Public Infrastructure: Provision, Funding, Financing and Costs – Further Comments post Draft report

Geoff Holman - Private Submission to the Productivity Commission Inquiry.

Key points are:

1. **Preservation of your report and submissions as a Public resource**
2. **Initiate a second stage of your inquiry for selected further research**
3. **Further General Risk Assessment; Develop a register of infrastructure assets**

Introduction and opening comments

At the outset allow me to congratulate you on the draft report, its detail and breadth is excellent, and also on the success of the submission process generally.

Subsequent to your draft report, this, my follow up submission, aims to further amplify aspects of item 6 of the terms of reference:
"Comment on other relevant policy measures, including any non-legislative approaches, which would help ensure effective delivery of infrastructure services over both the short and long term."

Later in the submission I make some comments on your draft report recommendations, however I will firstly make some initial observations and recommendations, possibly of long term relevance.

Recommendation 1 – Preservation of Submissions and Reports as Public resource

There have been over 110 submissions, all of which are to a high standard, all are relevant, valuable and cover diverse aspects. (I have looked at most and read many in detail). I hope, and recommend, that you will be able to maintain and preserve your final report together with the collected submissions, (with the addition of a useful index), and also your draft report if significantly changed, as a publicly available resource. This will be valuable in many ways, including public information and education, public discourse, career guidance and as an educational resource especially for current and future University students and academia in general. With this in mind, perhaps printed copies of the report, and a DVD of background material, could be forwarded to school and university libraries

Recommendation 2 - A second stage of your inquiry for selective further research

The number of submissions also highlights the success of the process and the complexity and scale of the task that you face. I am anxious that you succeed in this, since this may be your one opportunity, as Individuals and for us as a Nation, to make important changes to the way that we "do" infrastructure.

It would be a pity to consign all this good work to a dusty cupboard in Canberra, so I urge you to maintain the momentum of your deliberative process. Though meeting the reporting deadline is essential.

You comment in your draft report that this is a very complex issue, and perhaps it is unrealistic to expect you to arrive at the ultimate solution in the given time frame. The quality and diversity of

the submissions serve to illustrate the difficulties that you face in reaching recommendations. Some continuity of inquiry would be valuable, I therefore suggest a second stage to the inquiry.

The first stage being your final report as currently conceived, and delivered on time, including a recommendation for a second stage. The first stage being used to guide policy over the interim period. The second stage to expand the knowledge base and fill in gaps, and to cover complexities and uncertainties and to develop appropriate strategies .

The second stage being a funded and managed research program, with yourselves, perhaps, as a steering committee. This program would cover appropriate research, information gathering and policy development over, say, a two year period. Infrastructure Australia would be the obvious choice to manage the project. The cost may be millions of dollars, but it has the potential to save billions of dollars. There will be much to show for the expenditure, and likely other beneficial outcomes, so it will be money well spent. (A list of possible subject inclusions follows below).

The findings should be reviewed by yourselves, or a similar body, and summarised and incorporated in your findings and recommendations at the end of the second stage, with the possibility of recommendations for additional research where this may be justified.

The form of this stage may be similar to the suggested expert interdisciplinary analysis, which I outlined in my earlier submission, and might use existing Australian University Academic expertise, and possibly involve Doctorate studies. The expertise should be the best available, including from private providers, or from overseas institutions. Independent inquiry is an imperative.

This extended process will also have the advantage of building on our national knowledge and skill base, perhaps providing a cohort of informed and experienced experts for the future. This could prove to be a valuable legacy of your work.

List of possible subject inclusions covered in the second stage might include:

- Data issues including availability and collection (as outlined in my previous submission)
- Risk assessment (of externalities as outlined in my previous submission)
- Risk assessment (project oriented)
- Cost benefit methods and possible protocols
- Design considerations, possibly including standardised design protocols
- Computer modelling applications for a variety of design and data management purposes
- Policy Development and legislative considerations
- Social ramifications including costs and benefits
- Project Management – requirements, methods and case studies
- Project Finance and economics
- Training and education
- Innovations – construction, design, materials,social
- Climate adaptation – mitigation and precautionary actions
- Strategic considerations

This is not intended as an exhaustive list, but as a guide to type of areas which may require further examination for best Infrastructure policy outcomes.

General comments and recommendation regarding Draft report

Endorsements .

I fully endorse the draft commentary on the need for greater design consideration for more economic solutions eg draft recommendation 11.1 and following. I could give numerous examples of the astounding savings, which may result from routine design review. "Rolls Royce" solutions are often the easy option, but, subject to risk assessment, not always best solution.

I go some way in endorsing your comments on the 'infrastructure deficit'. (Page 58 Volume 1). I agree with the report comment "It is likely to be best approached by rigorous analysis of individual projects, rather than seeking to surmount an estimated deficit." However I believe that a "deficit" does exist. Motorists, cyclists, pedestrians and householders experience this everyday.

I agree with the tenor of the draft report on this subject. In reality, there may not be a lot of physical remediation that we can do to alleviate congestion. Congestion charging is certainly a logical step and may succeed in reducing demand, and hence could be part of the solution, but the critical question may be: to what degree or extent will this be socially and politically acceptable at effective charging levels? What will be the social and economic ramifications?

The cost of remediation of most infrastructure deficiencies is very significant, such that only the most obvious deficiencies can be affordable modified. This will be evidenced by the proposed removal of rail level crossings from the road system in suburban Melbourne; if this eventuates.

However, this should not preclude us from asking the question of whether we have made the best use of our legacy infrastructure? We can learn from this. Our current infrastructure is now our legacy infrastructure and we have to make the very best use of it. I believe that the "deficit" amounts quoted, (volume 1 page 58) and those based on calculations by others, (for example: the figures quoted in the ICCPM submission, number 105, pages 15 and 16), may be underestimates. Also these cost estimates do not include human infrastructure, or health and amenity valuations. These may outweigh the financial costs, but are more difficult to quantify.

I also think that this "deficit" may well be mitigated by other external factors, even in the short term of say 5 to 10 years; so for this reason it assumes a lower priority in my thinking, (but this is a subject for others to reflect on). Meanwhile other serious challenges may assume priority.

Recommendation 3: General Risk Assessment; and a register of infrastructure assets

Although your report discusses and acknowledges the importance of risk assessment at various stages of assessment and particularly at the cost benefit stage, there is very little reference to more general risks, such as I outlined in my earlier submission. (listed below).

Potential general risks may include:

- Climate change (eg effects on water supplies, effects on road/rail bases etc.)
- Energy constraints or changes to energy source (eg Peak oil, coal to gas/solar, petrol to gas/electrical)
- Population growth - ramifications and constraints – possible doubling of infrastructure replacement expenditure – additional demand
- Local and global financial/economic externalities
- Sovereign risks
- Changing technology eg the NBN and wireless/satellite technology.

These risks urgently need examination. We must face reality. Of these, perhaps, climate change appears to pose the greatest immediate risk to infrastructure, and is of greatest relevance to this subject. Predictions of droughts followed by periods of heavy rainfall would be a challenge.

The following hypothetical scenario, makes the point .

Our National Road system comprises several tens of thousands of kilometers. All of this, almost without exception, is founded on natural ground, uses natural construction materials and was designed in times of greater climate certainty.

The effect of predicted long term drought on this may be to excessively dry out the natural ground and road base materials leading to widespread pavement cracking, which will require continuous additional maintenance; though it also has maintenance benefits (perhaps also cost savings during dry times). Predictions suggest this may be followed by periods of heavy rainfall and flooding leading to swelling, rising moisture contents and to a loss of pavement strength. One may envisage dozens, perhaps hundreds, of rural towns being isolated to some degree for lengthy periods as a result of flooding and pavement failures. Looked at another way, our major cities may be isolated from their supporting hinterland and infrastructure. So, a serious situation.

Similarly additional sunlight (UV) may lead to accelerated bitumen oxidation (for spray seals and asphalt surfacing) leading to a possible increases, (20% to 30%), in routine road resurfacing costs.

A risk assessment might firstly examine the probability of these situations developing and the consequences; also mitigation and precautionary measures. These may include, for example, additional drainage construction or additional work to increase pavement strength. Thus maintenance and new works costs may increase substantially just on mitigation; this cost burden will probably fall mostly upon State and Federal Governments.

Similar issues will affect railway systems, sewerage and storm water systems, electrical distribution, and dependant systems such as the NBN and telecommunication systems.

Possibly the whole of our national infrastructure may be affected by climate change, so if it is assessed as having a degree of validity, then it would be irresponsible to ignore its possible ramifications. The expenditure on this could conceivably take all available Government funding to the exclusion of other major infrastructure work. So assessment is of the greatest priority.

This hypothetical, highlights the need for a holistic interdisciplinary approach, eg new design standards and procedures may need to be developed, based on the risk analysis findings, and subjected to rigorous industry and public examination. If climate change proves not to be a risk, then little will be lost by an evaluation process, and much may be gained.

This example also illustrates the need for reliable quantitative data on our national infrastructure. Which forms the second part of this recommendation. Estimates of cost, and opportunity costs, cannot be calculated, and priorities assigned without a complete knowledge of the subject. Perhaps this exists in one register, how else could IA conduct audits and prepares priority lists? If so is it publicly available, and classified in a nationally consistent and appropriate way, and in a format which is useful for general estimating purposes? So worthy of further examination

The risk factors listed, and possibly others, warrant examination and may have costs and social consequences, and a bearing on many of your recommendations, eg. Road funding.

Concluding Remarks

I conclude by congratulating all involved, and especially yourselves, on the quality of your draft report.

I realise the imperative for deadlines, and I do not underestimate the difficulties you face in meeting yours; however if we, as a Nation, do not build on your work now, then we will miss our one chance to put Australia in the best possible position to address the future.

I doubt that there will ever be another opportunity like this one to make such a vital and positive improvement to the future of the Nation.

If not now, then when?

Good Luck.