EPA’s Travel Efficiency Assessment Method (TEAM): Development and Case Studies

Presented by:

United States Environmental Projection Agency
Office of Transportation and Air Quality

Thursday October 20, 2016
2:00 PM - 3:00 PM EST
Housekeeping

• Please use the **Q & A pod** within Adobe Connect to send questions. We will try to respond to as many as possible throughout the webinar.

• Please direct any technical issues to: [berry.laura@epa.gov](mailto:berry.laura@epa.gov)

**NOTE:** Audio should be coming through your computer’s speakers. Please ensure that your computer’s volume is properly adjusted.
Agenda

• Introduction
• Issue and Background
• Atlanta Regional Commission - David D'Onofrio
• East West Gateway - Lubna Shoaib
• MetroPlan Orlando - Gary Huttmann
• Next round of TEAM Case Studies
• Questions
U.S. Greenhouse Gas Emissions by Sector

U.S. Transportation GHG Emission Sources

- Light Duty Vehicles: 60%
- Medium Duty Vehicles: 23%
- Aircraft: 8%
- Ships and Boats: 2%
- Rail: 2%
- Other: 4%

Atmospheric concentrations of CO$_2$ need to be stabilized at or below 450 ppm

- 80% reduction target are needed to limit 2°C warming

Travel Efficiency (TE) Strategies

Strategies to reduce emissions by affecting travel activity – examples:

• Travel demand management
  • Telecommuting
  • Transit Subsidies
  • Carpool and Vanpool Programs

• Changes to public transit
  • Reduced Fares
  • Increased Frequency, Range

• Travel pricing
  • Road Pricing, Parking Pricing

• Changes to land use
  • TOD, Mixed Use,
    Jobs/Housing Balance
The Travel Efficiency Assessment Method

• TEAM is a methodology to assess multi-pollutant emission reductions from TE strategies at the local, state and national level

• Modification of traditional 4-step model
The Travel Efficiency Assessment Method

• TEAM approach demonstrations

2011
National scale assessment (All 541 MSAs)

2012

2013

2014
1st series of case studies:
• Tucson
• Kansas City
• Boston

2015

2016
2nd series of case studies:
• St. Louis
• Atlanta
• Orlando
David D'Onofrio
Principal Planner
Air Quality & Climate Change Program
Atlanta Regional Commission
Past Climate Change Work at ARC

- Emission Inventory
- Scenario Planning
- Project Evaluation
- Community Design
Past Climate Change Work at ARC

- 80% below 2005 per capita level

Year:
- 2017
- 2024
- 2030
- 2040

Total Transportation Network CO2e Emissions (tons/year):
- 2017: 6.2
- 2024: 5.3
- 2030: 4.6
- 2040: 4.1

Per Capita CO2e Emissions (tons/person/year):
- 2017: 0.35
- 2024: 0.34
- 2030: 0.32
- 2040: 0.32

Legend:
- Total Network CO2e Emissions
- Per Capita CO2e Emissions
Results

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Applied to</th>
<th>Total 2040 Reductions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Expand telework and guaranteed ride home</td>
<td>Employees in 5 county core area of 20+ counties</td>
<td>• 12 million VMT/day</td>
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<tr>
<td></td>
<td></td>
<td>• 2.8 million kg/day GHG</td>
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<td>• 124 kg/day PM2.5</td>
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<td></td>
<td>• 535 kg/day NOx</td>
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<tr>
<td></td>
<td></td>
<td>• 414 kg/day VOC</td>
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<tr>
<td>• Improve transit access times</td>
<td>5 county area</td>
<td></td>
</tr>
<tr>
<td>• Parking pricing</td>
<td>5 county area</td>
<td></td>
</tr>
<tr>
<td>• Increase density and mixed use land use</td>
<td>5 county area</td>
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</table>
Bi State MPO

Eight counties

2.8 Million population

4,500 square miles

Geographical Location

Freight
• Region’s interest in addressing air quality issues: Long Range Plan and OneSTL

• One of 10 guiding principles in LRP: linking transportation planning to environmental sustainability

• Regional plan for sustainable development OneSTL, with goals and strategies for the region to build a more sustainable future

• City of St. Louis Mayor signed the Compact of Mayors

• Minimal level of familiarity with sketch planning tools for emissions
Employment Projections—Access to Jobs

Universities and millennials

Scenario 1 – Regional Transit Oriented Development Initiative
Increase transit oriented development around 7 existing LRT station --- sustainable development

Scenario 2 - Regional Transit Oriented Development Initiative and Workforce Housing Balance Initiative
Balance housing and employment density --- affordable housing

Scenario 3 - Regional Transit Oriented Development Initiative and Workforce Housing Balance Initiative with Bicycle/Pedestrian Infrastructure
Complete bicycle and pedestrian network --- access to employment, mode choices, transit dependent population

Scenario 4 - Regional Transit Oriented Development Initiative and Workforce Housing Balance Initiative with Bike/Ped Infrastructure and Transit Expansion
Transit expansion --- access to employment, mode choices, transit dependent population
### Results

<table>
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<th>Scenario</th>
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</tr>
</thead>
<tbody>
<tr>
<td>• TOD near existing light rail stations</td>
<td>3 county core area</td>
<td>• 1.9 million VMT/day</td>
</tr>
<tr>
<td>• Increase residential density and mixed</td>
<td>5 county area</td>
<td>• 440,000 kg/day GHG</td>
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<tr>
<td>development</td>
<td></td>
<td>• 16 kg/day PM2.5</td>
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<tr>
<td>• Complete bicycle and pedestrian network</td>
<td>5 county area</td>
<td>• 103 kg/day NOx</td>
</tr>
<tr>
<td>• Complete light rail system</td>
<td>5 county area</td>
<td>• 80 kg/day VOC</td>
</tr>
</tbody>
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Gary Huttmann, AICP
Deputy Executive Director
Metroplan Orlando
Two million people... and by 2040, ONE MILLION MORE
66.1 million visitors in 2015

Source: Visit Orlando
Cost of Congestion

$1,044 per commuter

46 hours stuck in traffic

Source: Texas Transportation Institute’s 2015 Urban Mobility Scorecard
Transit Focus
## Results

<table>
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<th>Total 2040 Reductions</th>
</tr>
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<tbody>
<tr>
<td>• Expand employer programs including transit pass</td>
<td>Sub-pop. of 3 county area</td>
<td>• 4.6 million VMT/day</td>
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<tr>
<td>• Improve transit access and travel times</td>
<td>Sub-pop. of 3 county area</td>
<td>• 1.1 million kg/day GHG</td>
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<td>• VMT pricing for entire region</td>
<td>Sub-pop. of 3 county area</td>
<td>• 39 kg/day PM2.5</td>
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<td>• Unlimited transit pass for with tuition and university employment</td>
<td>Sub-pop. of 3 county area</td>
<td>• 201 kg/day NOx</td>
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<td>• 117 kg/day VOC</td>
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TEAM Next Steps

2nd series of case studies:
• St. Louis
• Atlanta
• Orlando

Next series of case studies featuring: Your community

We will soon be soliciting letters of interest for our next round of case studies and we would invite all interested parties to apply.
2017 Case Studies

• Opening eligibility to smaller sized areas
• Offering support for
  • Assessing emission reductions under alternative travel efficiency scenarios (i.e., as in previous case studies), or
  • Greenhouse gas planning activities, e.g., developing a GHG inventory of the transportation sector
  • Have other ideas that would foster GHG planning/emission reductions? Let us know
For more information on the TEAM approach, TEAM case studies, and other useful documents, please visit:

Questions?