
<thead>
<tr>
<th>Type of facility</th>
<th>Group quarters or housing unit?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nursing home</td>
<td>Group quarters</td>
</tr>
<tr>
<td>Memory care</td>
<td>Group quarters</td>
</tr>
<tr>
<td>Independent living</td>
<td>Housing unit (multifamily)</td>
</tr>
<tr>
<td>Assisted living</td>
<td>Housing unit (multifamily)</td>
</tr>
</tbody>
</table>
Timeline and process

Estimates for April 1, 2016:

5/16/17: Council sends preliminary estimates to local governments

6/24/17: Final day to submit comments on preliminary estimates

7/15/17: Council must certify final estimates
Considerations for review

• Each year, we refine the data and methods used to calculate our estimates
  • Estimates from two different years not comparable
  • Final estimates not comparable to preliminary estimates

• In the past year:
  • Overhaul of group quarters data
  • Additions to post-2010 building permit data
  • Addition of more units permitted before 2010 and not included in 2010 Census count
How to write helpful comments

Do our estimates accurately reflect the building permits and housing stock changes you know about?
How to write helpful comments

Do you have utilities data that can be a proxy for occupancy?
How to write helpful comments

Do the occupancy rates and average household sizes look reasonable for each housing type?
What happens next

- If you submit a comment, we commit to...
  - Answering all of your questions
  - Explaining our reasoning
  - Consulting other available data sources
  - Applying the same standard for all communities

- We cannot commit to...
  - Making any certain adjustments
  - Incorporating adjustments from past estimates cycles
What happens next

• If no agreement, your community can contract with the Census Bureau for a special census
  • For details, see *Minnesota Statutes*, 473.24
  • Process described on the Census Bureau’s website: https://www.census.gov/programs-surveys/specialcensus.html

• This year, the Census Bureau must receive your request by June 15, 2017
  • After that, superseded by 2020 Census preparation
## Why our estimates vary from Census Bureau estimates

<table>
<thead>
<tr>
<th></th>
<th>Metropolitan Council</th>
<th>Census Bureau</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Estimate date</strong></td>
<td>April 1</td>
<td>July 1</td>
</tr>
<tr>
<td><strong>Post-2010 housing stock changes</strong></td>
<td>Comprehensive list of changes to housing stock</td>
<td>Conversions not captured; many other permitted units missing</td>
</tr>
<tr>
<td><strong>Occupancy rate and average household size multipliers</strong></td>
<td>Differentiated by housing type; reflects most recent data</td>
<td>Not differentiated by housing type; from 2010 Census</td>
</tr>
<tr>
<td><strong>Group quarters population</strong></td>
<td>Surveyed every year</td>
<td>Trended from 2010 with a small list of facilities</td>
</tr>
</tbody>
</table>
Looking ahead to the 2020 Census

- The foundation of 2011-2019 estimates is the 2010 housing unit count
- Accurate 2020 count → More accurate 2021-2029 estimates
- Other benefits:
  - Influences federal and state funding
  - Influences congressional apportionment and legislative redistricting
Looking ahead to the 2020 Census

- Local Update of Census Addresses (LUCA)
  - Ensure that Census Bureau’s address list includes all housing units

May 2017: Census Bureau informational webinars

July 2017: Invitation to participate

Fall 2017: Census Bureau training workshops

Winter/spring 2018: Review and update Census Bureau address file

E-mail Matt.Schroeder@metc.state.mn.us for webinar schedule
Using estimates to inform comprehensive plan forecasts
Using estimates to inform comprehensive plan forecasts
Using estimates to inform comprehensive plan forecasts

- Households

- Year: 2010, 2015, 2020, 2025, 2030, 2035, 2040
- Estimates: 8,735, 8,904, 9,700, 11,100, 12,500

PlanIt
Using estimates to inform comprehensive plan forecasts

1. Go to metrocouncil.org/data
2. Click “Community Profiles”
3. Select your community
4. Go to the “People” tab

Population and Households in Twin Cities Region (7-county)

Sources: U.S. Census Bureau Decennial Census, Metropolitan Council Annual Estimates, and Metropolitan Council Forecasts.
Resources

https://www.metrocouncil.org/PlanIt

https://metrocouncil.org/populationestimates

https://www.census.gov/geo/partnerships/luca.html
Questions?

Matt Schroeder, Senior Researcher
Matt.Schroeder@metc.state.mn.us
Upcoming Events

Workshop: Interactive Community Engagement
Presented by James Rojas
Tuesday, April 25, 2017

Workshop: Redevelopment
Thursday, June 22, 2017

Webinar: Integrating Economic Development Strategies into Everyday Planning
Presented by Corrin Wendell
Thursday, July 13, 2017

*Look for the 2017 PlanIt Schedule of Events on the website