

TRANSPORT ENERGY WATER TELECOMMUNICATIONS



infrastructure report card 2010  
*New South Wales*



ENGINEERS  
AUSTRALIA

# Communiqué

Infrastructure in NSW underpins the delivery of services that affect every part of the lives of the community. Sustainable economic growth of the State is dependent on good infrastructure and high quality infrastructure delivers a high standard of living, through improvements to social, environmental and economic outcomes.

In 2003, Engineers Australia released its first NSW Infrastructure Report Card, which rated the overall fitness for purpose of certain types of economic infrastructure. That Report Card found that while the State's infrastructure was better than the national average at the time, it required significant enhancement to meet NSW's current and future needs. Poor coordination, planning and the low priority given to infrastructure were seen as major impediments to the State having good infrastructure. Seven years on, this 2010 Infrastructure Report Card examines the current state of NSW's infrastructure to determine whether it meets current and anticipated future needs.

The State's infrastructure is under stress in many areas and needs major changes to be fit for its current purpose. It is in average to poor condition. Given the expected population rise over the next 40 years, the public and private sector will need to invest a significant amount of money to bring NSW's infrastructure up to a reasonable standard. While planning has occurred in some areas, there still remains a lack of strategic planning, coordination and integration and a commitment to existing plans. NSW also suffers from a disparity between the quality of infrastructure in rural and urban areas. Sound asset management practices need to be adopted across all infrastructure sectors, and issues such as demand management and a focus on sustainability and the potential impacts of climate change must become a higher priority.

NSW infrastructure has not stood still since 2003, and the Report Card recognises that there have been some major infrastructure developments, some of which include:

- Major freeway and highway projects such as the M7, Lane Cove Tunnel, the Pacific and Great Western Highway upgrades
- The generally good standard of the ARTC rail network, and incremental improvements in some rail infrastructure, such as the upgrade to the Newcastle rail corridor and the completion of the Epping to Chatswood rail link
- Major works at Port Botany, the Port of Newcastle and Port Kembla
- Upgrades to Sydney and Newcastle Airports
- Construction of the Kurnell desalination plant and upgrading of seven major dams
- Sydney Water's SewerFix program and Wollongong's Recycled Water Plant and Recycled Water Scheme
- The incorporation of stormwater into integrated catchment planning and widespread use of Water Sensitive Urban Design principles

- Irrigation scheme efficiency projects
- The CityGrid CBD electricity upgrade and the commissioning of major gas-powered generators at Colongra, Uranquinty and Tallawarra, as well as upgrades at Eraring, Bayswater and Mount Piper Power Stations
- Construction of the QSN Link and the Sydney Primary Loop to improve security of gas supply to the Sydney basin, as well as expansion in capacity of the Moomba–Sydney Pipeline, Eastern Gas Pipeline and NSW–Victoria Interconnect
- Projects under the Community Broadband Development Fund.

Significant challenges remain in each sector. For instance, integrated land use is an issue for transport planning outcomes, for port development and on-airport development. Transport tasks must be encouraged away from roads and long-term strategic plans for major regional and inter-capital routes must be developed. There has been inadequate expenditure on rail infrastructure, and there is an immediate need to reduce crowding and improve services on CityRail and CountryLink services.

Ports need to meet future container growth and congestion issues remain at Port Botany. Airports face long-term passenger and freight growth and regional airports face the problems of maintaining their financial viability.

We need to better understand and manage potential climate change impacts on water and maintain a continual emphasis on water efficiency. The demand for recycled water must remain high. Appropriate stormwater infrastructure must be provided to ensure that all urban areas have adequate drainage and flood protection.

Electricity infrastructure is ageing and needs renewal and there is a need to capture the opportunities of smart network technology. Challenges remain to plan gas infrastructure to meet demand and there is a need to expand the distribution network.

It is essential that optimal telecommunications technologies are selected for the future. As well, a visionary approach to telecommunications infrastructure is required as telecommunications will be instrumental in delivering future economic growth and social benefit.

Both the 2003 and 2010 Report Cards evaluate the status of assets and planning processes and assigns a rating that can range from A (very good) to F (inadequate).

## Ratings

Ratings are given below for the current and past NSW and National Report Cards.

Infrastructure Type	NSW 2010	NSW 2003	National 2005	National 2001
Roads overall	C-	Not rated	C	Not rated
National roads	B-	C+	C+	C
State roads	D+	C+	C	C-
Local roads	D+	C-	C-	D
Rail	D-	D	C-	D-
Ports	C	Not rated	C+	B
Airports	B	Not rated	B	B
Potable water	B-	B- Metropolitan urban C- Non-metropolitan urban	B-	C
Wastewater	C+	C- Metropolitan urban C- Non-metropolitan urban	C+	C-
Stormwater	C	D	C-	D
Irrigation	C	Not rated	C-	D-
Electricity	C-	B	C+	B-
Gas	C	Not rated	C+	C
Telecommunications	C-	Not rated	Not rated	B

## Recommendations

Engineers Australia recommends the following to ensure that NSW's infrastructure will, in time, meet the needs and expectations of the business and government sectors, and the wider community.

1. Develop a long-term infrastructure vision and plan that accommodates the State's projected increase in population by 2051.
2. Identify where the additional population will be accommodated, the location of major transport corridors, and the sources of water and other utility services.
3. Give greater attention to managing demand for infrastructure services, rather than relying on building additional infrastructure to meet growing demand.
4. Factor in the impact of climate change on the viability of regional and rural areas in infrastructure decisions.
5. Develop an independent planning infrastructure advisory group to coordinate infrastructure planning and funding advice and to provide input to Infrastructure Australia.
6. Improve cooperation and collaboration between all levels of government and business in the planning and provision of infrastructure.
7. Deliver more efficient infrastructure outcomes and develop innovative funding models to provide the required infrastructure.
8. Address the current disparity between rural, regional and urban infrastructure, and recognise that improved infrastructure in regional and rural areas encourages business and individuals to relocate from Sydney and other major cities.

# Ratings Summary

Infrastructure Type	Grade	Comment
<b>Roads overall</b> <b>National roads</b> <b>State roads</b> <b>Local roads</b>	<b>C-</b> <b>B-</b> <b>D+</b> <b>D+</b>	<p>These ratings recognise that the NSW road network is under stress due to demand rising faster than supply, and that there is a lack of a road pricing mechanism that ensures road usage becomes more efficient. National roads are in physically better condition than State roads due to the considerable investment in them over the last decade. The physical quality of State roads may be improving, but their service quality is deteriorating due to rising congestion. Local roads are struggling to maintain their existing standard, primarily due to increase in demand, coupled with a rising backlog of maintenance.</p>
<b>Rail</b>	<b>D-</b>	<p>This rating recognises that while the ARTC's Hunter Valley Coal Network and to a lesser extent, the other ARTC lines are of a good standard, the Metropolitan Rail Network and the Country Regional Network require significant improvements. Targeted projects are improving both networks, however, there is limited confidence that the planned projects will deliver the scale of improvements required along the metropolitan network routes and in country areas to meet both the unmet existing needs and those arising from the rapidly growing passenger and freight needs in Sydney.</p>
<b>Ports</b>	<b>C</b>	<p>This rating recognises that capacity is adequate at NSW's major ports due to recent infrastructure upgrades and is planned to grow in line with need. There is a lack of integration between the ports and road and rail infrastructure that has led to congestion problems and therefore the lower rating.</p>
<b>Airports</b>	<b>B</b>	<p>This rating recognises that there has been a significant investment in NSW's major airports over the last decade and they meet current and anticipated short-term demand. Problems of access and constraints remain at these airports, including curfews due to nearby land use. A number of regional airports are under stress due to rising costs and limited ability to increase revenue, and a lack of State Government policy guidance about their future.</p>
<b>Potable water</b>	<b>B-</b>	<p>This rating reflects the significant infrastructure and demand management improvements undertaken in the metropolitan areas that have addressed the recent water supply problems caused by the drought. It also recognises that the water supply plans established by the metropolitan water supply utilities provide a sound basis for the delivery of an efficient and reliable water supply into the future. While there have been some improvements in regional water supply quality and availability, local water utilities face significant infrastructure and supply challenges, including limited ability to raise revenue to improve infrastructure and access to sustainable raw water sources.</p>

Infrastructure Type	Grade	Comment
<b>Wastewater</b>	<b>C+</b>	<p>This rating recognises that there have been improvements in wastewater infrastructure and asset management across both metropolitan and non-metropolitan areas resulting in a noticeable improvement in the environmental impact of wastewater. There has also been an increased reuse of wastewater, which is reducing demand for potable water.</p>
<b>Stormwater</b>	<b>C</b>	<p>This rating recognises that stormwater design and management is of a high quality in both new and infill developments. This is primarily due to water sensitive urban design becoming standard practice, and good land use planning. Significant problems remain in areas serviced by older stormwater systems, resulting in chronic localised flooding. These problems cannot be rectified easily due to their significant cost and community impact.</p>
<b>Irrigation</b>	<b>C</b>	<p>This rating recognises there have been significant improvements to irrigation infrastructure over the last decade resulting in increased water efficiency and irrigation operations. The relevance of existing infrastructure and future infrastructure improvements will depend on water availability decisions to be made on the Murray Darling Basis cap this year.</p>
<b>Electricity</b>	<b>C-</b>	<p>This rating recognises that transmission and distribution systems performance has improved in the last few years and the committed medium-term investment will lead to further improvements. Of concern is the uncertain future of new baseload generation caused by uncertainty over the future of gas prices, carbon costs and government decisions. If new generation capacity is not constructed, NSW's power needs will not be able to be supplied from within the State.</p>
<b>Gas</b>	<b>C</b>	<p>This rating recognises that the gas transmission and distribution systems are in a sound condition, and increases in gas exploration, production and pipeline capacity have increased supply. However, as future supply and demand for gas is highly uncertain due to government policy, the internationalisation of domestic gas prices, and the construction of new gas-fired generation plants along the east coast of Australian, it is impossible to determine if the infrastructure is appropriate for future demand.</p>
<b>Telecommunications</b>	<b>C-</b>	<p>This rating recognises that the mobile and broadband provision is generally very high in the metropolitan areas, but is of variable quality in regional areas. The twisted copper pair network, upon which ADSL services rest, is reaching its limits and the rollout of fibre, broadband wireless and satellite under the NBN will enable the next evolution of broadband services to be provided. Backhaul networks are in good condition and competitive provision will be improved through the NBN blackspots program.</p>

# Rating Details

The objective of the Report Card is to rate the quality of economic infrastructure at a State level. Ratings have been based on an assessment of asset condition, asset availability and reliability, asset management, sustainability (including economic, environmental and social issues) and resilience. The rating assesses infrastructure policy, regulation, planning, provision, operation and maintenance.

Ratings are defined in terms of meeting the needs of community, economy and environment in terms of sustainability, effectiveness, efficiency and equity.

Ratings used are comparable with those of past Report Cards and are below.

Grade	Description	Definition
A	Very good	Infrastructure is fit for its current and anticipated future purposes
B	Good	Minor changes required to enable infrastructure to be fit for its current and anticipated future purposes
C	Adequate	Major changes required to enable infrastructure to be fit for its current and anticipated future purposes
D	Poor	Critical changes required to enable infrastructure to be fit for its current and anticipated future purposes
F	Inadequate	Inadequate for current and anticipated future purposes

Full report at  
<http://www.engineersaustralia.org.au/ircnsw>



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