



**Evans & Peck Submission
on Productivity Commission
Draft on Public Infrastructure**

4 April 2014





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1 Introduction & Recommendations

Evans & Peck is a major Australian-based advisory firm that focuses on the infrastructure and resources sectors. We provide advisory services across the infrastructure lifecycle from upfront policy and strategy considerations, to preparation of business cases and their inputs, to delivery and contract services. Our scope of advisory services encompass commercial, financial and technical. The extent and breadth of our work has furnished us with deep understanding and insights into the infrastructure sector in Australia and internationally.

In 2014, Evans & Peck was awarded the Infrastructure Partnerships Australia **Advisory Excellence Award** for the transaction management services and advice we provided to the State on the \$2.5 billion Sydney International Convention, Exhibition & Entertainment Precinct.

Evans & Peck welcomes the Commission's Draft Report. It makes a substantial and timely contribution to the public debate on how we can best address the infrastructure issues facing this country.

Importantly, the report distinguishes between funding and financing and re-enforces that funding shortfalls provide a much greater constraint than the operation of financial markets. Important also is the stark reminder that funding for infrastructure can come only from three sources

- Government – using current surpluses and borrowings, or revenue from asset sales
- Users – through direct payment for use of the infrastructure and related services
- Third party beneficiaries – through their identification and contribution.

Our submission addresses the first of these - government as a source of funding – and focuses on three initiatives outlined in the Commission's Draft Report for getting better value from existing government infrastructure funding levels:

- 1) Governance and Institutional Arrangements
- 2) Corridor Protection
- 3) Project Benchmarking.

In our submission, we have attempted to provide contributions which we believe could add to the Commission's practical understanding and/or provide additional relevant material for it to consider.

Our recommendations are:

1) Governance and Institutional Arrangements – General Government Sector

- Governments consider the introduction of an infrastructure decision-making framework in the general government sector that devolves greater incentive and responsibility to the agencies that use those assets to provide services
- Introduction of such a framework be considered initially through pilot schemes, to enable a focus on addressing ‘teething’ issues and an assessment of the merits and timing of its wider adoption.

2) Corridor Protection

- Greater emphasis is given by governments to long-term strategic planning of service needs and resulting proposed infrastructure responses
- As soon as corridors are identified through such processes, they should be protected
- A national approach be established to facilitate protection for corridors that cross jurisdictional boundaries.

3) Project Benchmarking

- When establishing benchmarking frameworks, regard be given to the Key Principles identified in s4.4
- Expand the Australian Government’s Project Cost Breakdown (PCB) principles beyond road and rail transport to other sectors which it either funds or makes a financial contribution toward
- Investigate ways of capturing data from privately funded developments
- Investigate ways of collaboration with like institutions internationally to share high level data to improve the validity of benchmarking internationally
- Provide independent oversight of the initiative, reporting to an appropriate body (eg Infrastructure Australia, Productivity Commission) on a periodical basis.

2 Governance and Institutional Arrangements – General Government Sector

In its Draft Report, the Productivity Commission rightly places importance on getting the governance and institutional arrangements for public infrastructure right; “to promote better decision making in project selection, funding, financing and the delivery of infrastructure services”.

Draft Recommendation 7.1 proposes institutional and governance arrangements that should be followed by governments in the provision and delivery of public infrastructure, including:

“effective processes, procedures and policy guidelines for planning and selecting public infrastructure projects, including rigorous use of cost-benefit analysis and transparency in cost-benefit assessments, public consultation, and public reporting of the decision (including a transparent review of the decision by an independent body, for example, an auditor-general or Infrastructure Australia”.

The emphasis in this recommendation on the use of transparency, public reporting and third party review results from a concern by the Commission that decision-makers face deficient incentives at present to make the best decisions in the public interest in the selection of public infrastructure projects. The major deficiencies are listed on pages 81 and 82 of the Commission’s Draft Report. There is also the issue of whether decision-makers face the appropriate incentives to make the best value-for-money decisions during the lifecycle of infrastructure assets.

2.1 Categorisation by commerciality of decision-making

This submission proposes a framework to improve these incentives, not only in the initial investment decision but throughout the life of the infrastructure. This framework could be used in conjunction with the Commission’s proposed focus on transparency, reporting and review. The discussion of this matter may benefit from a categorisation of public infrastructure according to the level of commerciality in decision-making in its current provision by government:

- 1) Purely ‘economic infrastructure’ provided by Government Trading Enterprises (GTEs) and/or private companies funded primarily by users (eg urban water, electricity)
- 2) Other ‘economic infrastructure’ provided by government entities and funded primarily by government (eg road, passenger rail)
- 3) ‘Social infrastructure’ provided by government entities and funded by government (eg public hospitals, public schools).

This categorisation can be important because of the differing incentives facing the infrastructure owners and the differing scope for, and nature of, reforms applicable:

- 1) Entities (GTEs/private companies) that provide services to customers using ‘economic infrastructure’ primarily on a user pays basis (eg urban water, power, airports, ports, freight rail, telecommunications) make their infrastructure decisions in a commercial environment, with prices charged tempered by market forces and/or economic regulatory regimes
 - For such infrastructure, a role for government may remain with respect to longer-term planning, investment approval (as GTE shareholders) and economic regulation

- 2) Entities (primarily government agencies) that provide services to customers using ‘economic infrastructure’ but with user charges providing a relatively small recovery of full costs (eg roads, passenger rail, irrigation, cultural) will require their infrastructure investment proposals to be approved and funded (at least in part) by government
- For such infrastructure:
 - Government controls pricing, and therefore impacts the level of cost recovery
 - Monetised cost benefit analysis is an important element of the current decision-making framework
 - There is potential for provision of services arising to be made on a more commercial basis; this is a key finding with respect to roads in the Commission’s Draft Report
 - There is also potential for decisions with respect to infrastructure provision and its ongoing management to be made on a more commercial basis. Under the departmental funding model discussed below (where funding decisions continue to be managed through government road agencies), the issue of hypothecation of revenue being clearly linked to expenditure would improve the transparency of investment decisions on assets such as roads.
- 3) Entities (primarily government agencies) that provide – directly or through 3rd parties - services to customers using ‘social infrastructure’, where user charges provide a minimal contribution to recovery of full costs, will require their infrastructure investment proposals to be approved and funded by government
- For such infrastructure:
 - The business cases to Cabinet supporting investment proposals include a comparison of primarily qualitative (non-financial) benefits and financial costs of investment and operation – using a multi-criteria analysis framework – rather than a focus on BCR ratios. The quantification of benefits can be difficult to estimate and/or isolate, limiting the usefulness of a monetised cost-benefit approach.
 - Whilst there may be limited scope to increase the commercial nature of these service markets, there may be significant scope to improve the investment decision-making incentives faced by these entities.

The Commission’s discussion is heavily focused on the first of these categories, and also the second category with respect to roads, with relatively less attention on the third category. This may be explained by the focus on economic infrastructure in its terms of reference. However, the Draft Report does makes numerous references to social infrastructure and, to the extent that the final report will do so as well, there is scope for the final report to address the issue of incentives with respect to the provision of social infrastructure.

2.2 Current framework for social infrastructure

The discussion below focuses on the potential to significantly improve the incentives facing those 'owners' of social infrastructure assets within government with respect to infrastructure decisions, both at the outset and during the life of the infrastructure assets.

The key parameters within which these social infrastructure entities currently operate include:

- Most capital must be bid for as part of annual (or sometimes 'out-of-cycle') Government Budget processes; social infrastructure entities may have some ongoing base funding for capital expenditure but this is often relatively small
- Capital is treated as 'free' by these entities; that is, if they are lucky enough to receive a capital appropriation, there is no ongoing capital charge (apart perhaps from a 'round robin' arrangement)
- Any additional operational costs (eg salaries, maintenance) with respect to the infrastructure (eg if the investment represents an addition to that entity's total capital stock) are funded separately through an increase in the entity's/department's ongoing operational Budget appropriation
- Under the output based funding model used by many Australian jurisdictions, the entity is funded to produce services and is paid according to their production.

The weaknesses of this current framework from a commercial decision-making perspective, with respect to infrastructure investment and ongoing management, include:

- The separate consideration, and appropriation, of capital and operational funding and expenditures limits incentives to optimise consideration of whole-of-life costs in upfront investment decisions
- The difficulty for entities to make optimal whole-of-life decisions during the life of their infrastructure given their lack of control over when the funding for infrastructure replacement – or expansion – may be provided
- There are limited incentives to adequately maintain infrastructure; if infrastructure ages prematurely, the relative priority (across government) for the funding of its replacement increases. Entities are largely free to re-allocate maintenance expenditure funds to address 'more urgent' needs
- No ongoing provision for asset replacement – depreciation provisions are generally made and retained centrally
- A preference by Ministers for new capital solutions, as these provide major announcement and ribbon-cutting opportunities
- Limited scrutiny by Cabinet of the infrastructure and its performance beyond the construction period of the infrastructure.

2.3 A reform framework for social infrastructure

There are two pillars to the proposed framework for improved incentives.

The two pillars are designed to more closely mirror the incentives faced by owners/managers of commercial assets:

- A distinction between 'Sustain' and 'Growth' assets
 - 'Sustain' assets are those used to provide the current level of services – quality and quantity – purchased by government under the output funding model
 - 'Growth' assets are those used to provide an increase in service provision - quality, quantity or both; and
- Infrastructure entities are given life-cycle responsibility for acquiring, holding, maintaining and disposing of assets – and for the funding of 'Sustain' assets.

The key elements of this 'reform' framework are:

- Social infrastructure entities receive full funding (ie not just 'operational') annually for provision of services that the Government has previously agreed to buy – 'sustain' funding under the output funding model. This gives greater certainty to these entities with respect to planning
- This funding includes depreciation allowances for its 'sustain' asset base, which the entity can 'save' toward the cost of replacement of assets
- Entities receive proceeds of asset disposals ie these are not returned to the Consolidated Fund as generally happens now
- Monitoring by central agencies to ensure that portfolios are being run well and remain on a financially sustainable path; annual reporting to Cabinet and more detailed rolling reviews of services purchased
- Cabinet considers 'growth' funding bids from entities ie to enable an addition to the current level of services
- The entity is provided with capital 'growth' funding if the purchase of additional 'growth' services is approved. The entity also receives an ongoing increase to its funding for operational and maintenance expenditures, and access to depreciation allowances for the new asset.

The benefits that could accrue from a more commercial framework include:

- Potential for significant cost savings in the medium to longer-term through
 - More efficient use of capital stock; better lifecycle decisions, including maintenance and refurbishment and extension of facility life; and greater scrutiny of increases to the capital stock
- Entities can plan with greater long-term certainty
- Entities are incentivised to focus on whole-of-life considerations
- A higher likelihood that facilities would remain fit-for-purpose and enable maintenance of service levels
- Stronger incentive for consideration of non-asset or asset-sweating solutions, compared with asset replacement, if that provides the best value for money outcome – taking into account a full consideration of risks of the continued use of aged assets

- Putting under the spotlight upfront, a consideration of the full consequences of external boosts in funding. For instance, a Commonwealth stimulus package will create a need for the asset owning entity to have increased operational funding and access to depreciation allowances to meet a large future increase in sustain capital expenditure at a future point in time
- More accurate costing of provision of government services – allows better scrutiny by government of services it is 'buying', including as to whether it wishes to continue 'buying' that level and type of service.

Whilst there appear to be significant potential benefits from adopting such a framework, there are no known living examples internationally. This indicates that its introduction faces substantial impediments. These include:

- A perceived “loss of control by Cabinet” over these capital expenditure decisions and their timing, arising from a devolution of responsibility for ‘sustain’ capital decisions from Cabinet to portfolio Ministers and their department leads
 - However, Cabinet should continue to approve each ‘sustain’ investment proposal (at least those above an individual or annual total threshold) to (1) confirm that it wishes to continue to purchase those services which the asset produces and (2) satisfy itself that good practice processes have been used in preparation of the business case and that proposed delivery arrangements are robust
- The current allocation of funding to departments for providing individual services, under the department funding model, may be far from accurate. It is generally based on historical allocations existing prior to the introduction of output funding. The determination of accurate pricing - and related funding provision - of services would be a very large ‘ground-up’ exercise and could only be undertaken over a period of years and would be very resource-intensive
- The result of this ground-up funding review is likely to involve funding shifts between service units within a portfolio, and between portfolios – ‘losers’ may protest vigorously
- It may require a significant increase in total upfront appropriations to departments, which may be unaffordable in the short-to-medium term. Although total appropriations over time for infrastructure to provide a given level of services should fall
- There is not always a clear distinction between ‘sustain’ & ‘growth’; many investment proposals will contain a combination of both elements
- Scope for gaming; some entities may take an unduly short-term focus, consistent with the likely tenure of their management (greater ‘Board’ scrutiny would be required by Cabinet)
- A need for a significant shift in the way that Cabinet (including its Budget Committee) operates, towards being a more informed buyer of the services it purchases and wishes to purchase and having a lesser focus on the allocation of capital funding.
 - Ideally, this shift in the role of Cabinet would be part of a more fundamental change that would see it playing a more strategic role generally than now and where medium to long-term strategic planning would receive greater attention (This is related to, but beyond the scope of this submission).

2.4 Conclusion

Governments are likely to continue to face even greater fiscal stringencies in future years with population aging leading to increased demand for health and other services traditionally provided by government at little or no direct cost to users, and with a smaller portion of the population in the workforce and providing the taxation to fund these services.

There will be a growing imperative for government to get greater mileage out its taxation revenues.

The size of the potential budgetary savings over the medium-to-longer term makes major reform to the current budget-sector infrastructure investment and management framework increasingly inevitable.

The initial increases in total appropriations to government entities should be recouped many-fold over time.

However, given the potentially seismic change in government budgetary arrangements associated with the adoption of this framework, and the significant implementation effort and change in practices, a practical approach may be to pilot it in a small number of entities initially.

2.5 Recommendation

It is recommended that:

- Governments consider the introduction of a framework in the general government sector that devolves greater incentive and financial responsibility for infrastructure provision and ongoing management to the agencies that use those assets to provide services
- Introduction of such a framework be considered initially through pilot schemes, to enable a focus on addressing 'teething' issues and assessing the merits and timing of its wider introduction.

3 Corridor Protection

Corridor protection is particularly important in the transport sector but can also be important in other infrastructure sectors. Ideally, corridors are set aside many years in advance of their development.

As set out in the Draft Report, and in particular the comments from the Office of the Infrastructure Coordinator, governments are best placed to protect corridors and delays in doing this can substantially increase the cost of future projects and impact the ability to respond to infrastructure demand.

3.1 Long-term strategic planning

The most critical aspect for protecting a future transport network is determination of the configuration of the future transport network. This is generally a responsibility of government(s) and is best undertaken through a long-term and transparent strategic planning process.

There is much international evidence to suggest that the most cost-effective and efficient way to undertake strategic transport network planning is to have a centralised, integrated, objective and transparent process. Like all planning, it is most efficient if it occurs in advance. Last minute planning can result in costly property acquisition, high impacts, higher cost infrastructure projects and/or sub-optimal network design.

Given that the costs of corridor protection (and the additional construction costs of a failure to protect corridors) are borne by government, improvements in the long-term strategic planning process can produce sizeable financial savings to governments.

Failure to undertake rigorous long-term strategic planning and/or to gain wider public support can also lead to transport agencies seeking to protect overly large or an excess number of corridor tracts to preserve options.

3.2 When to provide protection

If long-term planning is undertaken effectively and required corridors identified, the next step is determination of the most appropriate means of protecting the corridor for each project. Once a project is committed – regardless of how far in the future – the most cost-effective method is to protect the land immediately.

Total land acquisition costs (including land acquisition, compensation, legal and other costs) generally are cheaper over the long-term (ie better NPV if the land is acquired upfront, rather than deferred. If the government knows it will need to spend the money to buy land at some stage, generally there's also a better BCR if it's done up front. Depending on location of land, in most cases, the government can receive rent from existing landholders for continued use of land until the project build is imminent.

The vast majority of the overall acquisition cost is made up of compensation to landholders for future use. Compensation is triggered as soon as planning protection is applied, but acquisition can occur at any stage. This means that even protecting the land in Planning Schemes requires funding allocation for potential (and likely) compensation claims.

3.3 National approach for interstate corridors

Evans & Peck would also support further assessment of the benefits that may arise from development of nationally consistent processes and guidelines for the identification and protection of interstate infrastructure corridors. The assessment of cross jurisdictional projects such as Melbourne to Brisbane inland rail would provide a basis for testing whether nationally consistent processes and guidelines would improve the efficiency and cost of land corridor and site protection strategies at the individual jurisdictional level.

3.4 Recommendations

It is recommended that:

- Greater emphasis is given by governments to long-term strategic planning of service needs and resulting proposed infrastructure responses
- As soon as corridors are identified through such processes, they should be protected
- A national approach be established to facilitate protection for corridors that cross jurisdictional boundaries.

4 Data Collection and Benchmarking

This section of the submission responds to the following references in the Draft Report:

DRAFT RECOMMENDATION 8.2

The Australian Government should fund the development and ongoing implementation of a detailed benchmarking framework for major infrastructure projects in Australia. This would substantially assist in the future planning and evaluation of projects, and is an essential factor in the much-cited pipeline of projects.

The benchmarking should, at a minimum, include information on tender costs and other procurement outcomes, completion times and final out-turn costs and levels of remuneration and industrial disputation.

The provision of data to support the benchmarking framework should be a requirement attaching to all Australian Government funding for major infrastructure projects. Mechanisms should also be developed to capture similar data from projects funded by other levels of government and consideration should be given to what information might be gathered from the private sector to enhance the quality of information provided by the benchmarking.

This ongoing benchmarking must be seen to be independent of both government and industry influence and also be seen as technically robust and credible.

DRAFT FINDING 8.2

Comparisons of major project construction costs between Australia and other countries suffer from a range of methodological and data problems that limit their use. Recommended improvements in data availability, together with further development of reference frameworks, should assist greatly in reducing such limitations.

INFORMATION REQUEST 8.3

The Commission seeks further and better evidence on construction cost differentials for major infrastructure projects, both within Australia and between Australia and comparable countries.

The Draft Report identifies that lack of data, and/or poor quality of data, beset the ability to use historical data to improve decision-making. This finding relates to historical data within a jurisdiction as well as to publically available data from infrastructure undertaken by other governments. The Draft Report recognises the importance of the application of reliable data to support public infrastructure investment decisions, particularly from a national perspective.

While the Draft Report captures most of the key issues around the value of data capture and benchmarking, this submission endeavours to reinforce the need for the implementation of this fundamental tool [ie a robust historical data set] to support improved decision-making with respect to project planning and improving project productivity during delivery.

In doing so, we identify project scope and other critical success factors that need to be acknowledged and, in many cases, formalised benchmarking processes to be implemented.

While this submission will tend to highlight road and rail infrastructure project benchmarking, the principles and issues apply to other sectors. This submission also describes the issue in the Australian context, ie referring to the federal, state and in some cases local government framework.

4.1 Current status

The Draft Report acknowledges the preliminary work undertaken by the Australian Government Department of Infrastructure and Regional Development (DIRD) to establish a Project Cost Breakdown (PCB). This approach stems from the Best Practice Cost Estimation Standard for Publicly Funded Road and Rail Construction- May 2011 (Draft Version for Jurisdictional Training). Evans & Peck provided significant assistance to DIRD in the formulation of this document and the subsequent training within jurisdictions.

The PCB has been implemented across all road and rail agencies seeking Australian Government project funding.

The key success factor has been that the PCB is a DIRD requirement that agencies are obliged to comply with as a prerequisite for funding. The limitations remain that non-federally funded road and rail projects are not captured in this approach.

Unlike the building industry where quite good construction cost data is available, or at least held by state agencies and service providers, the road and rail sectors face a more complex task in “normalising” project cost data that can be weighed against economic benefit analysis to inform good decision making.

For example, the Benefit Cost Ratio (BCR) for a commercial office building is underpinned by a confident understanding of market rental rates and a construction cost estimate that in many cases is accurate within a relatively narrow range. Road and rail infrastructure is more complex to estimate within this accuracy range and the benefits also are often not able to be accurately costed. Hence any supporting data from recent similar road and rail projects can, as a minimum, provide relevant comparisons to inform decision makers of the variability risk in the pricing presented.

4.2 Objectives of a benchmarking process

The key objectives of a benchmarking process are for its use to:

- Support better decision making through validation of the subject project costs (and time) through comparison with costs of similar projects
- Assist in identifying value for money investments, or conversely, poor value for money outcomes
- Monitor project cost trends over time at a strategic level, within jurisdictions and nationally on a state by state basis for similar infrastructure classes
- Be better informed to measure productivity changes in the delivery of public infrastructure
- Undertake performance monitoring of project development, by dissection of costs and ratios within any given investment (eg construction costs; clients' cost; property and contingencies) to better understand the shift
- Enable our road and rail sectors to keep abreast of international data and experience.

4.3 Scope of benchmarking

While the Draft Report identifies the value that benchmarking brings to organisations who actively seek productivity improvement and value for money, there is a tendency to set excessively high expectations which in reality cannot be delivered through the data. To assist in clarifying reasonable expectations for the purpose of improving productivity, this submission differentiates between the strategic and tactical levels encountered in undertaking benchmarking.

The **strategic** level covers a range of high level outputs that provide key project metrics at a reference class basis, for example

- Total costs per lane kilometre
- Total costs per track kilometre
- Relative cost percentages of major cost areas within the total project budget
- Average expenditure per month over the construction period

The **tactical** level covers detailed outputs that cover costs for key project inputs, for example:

- Concrete, steel, asphalt prices
- Labour costs
- Plant costs
- Productivity for activities.

This submission primarily addresses the strategic level only. The items described at a tactical level are dealt with through current industry sources and practices and, as they are “net” costs generally exclusive of contractor management costs and margins and are not on the basis compatible with strategic benchmarking. However, the variances in costs for each of these “commodities” are useful to understand as reasons for price variability and trending and should be considered in context when undertaking strategic benchmarking.

The DIRD Project Cost Breakdown addresses benchmarking at a strategic level, commencing at the early project Identification Phase, reporting at intermediate milestones and ending with the Final Cost of the project.

To expand on the description provided in the Draft Report in Box 8.4 by Warren Fletcher, Director, Project Review at DIRD, the PCB process addresses the strategic level benchmarking through collection, processing and application of data as described below.

The Inputs include cost data within each project, broken down by:

- Direct costs for major project (construction) elements
- Contractor’s indirect costs (management , margins etc)
- Design costs
- Client’s management costs
- Property (if applicable)
- Contingency
- Escalation provisions.

The Outputs include:

- A profile of costs for the above, by dollar value and by a percentage relationship in accordance with a standard breakdown, at each mandatory reporting milestone.
- A number of key metrics, eg the gross construction costs for selected key elements such as \$/m³ of earthworks, \$/m² of bridge structure, \$/m² of road pavement, \$/m of track etc, plus
- Additional high level metrics as required.

The application of this data allows:

- Analysis of the (subject) project cost performance over the life cycle.
- Identification of items that have changed considerably.
- Monitoring the take up of contingency and escalation provisions.
- Comparison of that project with other projects within or outside the reference class.
- Comparison of data across agencies with respect to cost of delivery, specific items of inquiry and the like.
- Costs of the projects by phase (Identification, Scoping, Development and Delivery)
- Specific database queries on demand.

The tactical data referred to above may provide a supporting role in explaining significant trends. However, overall market supply and demand tends to have a significant effect on pricing.

It should be noted that the most significant data is the Final Cost of a project which is quite difficult to capture in the same detail as in the preceding phases, which would have been estimated by the client organisation using a “bottom-up” approach. However this is not sufficient reason to fail to complete the data capture and maintain the integrity of the database through to completion.

While the Draft Report recommends in 8.2 that “*the benchmarking should, at a minimum, include information on tender costs and...*” there are practical reasons why this type of information cannot be captured formally from bidders. Actual costs for tendering, levels of remuneration, industrial disputation and the like by bidders are normally not transparent to governing agencies who generally receive only indicative figures provided anecdotally. However, governments should be able to record their costs of running procurement processes.

It is important that the expectation for the benchmarking process is not over-reached by too much detail being required, particularly in the early phases of the project. By doing so, there is a potential for discrediting the effectiveness of the tool.

4.4 Critical success factors

Benchmarking is a significant investment in time, resources and processes by an organisation and should be planned comprehensively prior to embarking on extensive data capture and analysis. It is essential that the key outputs are defined and agreed upfront, as this will drive the way that estimates and construction pricing is structured.

The PCB implemented by DIRD has had appropriate rigour between DIRD and the state agencies to design the desired outputs, albeit at a preliminary stage. The value of the analysis will only become clear over some years as projects move through the life cycle and trends become apparent.

While the Draft Report has identified a number of issues in relation to good benchmarking practice at a strategic level, the following points are likely to become critical success factors if reasonable accuracy and sustainability of the investment is to be achieved:

- A commitment by federal and state government agencies to allocate the appropriate resources to support benchmarking that may eventually assist in improving productivity
- Establishment, or appointment, of an appropriate organisation(s) with a national mandate and a clear terms of reference as to the scope of its role. In the case of road and rail, DIRD fulfils this purpose for federally funded road and rail projects
- Preparation of the terms of reference jointly with state agencies, who may be more willing to participate if able to access the data for their own performance benchmarking
- Mandating of the high level structure (ie PCB) for inputs, as is the case with DIRD projects
- Identification and agreement of reference classes that will be common across the initiative
- Development of a glossary of definitions across each sector to ensure data is allocated and reported consistently
- Development of “ground rules” that ensure valid comparisons are made. For example, property and/or financing costs should be excluded from cost of construction analyses as they are very project specific and would skew results
- The defining of the expectations and limitations of the model by not requiring excessively detailed outputs
- Capture of projects outside the federal funding programs in the standard DIRD format within state agencies, to broaden the reach of the strategic benchmarking. It is acknowledged that state agencies may wish to delve into deeper analysis of their projects for their own purposes
- Establishment of the ground rules for security of data with agencies and/or service providers
- An appropriate level of collaborative governance, as the value is within the disciplined allocation and management of data. This governance would take the form of an appropriately credentialed representative within each agency working together to develop effective benchmarking.

The above factors do rely heavily on federal and state agencies working together to deliver this strategy. Understandably, the private sector is likely to be limited in what it is prepared to contribute – for commercial reasons.

4.5 Recommendations

In addition to awareness of the Critical Success Factors, the following actions are recommended:

- Expand the federal government’s PCB principles to other sectors where the federal government either funds or makes a contribution through a subsidy, eg Water, Buildings (by reference classes), Alternative Energy developments, Ports, Aviation Infrastructure.
- Investigate ways of capturing data from privately funded developments.
- Investigate ways of collaboration with like institutions internationally to share high level data to improve the validity of benchmarking internationally.
- Include Whole of Life Costs on an NPV basis.
- Engage universities to assist with benchmarking to raise the awareness in students of efficient infrastructure delivery and governance.
- Provide independent oversight of the initiative, reporting to an appropriate body (eg Infrastructure Australia, Productivity Commission) on a periodical basis.