TAKING THE TEMPERATURE: TRANSPORTATION IMPACTS ON GREENHOUSE GAS EMISSIONS

TCC
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The Greenhouse Effect

Some sunlight that hits the earth is reflected. Some becomes heat.

CO₂ and other gases in the atmosphere trap heat, keeping the earth warm.
Purpose

- Possible effects of increased levels of greenhouse gas (GHG) emissions
- National policies are considering strategies for reducing all GHG emissions
- Envision6 LRTP contains strategies to reduce primary pollutants as well as GHGs
- Relationship to Plan 2040
Federal level

- Pending Legislation
  - HR2454 American Clean Energy and Security Act
  - SB1733 Clean Energy Jobs & American Power Act
  - Kerry-Lieberman-Graham Bipartisan bill

- Regulation
  - EPA’s Endangerment Finding
  - EPA Mandatory GHG Reporting Rule
  - Partnership for Sustainable Communities
Reductions must come from all sectors

**Georgia CO₂ emissions, 2007**
- Electric Power: 49%
- Transportation: 36%
- Residential: 4%
- Commercial: 2%
- Industrial: 9%

**U.S. CO₂ emissions, 2007**
- Electric Power: 40%
- Transportation: 34%
- Residential: 6%
- Commercial: 4%
- Industrial: 16%

Transportation Factors

1. Increasing VMT

VMT & population change in metro Atlanta

GDOT, ARC
2. Fleet Efficiency

In 1990:
- Light Duty Trucks: 25%
- Passenger Vehicles: 69%
- Other: 6%

In 2007:
- Light Duty Trucks: 40%
- Passenger Vehicles: 53%
- Other: 7%

Source: Bureau of Transportation Statistics
3. On-Road Freight Traffic

- 84% of region freight movement
- 55% increase in VMT between 2005 and 2030
- Heavy-duty diesel engines are a primary source of CO$_2$ emissions
Transportation Factors

4. Congestion

- Low travel speeds and idling
- 1.35 TTI in 2007 ➔ 1.64 by 2030.

Source: Envision6

ARC, Envision6
Transportation Variables to Consider

- **Vehicles**
  - Improve overall fuel economy through technology

- **Fuel**
  - Lower carbon content or burn less

- **VMT**
  - Drive less

- **Operations**
  - Driver behavior and maintenance

Source: Center for Clean Air Policy
Fuel Economy Improvements

Draft CO$_2$ Emissions

CAFE Standards Alone Are Not Enough

[Graph showing CO$_2$ emissions trends from 1990 to 2030 with different scenarios including Future Local Plans (Trend), Envision6, Trend + EISA, and Envision6 + EISA.]
Draft CO$_2$ Emissions

Density Further Decreases Emissions
Draft CO$_2$ Emissions

Transit + TODs Mitigate Emissions Growth

- 65% above 1990
- 58% above 1990
Draft CO$_2$ Emissions

Transportation Alone Won't Get Us There

Future Local Plans (Trend)
Envision6

Increase in CO$_2$ Emissions

180%
160%
140%
120%
100%
80%
60%
40%
20%
0%

1990 2000 2010 2020 2030

Trend + EISA
Envision6 + EISA
Density Land Use + EISA
TPB Concept 3 + Transit Focused Land Use + EISA
C3 + TFLU + 2009 CAFE
Future Emissions Per Capita Decrease
ARC Policies

Envision6 Goals

- “Protect and improve environment and quality of life”
- “Support economic growth and development”
- “Sustainable and context sensitive development in urban centers and corridors with access to all modes of travel”
- “Traditional neighborhood development for all incomes with access to transportation options, jobs, services, and greenspace”
ARC Policies

Livable Centers Initiative

![Bar chart showing comparison between Existing Land Use and LCI for different locations: Cumberland, North Point, McFarland, Hwy 78, Bells Ferry, Hapeville, Tucker, Fayetteville, Griffin, Brookhaven. The chart indicates variations in the amounts of lbs/capita/yr.]
ARC Programs

- RideSmart
- Livable Centers Initiative
- Green Communities
- Envision6
- Fifty Forward
State Climate Action Plans

[Map showing states with green indicating completed plans and one state highlighted in orange]

Pew Center, 10 Nov 2009
## Peer regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Action</th>
<th>Driven by</th>
</tr>
</thead>
<tbody>
<tr>
<td>California MPOs</td>
<td>Analyze the GHG impacts of their long-range transportation plans</td>
<td>State law</td>
</tr>
<tr>
<td>MWCOG (Washington DC)</td>
<td>Set short-, mid-, and long-term reduction goals</td>
<td>COG Board of Directors</td>
</tr>
<tr>
<td>PSRC (Seattle)</td>
<td>Policies and goals outlined in Vision2040 RTP</td>
<td>State law RTP</td>
</tr>
<tr>
<td>H-GAC (Houston)</td>
<td>Discussion of integrating GHG Emissions/Strategies into the next RTP</td>
<td>None</td>
</tr>
<tr>
<td>DVRPC (Philadelphia)</td>
<td>Set regional goal. Developed GHG inventory.</td>
<td>RTP</td>
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</tbody>
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Plan 2040 Policy Recommendations for Discussion

- Promote sustainable development through integrated land use and transportation strategies
- Encourage alternative modes of transportation
- Support the use of cleaner and more fuel-efficient cars
- Work with stakeholders to set meaningful and realistic reduction targets
- Consider adaptation strategies
Questions?

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