Sustainability Performance Measurement for Transportation Agencies

By
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Transportation has many impacts
NCHRP 8-74

A Guidebook for Sustainability Performance Measurement for Transportation Agencies
Overview of Sustainability

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”
Sustainable Transportation?
Sustainable Transportation?
Principles of Sustainability

• **Sustainability entails meeting human needs for the present and future, while:**
  – preserving and restoring environmental and ecological systems,
  – fostering community health and vitality,
  – promoting economic development and prosperity, and;
  – ensuring equity between and among population groups and over generations.
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- HUMAN NEEDS
- COMMUNITY HEALTH AND VITALITY
- EQUITY
- EQUITY
- EQUITY
- EQUITY
- EQUITY
- EQUITY
- ECONOMIC DEVELOPMENT AND PROSPERITY
- ENVIRONMENTAL AND ECOLOGICAL SYSTEMS
Framework Development

- “what does a transportation agency need to be equipped with?”

- Framework consisting of:
  - Fundamental components
  - Overarching components
  - Auxiliary components
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Fundamental Framework Components

Understanding Sustainability

Development of Transportation Sustainability Goals

Development of Objectives

Implementation of Transportation Sustainability Performance Measures
  - Selection and Development of Performance Measures
  - Application of Performance Measures

Overarching Framework Components

FEEDBACK

Auxiliary Framework Components

FEEDBACK
Final Goal-Objective-Performance Measure Hierarchy
Performance Measurement Application

- Description
- Evaluation
- Accountability
- Decision Support
- Communication
## Spreadsheet-Based Compendium

### Goal 1. Provide a safe transportation system for users and the general public.

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<th>Focus Area 1: Planning</th>
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Sample Application

AGGREGATE INDEX VALUES-BY LINK

INDEX VALUE

0.00 0.20 0.40 0.60 0.80 1.00

1 2 3 4 Total Section

LINK NUMBER

US 281 – San Antonio

GOAL-WISE PERFORMANCE

INDEX VALUE

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Congestion Safety Economic Opportunity Transportation Assets Air Quality

Base Case Future Case
Conclusions

• What we are doing is not sustainable
• Key steps are to understand, quantify and apply sustainability
• NCHRP 8-74 provides flexible framework and guidebook with compendium
• Our role in a better future