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DRAFT TRANSPORT EVIDENCE BASE STRATEGY

Introduction

Thank-you for the opportunity to comment on *the Draft*.

First we will make some general comments about some limitations we see in the approach that has been adopted in *the Draft.*

Then we will give a brief outline of how it could be enhanced. In doing this we draw from the overlap between the section of the consultation document that deals with *The Transport Research Strategy* and the work NERI has been doing developing an Energy Research Strategy for NZ. This is simply intended as an example.

General approach to strategy development

As presented *the Draft* develops an approach to: "*Ensuring the transport sector has the right data, information, research and evaluation to deliver an evidence-based transport system that improves wellbeing and liveability*" (page 3)[1].

Data, information, research and evaluation (the *information system*) are all resources, and while some are becoming increasingly ubiquitous (e.g. data) there are still costs associated with their use. Strategy development for the *information system* is about helping to ration those resources[2]. This cannot be done in isolation from understanding the value being created by the *information system* in improving *wellbeing and liveability*.

The complication in doing this is that the detail of what will be required will depend on the current state of the transport system; its outlook; and its interactions with the

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[1] We note *the Draft* is focussed on the public interest aspects of *wellbeing and liveability* and hence is limited to the transport information systems managed by the public sector. The transport sector also has an extensive set of information systems not in public hands that may or may not be able to be recruited to assist with the public information needs.

[2] At the simplest level this is why we use a range of techniques in statistical monitoring from collecting 100% of the data, through routine sample surveys, to ad hoc targeted surveys/investigations etc.

wider systems in which it exists (economic, social, environmental etc). This dimension is by and large lacking in *the Draft*.

In its introductory comments *the Draft* does make it clear it sits within the *Transport Outcomes Framework*. However in its detail *the Draft* avoids, perhaps understandably, too much specificity on the current and future state of *wellbeing and liveability* vis-a-vis the *transport system* and the priorities for improving the former. Instead the analysis centres on the *information system*.

This extends to Figure 2 where the arrows suggest a bottom-up approach to strategy formation driven by the *information system*. Instead the top box will dominate even if there will need to be productive interaction along the way. Any development of the *information system* needs to be, and will be, driven by the government's specific goals.

The risk of taking the approach in *the Draft* is that improving the information system can become the end in itself because external requirements are diluted.

There is evidence of this in *the Draft*. Two examples:

Table 2 has been constructed by consultation with interested parties, but is *information system*-centric. The *high-priority evidence projects* are quite generic[3] and beg the question "why?". Judging how much to do in each area and the trade-offs between them will be hard because any sense of what makes them important is lacking.

In a similar way Table 7 is unhelpful in identifying what the specific *research needs* are - and it doesn't help in setting any particular priorities across the various *focus areas*. The general inference to be drawn is investing in any or all of the *focus areas* will be of (equal?) value.

This is unsatisfactory from the practical standpoint of setting direction and allocating resources.

The solution lies in attempting to come down a level of generality from the high level "*Transport Outcome and research need*" shown in Table 7. Some sense of the relative weighting to be given to the *Transport Outcome* areas is needed[4].

Constraining the research needs[5]

As noted what follows draws from our work on an energy research strategy. It is simply intended as an example, although we suspect some of the concepts are applicable beyond just the transport/energy intersection.

As noted, the research needs for the transport system will flow from a situational analysis both current and going into the future. *The Draft* does give a sense of the

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[3] By in large they relate to improvements in general data collection and use. Having a process for this kind of maintenance is important but it shouldn't be allowed to dominate.

[4] As the *GPS on Land Transport* starts to do – identifying safety and access as the priorities, with environment and value for money as the constraints.

[5] While these comments are directed at the research needs we think the same approach potentially applies to the whole *information system*.

current strengths and weakness of the transport *information system* and the demands upon it (*Enduring Questions*) but even with the latter a strong sense of priorities with justifications is still lacking. The generality of the analysis works against priority setting[6].

This can only be resolved by considering the key drivers of the transport system in relation to the *Transport Outcomes Framework*, and then translating them into the impact on the *information system* and assessing the strengths and weaknesses of that system in support.

Where this can be most easily seen is looking into the future. Apart from domestic changes there are at least three broad global trends[7] that will impact the NZ transport sector in the 2020s:

- <u>Changes in motive power</u>: the move to electricity; the reduction in fossil fuels.
- <u>Embedded intelligence and communications</u>: more intelligent and connected vehicles, users and consignments; transport as a service; autonomous/remotely controlled vehicles (e.g. drones).
- <u>Alternatives to movement</u>: augmented and virtual reality; 3D printing.

As it happens there are reasons why these impacts may occur relatively early in NZ and be particularly strong. We have a good renewable electricity supply and infrastructure; we have a relatively good communications infrastructure; and our isolation gives reason for us to particularly value alternatives to movement. There are equally things that might work against them here e.g. our small scale.

Each of these trends will come with economic, social and environmental impacts in the transport sector. They will also change the expectations of the role of the government in the sector and this will therefore develop and change.

The government will also wish to influence these impacts in the sector to further *wellbeing and liveability.* They will require an *information system* (including *research priority areas*) to support this.

Viewed in this light one develops a different structure of *research priorities* from those in Table 7. Faced with these developments we would expect for each of the global drivers a rough sequence of *research questions* developing something like:

1. In the NZ context how will these trends develop, particularly as they influence the transport sector?
2. What will their impacts be on the *Transport Outcomes* in general and on *wellbeing and liveability* in particular? How material will these impacts be over what timeframe? Quantification of impacts will help prioritize further work.
3. How much can the NZ government influence these developments? What options exist to enhance *wellbeing and liveability*, what interventions could assist (either by enhancing opportunities or managing risks)? We'd expect the state of the *information system* to be part of this investigation.

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[6] By way of example the first *Enduring Question* referenced in Table 7 is *EQ 9.5 What is the relationship between the existence and location of the transport network and transport services, and economic activity in New Zealand?* Any context to help set a priority is lacking.

[7] For simplicity these happen to all be technology trends.

4. Etc.

Interventions will very likely include further activities within the *information system*. These could range from further ad hoc research to understand what is occurring through to putting in place and running detailed monitoring and evaluation systems for approved interventions.

Suggested approach

We therefore suggest that the document would be enhanced if it had an early section that attempted to identify the key drivers of what is happening in the NZ Transport Sector, and with that some evaluation of the *information system's* ability to service the existing system, its priority issues and prospective trends.

This would then give the context for much of the balance of the document. By and large the objective should be to simplify and shorten it to focus on the key issues that emerge from those drivers and what needs to be done.

This has been a brief response given the nature of our comments. If the Ministry would like to explore further please don't hesitate to contact me.

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