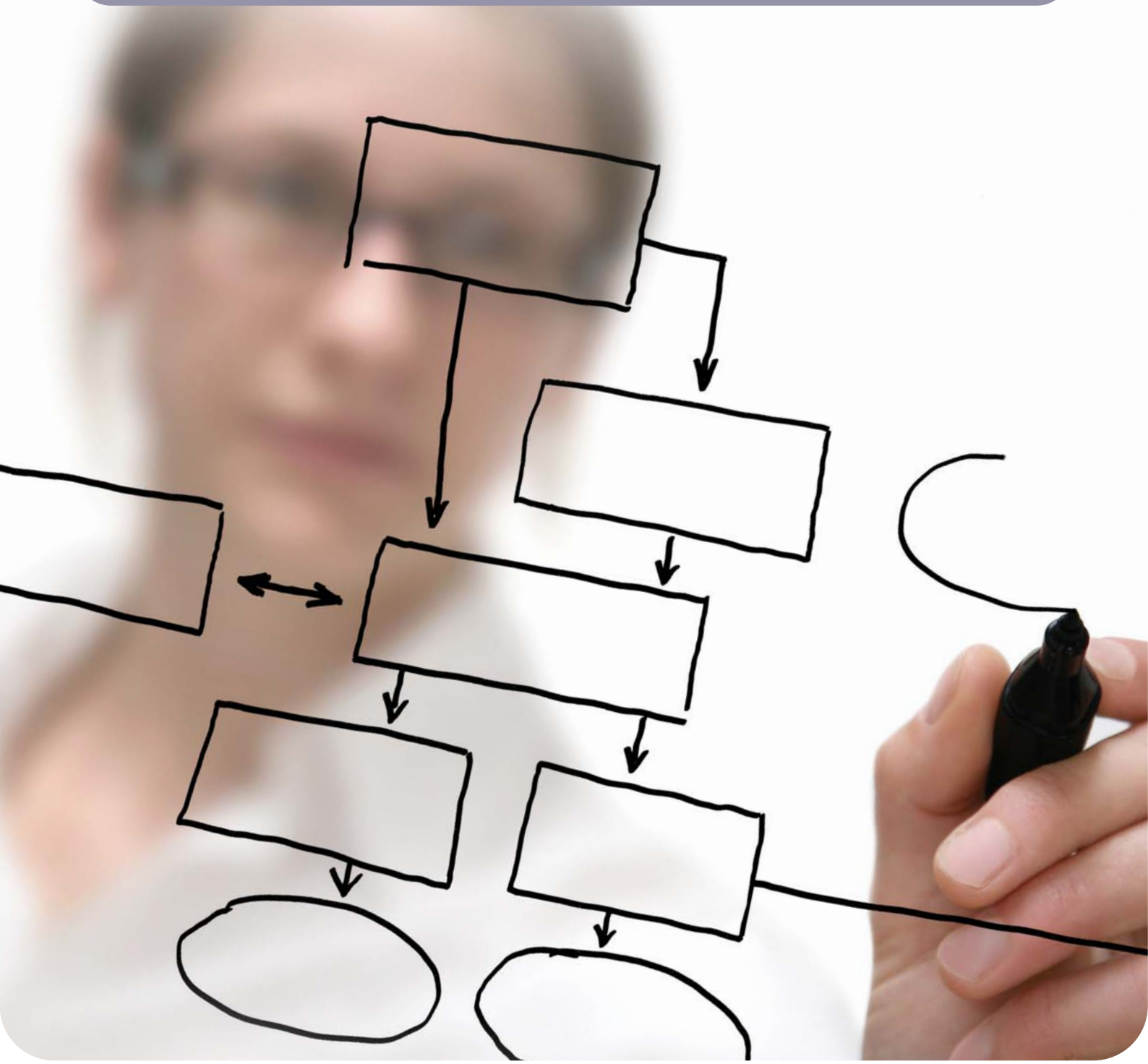
Designing a monitoring strategy to support sustainable transport goals



DistillATE

DESIGNING A MONITORING STRATEGY TO SUPPORT SUSTAINABLE TRANSPORT GOALS

Why read this guide?

Monitoring is a critical part of effective decision-support. Monitoring can also be used to communicate with a range of stakeholders within local government, across policy areas, with politicians and the general public.

Deciding what to monitor is a challenging task. Monitoring is resource constrained and is subject to many external influences each with its own set of monitoring requirements and time scales which are not necessarily joined up. This guide provides short but clear guidance on what should be monitored for what type of purpose, how information can be connected within a monitoring strategy and how to make best use of the limited budgets available.

What is in this guide?

The guide is split into four sections:

More Detail?

This report brings together the findings from two larger in-depth research reports:

→ Marsden, G., Kelly, C., Snell, C. and Forrester, J. (2005) Sustainable Transport Indicators: Selection and Use, Deliverable C1, DISTILLATE Project

→ Marsden, G., Kelly, C., Hull, A.D., Tricker, R., Lucas, K., Brookes, M., Snell, C. and Forrester, J. (2007) Improving Monitoring and Reporting for Local Authorities: Lessons from the Transport Sector, Deliverable C2, DISTILLATE Project

Both reports can be downloaded from the DISTILLATE website www.distillate.ac.uk

1. Understanding Indicators

1.1 What is an indicator?

Mitchell et al. (1995) state that indicators are needed to make sense of the 'complex systems' that we live in. In particular they identify four main reasons for using indicators to do this, which are:

- They allow the synthesis of masses of data
- They show the current position in relation to desirable states
- They demonstrate progress towards goals and objectives
- They communicate current status to stakeholders so that effective management decisions can be taken that lead towards the targets

Indicators are, therefore, a means of summarising the current position and the direction and rate of change of progress towards a particular goal or objective. As with any summary, the greater the degree of aggregation of the information the more the original picture can be lost. If indicators are to be useful to decision-makers they have to be capable of being simple enough to allow processing and trading off of performance between indicators that might be heading in different directions. At the same time, too many indicators may reduce the ability of an organisation to use the information effectively.

1.2 Different types of indicators

There are several different types of indicators that we can measure as part of a monitoring programme. The UK Audit Commission (2000) suggests the following broad categorisation:

- Cost – the money spent to acquire the resources (e.g. transport plan expenditure)
- Input - the resources employed to provide the service (e.g. amount of tarmac laid)
- Output – the service provided to the public (e.g. the number of bus miles run)
- Intermediate outcome – the changes to the transport system that can be observed (e.g. the number of bus users, the number of kilometres travelled)
- Outcome – the actual impact and the value of the service delivery – i.e. achievement of objectives (e.g. delay per person kilometre, fatalities)

In the development of a monitoring strategy for sustainable transport it is essential to be clear what our objectives are and to define the outcome indicators that can be used to approximate progress towards these objectives. This is discussed further in Section 2. Sometimes it is not possible to be clear about the relationship between our transport interventions and our objectives. For example, there is a strong belief and some case study evidence that transport interventions can increase employment levels in a region. However, monitoring employment levels as our outcome indicator would not necessarily be appropriate because they are subject to a range of other influences. Intermediate outcome indicators (such as reductions in congestion) are often used as proxies for the these objectives. Further advice on the selection of indicators is available in a companion guide (Advice on Selecting Indicators for Sustainable Transport).

Knowing how outcomes and intermediate outcomes are changing is important information. If such information is to be useful information in deciding what to do next (whichever direction progress is in) it is also critical to monitor outputs and inputs to understand why these changes happened. If we do not have a clear understanding of what has been put in place on the ground then we will not be certain whether it is the strategy or the implementation (or a combination of the two) that needs to be changed.

It is sometimes useful to combine the cost and input and output indicators with the outcomes to consider the effectiveness and efficiency of the interventions (Audit Commission, 2000). For example, it is possible to review the cost per life saved in a safety programme and compare this to the statistical value of a life to see whether the expenditure is justified. It is also useful for the purposes of improving the efficiency of purchasing and delivery to compare the cost/output (e.g. cost per tendered bus mile) and cost/input (cost per lighting column) between authorities to see if savings can be made. These applications are discussed further in Section 1.3.

1.3 Uses of Indicators

All indicators are used for communication. Like any communication, the type of information that needs to be communicated will be different for different target audiences. Equally, the degree of detail and frequency of reporting might vary significantly for different target audiences. Some common applications of indicators relating to transport are given below:

1.3.1 Performance Management

Performance management is becoming increasingly widespread in the public as well as the private sector. It has been defined as "a systematic approach to improving individual and team performance in order to achieve organisational goals" (Hendry et al, 1997).

So, where do indicators fit into this process? An example of a generic performance management framework is provided in Figure 1. This diagram shows a continuous cycle of determining the organisation's objectives, setting organisational targets, measuring performance, monitoring performance against those targets and then evaluating the process and starting the cycle again.

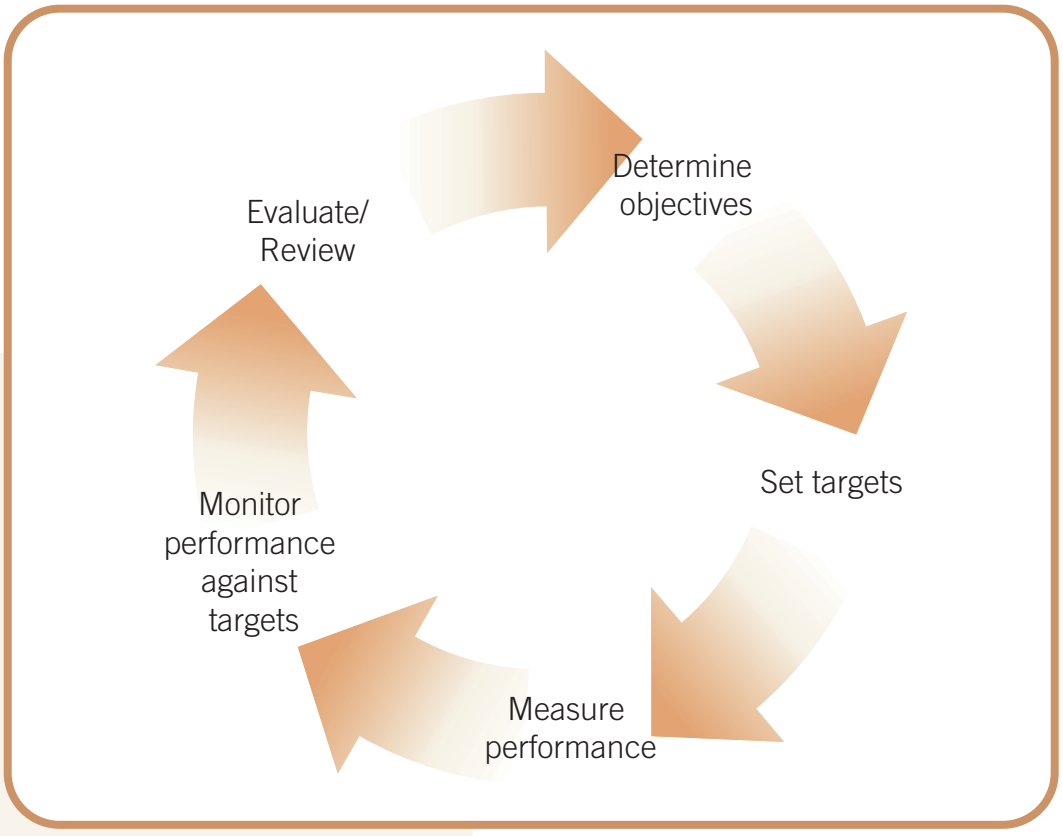


Figure 1: Performance Management Cycle
(Source: CIMA, 2000)

To conduct performance management, indicators are required as the measure of performance. Lebas (1995) suggests five main reasons why organisations want to measure performance, which are that we want to know:

- ➔ How did we get to where we are?
- ➔ Where are we now?
- ➔ Where do we want to go?
- ➔ How are we going to get there?
- ➔ How will we know when we have got there?

To answer these questions it is potentially necessary to track information on a range of indicators from those which assess whether we are implementing our strategy (e.g. constructing cycle lanes) to those which assess whether we are making a difference to our main objectives (e.g. reducing road casualties).

In summary, indicators provide the key pieces of management information which allow organisations to track the performance of their transport strategies. This is the main application around which this guide focuses.

1.3.2 Benchmarking

Performance management involves a process of continually studying the progress and processes of an organisation. Benchmarking is essentially a tool for comparing the performance of one authority, delivery sector or transport company with that of another area (BEST, 2000). As such, it is a tool which can be used to inform performance management. So, for example, in the UK comparisons on progress towards implementation of fully accessible pedestrian crossings in support of the Disability Discrimination Act 2006 might be made across authorities. Benchmarking does not place a value judgement on higher or lower performance as there may be important local contextual factors that explain differences. It should be used as a tool to try to explain why performance differs and to see whether, if the reasons are clear, they suggest approaches to improvements in the area where performance is currently worse. Benchmarking can be conducted on the full range of indicators but is often constrained by a lack of common data collection methodologies.

1.3.3 Communication with the public

Information can also perform a vital role in communication with the general public. For example, in the establishment of the Stockholm congestion charging scheme trial, an independent monitoring and reporting unit was established to communicate to the public whether the trial was successful in reducing traffic levels and a range of other impacts (Eliasson, 2007).

The type of information and the ways in which it is communicated to the general public may be very different to those required for reporting, for example, to central government. It would not, for example, be of great interest to the general public to know that the rate of growth of road traffic was 0.1% below the forecast rate or that delays across the network are constant (as the route that they experience might be getting worse). The problem of what to communicate is illustrated in Figure 2.

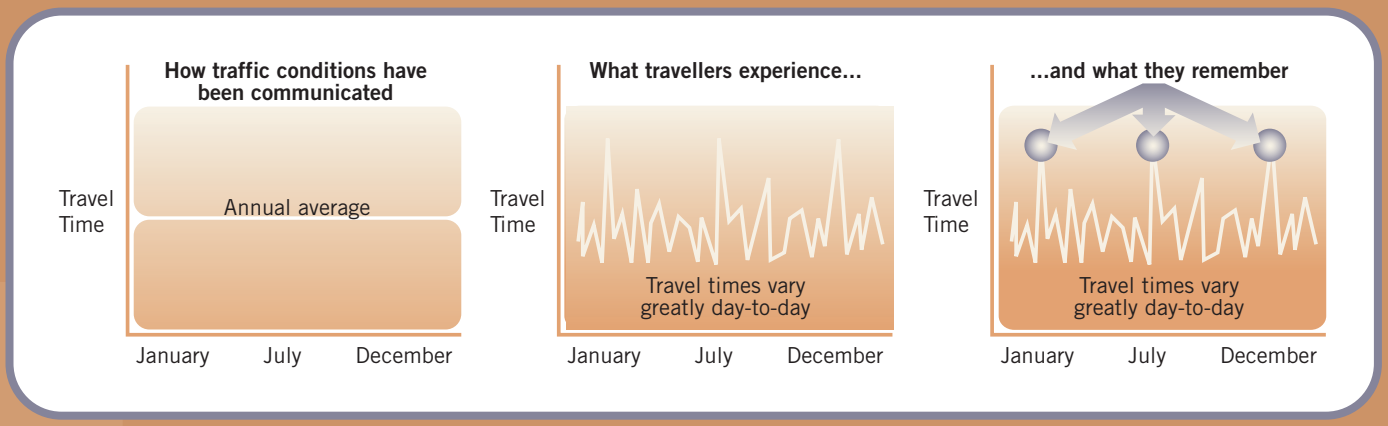


Figure 2: Communicating with the public
(Based on: FHWA, 2006)

Recent approaches to the travel time reliability issue suggest that reporting on reductions to the worst, say, 10% of journey times better reflects the public's concern. Such an approach has been adopted by the Highways Agency in the UK.

Our research has found that if monitoring is to be used to communicate with the public more effectively then greater effort has to be put into understanding what information the public finds important.

1.3.4 Communication with politicians

Political accountability has evolved from a process of checking that money is spent on those areas to which it has been committed, through a process of checking that the money has indeed bought the expected number of, for example, new lane miles or low-floor buses. More recently accountability has started to focus around whether or not the end objectives of policy (e.g. greenhouse gas emission level reductions) have been delivered (Marsden and Bonsall, 2006). This makes the selection of the right range of indicators to be measured and the setting of appropriate targets critical tasks. Further advice on these processes is available in a companion guide (Advice on Selecting Indicators for Sustainable Transport).

1.4 Summary

This section has reviewed the definition and classification of indicators and has examined the different uses to which they can be put. The key findings are that:

- Indicators provide summaries of data
- Indicators communicate to a range of stakeholders
- Indicators can be used for improving performance, communicating performance, learning from others and demonstrating accountability
- Five different categories of indicators exist and they have different roles.

Monitoring is a highly resource constrained activity. It is therefore imperative that there is a clear rationale for what is monitored and that maximum use is made of the indicators that are monitored. The remainder of this guide deals with the issue of how to assemble a monitoring strategy which makes best use of the different types of indicators available.

2. Turning indicators into an effective monitoring strategy

Monitoring strategies should be developed to inform decision-support. All too often however, monitoring and indicators are criticised for distorting decision-making processes (Hood, 2006). There is nothing inherently distorting about any indicator but there are many examples where the logic for measuring something disappears over time. Where this happens, the management action may become targeted around the indicator itself rather than the broader issue which the indicator was selected to represent.

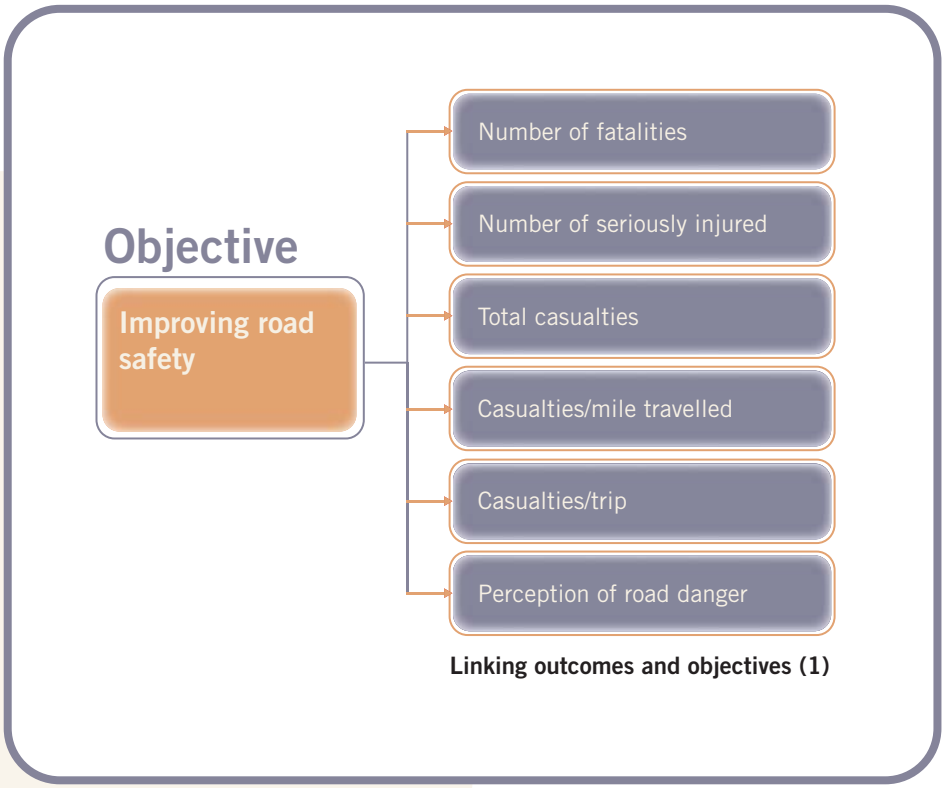
Our research suggests that many of the criticisms of indicators can be avoided if there is a clear strategy for monitoring. This requires stakeholders from transport and other sectors to discuss what the most important measures of progress are, who collects them and how this links to the strategies that are being deployed to make progress. A companion document (Monitoring across sectors and spatial levels for sustainable transport: A good practice guide) considers how best to engage with people from other sectors in developing a monitoring strategy and how better connections can be made between monitoring at different spatial scales. This section of the guide sets out a four step process for bringing together a range of different indicators as part of a monitoring strategy.

2.1 Step 1: Objectives and Outcomes

The development of strategies is largely conducted from a top-down perspective. In this, a series of policy objectives are adopted which set out the priorities for an area. The UK typically promotes an objectives-led approach (**www.webtag.org.uk**). Objectives include increasing productivity, tackling climate change, local environmental improvement, road safety improvement and reducing inequities (DfT, 2007). Whilst these objectives are well linked to notions of sustainability, a number of attempts have been made to develop further holistic sustainable transport objectives and these are reviewed at the Victoria Transport Policy Institute (**http://www.vtpi.org/tdm/tdm67.htm**). The monitoring strategy follows directly from the objectives set. If the objectives provide only partial coverage of sustainable transport it is likely that monitoring will likewise be partial in its reporting on important sustainability impacts.

Once an objective has been set it is necessary to identify some key outcome indicators which can be adopted. The two examples below illustrate how this might be done:

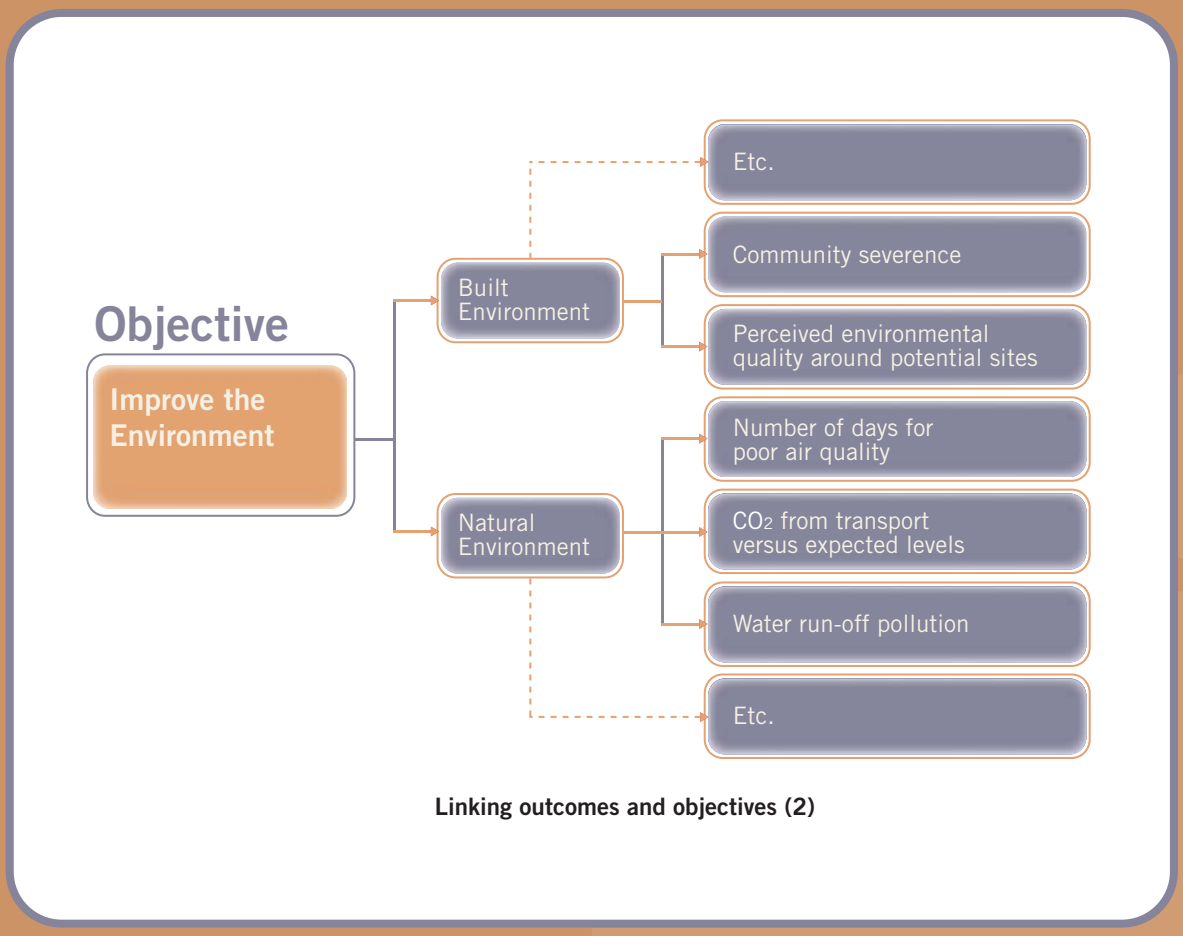
1. Improve road safety – key outcome indicators might include the number of fatalities, serious injuries and total casualties. It might be desirable to include a measure of exposure (such as casualties per distance travelled or casualties per trip made) or of perceived road danger. In the case of road safety the main casualty indicators are all derived from a common data source so multiple indicators may not prove costly.



Linking outcomes and objectives (1)

Figure 3

2. Improve the environment – it is necessary to break the environment down into its constituent parts (e.g. the built and natural environment). There are multiple environmental outcomes and priorities will need to be identified. For the built environment for example some historic cities might have particular local objectives for protection of the character of these areas. The ECMT has a sustainable transport objective to limit emissions within the planet's capacity to absorb them. This could be measured by the CO_2 emissions from transport (relative to the expected levels) and by the number of days of poor air quality for a city.



Linking outcomes and objectives (2)

Figure 4

2.2 Step 2 – Linking Outcomes and Intermediate Outcomes

Not all of the key outcomes identified are currently strongly attributable to transport interventions. For example, increasing participation in work might be an objective which could be captured by the outcome indicator "number of people employed". We would expect initiatives that improve the accessibility from areas with high unemployment to areas with job vacancies to reduce barriers to taking up a job. This is by no means a direct connection however, as many other issues influence the decision to take and stay in employment. In such circumstances it is often necessary to accept a proxy transport measure as the way in which the transport aspect of the intervention will be monitored, in this case it might be necessary to monitor the per cent of people in high unemployment areas within 30 minutes of a major employment site (see Figure 5).

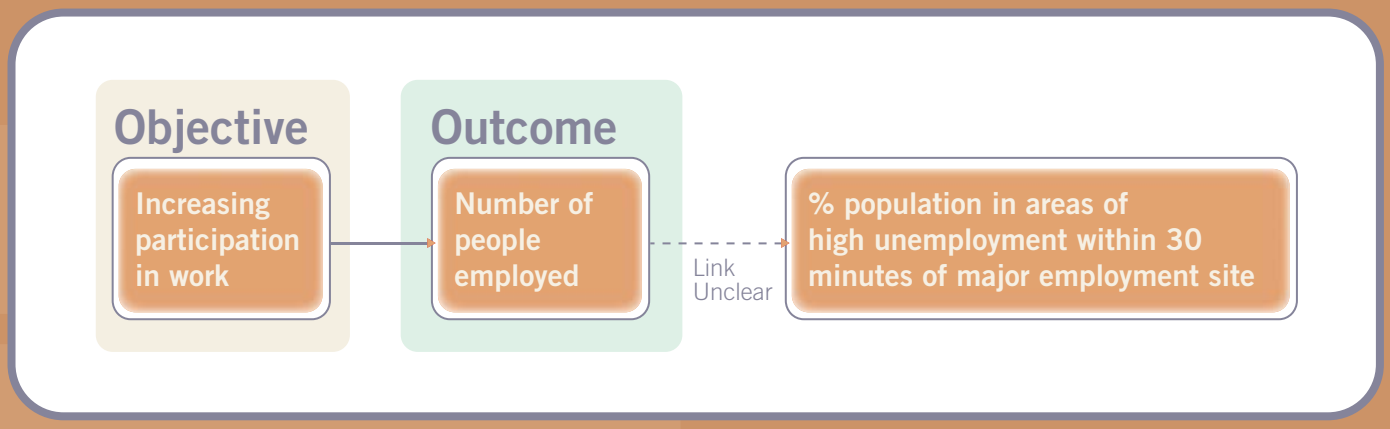


Figure 5

Further discussion about how to assess whether an indicator is robust can be found in a companion guide (Advice on Selecting Indicators for Sustainable Transport) whilst advice on monitoring across policy sectors can be found in a further guide (Monitoring across sectors and spatial levels for sustainable transport: A good practice guide).

Even where the key outcome is obvious and measurable (such as air quality) there is a need to identify the changes in the transport patterns that might be leading to this. For example, if we do not measure traffic flow levels then what can we infer about the impact of transport policies on the changes to air quality observed? There is therefore a need to work back from the key outcomes to intermediate outcomes.

Figure 6 sketches out the connections between key and intermediate outcomes. An intermediate outcome might contribute to several key outcomes (e.g. traffic levels impact on the delay per person km, casualties and casualty rates and CO_2 levels). There may be also several intermediate outcome indicators that connect to any one key outcome (e.g. traffic levels, mode share, speeds on the network and fleet technology mix may all influence CO_2 levels).

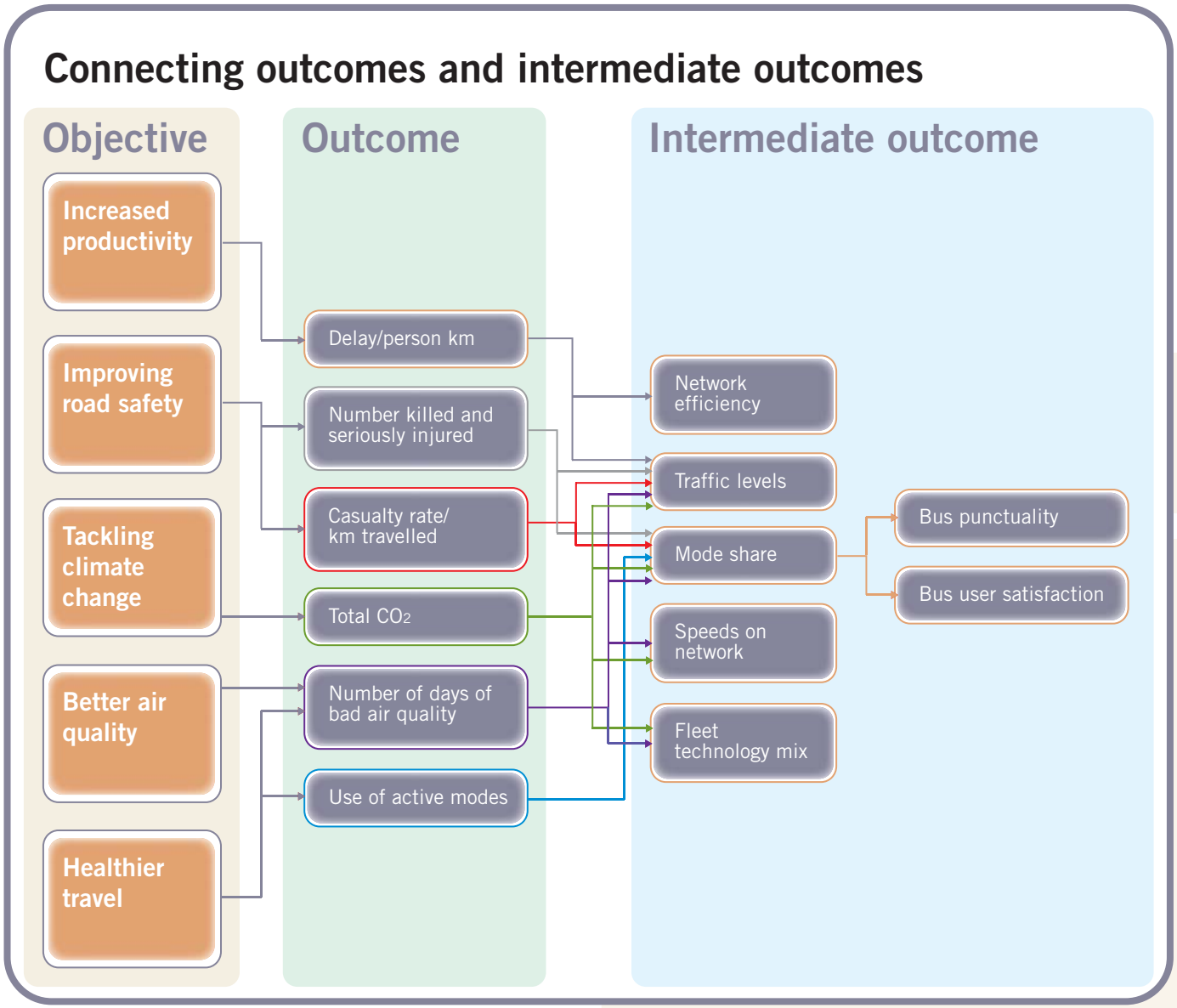


Figure 6

There is a range of possible objectives and, for each, a number of outcomes that could capture progress. In turn, there are many explanatory intermediate outcomes that could be measured. Such a mapping exercise can quickly snowball. It is however, important to keep all of the potential indicators together at this stage as there are a range of approaches to prioritisting what is actually measured which can be applied later. It is evident that some intermediate outcomes are critical to the monitoring framework (such as traffic levels and mode share). Others are more likely to vary in importance according to the local strategy (e.g. vehicle occupancy may be of great importance to an area promoting car sharing and introducing High Occupancy Vehicle lanes).

At this stage, there is a complete set of indicators that capture expected progress for the strategy. It should be possible to specify for each indicator an expected direction of change which constitutes progress of the strategy (e.g. reductions in CO_2 emissions, increases in public transport patronage).

It is also important to consider the degree of disaggregation that may be required. For example, road safety targets are often developed separately for children or deprived areas. Accessibility indicators may be more relevant for deprived wards (rather than as an average for the whole authority). Such decisions can add a layer of complexity and cost and it is important therefore to identify these up front before the prioritisation process is applied. Further advice on disaggregation is available in a companion guide (Advice on Selecting Indicators for Sustainable Transport).

2.3 Step 3: Connect the strategy elements to the intermediate outcomes

Performance management is put in place to help to assist in the assessment of whether an organisation is achieving its goals (Section 1.3). Underpinning any programme of change (such as a strategic transport plan) is a strategy which comprises a series of actions that will be taken (e.g. to change the number of parking spaces available or to implement a number of bus priority corridors).

This step of the process involves tying together the actions that will be taken to the intermediate outcomes or outcomes that they will affect (e.g. the introduction of bus priority corridors would be linked to mode shift). Figure 7 shows this process for a sub-set of measures relating to the outcome of reducing delay/person km.

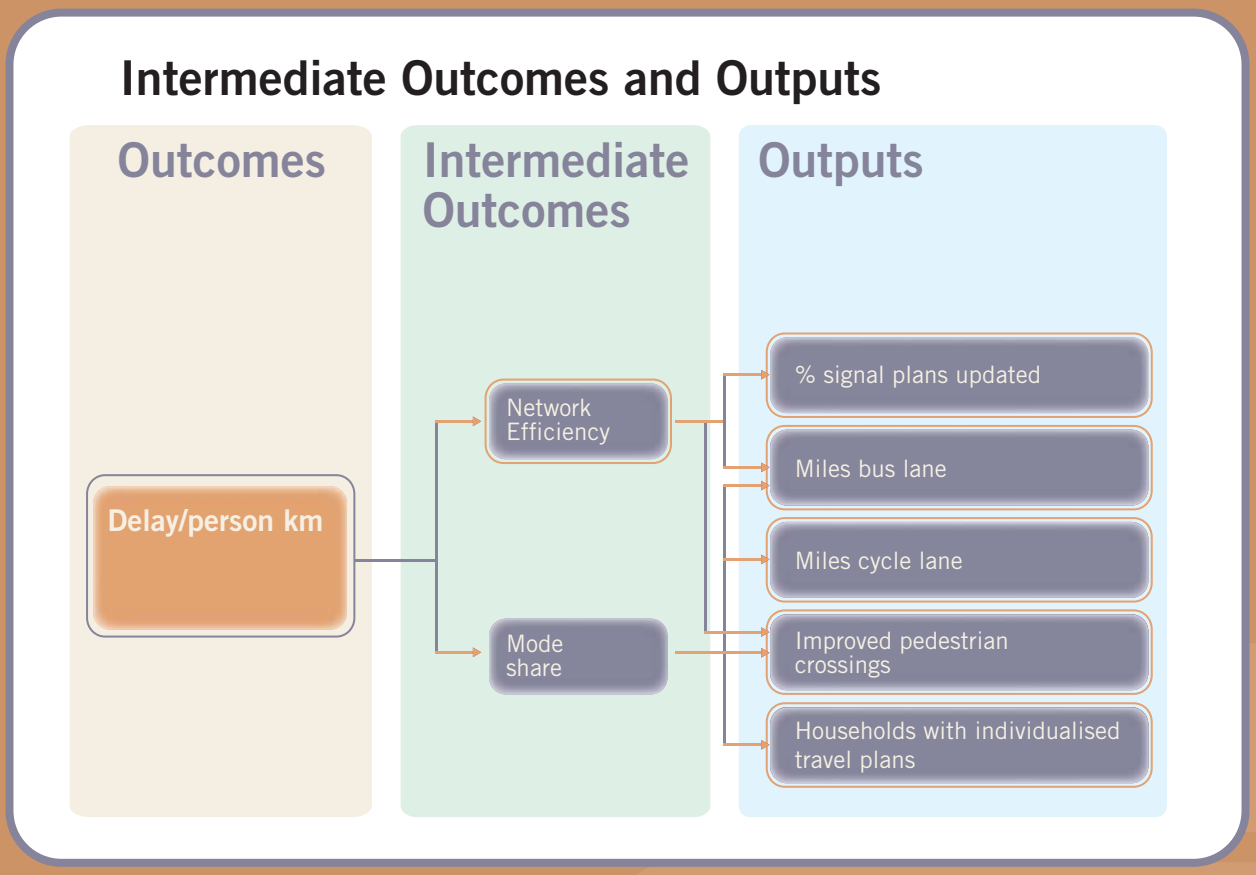


Figure 7

2.4 Step 4: Prioritising indicators

During our research the under-funding of monitoring in many areas was seen as a real deficiency in making transport strategies better for the future. Indeed, monitoring was described as "the art of the possible". Of course, monitoring has to compete with other transport and non-transport priorities for resources and it will not be possible to monitor everything. A method for prioritising what to measure is therefore provided below:

1. Identify what you are required to measure – in the UK monitoring requirements from central government are typically more stringent than in other countries. Even so, the number of indicators which have to be reported on has fallen.
2. Identify what you already measure – these are likely to (but not always) represent locally important indicators. There is great benefit in using indicators with a pre-existing time series although indicators should not be retained simply because they have always been measured. If they do not appear on the monitoring strategy map then are they really important?
3. Identify where the gaps are – compare the monitoring strategy map with your answers to parts 1 and 2. Where are the key gaps? It is important to have some coverage relating to all of the core objectives. Draw up a list of indicators that appear most useful to populate the key parts of your monitoring strategy.
4. Prioritise – From a management perspective it makes more sense to prioritise those indicators which perform multiple functions (e.g. traffic flows might relate to many objectives, average age of the car fleet to just the environment). Prioritisation also involves estimating the cost of monitoring and the likely deliverability of the plan. As with much of this work, it requires sound judgement from those most familiar with the area, context and monitoring capabilities.

This four stage process has been applied to a sub-set of the UK Department for Transport's proposed objectives from 2007 (DfT, 2007). Figure 6 shows a slice of the full set of objectives with a range of outcome, intermediate outcome and supporting output measures. For this exercise, we assume that the hypothetical authority has decided to pursue a strategy of individualised travel marketing which is focused around encouraging greater use of walk, cycle and public transport.

Creating an indicator map

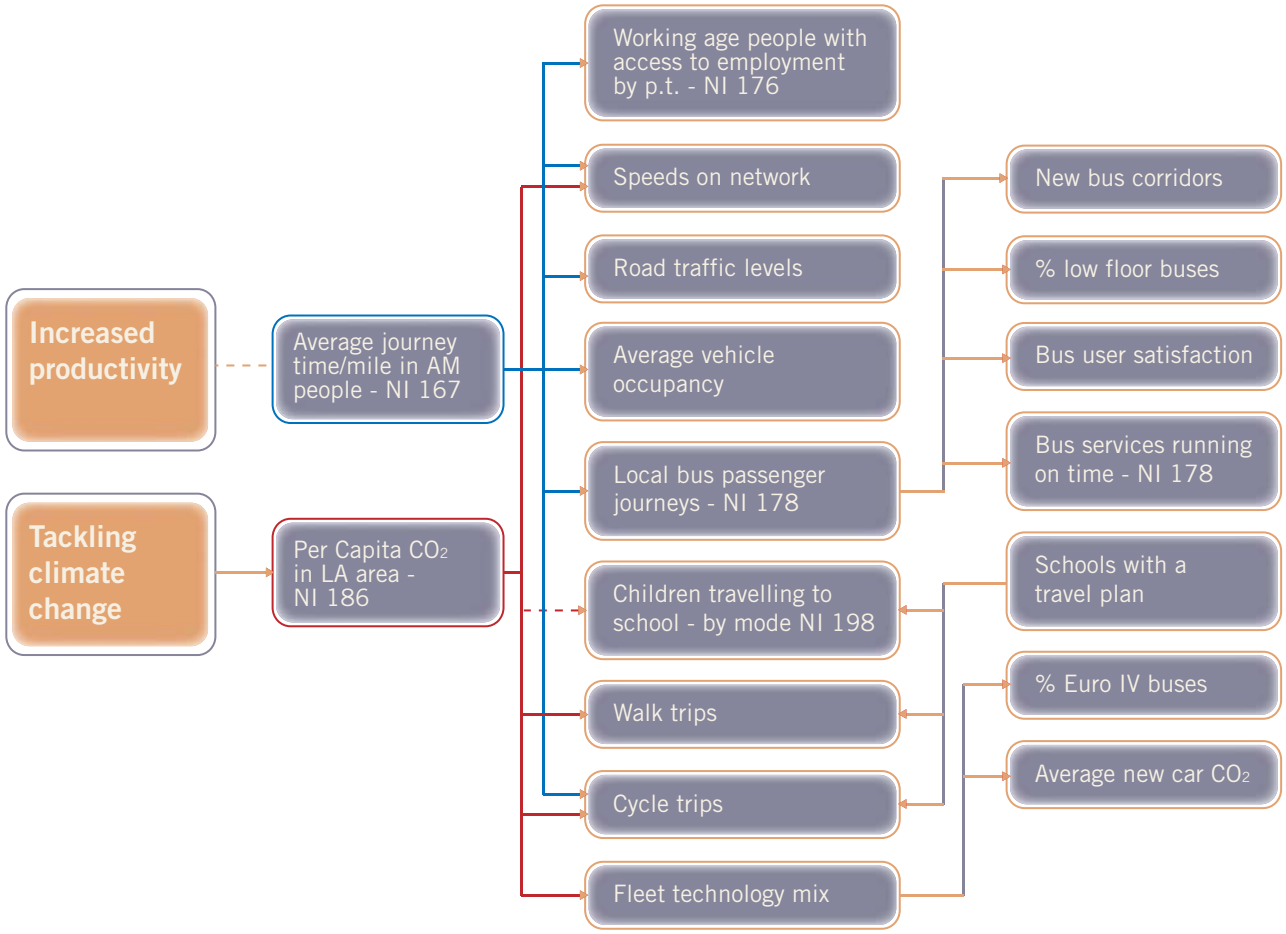


Figure 8

Figure 9a identifies those indicators which are mandated through the national New Performance Framework (Step 1).

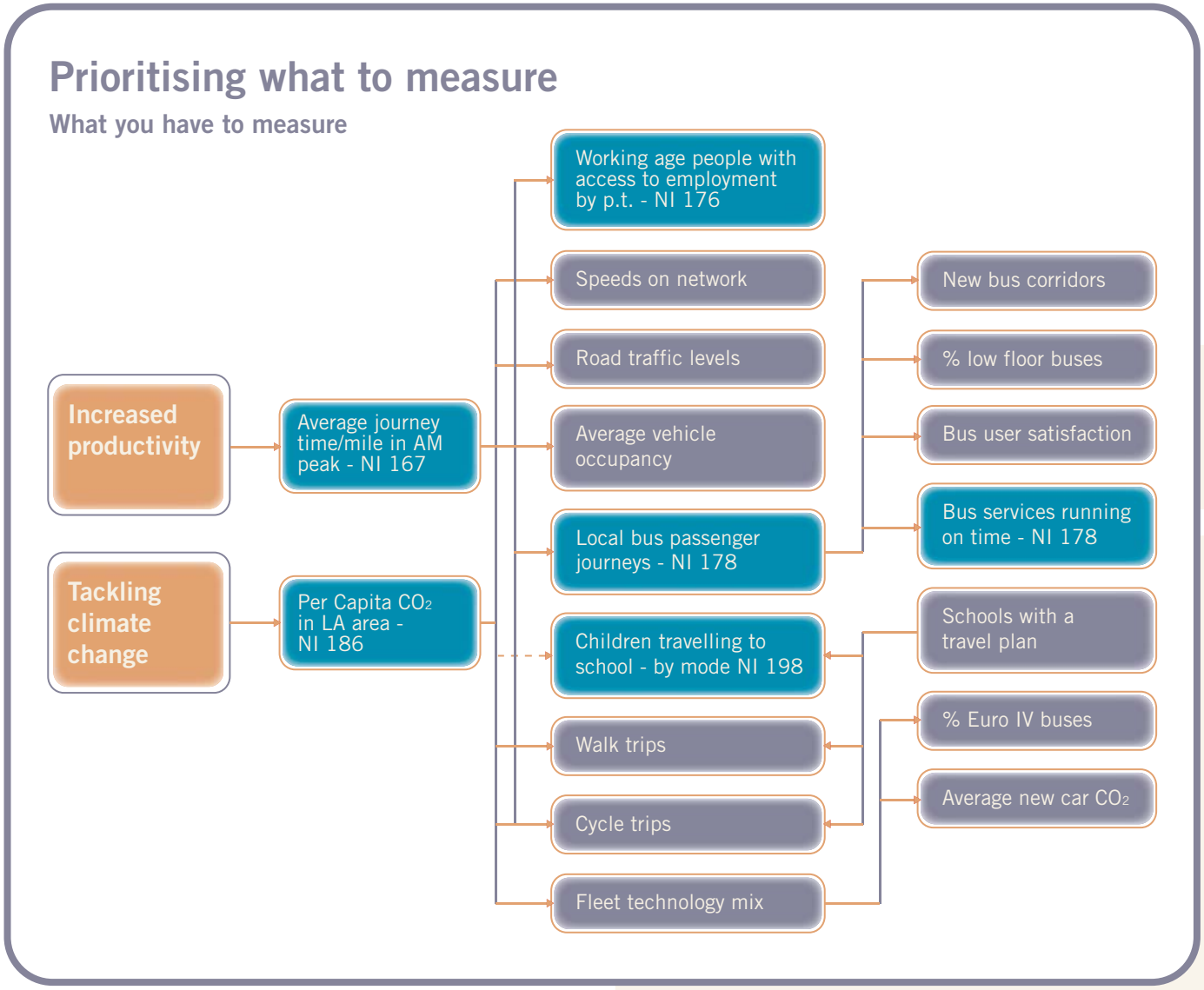


Figure 9a

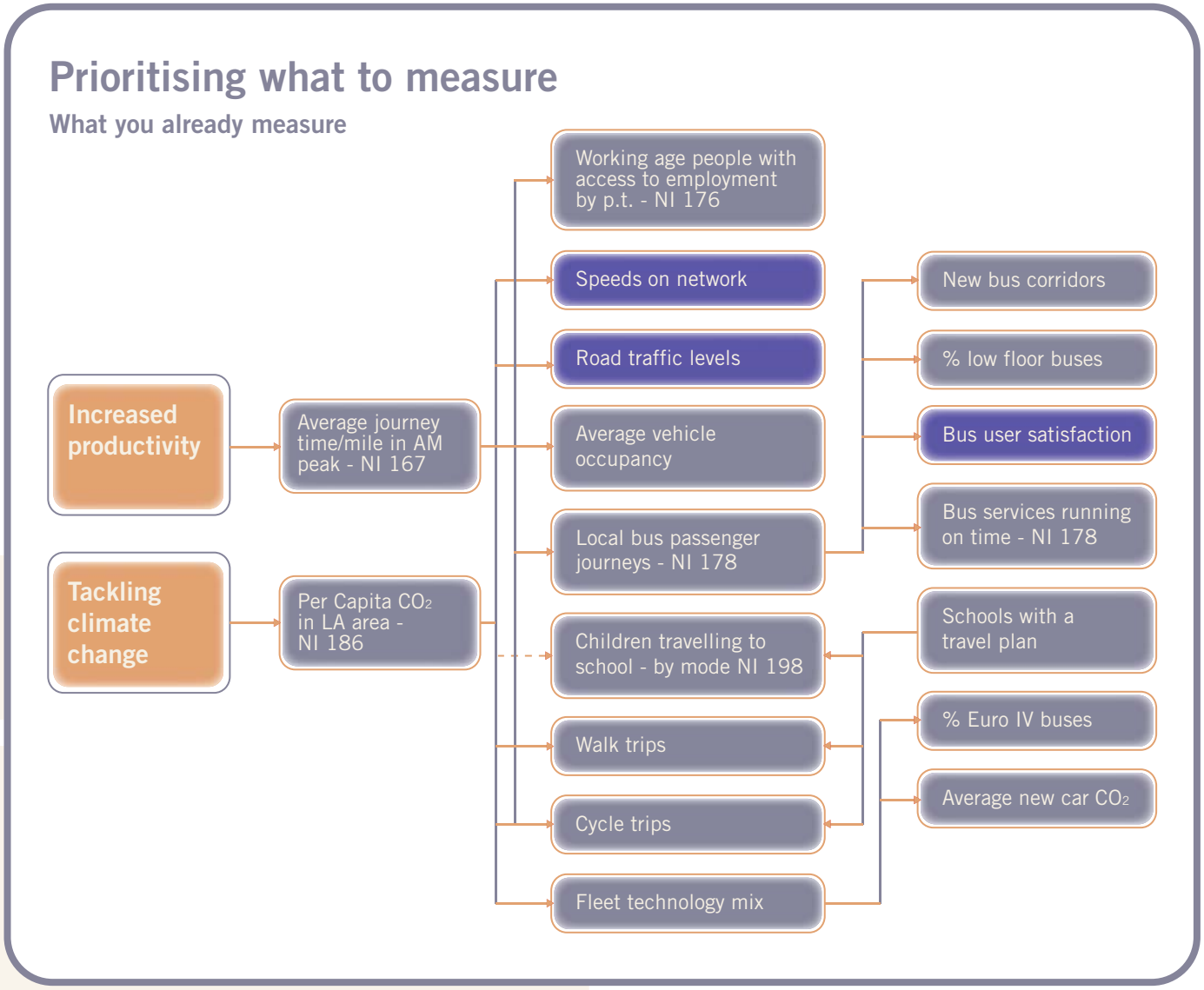


Figure 9b: Step 2

This exercise assumes that the local authority was already measuring speeds on the network, road traffic levels and bus user satisfaction (Step 2). These are highlighted in Figure 9b.

Prioritising what to measure

Identify gaps

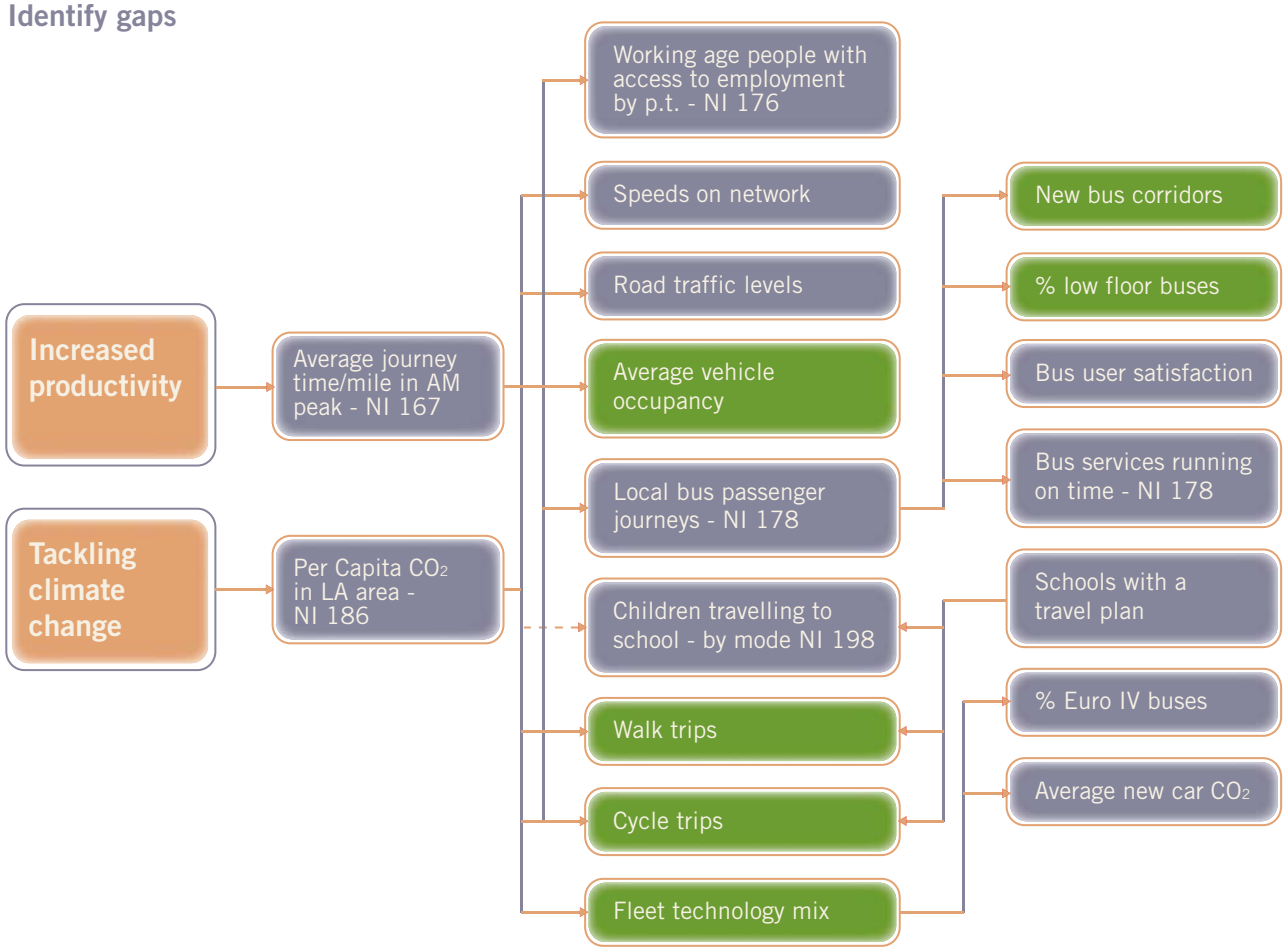


Figure 9c: Step 3

Potential gaps in the monitoring of strategy would depend on the nature of the strategy developed (Step 3). For our example, outputs related to the availability of new cycle facilities are not currently monitored (e.g. lane miles, secure cycle parking) and there is no information on parking pricing or availability which may be important. The former appear more important than the latter and should be included.

The following indicators are included in the initial map but are not mandated or currently collected and require prioritising (Step 4).

- → Walk trips
- → Cycle trips
- → Vehicle occupancy
- → Fleet technology
- → Per cent low floor buses
- → Number of new bus corridors
- → Schools with a travel plan
- → Per cent Euro IV buses
- → Average CO_2 of new car purchases in area

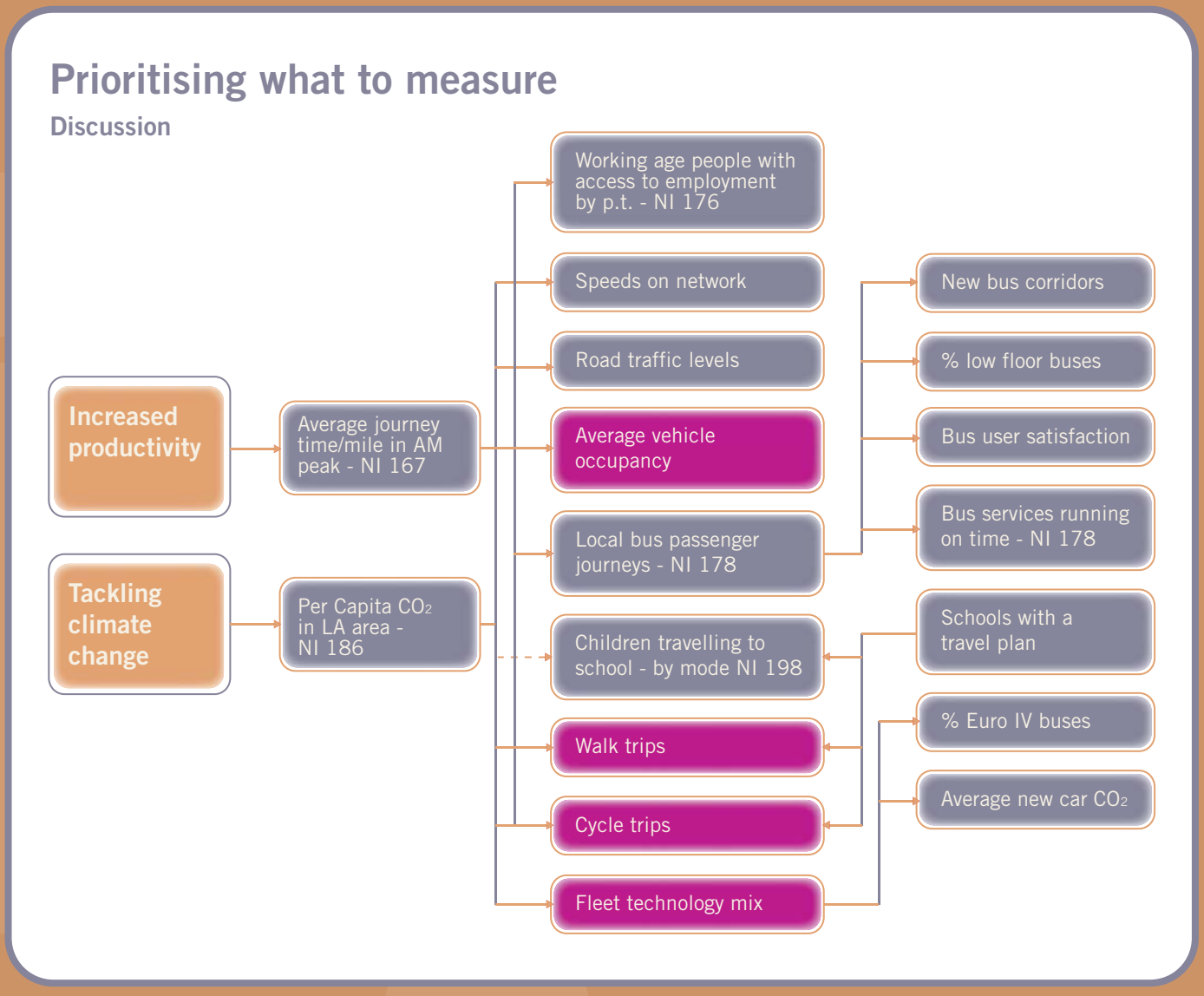


Figure 9d : Step 4

Monitoring of walk and cycle levels is central to the strategy and would be included. It is interesting to note that the nationally mandated school travel by mode indicator is really a sub-set of the data required by the authority to track trends in walk and cycle use.

If there is an emphasis on car share then vehicle occupancy would be important, otherwise it would not be essential. We assume this is not to be measured here. Without any strong local initiatives on vehicle fleet technology there seems to be little to be gained from measuring this rather than assuming that the national average applies and this would not be measured. It is not therefore necessary to monitor per cent Euro IV buses or the average CO_2 of new car purchases as these do not now connect to an intermediate outcome.

This leaves three output indicators to evaluate. Per cent of low-floor buses would be nice to know and is often provided by the bus operators at low cost to the authority. The number of new bus corridors costs little to measure and could strongly influence any step changes in bus patronage so would be a strong candidate for retention. The number of schools with a travel plan can be relatively easily monitored and could be maintained. Of course simple count indicators of this nature do not assess the quality of the implementation (e.g. whether the bus corridor has enough priority or whether the travel plans are active).

Figure 9e shows the monitoring map completed with the prioritised indicators with those indicators to be measured in dark grey.

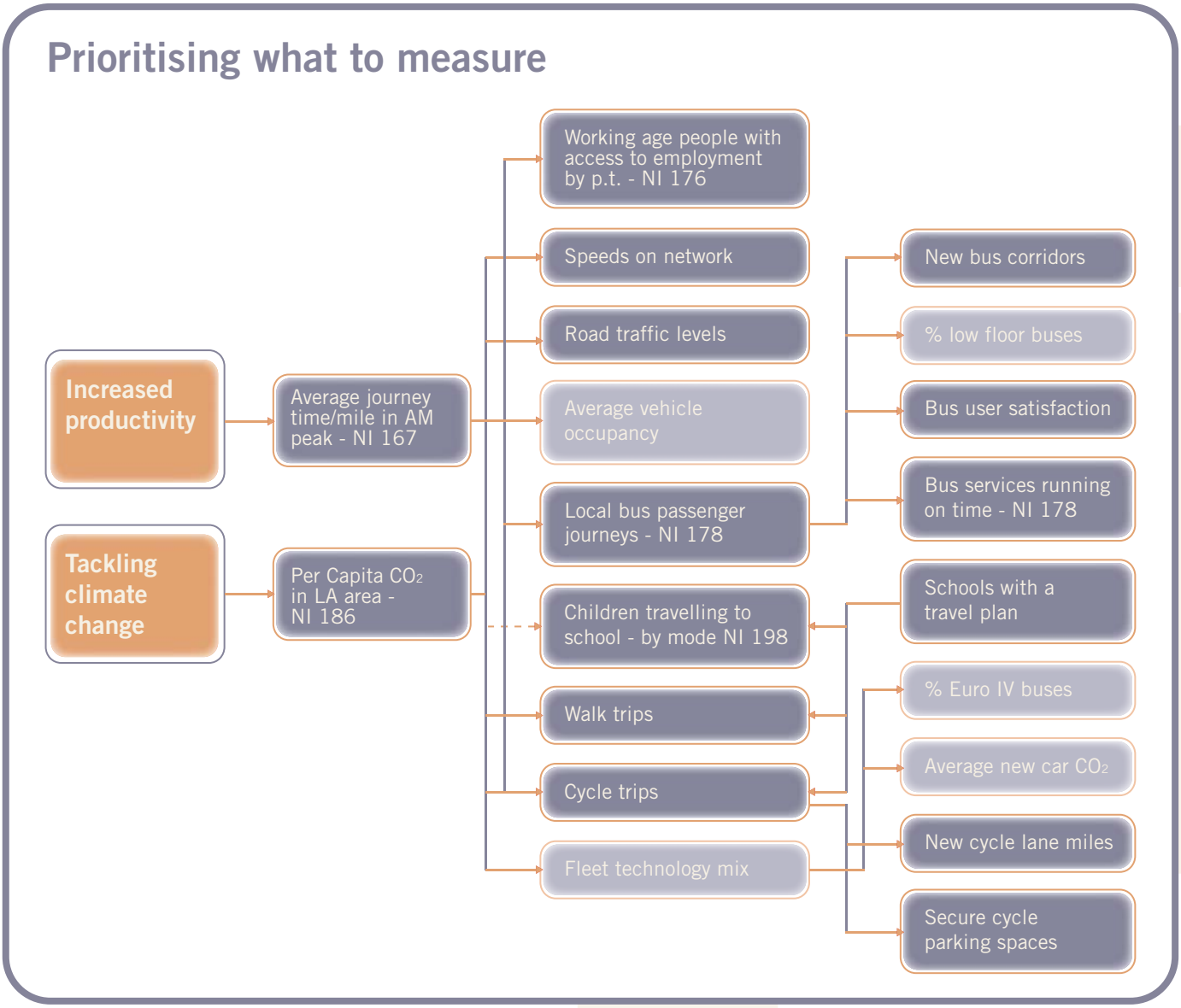


Figure 9e

2.5 Use the indicators to support decision-making processes

The Department for Transport in England assesses the quality of plan making and delivery. A key element of this work has been the establishment and application of monitoring frameworks. The Atkins review of the first round of English local transport plans found that "Authorities performing most strongly also appear to be those where … effective programme and performance management processes are in place focused on the delivery of agreed and realistic targets" (Atkins, 2007, pix).

Implicit in this is that a monitoring strategy is not a printout but a living creature with a constant stream of inputs and outputs from and to a range of sources. Those authorities that appear to perform best collect, log and utilise their information to support decisions throughout the year rather than seeing monitoring and reporting as a year-end activity. There is much good practice to learn from authorities within the UK. This guidance forms part of the good practice evidence base that has fed into the Atkins evaluation and it has also been adopted by one of our partner authorities (see Section 3).

The DISTILLATE project is examining ways to improve the entire transport decision-making process. Whilst indicators and monitoring are a sub-set of this, they are connected to many other elements of decision-making.

One approach to improving the way in which new transport options are generated and prioritised has incorporated indicators into the generation process. A filter system has been applied to an existing knowledge base of transport interventions which allows organisations to identify schemes that are most likely to improve their key indicators (visit www.konsult.leeds.ac.uk/ to test the application).

Indicators are also critical parts of the forecasting and appraisal process. Whilst transport models are not appropriate for all areas, many major metropolitan centres do maintain a strategic modelling capability. Integration between the indicators used in monitoring progress and those used for setting strategies should ensure a better match for the strategies proposed.

In appraisal, national rules may constrain the indicators which are to be used in assessing the worth of projects. However, often there is considerable local flexibility in how to assess the worth of small transport interventions. There is a clear link here between the monitoring strategy and appraisal as the key indicators used for decision-making should feature in both. A new tool for small scheme appraisal has been developed as part of DISTILLATE which provides an easy platform for authorities to integrate indicators and appraisal (see Small and Local Scheme Assessment Tool under the products section of **www.distillate.ac.uk**)

3. Case Study

The case study involves a Passenger Transport Executive (Merseytravel) from the North West of England. Merseytravel works with local highway authorities to develop and implement local transport policies. It is the joint Merseyside Local Transport Plan (LTP) that was the focus of the study and interviews were undertaken with Merseytravel and a range of partners from the Districts. As an overarching body with primary responsibility for public transport co-ordination Merseytravel has been strongly involved in the monitoring process for the conurbation-wide plans. In the first round of the LTP process at the turn of the century the Merseyside LTP submission, like that of many authorities, had selected a very large number of indicators to monitor. In attempting to report on these indicators it became apparent that some indicators were more important than others and some of the least important indicators were ultimately not being fully reported on.

In the second round of LTPs Merseytravel and its partners adopted the outcome focused approach recommended by the Department for Transport and concentrated on a much more clearly specified set of indicators (41 in total of which 17 are mandatory national indicators and 24 locally selected measures). Very clear statements of who has responsibility for data collection and how this will be reported have been developed.

An investigation was undertaken with Merseytravel and the Districts of Merseyside to review their indicator set and to assess:

1. how well the indicators cover the plan objectives

2. how well linked the indicators are

3. potential overlaps and gaps in the monitoring framework

The proposed indicator set was mapped out by the DISTILLATE team with Merseytravel before adoption in LTP2 and this was then reviewed. The schematic map is shown in Figure 8 to demonstrate the principles of the approach outlined in this report. Full contextual details about the indicators are available in the Local Transport Plan for Merseyside 2006-2011 (pages 259-263)[1]. Overlaps were identified between two indicators, one intermediate outcome did not have any supporting measures linked to it and user satisfaction outcomes also suffered from comparatively weak connections.

[1]http://www.letstravelwise.org/uploads/documents/dec_06/trav_1164971411_Chapter_5[1].pdf

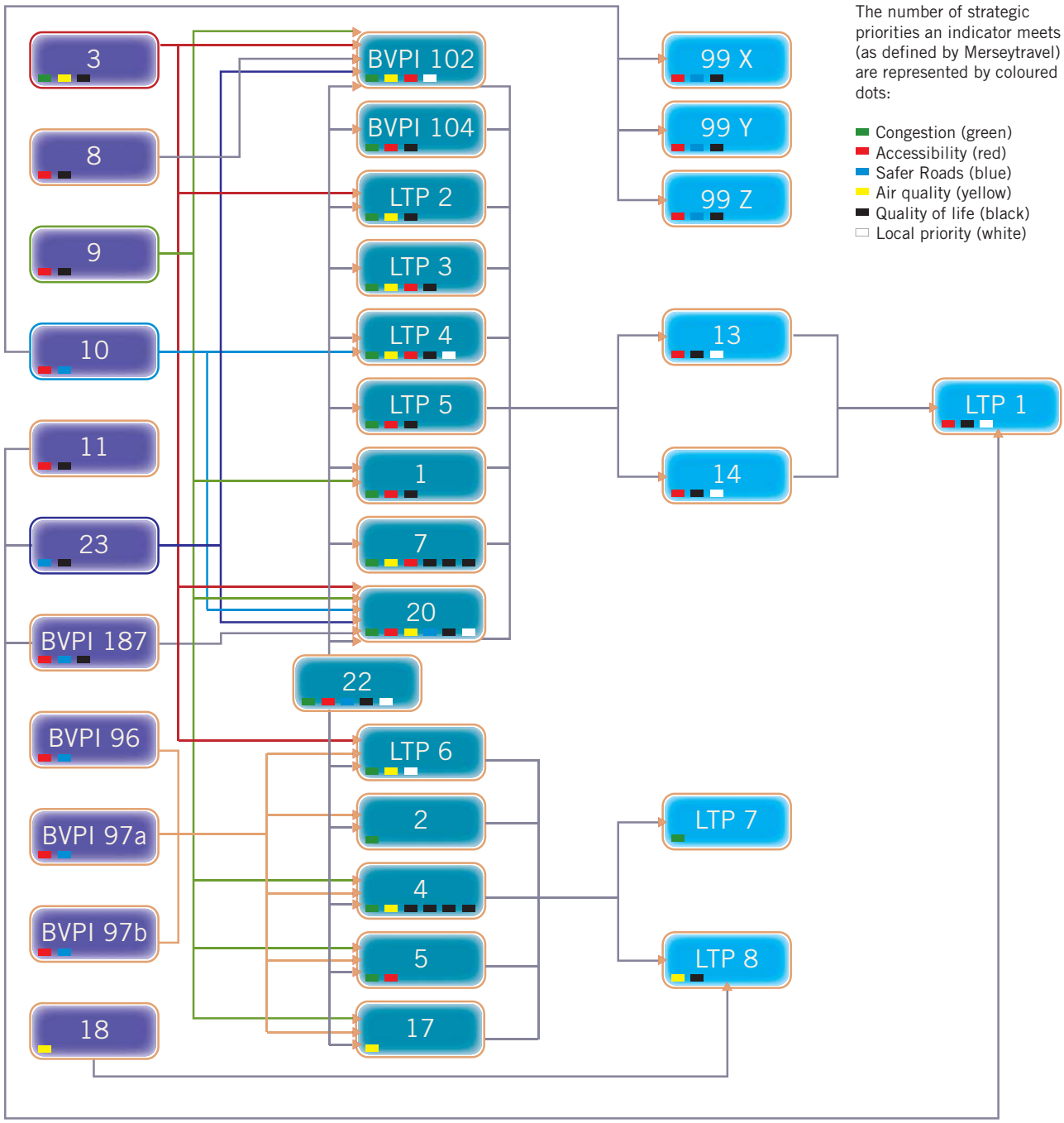


Figure 10 : Merseyside Indicator Schematic Diagram

Follow up interviews with officers from across the LTP Partnership (Merseytravel and the 5 Districts) indicated that this mapping process had four main advantages:

1. **Justifying choices and changes** - Many LTP1 indicators were omitted from the LTP2 set, with the Partnership aiming to provide a more rationalised, interlinked indicator set. From a Merseytravel perspective, the map acted as a good visual justification of these changes. The map also helped to ensure that the linkages (that were planned from the start) were made explicit, and were also appropriate.
2. **Demonstrating choices to the Department for Transport** - Since LTP2 has been much more outcome orientated, the indicator map provided a succinct outline of this, demonstrating the relevance of the indicators to the key outcomes.
3. **Helping to understand linkages** - The indicator map is not just useful at the indicator development stage. It also helps with the process of measuring and reviewing indicators, helping to identify how improvements in one area may have a knock-on effect in another. The analysis of gaps and overlaps will inform future work as and when the indicators are next reviewed. The map has also acted as a checklist helping Merseytravel staff, and their colleagues in the Partnership, to assess whether they are measuring what they need to measure. In turn, this helps policy delivery (if the indicators are right in the first place it will be easier to deliver policy aims).
4. **Aiding interaction with elected members and other organisations** - The map acts as a simple visual aid, and has been used to gain support from elected members. The map has also helped in communicating on monitoring issues across the LTP Partnership.

This case study exemplifies the potential usefulness of this product to transport departments charged with developing a monitoring strategy that covers key transport outcomes. It seems to provide some additional focus around which joint consideration of progress can be made. Importantly however, the case study suggests that such an approach can also reach out to organisations beyond the local authority.

Further Sources of Advice

In the course of conducting this research we have come across a range of reports, websites and fora which can provide further information on many of the topics covered above. These are listed below.

DISTILLATE
This is one of three products relating to indicator selection and use from the DISTILLATE project. The other two are:

1. Advice on selecting indicators for sustainable transport
2. Monitoring across sectors and spatial levels for sustainable transport: A good practice guide

The three products are based on a series of much longer and more comprehensive deliverables which might also be of interest to the reader. These are:

1. Sustainable Transport Indicators: Selection and Use, Deliverable C1
2. Measuring wider economic benefits of transport: A case study in good practice for indicator selection, Deliverable C2
3. Improving Monitoring and Reporting for Local Authorities: Lessons from the Transport Sector, Deliverable C3

All of these products and deliverables are available to download from **www.distillate.ac.uk**

Government guidance and evaluation reports
The Department for Transport has issued guidance on monitoring as part of its LTP2 guidance and has also commissioned a long-term evaluation of the Local Transport Plan process which is now complete. Several of these reports have sections of relevance to monitoring.

1. Atkins (2004) Working with weaker local authorities. Final summary report on findings, **www.dft.gov.uk/**
2. Atkins (2007a) Long-term process and impact evaluation of the Local Transport Plan policy. Final Report **www.dft.gov.uk/**
3. Atkins (2007b) Long-term process and impact evaluation of the Local Transport Plan policy. Monitoring and reporting on LTP1 outcomes. **www.dft.gov.uk/**
4. Department for Transport (2004) Full Guidance on local transport plans: second edition **www.dft.gov.uk/**

The Department for Transport has also established the Local Transport Planning Network. This is a website with information and case studies posted on it which encourages sharing of good practice and has data sources which allow for some performance related benchmarking.

→ **www.ltpnetwork.gov.uk**

The Treasury website has information on 'Choosing the Right Fabric: a Framework for Performance Information'. This describes the features of an effective performance information system and of good performance indicators. These are supported by the National Audit Office, Audit Commission, Office for National Statistics, HM Treasury, and the Cabinet Office.

→ HM Treasury (2007) Choosing the right fabric: a framework for performance information, **http://www.hm-treasury.gov.uk**

Benchmarking
The BEST Transport initiative was a European Union funded project that ran from 2000 to 2003 looking at the definition and application of benchmarking to improve transport performance. The website has a series of deliverables, benchmarking application reports and summaries of practitioner workshops which will be of interest to any authority considering or already undertaking any form of benchmarking activity.

→ **http://www.bestransport.org/cadrebest.html**

Performance measurement knowledge exchange forum
The US Transportation Research Board has established a Performance Measurement Exchange website and mailing list. This is a relatively low traffic but high impact service with active contributions by (mainly) US government officials and consultants. Information is archived under Case Studies and Research, Customer Satisfaction Measures, Measurement Tools Techniques Methodologies and Data, Organisational Performance Measures, Performance Measurement of Freight and Private Sector and System Performance Measurement. It is possible to post questions to the mailing list.

→ **http://knowledge.fhwa.dot.gov/cops/pm.nsf/home**

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