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Transportation is now the top source of greenhouse gases in the U.S.

**Figure ES-14: U.S. Greenhouse Gas Emissions Allocated to Economic Sectors (MMT CO₂ Eq.)**

- Electric Power Industry (Purple)
- Transportation (Green)
- Industry
- Agriculture
- Commercial (Orange)
- Residential (Blue)

Source: U.S. Environmental Protection Agency 2019
Share of U.S. Transportation GHG Emissions, 2017

- **Passenger Cars**: 41.2%
- **Freight Trucks**: 2.4%
- **Light-Duty Trucks (includes SUVs, pickup trucks and minivans)**: 2.4%
- **Commercial Aircraft**: 2.2%
- **Other Aircraft**: 2.2%
- **Ships and Boats**: 17.5%
- **Rail**: 23.3%
- **Pipelines**: 6.9%

Source: U.S. Environmental Protection Agency 2019.
Climate Action Planning

1. Step 1: Inventory GHG Emissions
2. Step 2: Adopt a Target
3. Step 3: Develop a Climate Action Plan
4. Step 4: Implement Policies
5. Step 5: Monitor and Track Progress
6. Step 6: Recognize Achievement
Strategies to reduce GHG emissions from freight transport
Research Question and Objectives

How can cities better incorporate innovative strategies to reduce GHG emissions from freight transport through climate action planning?

1. Analyze content of 27 advanced local climate action plans (CAPs) for freight emission reduction strategies

2. Compare local CAPs and corresponding freight plans concerning freight emissions
Climate Action Plans (CAPs)

**Level 5 CAPs**
- Burlington, VT
- Cambridge, MA
- Chula Vista, CA
- Denver, CO
- Fort Collins, CO
- Madison, WI
- Miami-Dade Co., FL
- Minneapolis, MN
- Portland, OR
- Santa Monica, CA

**Level 4 CAPs**
- Ann Arbor, MI
- Austin, TX
- Berkeley, CA
- Brattleboro, VT
- Brookline, MA
- Durham, NC
- Los Angeles, CA
- Medford, MA
- Oakland, CA
- Salt Lake City, UT
- San Diego, CA
- San Francisco, CA
- San Jose, CA
- Seattle, WA
- Takoma Park, MD
- Toledo, OH
- Tucson, AZ

Level 5 CAPs: monitor and verify results
Level 4 CAPs: implement policies and measures
# Methods of Analysis

## Table 1. Assessment of Climate Action Plans for Freight Transportation

<table>
<thead>
<tr>
<th>ICLEI Milestone 5 Plans</th>
<th>Coder 1</th>
<th>Coder 2</th>
<th>Actions/strategies related to freight</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Burlington, VT</strong></td>
<td></td>
<td></td>
<td>Focus on reducing GHG emissions for city vehicle fleets only.</td>
</tr>
<tr>
<td>Climate Action Plan (2013)</td>
<td>**</td>
<td>**</td>
<td>Focus on reducing GHG emissions from buildings. With over 80% of Cambridge GHG emissions being connected to buildings, only 17% attributed to transportation overall. Reduce motor vehicle emissions, including heavy-duty trucks.</td>
</tr>
<tr>
<td>Cambridge, MA</td>
<td>**</td>
<td>**</td>
<td>Promote alternative fuel vehicle readiness in general.</td>
</tr>
<tr>
<td><strong>Chula Vista, CA</strong></td>
<td>*</td>
<td>*</td>
<td>Action: Create a City Fleet Transition Plan to incorporate low or no-carbon/efficient fuel supply options.</td>
</tr>
<tr>
<td>Climate Action Plan (2017)</td>
<td></td>
<td></td>
<td>Strategy: Improve connectivity and mobility on the existing system to help ease the conflict between commercial trucks and personal passenger vehicles on urban streets and major roadways.</td>
</tr>
<tr>
<td><strong>Denver, CO</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80 x 50 Climate Action Plan (2018)</td>
<td>**</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td><strong>Fort Collins, CO</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate Action Plan Framework (2015)</td>
<td>**</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td><strong>Madison, WI</strong></td>
<td>*</td>
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<tr>
<td>The Madison Sustainability Plan (2011)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate Protection Plan (2002)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Miami-Dade Co., FL</strong></td>
<td>**</td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Climate Change Action Plan Greenprint (2011)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Coding Key:**

- (blank) No explicit mention of freight
- * Mentions freight
- ** Indicates the impact and importance of freight
- *** Includes strategies to reduce freight-based emissions
## Results: ICLEI Milestone 5 Plans

<table>
<thead>
<tr>
<th>Assessment Level</th>
<th>CAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Includes strategies to reduce freight-based emissions</td>
<td>Portland, OR</td>
</tr>
<tr>
<td>Includes the impact and importance of freight</td>
<td>Cambridge, MA; Miami-Dade, FL</td>
</tr>
<tr>
<td>Mentions freight</td>
<td>Denver, CO; Fort Collins, CO; Madison, WI</td>
</tr>
<tr>
<td>No explicit mention of freight</td>
<td>Burlington, VT; Chula Vista, CA; Minneapolis, MN; Santa Monica, CA</td>
</tr>
</tbody>
</table>
## Results: ICLEI Milestone 4 Plans

<table>
<thead>
<tr>
<th>Assessment Level</th>
<th>CAPs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Includes strategies to reduce freight-based emissions</td>
<td>Austin, TX; Los Angeles, CA; Oakland, CA; San Jose, CA; Seattle, WA</td>
</tr>
<tr>
<td>Includes the impact and importance of freight</td>
<td>Ann Arbor, MI; San Francisco, CA; Takoma Park, MD</td>
</tr>
<tr>
<td>Mentions freight</td>
<td>Berkeley, CA; San Diego, CA</td>
</tr>
<tr>
<td>No explicit mention of freight</td>
<td>Brattleboro, VT; Brookline, MA; Durham, NC; Medford, MA; Salt Lake City, UT; Toledo, OH; Tucson, AZ</td>
</tr>
</tbody>
</table>
Austin Community Climate Plan 2015

Transforming Los Angeles
Environment | Economy | Equity
City of Oakland
Energy and Climate Action Plan

December 4, 2012
(Updated March 2018)
Analysis of Freight Plans
Comparison of CAPs and Freight Plans
Conclusions and Recommendations for Cities

• All CAPs should explicitly discuss GHG emissions from freight transport specifically and develop targeted strategies and actions for reducing freight emissions;

• Planners working on CAPs should coordinate more closely with planners working on city, regional, and state freight plans to identify and include freight initiatives that will have the effect of reducing GHG emissions; and

• Planners working on city, regional, and state freight plans should develop a coordinated approach with planners working on CAPs to identify strategies and actions for reducing GHG emissions from freight transport.
Thank you!