Excerpts from

Sustainable Transportation Indicators

A Recommended Research Program for Developing Sustainable Transportation Indicators and Data

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"Several definitions of *sustainable transportation* have been proposed (CST, 2005; Litman, 2007). Of them, we recommend the definition selected by the European Council of Ministers of Transport (ECMT, 2004),[2] because it has a broad scope and recognizes specific transportation issues. According to this definition, a sustainable transport system:

> •Allows the basic access and development needs of individuals, companies and society to be met safely and in a manner consistent with human and ecosystem health, and promotes equity within and between successive generations.
>
> • Is affordable, operates fairly and efficiently, offers a choice of transport mode and supports a competitive economy, as well as balanced regional development
>
> • Limits emissions and waste within the planet's ability to absorb them, uses renewable resources at or below their rates of generation, and uses non-renewable resources at or below the rates of development of renewable substitutes

The following principles can help select sustainable transportation indicators:

1. Comprehensive and Balanced

2. Data Feasible to Collect

3. Understandable and Useful

4. Disaggregation

5. Reference Units

Reference units (also called *ratio indicators*) are measurement units normalized to facilitate comparisons, such as per-year, per-capita, per-mile, per-trip, per-vehicle-year and per dollar (Litman, 2003; GRI, 2006). The selection of reference units can affect how problems are defined and solutions prioritized. For example, measuring impacts such as emissions, crashes and costs per *vehicle-kilometer* ignores the effects of changes in vehicle travel. Measuring these impacts *per capita* accounts for the effects of changes in total vehicle travel.

6. Level of Analysis

7. Performance Targets

Performance targets are specific measurable objectives to be achieved by a stated deadline,

Selecting Sustainable Transport Indicators

See Document Table 3 on pp 8 and 9

Potential Sustainability Indicators

(I have listed the categories from Table 3 below, to list potential indicators we may want to use. Please see the table itself for ratings. Betsy Hand)

Travel Activity
- Vehicles
- Mobility
- Mode Split

Air Pollution Emissions
- Emissions
- Air pollution exposure
- Climate change
- Embodied emissions (from vehicle; facility construction

Noise Pollution
- Traffic Noise
- Aircraft Noise

Traffic risk
- Crash Casualties
- Crashes
- Crash costs

Economic Productivity

- Transport costs
  - Commute costs (time and Money)
  - Transport reliability
  - Infrastructure costs
  - Shipping costs
- Overall Accessibility
  - Mobility options
  - Land use accessibility
  - Mobility substitutes
- Land Use Impacts
  - Sprawl
  - Transport land consumption
  - Ecological and cultural degradation
- Equity
  - Affordability – Transport
  - Affordability – Housing
  - Basic Accessibility
- Transport Policy and Planning
  - Pricing efficiency
  - Strategic planning -= how decisions support goals
  - Planning efficiency
  - User satisfaction