DRAFT Maximize2045 Model Results

Technical Committee

May 7, 2019
Inputs

- Transportation networks: highway and transit
- Transportation capacity expansion projects 2012-2045: TIP (2020-2023) & LRTP (2024-2045)
- Demographic data by transportation analysis zone (TAZ): population, households & employment

Outputs

- Travel projections 2012-2045: roadway volume and transit ridership
- Traffic conditions by road type:
  - Severe congestion (volume to capacity ratio of 0.79 or greater)
  - Some congestion (volume to capacity ratio between 0.42 and 0.78)
  - Freeflow (volume to capacity ratio below 0.42)
BMC Travel Demand Model

Legend
- 2045 Transit Network
- Base Year Roads
- Capacity Expansion Projects
  - Base Year Roads
  - Completed Projects
- BMC TIP (2019)
- BMC LRP - Highway (2019)
- BMC LRP - Transit (2019)
- COG TIP (2018)*
- COG LRP (2016)*
- Jurisdiction
- TAZ 2010

*BMC does not model all MWCOG Transit

Baltimore Metropolitan Council, April 2019
Demographic Data by TAZ

Baltimore Region Growth Indicators

Change 2012-2045:
- Households: +170,191 or +16.4%
- Employment: +348,448 or +20%
- Population: +365,809 or +13.5%

Source: Round 9 Demographic Data, Cooperative Forecasting Group
Trip Generation

- **Person Trip Productions**
  - Work Trips – Motorized
    - 2020: 1,704,782
    - 2045: 1,790,958
  - Change:
    - +86,176
    - +5.1%

- **Person Trip Attractions**
  - Work Trips - Motorized
    - 2020: 1,494,747
    - 2045: 1,671,925
  - Change:
    - +177,178
    - +11.9%
Trip Purpose

Change 2012-2045

- Work: +9.4%
- Shop: +12.2%
- Home-Other: +12.1%
- School: +9.5%
- Work-Stop: +6.6%
- At Work: +8.6%
- Other: +12.6%
- All Trips: +11.1%
**Mode Choice**

Four modes in model

**Single Occupant Vehicle (SOV):**
- HBW: +6.6%
- HBS & HBO: +13%

**High Occupant Vehicle (HOV) 2:**
- HBW: +6.1%
- HBS & HBO: +13%

**High Occupant Vehicle (HOV) 3+:**
- HBW: +5.8%
- HBS & HBO: +13%

**Transit:**
- HBW: -0.2%
- HBS & HBO: +17%
Vehicle Miles Traveled (VMT)

Total VMT

2012-2045 Change:
- +15,264,661
- +23.5%

Traffic Conditions

Freeflow:
- 2012: 28.1% of VMT
- 2045 E+C: 20.0% of VMT
- 2045: 22.6% of VMT

Severe Congestion:
- 2012: 29.3% of VMT
- 2045 E+C: 39.6% of VMT
- 2045: 35.6% of VMT
Transit Ridership

Total Ridership
Change 2012-2045:
- +24,479
- +8.9%

Transit mode split
Trips to Washington Area

- Daily trips to/from Washington area from Baltimore region
- Total Trips:
  - 2012: 494,279
  - 2045: 544,124
- Change:
  - +49,845
  - +10%
## Model Results

<table>
<thead>
<tr>
<th>Performance Measure</th>
<th>Indicator of Travel Demand</th>
<th>2012 Base Year</th>
<th>2023 Existing &amp; Committed</th>
<th>2045 Preferred Alternative</th>
<th>2012 to 2023 Change</th>
<th>2023 to 2045 Change</th>
<th>2012 to 2023 % Change</th>
<th>2023 to 2045 % Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congested VMT (LOS E and F)</td>
<td>Interstates</td>
<td>9,829,419</td>
<td>15,321,713</td>
<td>14,730,384</td>
<td>5,492,294</td>
<td>-591,329</td>
<td>55.9%</td>
<td>-3.9%</td>
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<tr>
<td></td>
<td>Arterials</td>
<td>7,510,469</td>
<td>13,093,108</td>
<td>11,034,883</td>
<td>5,582,639</td>
<td>-2,058,225</td>
<td>74.3%</td>
<td>-15.7%</td>
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<tr>
<td></td>
<td>Collectors</td>
<td>1,632,185</td>
<td>3,316,884</td>
<td>2,722,946</td>
<td>1,684,699</td>
<td>-593,938</td>
<td>103.2%</td>
<td>-17.9%</td>
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<tr>
<td></td>
<td>All Roads</td>
<td>18,972,074</td>
<td>31,731,704</td>
<td>28,488,213</td>
<td>12,759,630</td>
<td>-3,243,491</td>
<td>67.3%</td>
<td>-10.2%</td>
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<tr>
<td>Percentage of Congested VMT (LOS E and F)</td>
<td>Interstates</td>
<td>29.69%</td>
<td>37.54%</td>
<td>35.22%</td>
<td></td>
<td>8%</td>
<td>-2%</td>
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<tr>
<td></td>
<td>Arterials</td>
<td>28.83%</td>
<td>40.85%</td>
<td>35.15%</td>
<td></td>
<td>12%</td>
<td>-6%</td>
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<tr>
<td></td>
<td>Collectors</td>
<td>29.39%</td>
<td>45.38%</td>
<td>40.31%</td>
<td></td>
<td>16%</td>
<td>-5%</td>
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<tr>
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<td>All Roads</td>
<td>29.32%</td>
<td>39.58%</td>
<td>35.62%</td>
<td></td>
<td>10%</td>
<td>-4%</td>
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</tr>
<tr>
<td>Total Transit Ridership (Linked Trips)</td>
<td></td>
<td>273,722</td>
<td>294,748</td>
<td>298,201</td>
<td>21,026</td>
<td>3,453</td>
<td>7.7%</td>
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<tr>
<td>Auto Occupancy Ratio</td>
<td>Home-Based Work Trips</td>
<td>1.09</td>
<td>1.09</td>
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<td>0</td>
<td>0</td>
<td>0.0%</td>
<td>0.0%</td>
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<tr>
<td></td>
<td>Home-Based Non-Work Trips (Shop/Other)</td>
<td>1.52</td>
<td>1.52</td>
<td>1.52</td>
<td>0</td>
<td>0</td>
<td>0.0%</td>
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<tr>
<td></td>
<td>All Home-Based Trips</td>
<td>1.65</td>
<td>1.65</td>
<td>1.65</td>
<td>0</td>
<td>0</td>
<td>0.0%</td>
<td>0.0%</td>
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<tr>
<td></td>
<td>Home-Based Transit Mode Share</td>
<td>4.17%</td>
<td>3.97%</td>
<td>4.03%</td>
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<td>-0.2%</td>
<td>0.1%</td>
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<tr>
<td>Congested Speed (MPH)</td>
<td>Interstates</td>
<td>47.7</td>
<td>41.4</td>
<td>43.8</td>
<td>-6</td>
<td>2</td>
<td>-13.2%</td>
<td>5.8%</td>
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<tr>
<td>AM Peak Period</td>
<td>Freeways</td>
<td>46.2</td>
<td>38.1</td>
<td>41.2</td>
<td>-8</td>
<td>3</td>
<td>-17.5%</td>
<td>8.1%</td>
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<tr>
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<td>Principal Arterials</td>
<td>32.6</td>
<td>29.6</td>
<td>31.1</td>
<td>-3</td>
<td>2</td>
<td>-9.2%</td>
<td>5.1%</td>
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<tr>
<td></td>
<td>Minor Arterials</td>
<td>30.3</td>
<td>27.7</td>
<td>28.8</td>
<td>-3</td>
<td>1</td>
<td>-8.6%</td>
<td>4.0%</td>
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<tr>
<td></td>
<td>Collectors</td>
<td>30.3</td>
<td>27.5</td>
<td>28.6</td>
<td>-3</td>
<td>1</td>
<td>-9.2%</td>
<td>4.0%</td>
</tr>
<tr>
<td></td>
<td>All Roads</td>
<td>36.9</td>
<td>32.6</td>
<td>34.5</td>
<td>-4</td>
<td>2</td>
<td>-11.7%</td>
<td>5.8%</td>
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<tr>
<td>Vehicle Hours of Delay</td>
<td>All Roads (AM Peak Period)</td>
<td>85,516</td>
<td>255,252</td>
<td>174,689</td>
<td>169,736</td>
<td>-80,563</td>
<td>198.5%</td>
<td>-31.6%</td>
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<td>All Roads (24-Hour Period)</td>
<td>271,492</td>
<td>834,051</td>
<td>583,480</td>
<td>562,559</td>
<td>-250,571</td>
<td>207.2%</td>
<td>-30.0%</td>
</tr>
</tbody>
</table>
For More Information

Brian Ryder | Transportation Planner
410-732-0500 x1054 | bryder@baltometro.org | www.baltometro.org