

# ANCE

ASSOCIAZIONE NAZIONALE COSTRUTTORI EDILI

*Lavori all'Estero e Relazioni Internazionali*

## **NEWSLETTER INTERNAZIONALE**

**N. 95 DEL 12 OTTOBRE 2010**

### **AUSTRALIA**

**Incontro con il Ministro delle Infrastrutture australiano – sede Ance, 5 novembre 2010, ore 12.30.**

Si informano le imprese e le Associazioni che, come già avvenuto nel novembre 2009, l'Ance per il secondo anno consecutivo ospiterà presso la propria sede (Via, G.A. Guattani, 16, Roma, V Piano), venerdì 5 novembre alle ore 12.30 per un pranzo di lavoro, il Ministro federale delle Infrastrutture e dei Trasporti australiano, On. Anthony Albanese, il quale ha espresso l'auspicio di incontrare nuovamente le imprese di costruzione italiane al fine di fornire una presentazione ed aggiornamenti sulle opportunità di partecipazione italiana ai programmi infrastrutturali australiani, coordinati dall'Agenzia federale *Infrastructure Australia* e finanziati da Governo federale e dai governi statali.

L'intervento del Min. Albanese prenderà spunto dal recente affidamento al consorzio Transcity (una joint venture costituita da una società spagnola, una italiana ed una australiana) della gara per la realizzazione del progetto da 1,7 miliardi di dollari australiani (circa 1,2 miliardi di euro) Northern Link. Il progetto, finanziato sia dal Governo statale del Queensland che dal Governo federale australiano, prevede la costruzione di due tunnel autostradali di 4,5 km fra le parti nord (Bowen Hills) ed ovest (Toowong) della città di Brisbane. I lavori di costruzione inizieranno a dicembre 2010 e si concluderanno nel 2014.

Si ricorda che fra i progetti infrastrutturali di prossima realizzazione in Australia si annoverano:

1. la fase 1 della Metropolitana di Melbourne (Stato di Victoria);
2. il collegamento ferroviario fra Goodwood e Torrens (Stato di South Australia);
3. l'ampliamento della Pacific Highway (Stato di New South Wales);
4. il collegamento ferroviario South West (Stato di New South Wales);
5. le fasi 2b e 3 della Eastern Busway (Stato di Queensland);
6. il porto di Oakajie (Stato di Western Australia);
7. l'espansione del porto di Darwin (Stato di Northern Territory);
8. il terminal intermodale di Moorebank (Stato di New South Wales);
9. il collegamento autostradale fra la Federal Highway e la Monaro Highway (Australian Capital Territory);

L'Ambasciata d'Italia a Canberra ha inoltre segnalato a questo ufficio che, a seguito della recente pubblicazione di un apposito studio qui allegato in sintesi (l'intero documento è scaricabile sul sito: <http://www.infrastructure.org.au/content/VFTSeptember2010.aspx>), il Ministro Albanese ha annunciato nei giorni scorsi la prossima pubblicazione di un bando di gara del valore di 20 milioni di dollari australiani (circa 14,3 milioni di euro) per la realizzazione di uno studio di fattibilità per un progetto di alta velocità ferroviaria sulla costa orientale australiana. Lo studio citato, infatti, raccomanda che entro i prossimi 5 anni sia avviata la costruzione delle due seguenti linee ferroviarie ad alta velocità: Melbourne-Sydney, via Canberra, ossia il terzo maggiore corridoio aeroportuale al mondo; e Sydney-Brisbane, via Newcastle e la Gold Coast. Il progetto sostituirebbe

la costruzione del secondo aeroporto di Sydney il cui costo stimato si aggira intorno ai 15 miliardi di dollari australiani (circa 10,7 miliardi di dollari).

Le imprese e le Associazioni che fossero interessate ad intervenire all'incontro del 5 novembre p.v. con il Ministro Albanese o ad avere maggiori informazioni sulle opportunità infrastrutturali esistenti in Australia sono invitate a comunicarlo allo scrivente Ufficio ([estero@ance.it](mailto:estero@ance.it); fax. 06/84567566) entro il 15 ottobre 2010, indicando il nominativo e l'incarico di un proprio rappresentante di adeguato livello.  
(AN/ci)

Allegato

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Quanto oggetto di questo foglio è parte della Newsletter Internazionale per lavori all'estero che rientra tra i servizi prestati dall'ANCE agli iscritti al Settore "Lavori all'Estero". Per ogni singola notizia vengono forniti numero progressivo, data e materia per consentire la tenuta, come è consigliabile, sotto forma di dossier



INFRASTRUCTURE  
PARTNERSHIPS  
AUSTRALIA

CONSTRUCTING THE FUTURE

A high-speed train, likely a Shinkansen, is shown traveling through a dark tunnel. The train is white with a black nose and is illuminated by its headlights, creating a bright path ahead. The background is dark and textured, suggesting the interior of a tunnel.

# EAST COAST HIGH CAPACITY INFRASTRUCTURE CORRIDORS

A realistic pathway  
to very fast trains

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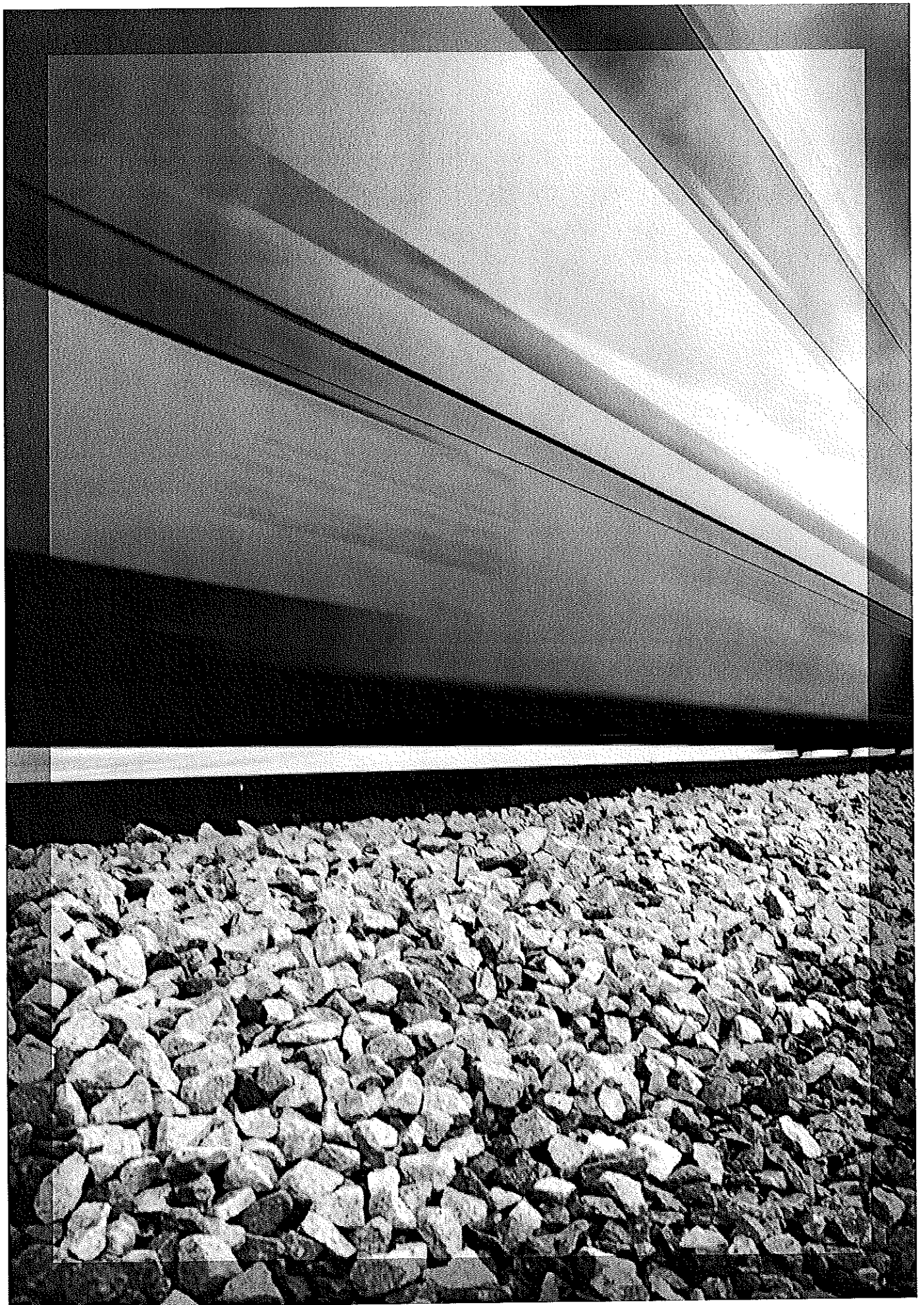
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# GLOSSARY

ABS	AUSTRALIAN BUREAU OF STATISTICS
ARRA	AMERICAN RECOVERY AND REINVESTMENT ACT
ARTC	AUSTRALIAN RAIL TRACK CORPORATION
AVE	ATLA VELOCIDAD ESPANOLA (SPANISH HIGH SPEED RAIL TRAIN)
CBD	CENTRAL BUSINESS DISTRICT
COAG	COUNCIL OF AUSTRALIAN GOVERNMENTS
CRC RAIL INNOVATION	CO-OPERATIVE RESEARCH CENTRE FOR RAIL INNOVATION
FIFA	FÉDÉRATION INTERNATIONALE DE FOOTBALL ASSOCIATION
GDP	GROSS DOMESTIC PRODUCT
HCI	HIGH CAPACITY INFRASTRUCTURE
HSR	HIGH SPEED RAIL
IA	INFRASTRUCTURE AUSTRALIA
ICE	INTER-CITY EXPRESS (GERMAN HIGH SPEED RAIL SERVICE)
IPA	INFRASTRUCTURE PARTNERSHIPS AUSTRALIA
NBN	NATIONAL BROADBAND NETWORK
NSW	NEW SOUTH WALES
RENFE	SPANISH GOVERNMENT'S RAILWAY COMPANY
RFF	RÉSEAU FERRÉ DE FRANCE (FRENCH RAIL NETWORK)
SNCF	THE FRENCH NATIONAL RAILWAY
TGV	TRAIN A GRANDE VITESSE (FRENCH HIGH SPEED RAIL SERVICE)
UIC	INTERNATIONAL UNION OF RAILWAYS
V/LINE	VICTORIA'S REGIONAL RAIL SERVICE
VFT	VERY FAST TRAIN

# Executive Summary

High speed rail has long been considered a possibility for the east coast of Australia, but to date this consideration has not resulted in concrete progression toward a network; or even consensus about a future network's route.

Now, as Australia grapples with a debate about how it can best accommodate projected population growth and reduce carbon emissions, it is clear that High Speed Rail could offer a game change in the way we consider and plan for mobility, regional development and other social and economic outcomes.

In this report, Infrastructure Partnerships Australia (IPA) and AECOM propose a new way of considering High Speed Rail on the east coast of Australia, through a long-term, realistic and pragmatic approach to nation building.

High speed rail is primarily used for passenger transport and includes railways that operate at speeds greater than 200 kilometres per hour. Despite an absence of a standard definition for high speed rail, common characteristics of most high speed rail systems include:

- travel speeds greater than 200 km/h;
- purpose-built, continuous welded rail tracks to allow for greater speeds;
- the absence of at-grade pedestrian crossings;
- electric overhead lines used to drive the system; and
- the use of in-cab signalling.

In recent times, operational high speed rail systems have attained routine travel speeds of greater than 300 km/h as technologies have advanced. For example, the TGV in France routinely achieves speeds of 320 km/h, while China's new system operates routinely at 350 km/h.

▼ TABLE 1

PREDICTED VFT TRAVEL TIMES & PASSENGERS 2051				
		2051 BUSINESS AS USUAL MODE SPLIT	2051 VFT 350KM/H MODE SPLIT	TRAVEL TIME 350KM/H VFT
Brisbane - Sydney	Air	6.637 m	3.098 m	
	Car	0.978 m	0.978 m	
	Train	0.038 m	3.577 m	173 mins
Brisbane - Melbourne	Air	4.289 m	4.041 m	
	Car	0.090 m	0.090 m	
	Train	0.000 m	0.248 m	353 mins
Sydney - Canberra	Air	0.658 m	0.128 m	
	Car	11.146 m	0.063 m	
	Train	0.335 m	11.948 m	57 mins
Sydney - Melbourne	Air	12.795 m	6.611 m	
	Car	2.086 m	2.086 m	
	Train	0.080 m	6.264 m	180 mins
Gold Coast - Sydney	Air	4.407 m	1.947 m	
	Car	1.004 m	1.004 m	
	Train	0.046 m	2.506 m	146 mins
Gold Coast - Melbourne	Air	2.936 m	2.741 m	
	Car	0.668 m	0.668 m	
	Train	0.030 m	0.225 m	326 mins

Analysis undertaken for this report on the proposed high speed rail corridor shows that at 350 km/h, an Australian High Speed Rail network would actively compete with air travel on the east coast. Table 1 shows predicted travel on key corridors both in a business as usual scenario to 2051, and with a proposed 350 km/h very fast train service.

Under this scenario the Gold Coast would be only two-and-a-half hours by train from Sydney, Melbourne three hours from Sydney, and Sydney and Newcastle would be less than 40 minutes apart. This analysis shows that high speed rail becomes an attractive and competitive mode to air travel, significantly reducing the levels of carbon emissions and reducing demand on Australia's airports and making Very Fast Trains a viable proposition.

High speed rail is also an important catalyst for regional development and renewal. In Europe, very fast rail has been associated with the economic and social recovery of a number of regional centres. Areas serviced by high speed rail generally have higher employment than other areas, varying in proportion to travel time savings. High Speed Rail may, for instance, present Australia with an opportunity to accommodate growth without the need for radical changes to density of capital cities and begin to answer some of our most challenging social issues, such as access to affordable housing.

Initial analysis suggests that some sections of an east coast high speed rail network are likely to make economic sense now – including a high speed rail connection between Sydney and its second airport – but other segments of the full High Speed Rail network are not likely to become economic until many decades in the future, however further detailed study is required.

This report also finds that action is required now to identify an entire East Coast network and preserve the infrastructure corridors for the next generation and beyond – to be shared between services including High Speed Rail, energy, water and communications.

The development of high capacity infrastructure corridors in Australia is essential to facilitate the movement of people and goods and the delivery of services, given the predicted population and density increases over the next four decades. It is imperative the Federal Government plays a pivotal role in meeting the challenges that this involves – to preserve the corridors now, enabling Australia to develop and implement a long-term approach to infrastructure planning.

Protecting these corridors now will mean that an east coast high speed rail network remains a realistic option for the future, even on the segments that do not yet make economic sense. Conversely, failure to protect the corridors now will increase their cost in the future and could put a complete network out of Australia's financial capacity.

***UNDER THIS SCENARIO THE GOLD COAST WOULD BE ONLY TWO-AND-A-HALF HOURS BY TRAIN FROM SYDNEY, MELBOURNE THREE HOURS FROM SYDNEY, AND SYDNEY AND NEWCASTLE WOULD BE LESS THAN 40 MINUTES APART.***

Australia has the opportunity to learn from the historic planning mistakes experienced by nations that are well advanced in delivering high speed rail networks who face the twin pressure and expense of needing to acquire corridors concurrently with developing existing networks.

International experience shows long-term planning of transport infrastructure has been the catalyst for higher standards of living and broader precinct and regional development improvements.

The way forward for an Australian high speed rail network is incremental development, constructing sections where benefits are most readily available first. This staged corridor development would involve progressively building out from areas of higher population densities to provide initial benefit, ultimately creating inter-capital links. It is critical that this process is part of a unified, nationally coordinated plan for high speed rail.

Some corridors, for example Sydney to Canberra or Newcastle, may lend themselves to short-term development. If high speed rail linked an existing airport such as Canberra or Williamstown, the need for a second Sydney airport could be deferred, saving up to \$15 billion and significantly enhancing the economic case for the project.

The report does not suggest we build a very fast train along the entire east coast immediately. IPA and AECOM consider that there is a very high probability that a new high speed rail link between the major capitals on Australia's eastern seaboard will be needed, but portions of the corridor may not be economically feasible for years or decades. However, recognising the need to link these areas with a high capacity infrastructure corridor is the first step; the next step involves examining how to get there in a realistic and appropriate way – through reservation, acquisition and incremental implementation.

The approach set out in this report takes into account the social and economic dividends that could be delivered by high speed rail in terms of Australia's looming population growth and density in capital cities and regional and coastal growth centres; reduced travel times, housing choice, the impact on national productivity, standards of living and employment, and the transport-related problem of congestion affecting all transit and freight modes.

The Federal Government is increasingly recognising its central role in meeting demand for infrastructure services. Under current arrangements, the Federal Government plays this role primarily by funding the project initiatives of state governments; but there are significant precedents for the Commonwealth to engage in an integrated, strategic planning approach. These include Infrastructure Australia's commissioning of national freight network and ports strategies, the national plan for health services and hospitals and the COAG agreement on developing strategic plans for all the capital cities. The COAG agreement is of particular relevance, in that it seeks to put in place long-term plans that integrate land use, infrastructure and transport, and cater for economic and population growth and demographic change.

Figure 1 illustrates population growth scenarios for capital cities, their hinterlands, coastal regions, in the Canberra region, and inland and depicts an indicative corridor route that would be required to provide infrastructure services to cater for growth of this magnitude. The dotted line through the La Trobe valley indicates an alternative Canberra-Melbourne route through population centres in this region, however final route alignment would need to be the subject of further detailed studies.

The compounding elements of congestion are evident as there are currently almost 1000 flights per week between Melbourne and Sydney, and the number will inevitably increase; other routes, such as Sydney to Canberra or southeast Queensland, are beginning to face similar pressures; and an ageing demographic is leading to greater population concentrations in regional and coastal locations, creating demand for better transport links to the major cities. These factors are occurring in the face of depleting oil supplies and growing concern about carbon emissions.

A long-term approach, which begins to deliver improvement and tangible benefits in the medium term, is essential to overcome problems and constraints that are already evident and progressively becoming more acute. Such a nation building infrastructure planning approach will become increasingly more difficult to realise in the future as:

- Density of land use increases;
- Land values increase;
- Land use becomes more fragmented;
- Environmental standards tighten; and
- Community impacts on affected landowners increases – over time through development.

There are also less community impacts in securing corridors sooner rather than later. Related value capture development is also more likely to eventuate with trends towards industrial estates, higher density housing, and commercial property developments.

Other economic benefits of very fast rail, including productivity gains, employment growth, sustainability dividends, regionalisation of industries, access to labour markets, land value uplift and growth in overall business capacity, have also been identified in this analysis. One freight train between Melbourne and Sydney replaces up to 150 semi-trailers and saves 45,000 litres of fuel and 130 tonnes of greenhouse gases, compared with road haulage. It also showed that in the event of a high probability of needing the corridor in the future for a very fast train network, it makes economic sense to reserve and subsequently acquire the entire corridor now rather than later.

If there is a reasonable chance of needing a very fast train in the future – specifically 86% in 2030 or 93% in 2050, as reflected in analysis for this report – then the benefits of acquiring the entire corridor now exceed the costs in real terms. Specifically, this analysis shows that acquiring the land for a corridor between Melbourne and the Sunshine Coast in 2010 would cost around \$13.7 billion. By 2030, this cost will have risen to \$57 billion. Alternatively, governments could choose to acquire the corridor segmentally, based on where the network could be rolled out first.

High speed rail proposals have been proposed over the years, however the work undertaken by IPA and AECOM in assessing a very fast train route along the east coast shows that Australia's increasing population and growing economy would greatly benefit from the establishment of such a system. In this report, we propose a realistic approach to achieving this, through corridor reservation and incremental development of the network radiating from the capital cities.

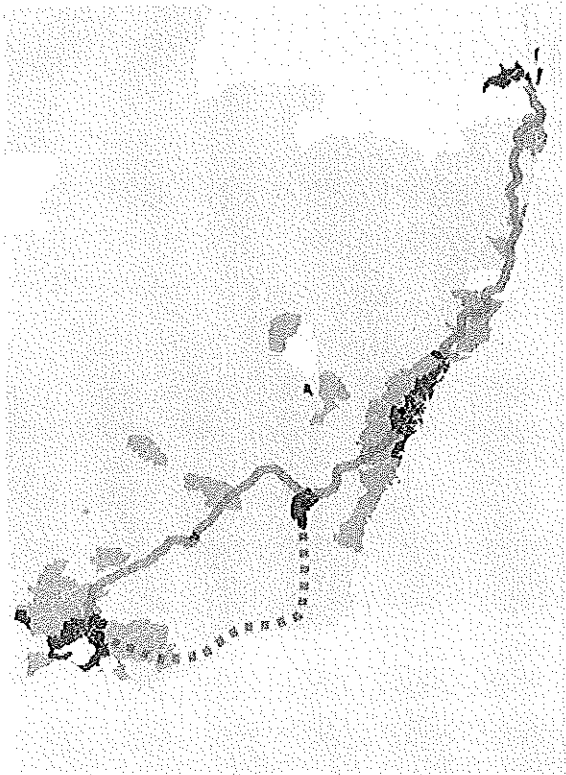
Funding such a project would be costly, but it is by no means impossible. Recent research by IPA on a national road pricing scheme showed that the introduction of such a system could be used to fund new nation building infrastructure which reduced dependency on motor vehicles, and under that scenario, a very fast train could be a potential beneficiary of funding. The most successful regional renewal programs in Europe involving high speed rail have benefitted from cooperative planning and investment, as well as the use of public-private partnerships.

This report answers the call for a real national debate about the role of high speed rail and includes a realistic, feasible pathway to having a very fast train on the east coast of Australia.

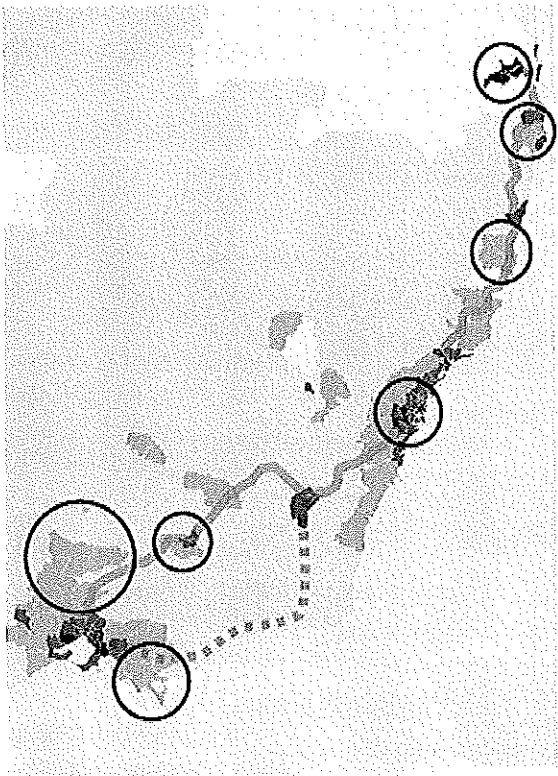
▼ FIGURE 1

POPULATION DENSITY INCREASES 2011 TO 2051 AND AN INDICATIVE EAST COAST HIGH SPEED RAIL CORRIDOR

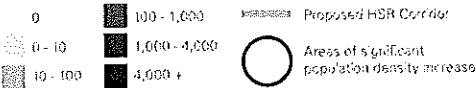
Population Density 2011



Population Density 2051



Population Density



## THE WAY FORWARD – RECOMMENDATIONS

This report has identified a realistic and pragmatic approach toward establishing a shared high capacity infrastructure corridor for the east coast of Australia. Infrastructure Partnerships Australia and AECOM believe the time is ripe for a considered debate on how Australia anticipates meeting the infrastructure needs of a growing population in the time towards 2050.

High speed rail has a role to play in Australia, although it may not be feasible for some time. However, recognising that it will be required to cater for future demand means there is an opportunity to act now to protect a corridor along which it can run, and ensure we do not preclude its future development.

This report recommends embarking on six critical phases towards planning, future-proofing and developing Australia's infrastructure on the eastern seaboard to cater for both transport and utility services:

- ➊ **Undertake a detailed corridor profile and implementation study to identify and protect a high capacity infrastructure corridor between the Sunshine Coast and Melbourne, to future-proof Australia's infrastructure capacity on the eastern seaboard.**

Protecting a high capacity infrastructure corridor between the Sunshine Coast and Melbourne will require concerted action by the Federal Government and a high level of cooperation with state and local governments. A key outcome of this process should be an improved process of infrastructure corridor planning which will facilitate a nationally consistent approach to planning, assessment, funding and implementing Australia's infrastructure.

- ➋ **Ensure the corridor is suitable for high speed rail.**

Infrastructure Partnerships Australia and AECOM have recognised that the east coast of Australia will, in all likelihood, require a new high speed rail corridor over the coming decades. We recommend the infrastructure corridor be future-proofed to ensure its suitability for high speed rail, that is, have very low curvature. It should also facilitate other utilities, including road, energy, data and communications, sharing the corridor.

- ➌ **Commit to a firm timeline for the procurement of the first economically feasible segment of a future network.**

After undertaking corridor and economic analysis indicating that the project will deliver benefits, the Federal Government should commit to a timeline to procure and

construct the first economically viable part of the east coast network, to provide certainty to industry and the community that high speed rail is part of Australia's future.

- ➍ **Reserve the corridor, and target capital expenditure towards incremental improvement.**

The plan set out in this report is to target capital expenditure in ways that produce incremental benefits, rather than deferring benefits until all capital has been spent. In addition to improving the present value of benefits, this approach will increase confidence in the expenditure program. It will also enable the program to be modified in the light of experience and changing circumstances and technology.

Acquiring the corridor will have substantial costs, however not acquiring the corridor will be far more expensive in the long term.

- ➎ **Spend when feasible in line with a long-term vision for infrastructure corridors, integrated with other policies.**

Having a long-term vision to develop infrastructure corridors enables governments to tailor spending to suit fiscal circumstances. For example, in times of budget surplus, governments could invest in straightening alignments. Conversely, should there be a case for government-funded stimulus, then governments could spend on portions of infrastructure.

In essence, the infrastructure plan for Australia's east coast is defined in principle in the Council of Australian Governments' strategic planning criteria for capital cities, agreed in December 2009.

- ➏ **Prepare an integrated infrastructure plan for Australia's east coast.**

Establishment of the COAG Cities Planning Taskforce, the requirement for all states to have capital city plans by the beginning of 2012 and the national freight network and ports strategies being prepared for Infrastructure Australia are a positive start for future national infrastructure planning.

The most advantageous process towards developing high capacity infrastructure corridors is to link it with the planning in progress under COAG and Infrastructure Australia. The next step clearly is to mould those plans into a long-term nation building infrastructure strategy.

# The Authors

## INFRASTRUCTURE PARTNERSHIPS AUSTRALIA

Infrastructure Partnerships Australia (IPA) is the nation's peak infrastructure organisation.

Its membership comprises Australia's most senior business leaders and public sector executives from across the infrastructure sector. IPA is the only body that brings together the public and private sectors in a spirit of partnership, to build Australia together.

Infrastructure is the lifeblood of the national economy. It is the key to how Australia does business, how we compete in the global economy and how we sustain the quality of life of a growing population.

IPA's mission is to develop and articulate the best public policy solutions needed to deliver the assets and services that will secure Australia's productivity and prosperity. IPA is committed to ensure that governments retain all procurement options for the delivery of infrastructure, and believes procurement models must be selected case by case, with a guiding principle of sustainably delivering better value, better quality infrastructure.

IPA has long been interested in the potential transformational affect of a very fast train in Australia – the key is how to develop such a network in a realistic, affordable and economically sustainable way. This report sets out this vision.

## AECOM

AECOM is a global, professional technical, design and consulting services provider to the infrastructure, environmental, energy and resources, water and government markets.

With more than 47000 employees around the world and 3400 in Australia, AECOM is a leader in all of the key markets that it serves. AECOM provides a blend of global reach, local knowledge, innovation, and technical excellence in delivering solutions that enhance and sustain the world's built, natural, and social environments.

AECOM delivers comprehensive services over the full life cycle of an infrastructure project to benefit the government and private industry clients that it serves. It has a genuine appreciation and understanding of the operating structures and business needs of the transportation industry. AECOM's transportation professionals are constantly looking for more acceptable, safer and sustainable ways to move people across cities, countries and continents.

AECOM also has substantial expertise in high-speed rail projects across the world. The text box in this page lists some of AECOM's past work on very fast train projects.

## AECOM & HIGH SPEED RAIL

### PORTUGAL'S RAVE

AECOM was commissioned by the Portuguese High Speed Rail Authority, RAVE, to develop a model of availability and asset performance related penalties, CAPEX and OPEX forecasts related to the maintenance strategy and organisation structure, staffing buildings and necessary plant, of the asset for the duration of the operations period

### FRANCE'S TGV

AECOM undertook a technical review of the traffic advisor's traffic and revenue forecasting model. AECOM analysed the historic growths and market share of the existing TGV services, including looking at mode shares of high speed trains in the rest of France.

### TAIWAN'S HIGH SPEED RAIL

AECOM was commissioned by the Bilfinger-Berger / Continental Engineering Corporation joint venture to carry out the design and detailing of seismic resistant viaducts for the Contracts C260 & C270, which forms part of the 345km long Taiwan High Speed Rail Project.

### UK HS2 PROJECT

AECOM was appointed to assess the potential benefits and cost to the Manchester region of extending the HSR network to the North of England and beyond.

### SOUTH AFRICA'S GAUTRAIN

AECOM was appointed the traffic advisor, assisting in auditing the consortium's demand and revenue forecasts for the bid to understand the traffic and revenue risks before a commitment was made to underwrite loans to the concessionaire.

### SPAIN'S AVE

AECOM (INOCSA) has developed the Railway Construction Project for Subsection La Sagrera-Trinidad Junction, from the Madrid-Barcelona-French Border Section, and is now dealing with the control and surveillance of the planned works. The works take place in Barcelona's city centre, this being a 5.2 km long section.

These very complex works include the construction of the railway platform, the reinstallation of the present lines, as well as the replacement of Sant Andreu Station and all the provisional situations needed to keep the rail traffic moving.