2014-2015 Assessment Brief

Recommended rating:	**Threshold**
Current rating on the Infrastructure Priority list:	**Early Stage**
Initiative Name:	WestConnex
Geography:	Sydney
Proponent:	NSW Government
Project description:	

WestConnex is a program of around 33 km of interconnected road projects that will extend the M4 motorway towards Sydney city, widen the M5 East motorway (including duplicating the existing tunnels) and then join the two motorways with a new tunnel running under the inner western suburbs of Sydney.

WestConnex was the major priority project put forward in Infrastructure New South Wales' *2012 State Infrastructure Strategy*. WestConnex was viewed as a priority by Infrastructure New South Wales because:

- Investment in Sydney's road networks was viewed as being best able to service diverse trips;
- Demand for the M4/Parramatta Road and M5 are leading to high levels of congestion and low speeds; and
- The M4/Parramatta Road and M5 are the most important road routes for freight and business transport and for connection to the 'gateways' at Port Botany and Kingsford Smith Airport.

Objectives:

The NSW Government's objectives for WestConnex are to:

- Support Sydney's long-term economic growth through improved motorway access and connections linking Sydney's international gateways and Western Sydney and places of business across the city;
- Relieve road congestion so as to improve the speed, reliability and safety of travel in the M4 and M5 corridors, including parallel arterial roads;
- Cater for the diverse travel demands on these corridors that are best met by road infrastructure;
- Create opportunities for urban renewal, improved liveability, public and active transport improvements along and around Parramatta Road;
- Enhance the productivity of commercial and freight generating land uses strategically located near transport infrastructure;
- Fit within the financial capacity of the State and Federal Government, in partnership with the private sector; and
- Optimise user pays contribution to support funding in a way that is affordable and equitable.

Problem:

The key challenges identified by the NSW Government are:

- Easing congestion: Tackling transport underperformance to improve travel reliability, reduce accidents and improve community well-being;
- Connecting communities: Improving access to employment and services for residents from Sydney's west and south west, while catalysing renewal along key corridors, especially Parramatta Road; and
- Creating jobs: Supporting economic growth by improving connections between Western Sydney and the Global Economic Corridor and supporting freight, service and business movements across the city and the State.

Solution:

The Reference Scheme in the July 2013 business case proposes:

- Stage 1: Parramatta to City West Link
  - M4 widening from Church St to Homebush Bay Drive (7.5 km)
  - M4 East to City West Link connection (6 km including 5 km tunnel)
- Stage 2: Beverly Hills to St Peters
  - M5 East duplication from King Georges Rd to St Peters (11 km including 6 km tunnel)
  - Airport Link from St Peters to Airport Dr (1.5 km)
- Stage 3: City West Link to St Peters (8.5 km tunnel).

Revisions to the proposed solution

Since the July 2013 Business Case, the NSW Government has undertaken (and is continuing to undertake) project development to refine the solution initially proposed. This has included bringing forward the timing of stage 2 of the project following the Australian Government's offer of up to $2 billion in a loan (in addition to the offer of $1.5 billion in grant funding for Stage 1) and consideration of proposed northern and southern extensions to the project.

This assessment is based on the Reference Scheme included in the July 2013 business case as well an update to the Cost Benefit Analysis for the proposed bringing forward of the timing of stage 2 following the Australian Government's decision to provide up to $2 billion in a loan. The Cost Benefit Analysis for this review does not include the proposed northern and southern extensions, as the NSW Government has advised that final decisions on these scope changes are still under consideration. [1]

Proponent's capital cost estimate (nominal):	Approx. $15 billion (P50)
Contribution sought by Proponent including requests for project development funding ($M):	$1,500m grant provided for Stage 1 $2,000m loan for stage 2. Further funding subject to negotiation and project requirements.
Project timing Start/Completion by Proponent (month/year):	Construction from 2015-2023, including: • Stage 1 (Parramatta to City West Link): Planning 2014-2015, construction 2015-2019 • Stage 2 (Beverly Hills to St Peters): Planning 2013-2017, Construction 2016-2019 • Stage 3 (City West Link to St Peters): Planning 2015-2018, Construction 2018-2023
BCR stated by proponent:	1.8 (Infrastructure Australia methodology except capital costs are not P90, excl. Wider Economic Benefits. August 2014)

[1] For maps and other diagrams of the current WestConnex proposal please see http://www.westconnex.com.au/

Strategic alignment summary

Alignment with Infrastructure Australia's strategic priorities

The objectives of WestConnex are aligned with a number of Infrastructure Australia's strategic priorities including:

- Developing Australia's cities and regions – one objective of the project is to allow for urban renewal along Parramatta Road;
- Expanding Australia's productive capacity and increasing Australia's productivity – time savings for those travelling to work and time savings for freight could both contribute to these priorities; and
- Improving social equity and quality of life in our cities and regions – time savings for users of transport services are aligned to improved quality of life.

Alignment with State strategies

The WestConnex strategic concept was set out in Infrastructure NSW's 2012 *State Infrastructure Strategy* and subsequently identified in the NSW Government's *Long Term Transport Master Plan* as the immediate priority in a longer term vision to complete the critical links in Sydney's motorway network.

WestConnex also aligns with NSW Government priorities identified in the *State Plan — NSW 2021* including increasing the competitiveness of doing business in Australia (Goal 4), reducing travel times (Goal 7) and improving road safety (Goal 10).

Problem assessment summary

The July 2013 Business Case focuses on how WestConnex addresses key challenges as opposed to identifying problems, however it remains consistent with the problems presented in an October 2012 submission to Infrastructure Australia. The key challenges identified are:

- Easing congestion: Tackling transport underperformance to improve travel reliability, reduce accidents and improve community well-being;
- Connecting communities: Improving access to employment and services for residents from Sydney's west and south west, while catalysing renewal along key corridors, especially Parramatta Road; and
- Creating jobs: Supporting economic growth by improving connections between Western Sydney and the Global Economic Corridor and supporting freight, service and business movements across the city and the State.

In establishing the 'Case for Change', the proponent has highlighted the expected growth in population and employment and in demand for air travel. Other supporting evidence includes the low current AM peak travel speeds and high variability on key roads in Sydney and rear-end crashes (a proxy for incidents caused by congestion).

The proponent also provides further analysis of the causes of poor urban amenity along Parramatta Road. It claims that, in addition to the problems caused by the priority given to east-west through traffic on Parramatta Rd, inconsistent local government planning and controls have also discouraged development along the corridor.

The August 2014 updated delivery report expands on the problems for the area addressed by the M5 widening component of Westconnex (Stage 2). There are lower travel speeds on relevant arterials and the M5 East compared to averages for the same type of road across Sydney, indicating that this area is a priority for transport improvement.

Solution assessment summary

WestConnex was the major priority project put forward in Infrastructure New South Wales' *2012 State Infrastructure Strategy*. WestConnex was viewed as a priority by Infrastructure New South Wales because:

- Investment in Sydney's road networks was viewed as being best able to service diverse trips;
- The M4/Parramatta Road and M5 are facing demand such that speeds are very low; and
- The M4/Parramatta Road and M5 are the most important road routes for freight and business transport and for connection to the 'gateways' at Port Botany and Kingsford Smith Airport.

WestConnex had the highest score for 'Project assurance' in the prioritisation framework adopted in the 2012 State Infrastructure Strategy.

Since the 2012-13 IA submission, key updates have included (i) development of a concept design for the first stage of WestConnex (M4, Parramatta to City West Link), and (ii) provision of higher level strategic design (including alignment and connection options) for subsequent stages. The July 2013 Business Case outlines the process undertaken to develop the WestConnex Reference Scheme, which included:

- Option development with four Australian and international design and construction industry consortia selected as development partners to assist with developing improved design and construction solutions for specific sections of the northern and southern corridors
- Option assessment and refinement applying multi-criteria analysis to further shortlist five options identified for the northern corridor and six for the southern corridor. The criteria included:
    - Provides improved connectivity between Western Sydney and the Global Economic Corridor;
    - Reduces travel duration, improves road safety and increases consistency of travel times;
    - Enables ease of delivery (e.g. staging/packaging, constructability/disruption, land acquisition, duration, access, traffic management, operations and maintenance);
    - Maximizes urban amenity/liveability and overall environmental outcomes;
    - Provides opportunities for urban renewal;
    - Enables the longer-term development of the road network as per the NSW Government's transport master plan;
    - Enables efficient management, maintenance and operations of WestConnex;
    - Improves user experience (legibility of the journey);
    - Capital and whole of life costs; and
    - Toll revenue.

Infrastructure Australia notes that WestConnex is designed to both double capacity on the M5 corridor and allow Port Botany truck traffic flows to split between the M4 and M5 corridors (rather than focusing solely on the congested M5 corridor as at present). In addition, Infrastructure Australia notes that the NSW Government is in the process of procuring a number of enabling works projects designed to relieve key "pinch points" around the port and airport precinct in time for the opening of WestConnex. These network enhancements are forecast to significantly improve freight journey times and reliability between south west and western Sydney and Port Botany. These initiatives may address the issue raised in Infrastructure Australia's review of the 2012-13 WestConnex submission, that the upgraded M5 East would not provide a direct freight route to Port Botany and hence may not reduce freight congestion issues.

The NSW Government currently plans for around 50,000 additional dwellings along Parramatta Road as part of the project development. Given the scale of the project and Sydney's dwelling needs, Infrastructure Australia supports the NSW Government's efforts to encourage greater development along Parramatta road as part of project's outcomes.

Further refinement of the WestConnex project has occurred since the project was prioritised by Infrastructure NSW, partly to account for the possible acceleration of Stage 2 following the Australian Government's offer of an up to $2 billion loan (in addition to the offer of $1.5 billion in grant funding). Refinements are also being considered particularly in relation to the design of the M5 component of WestConnex, the interchanges at each end of an additional M5 tunnel and additional extensions Southward and Northward.

The refinement work undertaken suggests that there are significant benefits from extensions to WestConnex and from delivering the entire WestConnex solution together. Partial delivery of stages of WestConnex provides substantially lower economic returns than delivery of the full project. This supports the prioritisation of WestConnex as a single concept by Infrastructure NSW.

BCR appraisal conclusion

The proponent's stated Benefit Cost Ratio for the overall program is 1.8:1 (core, P50, August 2014, excluding wider economic benefits).

The BCR for particular segments of WestConnex is typically lower than for the entire project, as stages are complementary to one another. This means that benefits are mainly realised from 2023 onwards following the completion of the entire project. Any delays to the completion of the entire project will therefore have significant impacts on the project's economic merits.

Further extensions may also benefit from the capacity created by WestConnex. For example, a Southern extension of WestConnex (along the route reserved for the F6) has been estimated to have an incremental BCR of 5.83 by the proponent. The recently announced scope changes to the northern section are unlikely to vary the BCR of 1.8:1 substantially either way.

The estimated benefits of the project are currently 80 per cent higher than the estimated costs. This provides a high degree of comfort that the project will have net benefits. Infrastructure Australia is seeking further clarification in two areas:

- For major projects, it is recommended that transport modelling and economic appraisal account for additional trips and redistribution of trips that result from the project.[2] These induced trips can both positively and negatively impact the overall benefits of road projects. Negative impacts could occur where induced trips lead to road recongestion. This has been shown to be material in demand modelling undertaken for a major scheme in Victoria. The proponent intends to refresh its analysis allowing for induced and redistributed traffic in an update to the business case.
- The cost estimates provided are currently not estimated on a P90 basis and are likely closer to P50 (median) costs. Infrastructure Australia assesses cost estimates on a P90 basis – that is, there is a 90% probability of actual cost being below this estimate. For the M5 component (Stage 2), moving from P50 to P90 would increase costs by just over 6%, although this may not reflect the full risks for this stage given time constraints for the estimation of costs.

There is a degree of confidence that following an adjustment to the BCR for P90 and any negative adjustment due to induced trips, the BCR will remain positive.

Wider Economic Benefits have been modelled and estimated to add 0.3 to the project's benefits.

[2] Bureau of Infrastructure, Transport and Regional Economics, November 2014, *Overview of Project Appraisal for Land Transport;* Victorian Auditor-General's Report (June 2011), Management of Major Road Projects

Overall Assessment and Next Steps

Since the October 2012 submission, the NSW Government has submitted the July 2013 Business Case and supporting documents, stated as having been developed with the purpose of progressing and refining the strategic concept for WestConnex and demonstrating that the overall WestConnex scheme is technically and financially viable and can therefore proceed to the next stage of development. Information reviewed provides further confidence on options assessment and that previously identified issues associated with connectivity to international gateways are being partially addressed, although there are still some questions concerning the impact of freight traffic through to Port Botany.

Infrastructure Australia has reviewed a number of iterations of the documentation of WestConnex. Moving the project to "threshold" on the Infrastructure Priority List is dependent on IA having a high degree of confidence that the economic benefits from the project outweigh the costs. The core BCR ratio of 1.8:1 does provide confidence in this regard.

Infrastructure Australia will reassess the project once its updated Business Case – including a final project capital cost estimate and revised demand modelling that takes account of induced and redistributed demand effects – is finalised. This updated work will be important for a recommendation of "ready to proceed" on the Infrastructure Priority List.

Infrastructure Australia Priority List Recommendation

The Acting Chief Executive Officer recommends that the project moves from "early stage" to "threshold" on the Infrastructure Priority List.