

## Towards a moving target: delivering outcomes for sustainable transport

Roger Toleman and Geoff Rose  
Institute of Transport Studies  
Department of Civil Engineering  
Monash University

### 1. Introduction

This paper evaluates current debates on the nature of sustainability and then reviews the practical complexities of delivering a sustainable transport system. In this environment, a small but growing number of jurisdictions have identified a greater focus on early identification of strategic outcomes (future desirable conditions) as a practical approach that is beginning to take shape in policy systems to drive overall performance. This concept is built around key legislative processes that clearly define strategic outcomes, identify ways forward and then start to establish structures and accountability systems that progress these goals.

### 2. Trying to define sustainability

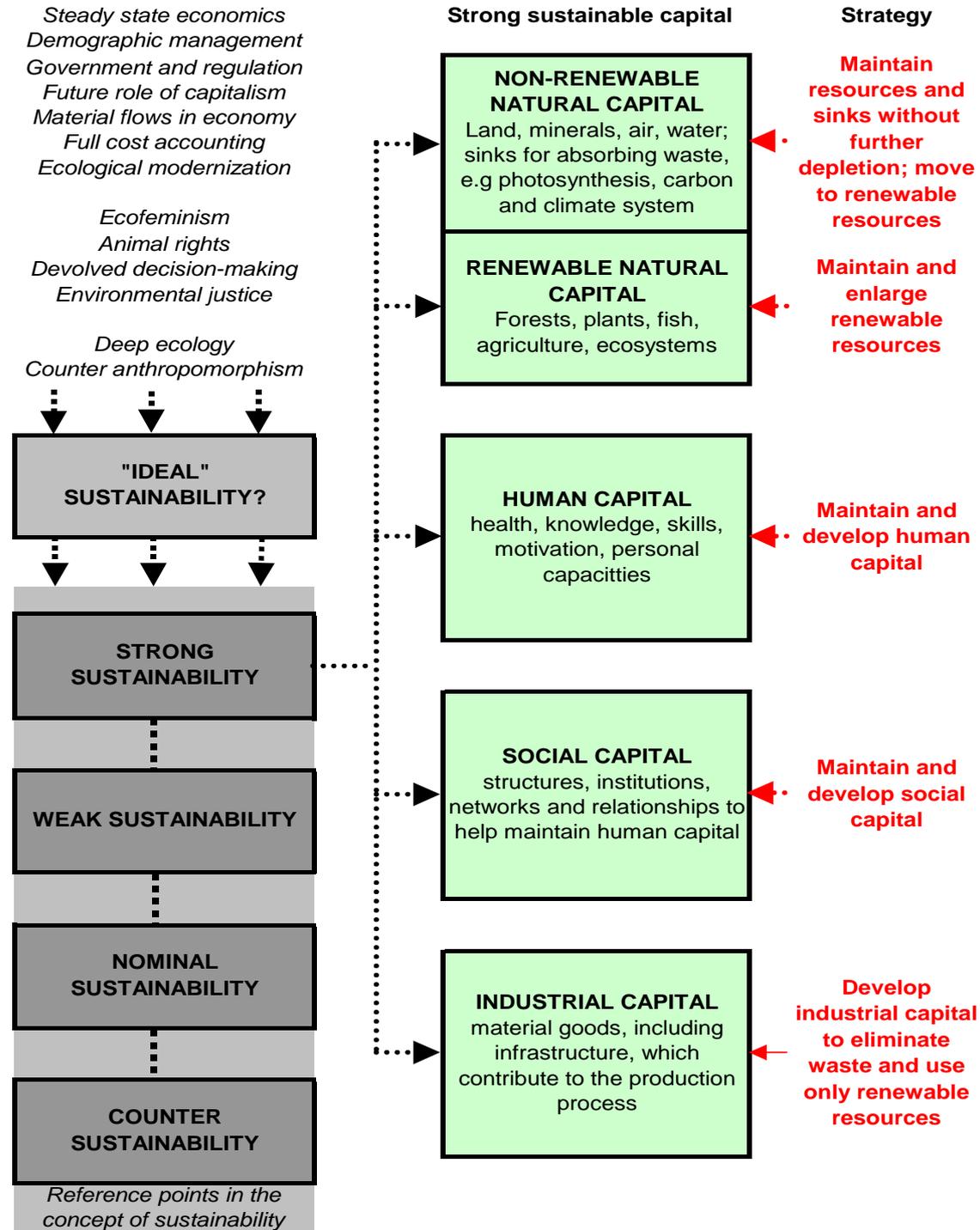
Current interest in the issue of sustainability initially developed as the result of growing awareness of the changing relationship between human activity and the geophysical environment, though the philosophical scope of sustainability runs much deeper than purely environmental concerns. The definitions of “sustainability” are numerous and none commands universal acceptance, though, at its’ simplest, the concept relates to the ability of humanity to “carry on” and the recognition of the need to consider social, economic and environmental issues when assessing the sustainability of a future state.

In practice, sustainability is a developing complex of ideas, built around a number of key reference points:

<i>Counter sustainability</i>	The view that sustainability is neither desirable nor practical
<i>Superficial sustainability</i>	This approach uses the <i>language</i> of sustainability, but in reality implies only minor or superficial consideration of the issues
<i>Weak sustainability</i>	This approach assumes that all four types of capital (natural, human, social and industrial) are fully interchangeable and that ongoing technological development will enable the use of all four to any appropriate extent
<i>Strong sustainability</i>	Natural capital must be preserved if it is non-renewable; enlarged if it is renewable; while human, social and industrial capital must continue to be grown as far as possible

Strong sustainability presently provides at least a minimum ethical foundation for sustainable strategic policies (Figure 1), though as Neumayer (2003) notes, both weak and strong sustainability are non-falsifiable paradigms, since they inherently apply to long-term outcomes.

**Developing concepts...**



The process of defining sustainability is evidently incomplete. There is an **Figure 1 The development of strong sustainability** strong sustainability or lead to a new framework of human behaviour that Baker (2006) characterises as "ideal" sustainability. Social issues in this

category include ecofeminism (Warren, 2000); animal liberation and other ethical imperatives (Singer, 2002); the implications of different approaches to decision-making (Plumwood, 1998; Eckersley, 1996; Frey, 1999); as well as environmental justice and the rights of individual citizens (Sax, 1990; Agyeman and Warner, 2002). Major economic implications include questions related to steady state economics and population stability (Sustainable Development Commission, 2007; Commissioner for Environmental Sustainability Victoria, 2008); changes to fundamental economic systems and the regulation of capitalism (Foster, 2008; Porritt, 2005); ecological modernization (Hajer and Poorter, 2005); the restructuring of accounting systems in the light of full cost accounting (Bebbington et al., 2001) and the need to account for material flows (Ayres et al., 2007). Philosophers such as Naess (1983) and Bookchin (1990) go beyond these issues into questions of the psychological and emotional relationship between human beings and their surroundings. As a path forward, sustainability is still potentially at the start of a long journey.

### **3. Making progress towards sustainability**

In these developing circumstances, moving towards a sustainable society, however defined, is proving to be an uncertain exercise. As Kemp and Rotmans (2004) note, the approach to sustainability will inherently be a potentially endless and complex series of transitions and temporary equilibria, rather than a single concerted policy initiative.

This conceptualisation of the complexity of sustainability consequently generates an interlinked series of both societal and sectoral goals. A society striving towards sustainability is likely be interested in such issues as equity, disadvantage, justice, safety, environmental management and material flows that apply to and affect the whole fabric of that society. Some of these issues will have greater resonance in some sectors than others. The current nature and scale of the transport sector, for example, means that pricing and charging, emissions to air and water, noise, safety and renewable energy will tend to offer greater overall potential for remedial action than the same issues in some other sectors (Government of Denmark, 2002). It is a pragmatic approach that offers at least the prospect of progress, yet it also requires a clear understanding of the iterative consequences of such change throughout the entire social system.

The complexities and fundamental “fuzziness” of this process are reflected in limited real progress to date. Visions of a more sustainable world demonstrate both the potential of a sustainable approach and the complexities of its achievement. Examples include the potential for:

- New technology and a reformed taxation regime to deliver major benefits to both the German economy and its' transport system (Schade and Rothengatter, 2004)
- Renewable energy in Denmark (Holm and Englund, 2009)

- Waste reduction in a whole range of industrial activities (Lovins et al., 1999)

Yet, global resource based problems such as climate change; water supply and a range of emission pollution issues continue to grow. Growing agreement on the possible means of tackling such problems - through integrated objectives and policies, new rules for decision-making, pricing reform and better indicator definition and management (Kemp et al., 2005) - has yet to be translated into widespread action to fundamentally change the relationship between human activity and the geosphere.

Conceiving the idea of a sustainable transport system in a sustainable economy involves complex and challenging policy issues. Successfully implementing such a sustainable transport system inevitably focuses on the way in which our current institutions, political and administrative systems consider and manage change.

#### 4. The policy process

No form of social change, including transport policy, occurs independently of the structures, values, beliefs and systems of the society within which it takes place. Figure 2 shows an outline of the overall “building blocks” of this process and the crucial importance of multiple information flows between all the core elements.

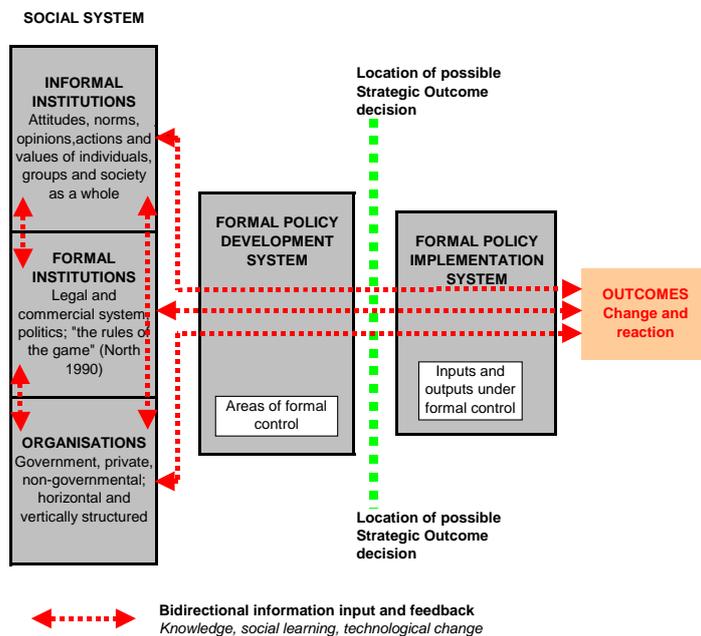


Figure 2 Policy development structural overview

The *informal institutions* of any society are the deeply rooted attitudes, norms, opinions, actions and values of the individuals and groups that make up that society. They form the constantly evolving social and individually based framework of information, ideas and beliefs within which potential changes may develop or be rejected at any given time (Walker et al., 2003).

The *formal institutions* of society are the legal, political, economic and administrative rules, legislation and structures that reflect the translation of ideas and beliefs into social operating systems at any given time, and are the formal expression of “the rules of the game” (Parliament of the United Kingdom of Great Britain and Northern Ireland, 2008).

*Organisations* – which can be governmental, commercial, non-governmental or simply informal associations – can be included in the formal institutions of society, but are often treated distinctly for ease of analysis (Zografos et al., 2004) They form a complex web of relationships developed out of informal and formal institutions, and their behaviour generates activity (or dependency) paths that can drive or restrain change (Pierson, 2000).

Information flows and the possibility of consequential learning are the basis of change or reaction in this institutional and organisational framework, and influence the *policy development system*. Key strategic approaches to the importance of learning in the complexities of policy development processes include Kingdon’s (1995) work on agenda setting; Sabatier’s (2007) advocacy coalition framework approach; and Boyer’s (1998) study of the links between markets and institutional and social relations. Hajer (2005) and Schmidt (2002) emphasize the way in which information management is at the core of the narratives and storylines that can drive the politics of change, while Berry’s (1986) seminal paper on change in the British coal industry emphasises the importance of the sources and reliability of information in developing policy.

Policy change in turn generates *implementation activity*. Implementation has often been seen as the simple linear administrative consequence of policy decisions, but the links between and development of fundamental inputs, outputs, outcomes and the extent of public policy influence are commonly far from simple (Pawson, 2003). Greater recent understanding of the “complicated” and “complex” models of implementation is reflected in Rogers (2008), Hospes (2008) and Barnes et al (1996) and builds on Rittel and Webber’s (1973) initial analysis of “wicked problems”. While policy implementation remains an active and often uncertain area of research, the recent appearance of an analytical model such as the Institutional Resource Regime (Gerber et al., 2009) to link institutions directly to capital and resource use emphasises the point made earlier that policy development and its implementation are part of the much wider process of social change.

This outline of the relationship between social systems, information and the relationship to policy and implementation is necessarily brief, but provides the initial framework within which to consider ways out of what Mulgan (1997) calls the “frequent gap between what governments are doing and what they think they are doing”.

## **5. Trying to improve policy direction**

The complexities of policy development in an ever changing world have already generated increasing interest in developing and delivering successful policy initiatives – and the additional complexities of sustainability inherently reinforce this concern.

The proliferation of strategic transport policy documents in recent years can be characterised as an initial attempt by politicians and administrators to give greater direction to policy and its implementation. However, few of these documents seem to have enjoyed a life beyond the currency of the government that introduced them. Still fewer address a path to desired outcomes as future desirable conditions, instead usually specifying desired inputs (levels of funding) or outputs (roles for particular modes of transport) (Government of Victoria, 2008).

The attempted development of high level centralised implementation units in some government bureaucracies is a similar initiative to give linear direction in a complex world - though with limited success (Tiernan, 2006).

Since the mid 1990's a further new initiative to strengthen the importance of policy outcomes has begun to make a tentative appearance. It has a strong focus on desired future conditions and is based on wide social involvement. A number of countries led by Sweden, the USA and Britain have tentatively established *legislatively based* long term policy outcomes in various transport related sectors. This is separate from the approach in jurisdictions such as Switzerland and California which have used referenda to ground specific policy initiatives.

As shown in Figure 2, the fundamental aim of the approach has been to effectively introduce a new stage in policy development, formally setting overall strategic outcomes *before* any implementation begins, thereby providing a greater sense of direction in subsequent processes. The overall aim has been to give a greater sense of certainty and continuity over periods of time longer than any specific government, through better incorporating formal and informal institutions and organizations into policy setting.

The use of strategic outcomes in this way is still in its early stages, but appears to be beginning to offer at least a prospect of a process that has the potential to improve policy delivery. The initial approach was a pragmatic approach to specific issues, but as noted earlier, sustainability may ultimately be the sum of a series of distinct ongoing initiatives – and here the strategic outcome approach may start to provide a more reliable path through the manifest complexities of sustainable transport policy development.

## **6. Developing strategic outcomes**

If the development of strategic outcomes can give greater direction to subsequent policy implementation, then it is important to understand the main factors that will successfully drive this process.

The dominant requirement of any legislated outcome inevitably has to be its ongoing acceptance by the general community and the political system. It must outlast the life of successive governments, providing a significant degree of long term certainty of direction for a wide range of personal, organisational and political implementation decisions.

The Americans with Disabilities Act (1990, as amended 2008), which sought to give the disabled the right to universal mobility, and the Swedish Road Traffic Safety Act (1997), which established the “Vision Zero” outcome of no fatalities or serious injuries arising from road use, are key examples. They have both retained substantial political support through successive administrations, because they broadly reflect the continuing ethical concerns of the societies to which they apply. A large majority in Parliament supported the British Climate Change Act (2008), but it is too recent to tell whether this level of support will endure.

These initial attempts at giving direction to the policy implementation process have all been addressed and promoted by a range of individuals and organisations within existing political and legislative systems. The approach can also include a range of demonstration projects and trials in the way that Stockholm’s congestion pricing scheme materially shifted public opinion behind a significant sustainable transport initiative (Eliasson and Mattson, 2006). Smith (2003) further makes it clear that there are potential future opportunities for a greater range of deliberative democratic processes to set strategic outcomes. These include binding referenda and minimum voting majorities that could materially enhance the current tentative approaches.

Complexity is the enemy of successful strategic outcome setting. To be effective outcome statements have to be brief, clear, measurable and provide motivation for change within present possibilities, even within a potentially lengthy timescale. Outcome statements have to provide clear, unambiguous direction for implementation and decision-making at the governmental, personal and organisational levels of society (Smokers, 2008) without artifice or “hidden” political agendas. Without such clarity they will not gain or maintain support. Furthermore, any legislatively defined outcome will be subject to appeal through the courts system, and while judicial challenges over the pace or nature of delivery may be relevant, arguments over the *nature* of the outcome are inherently counter-productive.

Stressing the need for highly focussed simplicity in developing strategic outcomes also reinforces the important point that outcomes are *not* generic constitutional principles of the sort that the Brundtland Commission promoted (World Commission on Environment and Development, 1987). They are the next legislative level down, supporting individual rights to a particular outcome

Sax (1990). In consequence, it is becoming evident that outcome statements should also include definition of the necessary accountabilities for delivery, both as these apply to formal administrative structures and social systems as a whole (Nihlén Fahlquist, 2006).

The question of formally including timetables for legislative outcomes remains a contested issue. While the Swedish “Vision Zero” approach to road safety has a formal review process, it does not include a specific completion date – an approach which Edvardsson (2004) sees as rational, given the associated implementation difficulties. The potential pressures of public expectations are effectively the timing mechanism in this context. By contrast, the British Climate Change Act sets a very specific outcome of achieving a numerical reduction in greenhouse gases by 2050. However, the Act then includes precautionary administrative mechanisms to address any potential inability to meet that target.

## **7. Outcomes for sustainable transport**

The developing experience of the legislative strategic outcome approach is still comparatively limited, but raises the specific question of how the indicative principles of strong sustainability set out in the previous sections might similarly apply to the development of outcomes for a sustainable transport system.

The potential use of strategic outcomes for the transport sector raises an important issue of scope. As noted earlier, transport policy has traditionally focussed on an input or output development approach centred on the perceived performance of specific modal technologies at a given time (Aberle, 2003), rather than on the long term performance of the transport system as a *whole*. While there are clearly some technology issues associated with specific modes, the wider picture of transport policy as a whole suggests that its policy development and administration has become substantially fragmented in a way that inherently militates against an overall approach to sustainability (Begg and Gray, 2004).

If the ultimate goal of sustainable transport policy is to have each mode providing long term mobility in the way for which it is best suited, then there is a strong case for setting strategic outcomes that apply across the *whole* transport sector, and allowing individual technologies to develop and adapt within this broad framework (Smokers, 2008). Emissions to air or water runoff from the transport system essentially have the same impact on the geophysical system and humanity whether they come from airports, roads or ports – and should all be treated within the same sustainable policy framework.

On this basis, a number of indicative examples based on strong sustainable outcomes could be identified that would make significant steps towards a sustainable transport system, including but not limited to:

- The transport sector will not generate any emissions to air that are harmful to human health or the ecosystem
- No water runoff or impact on water from the transport system will be harmful to human health or the ecosystem
- No noise generated by the transport sector will be harmful to human health or the ecosystem
- The transport system will directly or indirectly use only renewable energy

In addition, the Swedish Vision Zero approach to road safety could be extended to apply to the whole sector:

- Nobody will be killed or seriously injured in the transport system

A sustainable transport sector would also be characterised by users directly bearing all the costs imposed on society. However, given the economic complexities of average and marginal pricing and charging, a strategic outcome formulated in these terms would, would certainly not meet the requirement of simplicity noted above. In this case, strategic outcomes would need to be simplified to address specifics such as reducing traffic congestion or refocussing of local or national taxes.

The outcomes suggested above are indicative only, and do not claim to cover the full scope of the transport system's impact on society. They do, however provide an initial set of steps that could, with community support, be developed into legislative strategic outcomes that could make significant progress down the uncertain path toward the current concept of strong sustainability.

In some cases transport would simply be a part of a wider social outcome, such as the unimpeded access of disabled citizens throughout society. As noted earlier, all the outcomes would require careful consideration of their impacts in other areas of society, especially at the implementation stages. Each outcome would inherently have different paces of implementation, and for this reason might well not use completion dates. Nevertheless, such outcomes embedded in the relevant legal system would provide a sense of clear direction often absent from existing planning and implementation systems.

## **8. The developing performance of the strategic outcome approach**

Given the limited practical experience of the strategic outcome approach to date, a detailed comparative evaluation of the experience in different jurisdictions is not yet possible. Nor is it yet possible to accurately analyse outcome delivery between alternative approaches. However, three preliminary

elements of experience with the strategic outcome approach are beginning to emerge.

Initial criticism of the strategic outcome approach frequently focussed on the visionary or ethical nature of the chosen goals and their perceived departure from “impartial” traditional cost benefit approaches. Such criticism largely ignores the fact that even the most rigorous classical economic approach still builds on a set of ethical assumptions as pervasive as the ethical underpinning of Vision Zero and its pursuit of the ultimate safety goal (Tingvall, 2007). The primary characteristic of the strategic outcome approach is that it coalesces social perceptions of problems and strategic solutions and *then* addresses the relevant tradeoffs. It is an approach that seeks to understand the values of society in our present environment and then move to rationally encapsulate and implement them (Edvardsson, 2004). Given the evident ongoing levels of public support for the goals of the Americans with Disabilities Act (Switzer, 2001) and the Vision Zero approach to road safety (Breen et al., 2008) the strategic outcome approach is at least beginning to provide long term policy direction that reflects community opinion.

The second developing factor is the evident ability of strategic outcomes to provide a framework for subsequent detailed policy development. De Roo and Porter (2007) refer to the ability of visions to give a sense of flexibility within an overall direction as “fuzzy” planning, but as noted earlier, the path to sustainability may well be endlessly fuzzy. It is very clear from the review (Breen et al., 2008) of the Swedish Road Traffic Safety Act after ten years operation, that it has successfully provided a clear long term framework that has countered policy fragmentation while tackling specific developing issues. In Parsons’ terms (2004), the strategic outcome approach is not just “steering”, but “weaving”.

The third element that can be discerned from the initial progress of the strategic outcome approach to date effectively sets the next stage in its development. As Switzer notes (2001), the relatively general goals and the complexities of multiple governmental systems have impeded administrative progress of the Americans with Disabilities Act, while the independent review (Breen et al., 2008) of the Swedish Road Traffic Safety Act has highlighted the need to progress the formal allocation of responsibility for outcomes.

The formal institutions, organisations and patterns of accountability that were developed to address the problems of one era do not necessarily address those of a new environment. The concept of strategic outcomes provides greater policy direction but this must then be translated into effective and accountable implementation systems, through careful consideration of the scope and potential of government regulation (Levi-Faur, 2006) and the formal responsibilities of all the relevant organisations, including the fundamental issue of organisational boundaries and potential producer and operator responsibilities (Grey, 2005).

## **9. Conclusion**

The strategic outcome concept of policy development is still evolving in terms of implementation and accountability. However it is expressed in practice, the principle of legally defining outcomes at an early stage in the policy process seems to have the possibility of providing a greater sense of direction towards specific goals and focussing subsequent detailed implementation processes. To date, the strategic outcome approach has been implemented through existing political systems, but there is obviously a considerable potential for expanding support for definition of strategic outcomes through greater direct community involvement.

What this paper defines as the strategic outcome approach was developed separately in a number of jurisdictions in different circumstances to give long term direction for specific policy concerns in transport and other sectors. This initial focus on making progress through achieving a number of separate clearly defined goals now increasingly seems to provide a pragmatic way of making some very necessary progress towards the moving target of sustainability.

Moving towards the achievement of a sustainable transport system is not "business as usual" in a world of systems and organisations developed for other purposes. Changes are necessary in the way that society views the goals, structure and performance of existing transport systems; frames the resulting issues; sets desirable outcomes; develops subsequent accountabilities and operations: and then deals with the consequences of change in the rest of the sector and society as a whole. None of these developments will be easy – but the wider development and use of the strategic outcome process holds potential for a greater sense of direction and focus for the journey towards a more sustainable transport future.

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