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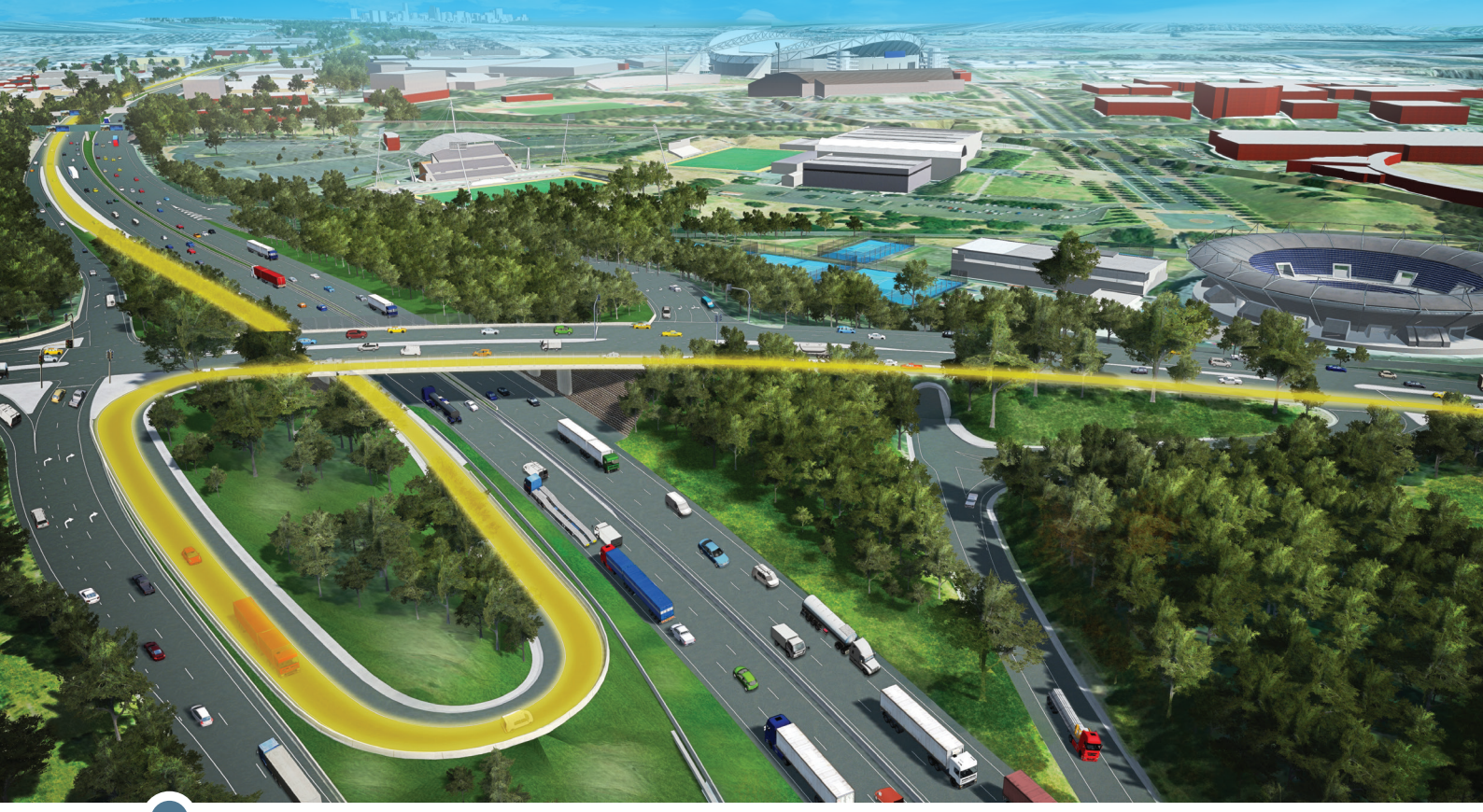
WestConnex

M4 Widening Environmental Impact Statement

Volume 1

August 2014



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WestConnex Delivery Authority

WestConnex – M4 Widening

Environmental impact statement

August 2014

Prepared by SMEC Australia

Executive Summary

More than 12 million trips are taken every day by cars and trucks in Greater Sydney. This compares to around 753,000 trips by rail, 737,000 by bus and 4,000 by light rail. The NSW Government's Long Term Transport Master Plan (Transport for NSW 2012) estimates road congestion currently costs the NSW economy $5.1 billion annually, adversely impacting business productivity and city liveability.

Sydney's population is expected to increase by more than 1.5 million people by 2031 and road congestion will become an increasingly critical issue requiring on-going improvements to the road network to meet increased demand. Cars are expected to make up 74 per cent of all growth in daily travel demand over the next 20 years. The cost of road network congestion to the NSW economy is anticipated to rise to $8.8 billion annually by 2020 if measures are not taken to improve the situation.

Addressing congestion is also critical to the on-going competitiveness of Greater Sydney as a global city in regional competition with other global business centres such as Hong Kong, Singapore and Shanghai.

The NSW Government's *Long Term Transport Master Plan* sets out a number of projects to meet Sydney's transport challenge. WestConnex is the largest integrated transport and urban revitalisation project in Australia. It will link Parramatta to the central business district (CBD), Sydney Airport and the Port Botany precinct and the M5 in south-west Sydney via a 33 kilometre tolled motorway completely free of traffic signals. When completed, WestConnex would save 40 minutes on a typical journey between Parramatta and Sydney Airport, bypassing up to 52 sets of traffic signals.

The NSW Government will deliver WestConnex in a series of project stages, with a commitment for completion by 2023. When complete, it is expected that about 400,000 vehicles per day will use the WestConnex motorway.

WestConnex is made up of the following stages:

- The M4 West Widening (M4 Widening) from Parramatta to Homebush.
- The M4 East from Homebush to Haberfield.
- The M4 South from Haberfield to St Peters via Camperdown.
- The M5 from St Peters to the M5 East as well as duplication of the M5 East.

Each stage will be subject to its own environmental assessment, consultation and planning approval process.

The M4 Widening is the first WestConnex project. It involves converting the existing M4 Western Motorway (M4 Motorway) generally from three lanes to four lanes in each direction between Parramatta and Homebush.

This environmental impact statement (EIS) considers the environmental, social and economic impacts of the M4 Widening project. Volume 1 describes the project and why it is needed, assesses the impacts of the project and identifies measures that would be implemented to avoid and minimise those impacts. Volumes 2, 3 and 4 contain the technical papers used to inform the preparation of this assessment.

As proposed in the *WestConnex Business Case Executive Summary* (Sydney Motorways Project Office 2013a), a toll will be re-introduced on the widened M4 Motorway on opening in 2017. The proceeds of this toll would be applied to help fund the remaining WestConnex projects. The NSW Government is contributing $1.8 billion to fund WestConnex, while the Australian Government is contributing $1.5 billion with a further $2 billion through a concessional loan to the NSW Government.

When completed, the widened M4 Motorway would save motorists up to nine minutes in a morning peak eastbound journey from Church Street, Parramatta to Homebush Bay Drive, Homebush. When WestConnex is completed, this will convert to a saving of 14 minutes during the morning peak on an eastbound journey from Church Street to Homebush Bay Drive, cutting future travel times from 19 minutes (if nothing is done) to only five minutes. This equates to a travel time saving of 74 per cent.

When completed, the widened M4 Motorway would save motorists around one minute on an evening peak westbound journey from Homebush Bay Drive to Church Street, reducing travel time from six minutes to five minutes. When WestConnex is completed, this will convert to a saving of six minutes during the evening peak on a westbound journey for the same section of road, cutting travel times from 11 minutes (if nothing is done) to only five minutes. This equates to a travel time saving of 55 per cent. Faster travel times on this section of the M4 Motorway would provide economic and social benefits to Sydney.

Future WestConnex project stages would include new tunnel sections between Homebush and Camperdown. When these sections are completed they would ease congestion along Parramatta Road east of North Strathfield through to Camperdown, as there is currently no motorway alternative along that section of Parramatta Road.

When the fully completed WestConnex is operational, modelling shows that an average of around 4,500 fewer trucks and 20,000 fewer cars per day are expected to travel on the section of Parramatta Road between Concord Road and Camperdown.

Why is the M4 Widening and WestConnex needed?

The M4 Motorway is a vital artery in Sydney's road network. It is one of Sydney's key transport corridors servicing Western Sydney which is the third biggest economy in Australia after the Sydney CBD and South East Queensland. On the M4 Motorway, congestion is currently concentrated between some of Sydney's key jobs centres, which include Parramatta CBD and Sydney Olympic Park.

Congestion occurs mainly during the morning and evening peaks when many people are commuting to and from work. However, it is not only commuter traffic creating congestion on the M4 Motorway with freight vehicles, tradespeople and others making multiple daily trips which also significantly contributes to this congestion. The *State Infrastructure Strategy 2012-2032* (Infrastructure NSW, 2012) identifies that the M4 Motorway currently experiences periods of congestion (traffic travelling at lower than 'design speed' and experiencing periods of queuing) for up to 13 hours per day.

Congestion delays adversely impact on business productivity, and ultimately push up the price of goods and services. Uncertainty about how long a journey will take, due to variable travel times on a congested network, also has a negative impact on business productivity and freight efficiency.

The M4 Widening project would provide greater certainty to travel times on the M4 Motorway between Parramatta and Homebush due to increased lane capacity provided by the project, resulting in a smoother traffic flow and reducing the stop/start conditions currently experienced.

The M4 Widening project would also benefit businesses and industry using the widened motorway through improved access and travel time savings, improved certainty of travel times and savings in vehicle operating costs. Overall, the fully completed WestConnex will also improve liveability and amenity for residents and businesses within the region, by improving travel and accessibility to work, business and leisure.

Future transport demand in the M4 corridor represents a significant challenge for Sydney and NSW. The current road network has inadequate capacity to support a growing population that needs to reliably access dispersed employment areas and services. The M4 Motorway east of Church Street, Parramatta is a known constraint on the road network due to the motorway effectively reducing to two lanes in each direction at the James Ruse Drive interchange. Without the M4 Widening and the WestConnex project, congestion on this section of the M4 Motorway will continue to impact on the NSW economy.

Modelling indicates that without the M4 Widening or the WestConnex project, morning peak travel times in the eastbound direction would increase from around 12 minutes to 19 minutes between Church Street and Homebush Bay Drive. In the westbound direction in the same section of road, travel times would increase from about five minutes to 15 minutes.

In addition to slow average peak hour speeds, congestion also leads to unreliable travel times forcing motorists to plan for longer travel times than they may need. This can impact on motorist's quality of life, business productivity and freight efficiency, pushing up the cost of goods and services for consumers. Congestion presents particular challenges in the M4 corridor due to the high volume of freight needing to be transported from Port Botany to Western Sydney where many of the freight distribution centres are based. These goods are then distributed to dispersed points across the entire metropolitan area.

Efficiency of freight and logistics is important to freight and economic activity. Sydney's freight, commercial and services industries rely on distribution of goods and services across Sydney, through diverse and dispersed point-to-point transport connections. Around 60 per cent of import containers from Port Botany are delivered to areas serviced by the M4, M5 and M7 corridors.

Modelling by the Bureau of Freight Statistics estimates that the average number of weekday freight trips in the Sydney Metropolitan Area would increase by almost 40 per cent between 2011 and 2031. This includes:

- An increase in the number of trips made by rigid trucks on an average weekday from 271,000 to 355,000, an increase of around 30 per cent.
- A more rapid increase in articulated truck trips from 95,000 to 157,000, an increase of around 65 per cent.

Even minor incidents on a congested road network can have an immediate and serious impact on travel times. Congestion also reduces safety on the road network and can lead to more frequent vehicle crashes and traffic incidents that impact personal safety, property and road network performance.

What are the M4 Widening project objectives?

The objectives of the M4 Widening project are to:

- Enable integration with the subsequent stages of WestConnex while not significantly impacting on the surrounding environment in the interim period.
- Relieve road congestion so as to improve travel times and safety of travel on the M4 Motorway between Church Street, Parramatta and Homebush Bay Drive, Homebush.
- Improve access to the M4 Motorway from Sydney Olympic Park.
- Improve access to the M4 Motorway from Homebush Bay Drive.
- Improve road safety on the M4 Motorway and connections.
- Protect natural and cultural resources and enhance the environment.

How would the M4 Widening and WestConnex meet the need and project objectives?

The M4 Widening comprises the first project in the delivery of WestConnex.

Once completed, the M4 Widening project would provide immediate operational benefits in relieving congestion on the M4 Motorway between Church Street and Homebush Bay Drive, delivering reductions in travel times and improvements in the level of road safety on the motorway.

Access to and from the M4 Motorway would also be improved at Homebush Bay Drive and Hill Road, particularly in the evening peak period. The investment in the M4 Widening project and subsequent WestConnex stages would facilitate a fundamental change in network performance, enabling delivery of major city shaping improvements and delivering economic growth.

While the M4 Widening will provide improvements to Sydney's road network, the maximum benefits would occur when the entire 33 kilometre WestConnex project is completed, providing a seamless motorway standard journey from Parramatta to the CBD, Sydney Airport, the Port Botany precinct and the M5 in south-west Sydney, free of traffic signals.

When fully constructed, WestConnex will:

- Cut forecast travel times between Parramatta and Sydney Airport by up to 40 minutes.
- Effectively halve bus travel times between the Inner West and the CBD.
- Create 10,000 jobs during the construction phase, including hundreds of apprenticeships.
- Bypass up to 52 sets of traffic signals.
- Remove around 4,500 trucks a day from Parramatta Road and put them underground, leading to revitalised neighbourhoods on the surface.
- Improve north-south times across Parramatta Road for public buses accessing the Western Rail line at Burwood and other stations.
- Allow for the creation of 25,000 new jobs and 25,000 residences over the next 20 years along Parramatta Road.
- Deliver more than $20 billion in economic benefits to NSW.

By providing a fast motorway standard route, the fully completed WestConnex will also deliver average network speed improvements of one kilometre per hour across the Sydney network. With more than 15 million car and truck trips predicted on the network by 2031, the cumulative benefit of this average network speed improvement would be substantial.

In particular, the M4 Widening project, as part of WestConnex, supports NSW's key economic generators and provides a strategic response to the currently inadequate, and highly congested, road network.

As part of WestConnex, the M4 Widening project would support the freight transport task by improving access to, and reliability of, the motorway network. When complete, WestConnex would also provide a continuous high quality road connection linking the key regional cities of Parramatta and Penrith and other key centres in the Global Economic Corridor. Positive changes anticipated include improved travel time reliability on the motorway network, assisting business productivity and contributing to improved liveability and urban amenity.

What alternatives were considered?

A number of different alternatives to the project were considered. These include:

- A 'base case' (or 'do nothing/do minimum') option. This option assumes that the NSW Roads and Maritime Services (Roads and Maritime) will continue to deliver regular road network improvements over time to improve capacity and cater for traffic growth, but it does not include the M4 Widening or other WestConnex projects.
- Improving the existing arterial road network.
- Improving public transport provision.
- Investment in public transport and freight rail improvements.
- Demand management.

In the context of the substantial identified congestion and transport challenges facing Sydney, the 'base case' option is not considered viable if Sydney is to maintain global competiveness and remain an attractive and liveable city. In particular, congestion is already a significant issue on this section of the M4 Motorway and will continue to get worse as both population and the freight task increases. Therefore doing nothing was not considered an option.

The other alternatives are desirable and complementary to the project, but none were considered to provide an adequate and stand-alone response to the identified strategic need and project objectives.

In particular, the public transport and rail freight improvements and demand management alternatives alone would not address the diverse and dispersed point-to-point transport connections required that can only be provided by the road network.

In addition to these alternatives, a number of interchange design options, viaduct, bridge and motorway widening options were also considered in development of the preferred concept design described in this EIS. This concept design best meets the identified need and objectives of the project, which include improving access to the M4 Motorway from Sydney Olympic Park and Homebush Bay Drive, and relieving road congestion so as to improve travel time and safety of travel on the M4 Motorway between Parramatta and Homebush.

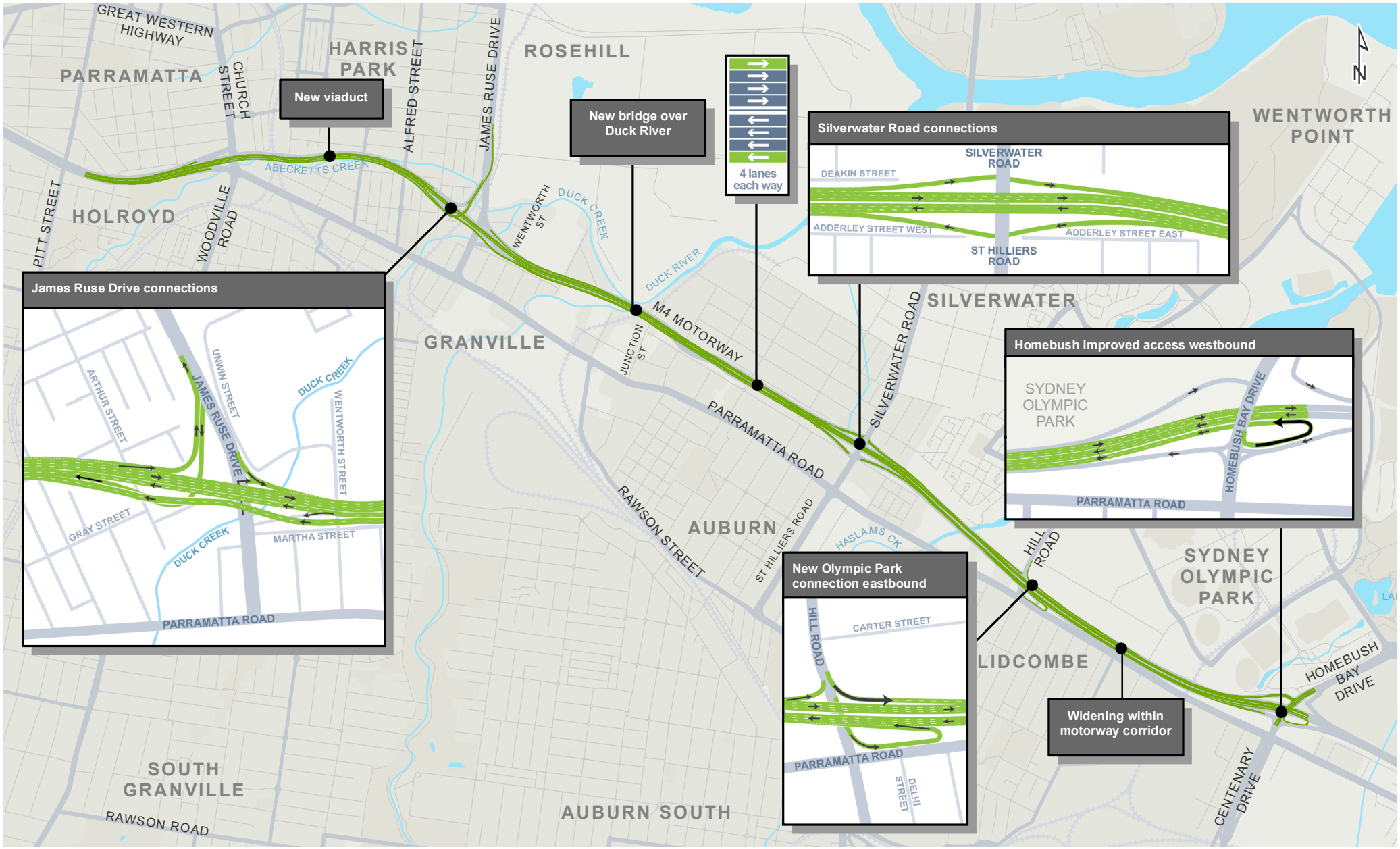
M4 Widening key features

The NSW Government is proposing to widen and upgrade approximately 7.5 kilometres of the M4 Motorway between Pitt Street, Parramatta and Homebush Bay Drive, Homebush as part of WestConnex.

The M4 Widening project includes the following key features:

- Construction of a new two lane viaduct for westbound traffic, on the southern side of the existing viaduct structure between Church Street, Parramatta and Wentworth Street, Granville.
- Reconfiguration of traffic lanes on the existing viaduct structure (to make four lanes in each direction).
- Construction of a new bridge/viaduct over Duck River at Auburn.
- Widening of the existing motorway to the south of the westbound carriageway between Wentworth Street, Granville and Duck River, Auburn.
- Widening of the at-surface carriageway of the motorway predominantly within the existing motorway corridor (utilising both the existing median and verge areas), between Junction Street, Auburn and Homebush Bay Drive, Homebush to provide four traffic lanes westbound and four traffic lanes eastbound.
- Construction of a new westbound G-loop on-ramp to the M4 Motorway from Homebush Bay Drive, Homebush.
- Construction of a new eastbound on-ramp to the M4 Motorway from Hill Road, Lidcombe.
- Provision of Intelligent Transport Systems infrastructure for motorway operations.
- Provision of road infrastructure and complementary technology services to support the future implementation of smart motorway operations.
- Widening and/or lengthening of existing ramps at Church Street, James Ruse Drive, Silverwater Road, Hill Road and Homebush Bay Drive.
- Provision of tolling infrastructure such as gantries and control systems.
- Provision of new and modified noise barriers.
- Provision of new asphalt wearing surface to the existing M4 Motorway.

Roads and Maritime is the project proponent. The NSW Government has established the WestConnex Delivery Authority (WDA) to manage delivery of the WestConnex projects. WDA has been established as a public subsidiary corporation of Roads and Maritime.



KEY

- New/upgraded surface road
- New ramp
- Road
- Rail line

Project location and key features

0 0.5 1
Km

What are the main benefits expected?

While the M4 Widening would deliver standalone benefits, its full benefits would be realised when the WestConnex project is fully completed.

As part of WestConnex, the M4 Widening project would contribute to delivering long-term economic benefits outweighing the initial upfront construction cost and ongoing operational cost, and creating the potential for realisation of wider economic benefits. An economic appraisal was undertaken for the fully completed WestConnex as reported in the WestConnex Business Case Executive Summary. The economic appraisal identified a benefit-cost ratio (BCR) of 2.55:1, including wider economic impacts reflecting the benefits of WestConnex across the Sydney road network. Based on the concept design, the M4 Widening project would support around 2,000 construction jobs as well as a number of operational jobs.

The main traffic benefit of the M4 Widening project is the operational improvement in relieving congestion along the M4 Motorway between Church Street and Homebush Bay Drive, including reductions in travel times and improvements to road safety. The M4 Widening project would also improve access to and from the M4 Motorway at key locations such as Homebush Bay Drive and Hill Road.

Typical morning peak travel time improvements along the section of the M4 Motorway between Church Street, Parramatta and Homebush Bay Drive, Homebush, when WestConnex is completed, are shown below.

Year	Scenario	Travel time (minutes) eastbound on M4 Motorway	Travel time (minutes) westbound on M4 Motorway
2031	No WestConnex	19	15
2031	WestConnex complete	5	9
	WestConnex saves	14 minute saving	6 minute saving
	% time saving	74%	55%

The fully completed WestConnex will also deliver amenity benefits, helping Sydney cope with expected population growth, improve traffic flow along key corridors, deliver improved average travel speed across the network and provide an important catalyst for urban renewal in areas of Sydney that currently experience poor amenity due to excessive traffic on local and arterial roads.

In 2013, the NSW Government announced an urban activation precincts program as an important component of a package of wider housing delivery and employment initiatives. Through consultation with local communities and councils, urban activation precincts aim to deliver more homes in places with access to infrastructure, transport, services and jobs. The benefits to the community will include greater housing choices, increased amenities, services and improved public spaces. Two of these precincts are located along the M4 corridor, at Wentworth Point and Carter Street, Lidcombe, and will benefit from improvements to the M4 corridor.

What are the main adverse outcomes expected?

During construction of the project, adverse impacts would include:

- Noise and vibration, including potential night time disturbance associated with out-of-hours work.
- Dust and construction vehicle emissions.
- Traffic and access impacts.
- Impacts on three threatened ecological communities (Swamp Oak floodplain forest, Shale gravel transition forest and Freshwater wetlands on coastal floodplains). This would be limited to a total of approximately 0.17 hectares of moderate condition vegetation and 0.35 hectares of low condition habitat.

Construction impacts would be minimised through further consideration during detailed design and construction planning, application of appropriate management and mitigation measures, and consultation with affected residents.

During operation, adverse impacts would include:

- Traffic noise requiring new noise barriers and property treatments.
- Visual impacts associated with new viaducts and bridges.
- Increased traffic on Parramatta Road and other roads due to toll avoidance.
- Potential minor flooding impacts along A'Becketts Creek.

While substantial travel time benefits are expected along the motorway, the WestConnex Road Traffic Model has indicated that the M4 Widening project is expected to increase travel times on Parramatta Road between Church Street and Homebush Bay Drive due to drivers seeking to avoid the toll. However, even with more than 1.5 million extra people living in Sydney by 2031, there would be fewer people using Parramatta Road during the morning and afternoon peak periods than it had in 2008 when the M4 Motorway previously had a toll.

How will the impacts be managed?

Project development and concept design investigations have sought to avoid and minimise impacts on the community. For each key issue, the existing environment is described in the EIS, the potential impacts (both direct and indirect) of the project during construction and operation are assessed and the influence of relevant planning matters is considered. The assessment of key issues presented in this EIS is supported by detailed investigations. These are documented in the working papers in Volumes 2, 3 and 4 of this EIS.

The EIS also identifies comprehensive mitigation and management measures that would be implemented to avoid, manage, mitigate, offset and/or monitor impacts during construction and operation of the project. These include best practise construction environmental planning and management techniques, urban design and landscaping treatments, noise mitigation measures and consideration of options to offset biodiversity impacts. During further detailed design and construction planning, some impacts identified within this EIS are likely to be able to be further mitigated.

The design, construction and operation of the project would be undertaken in accordance with extensive environmental management commitments identified in this EIS, as well as any additional measures identified in conditions of approval for the project.

To assist in further mitigating traffic impacts on the wider road network, Roads and Maritime will continue to prioritise improvements to the overall network including works to address intersection congestion where required. In addition, the NSW Government's Long Term Transport Master Plan commits to the development of an integrated package of transport improvements to renew the Parramatta Road corridor in conjunction with the delivery of WestConnex. The medium- to long-term benefits of these improvements, along with the completion of WestConnex, would assist to reduce the adverse impact of additional vehicles on the section of Parramatta Road between Parramatta and Homebush.

How has the community been engaged?

Consultation activities undertaken specifically for the M4 Widening project began in September 2013 following announcement of the project and the commencement of EIS preparation.

Community feedback was sought on the WDA concept design for the M4 Widening with community information sessions and meetings also held, including:

- Publication and unaddressed distribution of approximately 95,000 WestConnex factsheets (September 2013).
- Publication and unaddressed distribution of more than 50,000 Urban Revitalisation factsheets (September 2013).
- Nine staffed community display sessions.
- Six 'drop in' community information sessions.
- Nineteen static displays in libraries, motor registries, council chambers and government offices.
- Briefings with industry groups, councils, chambers of commerce, clubs and organisations.
- Publication and distribution of approximately 75,000 M4 Widening project community update brochures (October 2013).

These sessions provided information about the project and the opportunity for the community and other stakeholders to comment. A range of other consultation activities were also adopted including door knocking, newsletters, advertisements and community updates seeking feedback and input on the project.

Extensive community feedback was received which has informed the preparation of this EIS. WDA will continue to provide opportunities for the community to participate in the ongoing refinement of the design and construction process to further minimise project impacts.

How can I comment?

The NSW Department of Planning and Environment (DP&E) will make the EIS publicly available for a minimum period of 30 days. During this period, it will be available for inspection at the DP&E's website: http://majorprojects.planning.nsw.gov.au/, at selected local council and Roads and Maritime offices, and at various staffed displays in the region. A link will also be provided on the WestConnex website: www.westconnex.com.au.

WDA will continue conducting community information sessions. A project information line (1300 660 248) will also be available throughout the exhibition period to answer questions from the community relating to the project.

To provide feedback on the project, a person may make written submissions to the Secretary of DP&E during the exhibition period, quoting the project number (SSI 13-6148). All submissions received will be placed on the DP&E website.

Written submissions may be made online at http://majorprojects.planning.nsw.gov.au or may also be directed to:

SSI 13-6148
NSW Department of Planning and Environment
GPO Box 39
Sydney NSW 2001