



# ELASTIC – A methodological framework for identifying and selecting sustainable transport indicators

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## ABSTRACT

There is significant reliance on sustainable transport indicators for monitoring and reporting progress towards sustainable transport. The selection of appropriate sustainability indicators presents a number of challenges however, not least because of the vast number of potential indicators available. To help address these challenges, this paper presents the Evaluative and Logical Approach to Sustainable Transport Indicator Compilation (ELASTIC) – a framework for identifying and selecting a small subset of sustainable transport indicators. ELASTIC is demonstrated with an application to the English Regions, UK.

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## 1. Introduction

In the past two decades, sustainable transport has become the fundamental goal of transport planning and policy. At the highest level, sustainable transport can be viewed as the expression of sustainable development in the transport sector. As with the concept of sustainable development, there is still no single universally accepted definition of 'sustainable transport'.

Given this lack of a single definition, an increasingly popular approach is to frame the concept by proposing principles and desirable attributes of a sustainable transport system.

The PROSPECTS project (May et al 2001) for example, proposed five overarching objectives for sustainable transport:

- i. Liveable streets and neighbourhoods;
- ii. Protection of the environment;
- iii. Equity and social inclusion;
- iv. Health and safety;
- v. Support of a vibrant and efficient economy.

Review of the principles commonly suggested in literature and practice, show that they generally fit well into the PROSPECTS objectives. This fit is demonstrated in Table 1 below.

## 2. Indicators as sustainable transport assessment tools

As with any goal, decision-makers are increasingly being required to monitor and report the sustainability performance of transport systems. Sustainable transport is a broad and complex goal however, and any assessment tool must

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**Table 1**  
Fit of commonly proposed sustainable transport attributes with PROSPECTS objectives.

Source	PROSPECTS objectives and attributes of sustainable transport commonly proposed in literature and practice				
	Livable streets and neighbourhood	Protection of the environment	Equity and social inclusion	Health and safety	Support of a vibrant and efficient economy
Gilbert and Tanguay (2000)	Minimises noise	Limits waste within the planet's ability to absorb them Minimises consumption of non-renewable resources Reuses and recycles components Minimises use of land Maintains ecosystem health	Meets basic needs of individuals and society Consistent with human health Ensures that access is met equitably Operates efficiently Offers a choice of transport modes Provides access to key services	Ensures that mobility needs are met safely	Supports a vibrant economy
OECD (1997)	Integrates land use and transport planning	Prevents pollution Minimises land and resource use	Contributes to equity Facilitates education and public participation	Maximises health and safety	Supports economic well-being and viability
Shiftan et al (2003)		Reduces energy consumption Minimise air pollution from road transport Protects wildlife and natural habitats	Improves accessibility to employment, activities, etc. Maximises the availability of public transport to population	Decreases road transport accidents and their severity	
Lautso and Toivanen (1999) Black (2000)	Reduces congestion levels	Minimise consumption of natural resources Reduces pollution Minimises use of finite resources Reduces atmospheric pollution	Meets mobility needs equitably Provides opportunities	Integrates health and safety considerations Minimises accidents and fatalities	
Gudmundsson and Höjer (1996)	Safeguards natural resource base within critical loads, levels and usage patterns	Maintains the option value of a productive capital base for future generations Improves the quality of life for individuals Secures an equitable distribution of life quality			
Croydon Borough Council (2004)		Encourages use of environmentally friendly modes Reduces levels of noise and air pollution from transport	Reduces dependency on car travel Improves accessibility	Minimises danger and perception of risks	Promotes economic growth and planning

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