Measuring Transit Sustainability

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Outline

> Genesis of the APTA Sustainability Metrics
> Environmental, Economic, and Social Metrics
> LACMTA Experience
> Questions/Discussion
Genesis of Sustainability Metrics

> APTA Sustainability Commitment
> Recognition Levels
> The Need For Standardization
> Sustainability Metrics Working Group
Sustainability Metrics Working Group

> Approach to the Selection of Metrics
> Recommended Practice: Quantifying and Reporting Transit Sustainability Metrics
> Mimics APTA Sustainability Commitment Requirements
> Focus on the Environment
Overview of Recommended Practice

- Water Usage
- Criteria Air Pollutant Emissions
- Greenhouse Gas Emissions
- GHG Displacement (savings)
- Energy Use
- Recycling and Waste
- Operating Expense
- Unlinked Passenger Trips per Capita
- Vehicle Miles Travelled per Capita
Economic Metrics of Sustainability

> Considerations
  > Measure of connectivity of the transportation network
  > Measure of the financial impact of transit nodes
  > “Transit –friendliness” public policy indicator
  > Measure of interagency cooperation
  > Costs of time
  > Customer lens focus
Foundation of an Economic Indicator

Issue: Transit does not operate for profit but its services have a positive impact overall. How do we financially justify transit’s existence?

Consider two levels of economic indicators:

- **Internal Economic Efficiency**: Look at what we spend our funds on (Operating Expense, Opportunity Costs)
- **External Economic Contribution**: Economic impact of service to surrounding communities (What services facilitate most sales tax revenues?)
Social Metrics/Indicators

- Internal and External
  - Internal
    - Team well-being and building
    - Team partnerships with community
    - Development of sustainable skill sets and lifestyle
  - External
    - Public Participation and Engagement
    - Health and Safety of Customers and Broader Community
    - Socially Responsible Procurement
LACMTA Sustainability Report

> Published since 2008
> Outlines the goals, accomplishments, challenges of LA Metro sustainability-related efforts
> Used as a guide to reduce operational costs and advance innovation while simultaneously providing environmental and social co-benefits under a plan-do-check-act mechanism
“Metro’s sustainability program has achieved significant reductions in resource usage, reduced the agency’s carbon footprint, and saved money: over $2 million per year with additional savings in the future.”

- Antonio R. Villaraigosa, Mayor of Los Angeles and LACMTA Board Member
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Unit</th>
<th>2010</th>
<th>2011</th>
<th>Progress</th>
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</thead>
<tbody>
<tr>
<td><strong>1 Water Use</strong></td>
<td>Gallons of Water</td>
<td>243,000,000</td>
<td>238,000,000</td>
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<tr>
<td><strong>2 Criteria Air Pollutant Emissions</strong></td>
<td>Tons of Criteria Pollutants</td>
<td>1,783</td>
<td>1,420</td>
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<tr>
<td><strong>3 Greenhouse Gas Emissions</strong></td>
<td>Metric Tons of CO(_2)e</td>
<td>476,000</td>
<td>457,000</td>
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<tr>
<td><strong>4 Greenhouse Gas Displacement</strong></td>
<td>Metric Tons of CO(_2)e</td>
<td>410,776</td>
<td>419,344</td>
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<tr>
<td><strong>5 Energy Use</strong></td>
<td>Gallons of Gas Equivalents</td>
<td>46,000,000</td>
<td>43,000,000</td>
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<tr>
<td>- Fuel Use</td>
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<tr>
<td>- Rail Propulsion Power</td>
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<tr>
<td>- Facility Electricity Use</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Kilowatt Hours</td>
<td></td>
<td>244,000,000</td>
<td>261,000,000</td>
<td>R+</td>
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<tr>
<td><strong>6 Waste and Recycling</strong></td>
<td>Tons of Solid Waste</td>
<td>11,000</td>
<td>8,600</td>
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<td>- Solid Waste and Recycling</td>
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<tr>
<td>- Used Oil Waste</td>
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<tr>
<td>- Hazardous Liquid Waste</td>
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<tr>
<td>- Non-Hazardous Liquid Waste</td>
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<tr>
<td>- Anti-Freeze Waste</td>
<td></td>
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</tr>
<tr>
<td>- Recycling Percentage</td>
<td></td>
<td>44</td>
<td>41</td>
<td>R+</td>
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<tr>
<td><strong>7 Operating Expenses</strong></td>
<td>Combined Dollars per Boarding</td>
<td>$8.08</td>
<td>$8.19</td>
<td>R</td>
</tr>
<tr>
<td><strong>8 Unlinked Passenger Trips per Capita</strong></td>
<td>Boardings</td>
<td>460,000,000</td>
<td>457,000,000</td>
<td>R</td>
</tr>
<tr>
<td><strong>9 Vehicles Miles Traveled per Capita</strong></td>
<td>Miles</td>
<td>N/A</td>
<td>7,869</td>
<td>NC</td>
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</tbody>
</table>

*According to the most recent Highway Performance Monitoring System report, Caltrans (2010).

I = Improved  R = Regressed  NC = No Change  + = Co Benefit Achieved (benefits achieved other than the benefit intended)
Summary

> Sustainability is the core mission of the transit industry
> Sustainability performance measurement is the basis of continual improvement
> APTA Recommended Practice provides framework and tool in decision-making
Questions/Discussion

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