Carsharing Trends and Research Highlights

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OVERVIEW

- Growth Trends in the Americas
- Roundtrip Research
- One-way Research
- College/University Study
- Recent Reports
- Shared Mobility and Planning
- Acknowledgements
North American Membership Growth

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. (n=21)</th>
<th>Canada (n=17)</th>
<th>Mexico (n=1)</th>
<th>North America (n=39)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>184,292</td>
<td>26,878</td>
<td>750</td>
<td>211,170</td>
</tr>
<tr>
<td>2008</td>
<td>279,234</td>
<td>39,664</td>
<td>2,654</td>
<td>318,898</td>
</tr>
<tr>
<td>2009</td>
<td>323,681</td>
<td>53,916</td>
<td>6,174</td>
<td>377,597</td>
</tr>
<tr>
<td>2010</td>
<td>448,574</td>
<td>67,526</td>
<td>9,639</td>
<td>516,100</td>
</tr>
<tr>
<td>2011</td>
<td>560,572</td>
<td>78,856</td>
<td>9,275</td>
<td>639,428</td>
</tr>
<tr>
<td>2012</td>
<td>806,332</td>
<td>101,502</td>
<td>2,654</td>
<td>908,584</td>
</tr>
<tr>
<td>2013</td>
<td>995,926</td>
<td>147,794</td>
<td>6,174</td>
<td>1,146,374</td>
</tr>
<tr>
<td>2014</td>
<td>1,337,803</td>
<td>281,675</td>
<td>9,639</td>
<td>1,625,652</td>
</tr>
<tr>
<td>2015</td>
<td>1,172,490</td>
<td>344,403</td>
<td>9,275</td>
<td>1,526,532</td>
</tr>
<tr>
<td>2016</td>
<td>1,351,051</td>
<td>477,528</td>
<td>10,127</td>
<td>1,837,854</td>
</tr>
<tr>
<td>2017</td>
<td>1,405,447</td>
<td>511,654</td>
<td>10,127</td>
<td>1,927,228</td>
</tr>
</tbody>
</table>

(Shaheen and Cohen 2017)
## North American Vehicle Growth

<table>
<thead>
<tr>
<th>Year</th>
<th>U.S. (n=21)</th>
<th>Canada (n=17)</th>
<th>Mexico (n=1)</th>
<th>North America (n=39)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>5,104</td>
<td>1,388</td>
<td>18</td>
<td>6,492</td>
</tr>
<tr>
<td>2008</td>
<td>5,840</td>
<td>1,667</td>
<td>40</td>
<td>7,507</td>
</tr>
<tr>
<td>2009</td>
<td>7,722</td>
<td>2,046</td>
<td>47</td>
<td>9,768</td>
</tr>
<tr>
<td>2010</td>
<td>8,120</td>
<td>2,285</td>
<td>73</td>
<td>10,405</td>
</tr>
<tr>
<td>2011</td>
<td>7,776</td>
<td>2,605</td>
<td>43</td>
<td>10,381</td>
</tr>
<tr>
<td>2012</td>
<td>12,634</td>
<td>3,143</td>
<td>39</td>
<td>15,795</td>
</tr>
<tr>
<td>2013</td>
<td>16,811</td>
<td>3,933</td>
<td>24,210</td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>19,115</td>
<td>5,048</td>
<td>25,224</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>19,270</td>
<td>5,881</td>
<td>26,691</td>
<td></td>
</tr>
<tr>
<td>2016</td>
<td>19,555</td>
<td>7,093</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2017 (Jan)</td>
<td>17,178</td>
<td>7,412</td>
<td>24,629</td>
<td></td>
</tr>
</tbody>
</table>

(Vehicles)

*Shaheen and Cohen 2017*
Roundtrip Impacts: North America

- 25% sold a vehicle
- 25% postponed a vehicle purchase

1 carsharing vehicle replaces 9 – 13 vehicles

(Martin et al. 2010; Shaheen and Chan 2015)
Reduction of GHG emissions per year for one household

Reduction of VMT per year considering vehicles sold and purchases postponed

Monthly household savings per US member after joining carsharing

More users increased (than decreased) their modal use; including bus, rail, walking, biking, and carpooling

Roundtrip Impacts: North America

- 0.58 - 0.84 metric tons
- 34% - 41%
- 27% - 43%
- $154 - $435

(Martin et al., 2010; Shaheen and Chan, 2015)
One-way Impacts: North America

Member Vehicle Holdings
- 2-5% Sold a vehicle
- 1-3 Vehicles sold per a car2go vehicle
- 7-10% Postponed a vehicle purchase / vehicle acquisition
- 4-9 Vehicles suppressed per car2go vehicle

(Martin et al. 2016)
# One-way Impacts: North America

<table>
<thead>
<tr>
<th>City</th>
<th>Vehicles Sold</th>
<th>Vehicles Suppressed (foregone purchases)</th>
<th>Total Vehicles Removed per Carsharing Vehicle</th>
<th>Range of Vehicles Removed per Carsharing Vehicle</th>
<th>% Reduction in VMT by Car2go Hhd</th>
<th>% Reduction in GHGs by Car2go Hhd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calgary, AB (n=1,498)</td>
<td>2</td>
<td>9</td>
<td>11</td>
<td>2 to 11</td>
<td>-6%</td>
<td>-4%</td>
</tr>
<tr>
<td>San Diego, CA (n=824)</td>
<td>1</td>
<td>6</td>
<td>7</td>
<td>1 to 7</td>
<td>-7%</td>
<td>-6%</td>
</tr>
<tr>
<td>Seattle, WA (n=2,887)</td>
<td>3</td>
<td>7</td>
<td>10</td>
<td>3 to 10</td>
<td>-10%</td>
<td>-10%</td>
</tr>
<tr>
<td>Vancouver, BC (n=1,010)</td>
<td>2</td>
<td>7</td>
<td>9</td>
<td>2 to 9</td>
<td>-16%</td>
<td>-15%</td>
</tr>
<tr>
<td>Washington, D.C. (n=1,127)</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>3 to 8</td>
<td>-16%</td>
<td>-18%</td>
</tr>
</tbody>
</table>
One-way Impacts: North America

Average reduction of GHG emissions per year per car2go household

4% - 18%

Average reduction of VMT per year per car2go household

6% - 16%

(Martin et al. 2016)
Recent Study of Zipcar’s College/University Market: Fall 2016

n=\sim 10,000

(Stocker et al. 2016)
Reduction of GHG emissions
- Reduction of VMT
- VMT reductions are greatest in urban land-use contexts
- Members of Southern and Canadian campuses have the greatest VMT reductions

(Stocker et al. 2016)
Recent Reports

1. **Shared Mobility: Current Practices and Guiding Principles**
   - [Download](https://ops.fhwa.dot.gov/publications/fhwahop16022/fhwahop16022.pdf)

2. **Smartphone Applications to Influence Travel Choices: Practices and Policies**
   - [Download](https://ops.fhwa.dot.gov/publications/fhwahop16023/fhwahop16023.pdf)

3. **Planning for Shared Mobility**
   - [Download](https://www.planning.org/publications/report/9107556/)
Available at:

Innovative Mobility Highlights, Carsharing Outlook, and Latest Research

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