DISTILLATE

Improved Indicators for Sustainable Transport and Planning

Deliverable C1

Sustainable Transport Indicators: Selection and Use

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Executive Summary

The research brief for this deliverable was to:

- complement the scoping study review of indicators with a survey of local authorities' experience in measuring, predicting and using indicators;
- determine the extent to which current indicators correspond to stakeholders' understanding of sustainability and quality of life;
- specify the requirements for a core set of indicators at each stage in the decision-making process; and
- identify a core set of outcome indicators that best meets those requirements

The survey work identified a set of concerns surrounding the ways in which indicators are applied in practice. Eight aspects of indicators scored importance levels between fairly and very important and levels of satisfaction between not satisfied and fairly satisfied. These aspects of indicator selection would therefore appear to be of greatest concern to the practitioners. In order of importance, these were:

1. Their use in the development of well-founded targets
2. Cost effectiveness of monitoring
3. Ability to capture year-on-year improvements
4. Ease of measurement
5. Ease of understanding by politicians
6. Ease of understanding by the general public
7. Poor Consistency between transport and planning indicators
8. Poor Consistency between transport and sustainability indicators

Whilst the current set of indicators being used in local transport planning did not typically correspond well to the local authorities' perceptions of what sustainability is, some of what is measured is seen to count towards sustainability.

There are therefore several barriers to be overcome to the effective selection and measurement of indicators. One further area of concern that was investigated was the potential for indicator systems, through their role in driving performance changes, to lead to perverse incentives and outcomes. Smith (1995) identified eight unintended consequences of publishing public sector performance data which were; tunnel vision, sub-optimisation, measure fixation, myopia, complacency, misrepresentation, gaming[1] and ossification[2].

Where monitoring and strategy development are not well connected it appears that the performance management system will perform less well. If the indicators do not match well with the overall objectives then management action in pursuit of the indicators is likely to lead to distorted outcomes. Our review of the decision-making process determined that a common set of indicators, comprising a mixture of key outcome and intermediate outcomes, is desirable for application through the option generation and strategy formulation, testing and appraisal process as well as for use in monitoring the success of strategy delivery as shown in Figure A.

[1] Gaming refers to the act of deliberately distorting the performance measure to gain some strategic advantage
[2] Ossification refers to an n unwillingness to change a set of performance measures once they have been set up

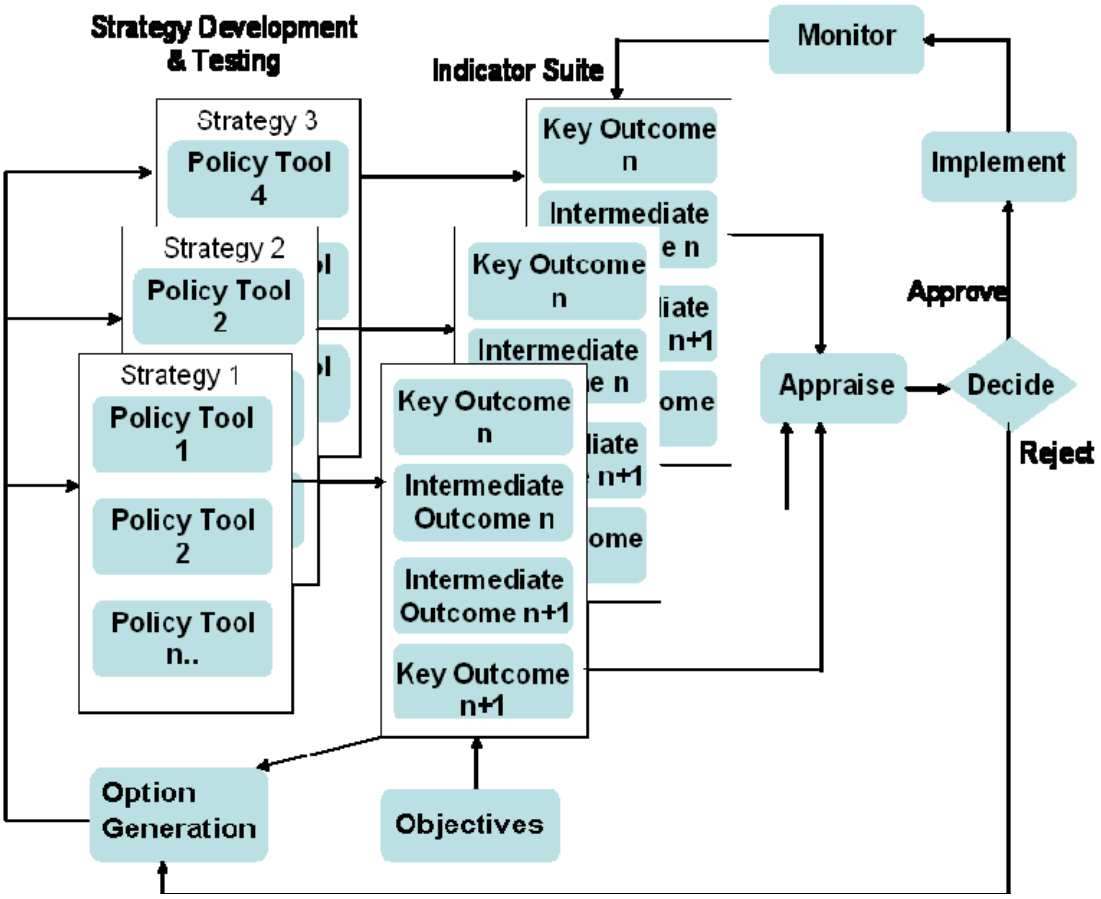

Figure A: Integrating the indicator set throughout the decision-making process

Monitoring of outputs and scheme specific monitoring are also important in determining the reasons for the successful or otherwise implementation of the strategy. Understanding what has been delivered and for how much is important for accountability purposes and for improving the efficiency of expenditure.

We have proposed a core set of outcome indicators (key and intermediate) for use across the strategic decision-making process. The suite of indicators is drawn from only those indicators already in use but provides a fuller coverage of sustainability issues than could be achieved by using just those mandatory indicators set out in the LTP2 guidance. We have also proposed a method for prioritising the selection of these indicators. Not all of them appropriate for each area nor would it be resource efficient or necessarily useful to monitor them all. The list of indicators can be found in Table A on pages 4 to 6.

It is not yet clear if or where, within any given local authority, some of the broader 'non-core' transport indicators are collected. The second round of LTP submissions may also bring forward a raft of locally specified indicators that may prove superior to those selected from the national lists considered in this report. Through case study investigations in 2006 we intend to investigate these issues further and update the outputs of this report accordingly.

Table A: Sustainability Outcome Indicators List - Key and Intermediate Outcomes

Environment				
ECMT area	Key outcome	Current Indicator	Intermediate Outcome	Current Indicator
Limits emissions within planet's ability to absorb them	CO2 emissions by end user/per capita	QoL N3	Change in area wide road traffic mileage	LTP2
	Local CO2 emissions	Audit commission Local quality of life indicators		
	Acidification		Annual average nitrogen dioxide concentration	QoL P2
			Annual sulphur dioxide emissions	QoL P1
Protects human health	Days when the pollution is moderate or high	QoL H10 LTP8	Emissions of particulate matter	QoL P2
	Number of days when air pollution is moderate or higher for PM10			
	For rural sites, number of days per year when air pollution is moderate or higher for ozone		Change in area wide road traffic mileage	LTP2
Uses of renewable resources	Energy Efficiency of transport industry/economy	QoL D15 QoL A2	Change in area wide road traffic mileage Mode share of journeys to school Congestion (vehicle delay) Public transport patronage	LTP2 LTP4 LTP7 BVPI102
Minimises noise generation	People rating the level of transport related noise as unacceptable	LTP APR Guidance	Noise levels	TAG UNIT 3.3.2 National QoL k8
			Change in area wide road traffic mileage	LTP2
Minimizing the impact on land/ water	Net loss to sites of importance (historical)	TAG UNIT 3.3.9	Buildings of grade 1 or grade II at risk of decay	QoL K5
			Loss or damage to historic landscapes and their settings	Sustainability Appraisal of regional spatial strategies
			Loss or damage to historic view lines and vistas	Sustainability Appraisal of regional spatial strategies
			Loss or damage to listed buildings and their settings	Sustainability Appraisal of regional spatial strategies
			Loss or damage to scheduled ancient monuments and their settings	Sustainability Appraisal of regional spatial strategies
	Net Loss to land	TAG UNIT 3.3.7	% of conservation area demolished or otherwise lost	Sustainability Appraisal of regional spatial strategies
			Construction and demolition waste going to landfill	Sustainability Appraisal of regional spatial strategies

	Net Loss to Habitat/ air pollution/ loss of land	TAG UNIT 3.3.10	Net change in natural/ semi natural habitats	Sustainability Appraisal of regional spatial strategies
			Changes in populations of selected characteristics species	
			Population of wild birds	National QoL H13
	Net loss to water	TAG UNIT 3.3.11	River lengths of good or fair chemical quality	National QoL H12
			Biodiversity in coastal/ marine areas* for coastal sites only	QoL R3
Economy				
ECMT area	Key outcome	Current Indicator	Intermediate Outcome	Current Indicator
Supports a competitive economy	• Total output of the economy (GDP and GDP per capita) • Regional GDP/GVA	QoLc H1	Congestion - average time lost per vehicle km	LTP7
Supports balanced regional growth			Work Fatalities and injury rates; working days lost through illness	QoLc C10
			Real changes in the cost of transport	QoLc T4
			Principal Road Condition	BVPI 196
Operates efficiently	Transport efficiency	Webtag Methods	Congestion - average time lost per vehicle km	LTP 7
			Bus Punctuality	LTP 5
			Pedestrian Delay (access of pedestrian crossing facilities)	BV 165
Social				
ECMT area	Key outcome	Current Indicator	Intermediate Outcome	Current Indicator
Meeting society's needs safely	Total killed and seriously injured casualties	BVPI99(x)	Principal Road Condition Non-principal Classified Road Condition Unclassified Road Condition Footway condition	BVPI 196 BVPI97a BVPI97b BVPI87
	Child killed and seriously injured casualties	BVPI99(y)		
	Total slight casualties	BVPI99(z)		
	Death rates from cancer, circulatory disease, accidents and suicides	QoLc F1	Cycling trips (annualised index)	LTP3
	Fear of crime	QoLc k9		
	% of residents surveyed who feel 'fairly safe' or 'very safe' after dark whilst outside in their local area	BVPI QB Q36		
	% of residents surveyed who feel 'fairly safe' or 'very safe' during the day whilst outside in their local area	Audit Commission voluntary quality of life indicators		

	People who think it is easy and safe to walk in their area	LTP APR		
Quality of life	% of residents who are satisfied with their neighbourhood as a place to live	QoL 18	Footway condition	BVP187
	Average satisfaction with the local community	European common Indicators		
End user satisfaction			% of highways that are either of a high or acceptable level of cleanliness	QoLc 34
			Bus Satisfaction	BVPI 104
			Rail passenger satisfaction	Methodology as bus
			% of users satisfied with local authority provided district transport services	BVPI Gen QB Q16
			Principal Road Condition Non-principal Classified Road Condition Unclassified Road Condition Footway condition	BVPI 196 BVPI97a BVPI97b BVPI87
Basic Access	Social participation/ sport/ learning	QoLc J4	% of rural households within 13 min walk of an hourly or better bus service	LTP APR
		Appraisal of regional spatial strategies	Working age people in workless households (access to employment)	QoLc C5
			% of residents defined as within a distance of 500m (15min walk) of key local services	QoLc 22/ BVPI QB Q6
Fairness	Accessibility	LTP requirement	% of a) households b) households without access to a car within 30 and 60 minutes of a hospital by public transport % of a) households b) households without access to a car within 15 and 30 minutes of a GP by public transport	LTP1 accessibility
			Changes in peak period traffic flows to urban centres	LTP6