ROUND 9.0 COOPERATIVE FORECASTS OF FUTURE GROWTH

Greg Goodwin
COG Community Planning and Services

BMC – Cooperative Forecasting Group
April 27, 2016
Cooperative Forecasting Process

Regional Econometric Model Projections
- Employment
- Population
- Households

Local Forecasts
- Short Term – Permits
- Long Term – Comprehensive Plans

Reconciliation

Regional Forecast Jurisdictional Small Area (TAZ)
Employment Change by 10-Year Increments
National vs. COG / TPB Planning Area

<table>
<thead>
<tr>
<th>Period</th>
<th>National</th>
<th>COG / TPB Planning Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>1985-1995</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>1995-2005</td>
<td>14%</td>
<td>26%</td>
</tr>
<tr>
<td>2005-2015</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>2015-2025</td>
<td>10%</td>
<td>13%</td>
</tr>
<tr>
<td>2025-2035</td>
<td>7%</td>
<td>11%</td>
</tr>
<tr>
<td>2035-2045</td>
<td>6%</td>
<td>8%</td>
</tr>
</tbody>
</table>

% Increase

Draft Round 9.0 Cooperative Forecasts
Population Change by 10-Year Increments
National vs. COG / TPB Planning Area

Draft Round 9.0 Cooperative Forecasts
Employment Change by Sector 2015–2045
National vs. COG / TPB Planning Area

- Professional & Business Services
- Construction, Natural Resources, and Mining
- Information
- State & Local Government
- Educational & Health Services
- Leisure & Hospitality
- Other Services
- Financial Activities
- Transp., Trade, & Utilities
- Manufacturing
- Federal Government

COG / TPB Planning Area vs. National
Employment Change by Sector 2015 – 2045
COG / TPB Planning Area

- Professional & Business Services: 601,995
- Construction, Natural Resources, and Mining: 91,927
- Information: 49,022
- State & Local Government: 80,582
- Educational & Health Services: 82,153
- Leisure & Hospitality: 50,178
- Other Services: 14,467
- Financial Activities: 8,395
- Transp., Trade, & Utilities: 5,915
- Manufacturing: -3,488
- Federal Government: -43,796
### Round 9.0 Econometric Model Results

**(June 2015) ROUND 9.0 ECONOMETRIC MODEL RESULTS (thousands) - COG / TPB Planning Area**

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL JOBS</td>
<td>3,146.2</td>
<td>3,390.8</td>
<td>3,542.9</td>
<td>3,689.8</td>
<td>3,846.8</td>
<td>4,018.4</td>
<td>4,166.0</td>
</tr>
<tr>
<td>TOTAL POPULATION</td>
<td>5,486.5</td>
<td>5,793.6</td>
<td>6,043.6</td>
<td>6,274.3</td>
<td>6,488.7</td>
<td>6,686.6</td>
<td>6,888.4</td>
</tr>
<tr>
<td>TOTAL HOUSEHOLDS</td>
<td>2,009.4</td>
<td>2,146.2</td>
<td>2,276.2</td>
<td>2,400.2</td>
<td>2,519.6</td>
<td>2,642.7</td>
<td>2,775.4</td>
</tr>
</tbody>
</table>

**DRAFT ROUND 9.0 INTERMEDIATE SCENARIO (thousands) - COG / TPB Planning Area**

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL JOBS</td>
<td>3,151.7</td>
<td>3,343.0</td>
<td>3,562.6</td>
<td>3,766.7</td>
<td>3,949.0</td>
<td>4,125.0</td>
<td>4,291.2</td>
</tr>
<tr>
<td>TOTAL POPULATION</td>
<td>5,372.0</td>
<td>5,673.1</td>
<td>5,956.0</td>
<td>6,214.3</td>
<td>6,453.0</td>
<td>6,665.3</td>
<td>6,876.0</td>
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<tr>
<td>TOTAL HOUSEHOLDS</td>
<td>2,009.3</td>
<td>2,135.1</td>
<td>2,256.4</td>
<td>2,371.1</td>
<td>2,470.2</td>
<td>2,557.9</td>
<td>2,651.3</td>
</tr>
</tbody>
</table>

**COG / TPB Planning Area Absolute and Percentage Difference between Draft Round 9.0 and the Round 9.0 Econometric Model (Draft Round 9.0 minus Model Results)**

<table>
<thead>
<tr>
<th>Year</th>
<th>2015</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
<th>2040</th>
<th>2045</th>
</tr>
</thead>
<tbody>
<tr>
<td>TOTAL JOBS</td>
<td>5.5</td>
<td>-47.8</td>
<td>19.6</td>
<td>76.8</td>
<td>102.3</td>
<td>106.6</td>
<td>125.2</td>
</tr>
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<td></td>
<td>0.2%</td>
<td>-1.4%</td>
<td>0.6%</td>
<td>2.1%</td>
<td>2.7%</td>
<td>2.7%</td>
<td>3.0%</td>
</tr>
<tr>
<td>TOTAL POPULATION</td>
<td>-114.5</td>
<td>-120.5</td>
<td>-87.7</td>
<td>-60.0</td>
<td>-35.7</td>
<td>-21.3</td>
<td>-12.4</td>
</tr>
<tr>
<td></td>
<td>-2.1%</td>
<td>-2.1%</td>
<td>-1.5%</td>
<td>-1.0%</td>
<td>-0.5%</td>
<td>-0.3%</td>
<td>-0.2%</td>
</tr>
<tr>
<td>TOTAL HOUSEHOLDS</td>
<td>0.0</td>
<td>-11.1</td>
<td>-19.8</td>
<td>-29.1</td>
<td>-49.5</td>
<td>-84.8</td>
<td>-124.1</td>
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<tr>
<td></td>
<td>0.0%</td>
<td>-0.5%</td>
<td>-0.9%</td>
<td>-1.2%</td>
<td>-2.0%</td>
<td>-3.2%</td>
<td>-4.5%</td>
</tr>
</tbody>
</table>
Summary of Round 9.0 Cooperative Forecasts

COG / TPB Planning Area (Thousands)

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2045</th>
<th>2015 to 2045</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>3,151.7</td>
<td>4,295.2</td>
<td>1,140</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>36%</td>
</tr>
<tr>
<td>Population</td>
<td>5,372.0</td>
<td>6,876.0</td>
<td>1,504</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>28%</td>
</tr>
<tr>
<td>Households</td>
<td>2,009.3</td>
<td>2,651.3</td>
<td>642</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>32%</td>
</tr>
</tbody>
</table>
### Change in 2040 Forecast from Round 8.4

**COG / TPB Planning Area (Thousands)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Round 8.4</th>
<th>Round 9.0</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employment</td>
<td>4,370.8</td>
<td>4,125.0</td>
<td>-246</td>
<td>-6%</td>
</tr>
<tr>
<td>Population</td>
<td>6,619.2</td>
<td>6,665.3</td>
<td>46</td>
<td>1%</td>
</tr>
<tr>
<td>Households</td>
<td>2,546.6</td>
<td>2,557.9</td>
<td>11</td>
<td>1%</td>
</tr>
</tbody>
</table>
### Employment 2015 - 2045

<table>
<thead>
<tr>
<th>Location</th>
<th>2015 Employment (Thousands)</th>
<th>Absolute Increase 2015 - 2045 (Thousands)</th>
<th>Percentage Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>District of Columbia</td>
<td>798.3</td>
<td>247.1</td>
<td>31.0%</td>
</tr>
<tr>
<td>Fairfax County</td>
<td>654.1</td>
<td>244.0</td>
<td>37.3%</td>
</tr>
<tr>
<td>Montgomery County</td>
<td>520.2</td>
<td>158.5</td>
<td>30.5%</td>
</tr>
<tr>
<td>Prince George's County</td>
<td>338.6</td>
<td>63.6</td>
<td>18.8%</td>
</tr>
<tr>
<td>Arlington County</td>
<td>209.6</td>
<td>69.9</td>
<td>33.3%</td>
</tr>
<tr>
<td>Loudoun County</td>
<td>164.2</td>
<td>126.5</td>
<td>77.1%</td>
</tr>
<tr>
<td>Prince William County</td>
<td>144.6</td>
<td>113.7</td>
<td>78.6%</td>
</tr>
<tr>
<td>Frederick County</td>
<td>106.2</td>
<td>34.0</td>
<td>32.0%</td>
</tr>
<tr>
<td>City of Alexandria</td>
<td>106.2</td>
<td>48.9</td>
<td>46.0%</td>
</tr>
<tr>
<td>City of Rockville</td>
<td>76.9</td>
<td>19.8</td>
<td>25.8%</td>
</tr>
<tr>
<td>City of Frederick</td>
<td>50.1</td>
<td>11.1</td>
<td>22.2%</td>
</tr>
<tr>
<td>Charles County</td>
<td>46.6</td>
<td>14.9</td>
<td>32.0%</td>
</tr>
<tr>
<td>City Gaithersburg</td>
<td>46.4</td>
<td>19.3</td>
<td>41.5%</td>
</tr>
<tr>
<td>City of Manassas</td>
<td>5.3</td>
<td>2.0</td>
<td>20.7%</td>
</tr>
<tr>
<td>City of Fairfax</td>
<td>5.8</td>
<td>1.5</td>
<td>28.0%</td>
</tr>
<tr>
<td>City of Falls Church</td>
<td>6.6</td>
<td>3.4</td>
<td>55.0%</td>
</tr>
<tr>
<td>City of Manassas Park</td>
<td>0.6</td>
<td>0.3</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

Agenda Item #13: Round 9.0 Cooperative Forecasts
March 9, 2016
Population 2015 - 2045

<table>
<thead>
<tr>
<th>County</th>
<th>2015 Population</th>
<th>Absolute Increase 2015 - 2045</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fairfax County</td>
<td>1,125.4</td>
<td>281.4</td>
<td>25.0%</td>
</tr>
<tr>
<td>Montgomery County</td>
<td>1,015.3</td>
<td>208.1</td>
<td>20.5%</td>
</tr>
<tr>
<td>Prince George's County</td>
<td>904.4</td>
<td>91.4</td>
<td>10.1%</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>672.2</td>
<td>315.0</td>
<td>46.9%</td>
</tr>
<tr>
<td>Prince William County</td>
<td>431.2</td>
<td>141.6</td>
<td>32.8%</td>
</tr>
<tr>
<td>Loudoun County</td>
<td>363.5</td>
<td>134.0</td>
<td>36.9%</td>
</tr>
<tr>
<td>Frederick County</td>
<td>246.5</td>
<td>97.6</td>
<td>39.6%</td>
</tr>
<tr>
<td>Arlington County</td>
<td>220.5</td>
<td>69.0</td>
<td>31.3%</td>
</tr>
<tr>
<td>Charles County</td>
<td>150.8</td>
<td>85.7</td>
<td>56.8%</td>
</tr>
<tr>
<td>City of Alexandria</td>
<td>147.6</td>
<td>60.8</td>
<td>41.2%</td>
</tr>
<tr>
<td>City of Frederick</td>
<td>70.4</td>
<td>22.7</td>
<td>32.2%</td>
</tr>
<tr>
<td>City of Rockville</td>
<td>66.3</td>
<td>23.6</td>
<td>35.6%</td>
</tr>
<tr>
<td>City of Gaithersburg</td>
<td>67.1</td>
<td>22.2</td>
<td>33.0%</td>
</tr>
<tr>
<td>City of Manassas</td>
<td>9.6</td>
<td></td>
<td>22.6%</td>
</tr>
<tr>
<td>City of Fairfax</td>
<td>3.7</td>
<td></td>
<td>14.8%</td>
</tr>
<tr>
<td>City of Manassas Park</td>
<td>1.6</td>
<td></td>
<td>11.1%</td>
</tr>
<tr>
<td>City of Falls Church</td>
<td>4.5</td>
<td></td>
<td>34.4%</td>
</tr>
</tbody>
</table>

2015 Population

Absolute Increase 2015 - 2045

(Thousands)
Households 2015 - 2045

- Fairfax County: 403.9 (37.2%)
- Montgomery County: 374.9 (31.8%)
- Prince George's County: 321.1 (21.9%)
- District of Columbia: 297.1 (54.4%)
- Prince William County: 140.4 (47.6%)
- Loudoun County: 121.1 (60.9%)
- Arlington County: 103.6 (39.0%)
- Frederick County: 89.5 (54.7%)
- City of Alexandria: 71.2 (47.7%)
- Charles County: 53.7 (79.9%)
- City of Frederick: 27.3 (44.9%)
- City of Rockville: 26.4 (50.2%)
- City Gaithersburg: 24.7 (53.2%)
- City of Manassas: 2.9 (22.1%)
- City of Fairfax: 2.1 (24.8%)
- City of Falls Church: 3.0 (58.8%)
- City of Manassas Park: 0.5 (11.7%)

2015 Households - Absolute Increase 2015 - 2045
Forecasts for Jurisdictions in COG / TPB Planning Area Grouped Geographically for Analysis Purposes

<table>
<thead>
<tr>
<th>Central Jurisdictions</th>
<th>Inner Suburbs</th>
<th>Outer Suburbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>• District of Columbia</td>
<td>• Montgomery</td>
<td>• Loudoun</td>
</tr>
<tr>
<td>• Arlington</td>
<td>• Prince George’s</td>
<td>• Prince William</td>
</tr>
<tr>
<td>• Alexandria</td>
<td>• Fairfax County</td>
<td>• Manassas</td>
</tr>
<tr>
<td></td>
<td>• Fairfax</td>
<td>• Manassas Park</td>
</tr>
<tr>
<td></td>
<td>• Falls Church</td>
<td>• Charles</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Frederick County MD</td>
</tr>
</tbody>
</table>
Forecast Employment Growth, 2015 - 2045

- **Central Jurisdictions**: +365,900 Jobs (33%)
- **Inner Suburbs**: +478,600 Jobs (31%)
- **Outer Suburbs**: +295,000 Jobs (60%)
Forecast Population Growth, 2015 - 2045

Central Jurisdictions: +448,800 People (43%)
Inner Suburbs: +589,000 People (19%)
Outer Suburbs: +470,200 People (38%)
Forecast Household Growth, 2015 - 2045

- Inner Suburbs: +274,500 Households (25%)
  - 2015 - 2045 Growth
  - Households in 2015: +274,500 Households (25%)
- Outer Suburbs: +183,300 Households (39%)
- Central Jurisdictions: +184,100 Households (44%)

Households in 2015:
- Inner Suburbs: +274,500 Households (25%)
- Outer Suburbs: +183,300 Households (39%)
- Central Jurisdictions: +184,100 Households (44%)

Households in 2015:
- Inner Suburbs: +274,500 Households (25%)
- Outer Suburbs: +183,300 Households (39%)
- Central Jurisdictions: +184,100 Households (44%)

Households in 2015:
- Inner Suburbs: +274,500 Households (25%)
- Outer Suburbs: +183,300 Households (39%)
- Central Jurisdictions: +184,100 Households (44%)
About COG

- COG Board approved “Draft Round 9.0” for use in the Air Quality Conformity Analysis of the 2016 Update to the Financially Constrained Long-Range Transportation Plan (CLRP) and the FY 2017-2022 Transportation Improvement Program (TIP) on March 9.

- Local jurisdictions submitted Round 9.0 forecasts by Transportation Analysis Zone (TAZ).

- Final approval and adoption by the COG Board in November 2016.
Greg Goodwin
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ggoodwin@mwcog.org

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Washington, DC 20002

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