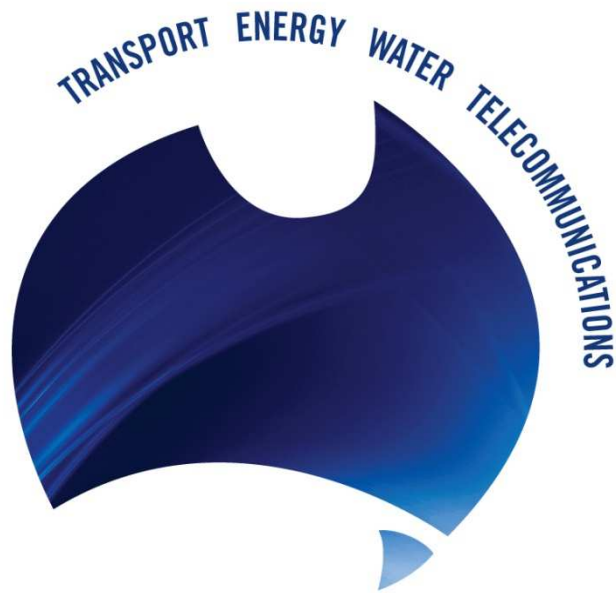


# infrastructure report card 2010

## *Australia*



**An Address to the National Press Club of Australia**

**by Peter Taylor**

**CEO Engineers Australia**

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**(Check against delivery)**



**ENGINEERS  
AUSTRALIA**



Thank you Laurie.

I'm sure that you and the viewers will be relieved to know that I will not be following the format of many of your recent speakers ..... I will not be launching my autobiography; nor will I be offering any insights into the internal wranglings of our political parties.

What I will be doing is speaking about infrastructure - its role in ensuring that Australia continues to be a great place to live, and the standard of living for most of our citizens continues to be one of the best in the world.

But we have some major challenges to overcome to make sure that all Australians can enjoy these benefits.

The key to this is high quality infrastructure.

Engineers Australia has long held the view that the quality of Australia's infrastructure is an indicator of the nation's current and potential economic, social and environmental wellbeing and viability.

We have been providing independent commentary on Australia's infrastructure for many years through a range of media, but primarily through our series of Infrastructure Report Cards since 1999.

Today, I am releasing our 2010 Infrastructure Report Card for Australia. The Report rates Australia's infrastructure sectors from A to F, and shows that we still need some major changes if our infrastructure is to meet current and future needs.

Much of it is working at its capacity and needs replacement or serious maintenance. We have also found that there is still significant under-investment, resulting in a current shortfall of billions of dollars.

These are long-term issues that must be addressed.

To set the scene, I'll briefly wind the clock back to 2005. In our 2005 report, we identified that providing new infrastructure, and maintaining, upgrading or replacing ageing infrastructure were major challenges facing Australia.

We noted the significant under-investment across the nation, which imposed constraints on all parts of the economy and the community.

Unfortunately, this is still the case.

We called for coordinated planning frameworks, and cooperation between governments. We considered these critical to providing for Australia's future needs.

Most importantly, we believed that Australia would benefit from a national infrastructure council to provide independent advice about priorities of national significance.

In the five years since 2005, we have experienced significant economic and population growth.

Infrastructure Australia was established by the Federal Government as the independent national advisory body. It has already developed a priority-setting process that will apply more rigour to project-funding decisions.

Engineers Australia wholeheartedly welcomed the establishment of Infrastructure Australia, and we have monitored its work, including the infrastructure audit and the creation of priority lists.

The initial list was based primarily on submissions by state governments and other interested parties. This was understandable because of a lack of time for detailed research at such an early stage of Infrastructure Australia's existence. But there was a lot of variability in the submissions; some were supported by sound analysis and justification, while others were little more than wish lists with election outcomes in mind.

In the 2008-9 Budget, the Australian Government announced the establishment of the Building Australia Fund. Allocations from the fund were to be guided by the priority list.

Around this time, there was public discussion of an infrastructure deficit, with estimates as high as \$770 billion.

The output from Infrastructure Australia provided the basis for tranches 2 and 3 of the Federal Government's economic stimuli that assisted us through the global financial crisis. But it cannot stop there.

Engineers Australia believes that the Building Australia Fund will need to expand significantly to overcome current deficiencies if it is to provide for the future. One potential source of funds might be the mineral resource rent tax currently under discussion.

Infrastructure planning, maintenance and development must become a coordinated priority for governments at all levels. Therefore, we welcome the work on national strategies for ports; energy; water; a freight network; and public transport. These will provide a good priority-setting framework to guide future investment decisions.

The advent of Infrastructure Australia and its project selection process has given impetus to some jurisdictions to improve their planning and priority setting.

We have examined these issues in our state and territory report cards, and today's 2010 Infrastructure Report Card for Australia has been distilled from these reports. Appropriate weighting has been given to the relative size and economic importance of each state and territory.

The ratings show that the early work of Infrastructure Australia and the GFC stimuli have yet to deliver their full impacts.

Given the long lead times for major projects, it is not surprising that there is a mix of no change, slight improvement and slight deterioration across the various infrastructure classes.

NSW, with a C rating, has experienced significant under-investment in all sectors over a long period of time. In the transport sector, roads are congested, regional and rural roads are in poor condition, and bridges are in need of urgent upgrades. Other sectors face similar issues. Significant improvements will only be achieved by building more infrastructure and employing demand management techniques.

Victoria's investment has consistently tracked below the national trend. It is only adequate with a C. There is traffic congestion in metropolitan areas, and there are public transport inadequacies. Regional areas have wastewater treatment problems and inadequate broadband availability.

Queensland's expenditure has stayed above the national average for 20 years. While several infrastructure sectors have been assessed as good with B ratings, the state only achieved a C plus overall. There has been under-investment in maintenance and renewals. The state is facing an ongoing increase in demand driven by population growth and the impacts of climate change and the resources boom.

The Western Australian trend was very close to the national average until 2001, after which it accelerated dramatically. This coincides with the minerals boom. Western Australia's infrastructure is generally adequate to good but still rates only a C plus overall.

South Australia's expenditure remained below the national trend until this year. There have been quite mixed results over the past five years with ratings ranging from a couple of poor D's - for stormwater and local roads - to a B plus for gas. The overall rating was C plus.

Spending on infrastructure in Tasmania has remained well below the national trend, with the occasional exception. Tasmania's infrastructure is mostly rated as adequate or poor, due to some issues with drinking water supplies and rail derailments. Only a B and a few B minuses saved Tassie from falling below a C rating.

The Northern Territory has generally followed the national per-capita infrastructure spend, except for a huge spike coinciding with the construction of the Alice Springs to Darwin railway. An A minus score for gas helped lift the Territory's infrastructure to a C plus overall.

Since the mid-1990's, ACT spending has tracked well below the national trend, and its overall B minus suggests that it is still enjoying the legacy of quality, pre-self-government infrastructure.

But self-government became a reality over 20 years ago and much of the inherited infrastructure is now at capacity, or is reaching the end of its design life. A change of approach will be required in the near future.

Five years ago, Australia's overall result was a C plus and it remains a C plus in 2010. This means that little or no real progress has been made, despite some attempts to make up for past under-spending.

In our range of A to F, a C plus rating can only be considered as pretty mediocre. In more objective terms, it means that major changes are required if Australia's infrastructure is to be fit for current and future purposes.

But what should we be aiming for? It would be unaffordable and unrealistic to expect nirvana. In my view, a B or B plus should be the goal.

Let me explain. Western Australia currently spends close to twice the national per capita average on engineering construction and it still only scores a C plus.

Just to lift the national per-capita spend to match Western Australia's would cost about \$40 billion; so it's not hard to see where the \$770 billion estimate, that I mentioned earlier, comes from.

Clearly, expenditure on maintaining and replacing existing infrastructure - not to mention new infrastructure - is well below what is necessary. There is still a lack of strategic and coordinated planning and prioritisation across many sectors.

And we are facing more intense challenges.

While Australia's economy is dominated by the services sector, its economic success is based on the abundance of agricultural and mineral resources. Australia's comparative advantage in the export of primary products is a reflection of the natural wealth of the continent and a small domestic market.

If we are to maintain this advantage, particularly now that the Australian dollar is bouncing around parity with the "greenback", we must have sufficient, efficient infrastructure.

Growth in the economy, coupled with new technologies, will see a significant growth in demand for expanded and new infrastructure.

Population growth is also an issue. Whether we use low or high growth assumptions, Australia's population in 2051 is likely to be in the range from 35 to 42 million people, with 8 or 9 million of them aged 65 or more.

Such a growing and ageing population will accelerate the demand for all transport, water, energy and telecommunication services.

Whether we are climate change sceptics or not - and we at Engineers Australia are definitely not - we cannot afford to gamble with our future. Australia must adopt a proper risk management approach in anticipation of the most likely consequences of climate change.

Existing sound infrastructure and new infrastructure must be able to deal with sea level rises, more intense dry and wet weather events, and greater temperature extremes.

We have already experienced some of these impacts in recent years with water shortages, electricity brown-outs, rail and road failures, and major structural failures to name a few. These failures have accelerated the implementation of alternatives such as wind and solar energy, and water desalination and reuse.

Funding is a major issue. Investment in infrastructure has still not caught up with the shortfall caused by years of under-investment.

As a result of the underspend prior to the mid-2000's, infrastructure is mostly working at capacity - and this requires an extremely high quality of operational management, so that large numbers of people are not adversely impacted by major power outages or gas shortages.

Since our last report, most sectors have developed plans for a massive expansion in capital works. This is mostly to meet existing demand rather than provide capacity to meet future demand. While plans have been made - relatively few projects are actually funded!

A large proportion of Australia's infrastructure is reaching the end of its useful life. Increasingly, owners will have to spend money on replacement of ageing assets, not only to meet the needs of an expanding population; but also to cater for increasing minerals and gas exports.

The capital investment required over the next decade will be very significant. But one of the areas that can easily be overlooked is the need to ensure that whole-of-life operational performance and maintenance costs are covered.

While short-term savings can be made by reducing maintenance, the end-result is inevitably more expensive and disruptive.

Economic principles should not be the sole determinant in deciding whether or not to construct a nation-building project. The need for some infrastructure sometimes overrides a poor benefit-cost analysis. It could be argued that the Snowy Mountains Hydro-electric Scheme and the NBN fit this category.

A particular project may not be justified purely on economic returns, but from a broader perspective it may well be. There needs to be a way of capturing the non-economic and policy factors in any analysis.

The lack of integrated and coordinated long-term planning now means that funding for essential infrastructure typically falls well short of what is needed. This has reinforced the need to consider traditional and novel funding options in conjunction with priority-setting processes.

Funding mechanisms range from public sector financing (whether by debt or reserve funding), infrastructure bonds, public-private partnerships, favourable taxation treatment for infrastructure investments, or other creative means - creative, but legal, of course.

Private superannuation funds have long been calling for opportunities to invest in economic infrastructure. Perhaps now is the time for bipartisanship at the federal level in looking seriously at infrastructure bonds? But the signs are not encouraging under the "new paradigm".

Further institutional reforms may also be needed. Infrastructure projects are time-consuming and produce large fixed assets with significant capital costs. There are high risks associated with private sector investment, which can lead to under-investment.

Supporting the private market is essential. We need an environment that allows the private sector to participate more fully in the delivery of energy, water and transport.

Australia has an extremely fragmented regulatory and planning framework. There are many federal bodies involved in infrastructure, and there are dozens more at the state and territory level, each having different and often competing responsibilities and interests.

Add to this around 565 local governments and the problems are compounded. Cooperation between the various spheres of government, business and the community is fundamental to future success.

We also need greatly improved cooperation and coordination across infrastructure modes, such as between road and rail. This will mean that decisions will be more likely to complement one another, rather than be in conflict.

Strategic planning for infrastructure by some state and territory governments has improved since our last Australian report card in 2005, but is not at the optimum level to provide the best outcomes for the community.

Some plans are sector-specific, with no overarching strategic vision, while others are more integrated but only for specific geographic areas.

Some have provided a strategic long-term approach to planning and delivery of infrastructure. Others have provided a wish list of potential infrastructure projects.

A planning hierarchy is needed so that plans align with challenges at national, state, territory, or regional levels. The timeliness of planning processes also needs improvement as does the need for plans to reflect the community's interest rather than a political interest of a particular level of government.

Efficient transport networks require supportive land use developments. It is no longer acceptable to provide single-use corridors, such as for a railway. They must cater for other infrastructure such as water, gas and electricity, and so encourage new residential and business developments.

Once decisions on land use and transport planning are made, the responsible parties must either build the infrastructure in a timely manner, with the required capacity, or make sure that land is set aside to cater for future needs.

There have been instances where land developments have proceeded, but the transport infrastructure has been delayed or cancelled, resulting in an area being under-served. This has led not only to congestion and long transport times, but also to social exclusion. The Sydney south-west growth corridor is a classic example.

Priority-setting for critical projects must be based on the advice of Infrastructure Australia at a national level, following rigorous analysis and justification. States and territories should have advisory bodies operating on similar principles.

Underlying principles in any planning documents need to include productivity, liveability and sustainability. Sustainability is not only about the natural environment, but includes economic and social issues, equity, affordability and effectiveness. Planning regimes must remain flexible and open to change, given that forecasts often turn out to be inaccurate.

We also need to be realistic in terms of our ability to deliver benefits from infrastructure.

Political, business and community expectations about new or improved infrastructure are often raised to unrealistic levels, resulting in unnecessary public criticism and blame when projects do not achieve their expected outcomes.

New projects are often described in transformative terms and claims are made that they can be delivered in short time-frames. However, in reality, many of these projects provide only incremental improvements and almost all have lengthy design, construct and commissioning phases.

All infrastructure owners must have adequate data on their infrastructure assets, and must utilise this to plan and fund maintenance and renewal programs. Maintenance may not be the most newsworthy activity, but it is absolutely essential to ensure the longevity of the infrastructure asset.

The next decade will see a number of very large infrastructure projects being simultaneously designed, constructed and commissioned. This unprecedented program of works will require large skilled workforces in both the public and private sectors. A significant risk is that due to skill shortages, projects will be delayed and costs will exceed estimates.

There is an engineering skills shortage in most infrastructure areas and I predict that this will only get worse in the future. The shortage will be exacerbated by the increased demand for staff to work on projects across the nation.

The large numbers of engineering practitioners retiring over the next decade, coupled with an inadequate supply of graduates, will complicate matters even more.

Having and utilising technical expertise is a pre-condition to being an informed buyer of all infrastructure-related projects and services. It is crucial that buyers are well informed so that they are able to evaluate and select the option that provides best value for money, while being innovative and managing risks equitably.

The myriad of technical and legal details in tender and contract documents creates minefields for clients who have down-sized at the expense of their in-house skills and expertise.

Infrastructure must contribute to sustainable economic, social and environmental activities. While infrastructure projects over the last decade have increasingly focused on environmental sustainability, insufficient attention has been paid to long-term economic and social aspects.

Perhaps the initial Murray-Darling Basin guidelines, which have been so much in the news lately, demonstrate this point?

It is essential to ensure that decisions on infrastructure reflect the fact that its physical life is typically between 20 and 50 years, but may well be longer than 100 years with refurbishment.

Infrastructure must be able to operate under all of the likely climate-related changes, not just in the short-term, but over the full duration of its intended life.

Population growth must be factored in so that we have sufficient capacity for growth at the time of construction by preserving land, or by designing for future expansion.

Notwithstanding the lack of community acceptance for some of today's re-use or recycling technologies, sustainability into the future will become increasingly dependent on the recycling of many of our critical resources, such as water.

A combination of new and improved technologies and properly devised community education programs will be needed.

There is a significant difference in the quality of rural and urban infrastructure. This will only get worse if no action is taken.

Efforts must be made to close this gap for equity reasons and for the pragmatic reason that improved infrastructure in regional and rural areas may encourage decentralisation.

This will reduce pressure on the crowded capital and major cities. Properly planned and serviced hubs and corridors may be part of the solution.

Australia is experiencing congested ports and roads and lacks efficient intermodal facilities.

Infrastructure Australia has identified priority projects costed at \$83 million for nationally significant infrastructure in their latest priority list alone, but many more projects will need funding in the future.

Innovative funding solutions must be found using experiences and learnings of other states or countries.

Australia's infrastructure issues are long-term. They are well beyond an electoral cycle and the highs and lows of the stock market. Having a vision for Australia and for big infrastructure projects is needed; and getting the priorities right through an independent strategic process is essential.

In the last five years, there has been a significant shift in the landscape. "Infrastructure" is now part of the vocabularies of all political parties. Public debate and discussion are now commonplace and certainly better informed.

Many of these discussions have common themes that are very similar to the views that Engineers Australia has been presenting for many years. They highlight the importance of well-maintained and timely new infrastructure to the national economy and our envied quality of life.

If we are to succeed in ensuring that there is life after mineral export booms; that we cater for the exigencies of climate change; that we provide for population growth; that we improve our international competitiveness; and that we facilitate the achievement of equity for all Australians, then governments, the private sector and the community - all of us - must lift levels of cooperation and coordination to new heights.

Long-term, fully integrated planning - and the cash to back it - will be the key!

The early work and achievements of Infrastructure Australia must be recognised and developed further. Their priority assessments must be respected by all to avoid any tendencies to revert to good old-fashioned "pork-barrelling".

In the meantime, Engineers Australia remains the leading advocate for the engineering profession. We will continue to be the major source of independent policy advice to governments and the community on matters related to infrastructure, including its suitability for Australia's future.

Thank you.