

Public Environment Report

# Chapter 16

## Economic and social matters

September 2019



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Section 2.12 of the Public Environment Report (PER) guidelines requires analysis of the economic and social impacts of the action and reflects section 136(1)(b) of the Australian Government's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) which requires the consideration of social and economic matters.

In addition, the Ecologically Sustainable Development (ESD) Principles (section 3A of the EPBC Act) state that '*(a) Decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations*'.

This chapter discusses the social and economic impacts at local, regional and national level of the action as a whole. Local social and business impacts for North East Link are assessed in detail in the Environment Effects Statement (EES) under Victoria's *Environment Effects Act 1978*.

This chapter draws particularly on the North East Link business case (NELA, 2018a). A separate discussion of impacts on the people and community from impacts related to the action on Commonwealth land are provided in Chapter 9 – Impacts on the whole of the environment on Commonwealth land. Details of the North East Link consultation program are provided in Chapter 14 – Consultation.

## 16.1 Socio-economic impacts

### 16.1.1 Socio-economic context

Over the past 50 years, Melbourne has experienced major changes in population growth, economic structure and urban built environment. Melbourne has also undergone an economic transition, away from manufacturing-based industries towards information and service provision. These changes in population and economic structure have led to an evolving spatial reorganisation of the city, with people increasingly being unable to live close to key business centres.

Population, economic and spatial changes will place increasing pressure on Melbourne's infrastructure and services, with growing demand for travel putting the city's transport networks under particular strain. At the same time, there are rapid advances occurring in vehicle technology, including the possible introduction of driverless or fully autonomous vehicles. All these changes must be planned for and addressed to maintain Melbourne's productivity, competitiveness and liveability.

By improving the cross-city network, it is anticipated that North East Link would address a number of these pressures. North East Link would better connect households to jobs, services and education, increasing economic opportunity for households. Non-local traffic would be moved out of residential areas, improving local amenity and safety. Many businesses would be better connected with suppliers and gain efficiencies in the delivery of goods, achieved by reduction in congestion and improved travel time reliability. These factors are expected to contribute benefits to the wider economy, making Victoria more competitive.

This chapter provides an assessment of the social impacts associated with the construction and operation of North East Link.

### 16.1.2 Socio-economic benefits

The business case for North East Link identified a range of potential benefits for businesses, communities, commuters and the wider Victorian and national economies (NELA, 2018a) based on the North East Link project objectives. These are summarised in Table 16-1.

Table 16-1 Socio-economic benefits

Objective	Local, regional or national effect	Benefit	Description
Productive businesses	While many of the benefits would be experienced directly in the north-east and other parts of Melbourne, regional Victoria and the rest of Australia would also benefit through increased economic activity and employment.	Better business-to-business connectivity	North East Link would reduce travel times and associated costs between key employment clusters and activity centres in the north, east and south-east, including La Trobe and Monash national employment innovation clusters and Box Hill, Ringwood and Dandenong. Overall, improved connectivity is estimated to provide \$250 million in economic value each year.
		Improved business access to workers	North East Link would make it easier for businesses to access the full range of skills available across the city to meet the demands of a job. The available labour pool for businesses located in the north-east would increase, on average, by an additional 62,000 workers.
		Increase in business productivity	By improving connectivity and providing greater opportunities for interaction, North East Link would allow businesses and workers to more readily engage in activities that drive productivity growth. Across the life of North East Link, the better connectivity provided by North East Link is expected to drive an increase in business productivity of approximately \$590 million.
		More jobs in the north and north-east	North East Link would make key employment clusters and activity centres in the north (Epping and Broadmeadows), north-east (La Trobe) and east (Ringwood and Box Hill) more attractive business locations, spurring investment and employment in those areas. North East Link is expected to attract an additional 5,500 jobs to the north-east. This would lead to a more efficient spatial structure across the city that locates jobs closer to where people live, helping to create a more sustainable, accessible and resilient Melbourne.

Objective	Local, regional or national effect	Benefit	Description
Competitive supply chains	The benefits delivered to the freight and supply chain industry are important from a state-wide economic perspective because they increase the potential for businesses to gain access to goods and supplies. Because the freight industry impacts almost every other industry, these benefits accrue to the entire economy in Victoria and Australia.	Better freight connectivity	Direct benefits for road freight operators include commercial vehicle travel time savings, improved travel time reliability, truck operating cost savings and reduced congestion on freight routes. These benefits would extend across light and heavy commercial vehicles, including high productivity freight vehicles. In turn, this would reduce the costs of 'last mile' deliveries and enable a more efficient metropolitan logistics system.
		Improved access between industrial precincts	Improved access between industrial precincts – North East Link would improve supply chain efficiency by reducing the time to travel between Melbourne's major industrial precincts. For example, travel times between Dandenong and Epping are expected to reduce by 16 minutes, reducing costs for heavy vehicles by approximately \$50 per trip.
		Greater freight productivity	Greater freight productivity – North East Link would increase the amount of deliveries road freight operators can make within a given time, reducing their labour and fuel costs and improving their productivity, and enabling greater access for high productivity freight vehicles through the north-east. These cost savings can be passed on to producers and suppliers, increasing their ability to compete across larger distances and reducing the 'landed' cost of goods for consumers.
		A more efficient metropolitan logistics system	North East Link would enable the logistics industry to organise and execute a more efficient metropolitan goods storage and transport system by locating at the northern apex of the city, which would provide rapid access around the city and to the local road network and reduce the cost of last mile deliveries.
Economic growth	North East Link is expected to provide the most significant boost to gross regional product (GRP) for the Eastern Metro region, worth \$5.2 billion through to 2046 with additional impacts spread across the rest of Melbourne. This would contribute to boosting Australian gross domestic product (GDP).	Economic growth from increased economic activity and employment growth	As a significant proportion of the benefits of North East Link would be provided to business and freight users, North East Link is expected to result in significant productivity gains throughout the economy which in turn, would help to stimulate economic activity. The analysis undertaken by the Centre of Policy Studies suggests that productivity improvements provided by North East Link would increase GSP by about \$12.5 billion through to 2046.

Objective	Local, regional or national effect	Benefit	Description
Prosperous households	These benefits for households are important from a state-wide economic perspective, because they improve individuals' access to appropriate employment opportunities, generating higher incomes and leading to increased contributions to the Victorian economy and GSP, with flow on benefits to GDP.	Better household connectivity	Improved travel times to key employment locations would better connect households with jobs, services, education providers and economic opportunities. Better connectivity is anticipated to provide \$324 million in economic benefits to Victorian households each year.
		Improved access to jobs	See 'Improved business access to workers' above.
		Improved access to education –	For students living in Melbourne's north, north-east and south-east, North East Link would provide access to better educational opportunities.
		More sustainable urban structure	Improved accessibility and liveability would contribute to a rebalancing of future urban residential developments in Melbourne's north and north-east, leading ultimately to a more sustainable city-wide spatial structure with jobs located closer to where people live.
Liveable neighbourhoods	These impacts would be felt at a local level across the north-eastern suburbs of Melbourne.	Improved local access to key places and services	Reduced congestion on local roads and subsequent improved public transport service performance would give residents easier access to local destinations.
		Safer roads and fewer crashes	By reducing the number vehicle kilometres (especially trucks) on local roads and arterials, the likelihood of road accidents decreases with the implementation of North East Link by an estimated 100 crashes each year. Improved safety and amenity is expected to provide \$41 million in economic value each year.
		Healthier communities	North East Link incorporates improvements to walking and cycling infrastructure and facilities, including on-road and shared use paths. These active transport improvements along the North East Link corridor would generate benefits for local residents and public transport.
		Less local pollution from vehicle emissions	Reduced car and truck kilometres on local and arterial roads with the implementation of North East Link would decrease air pollution and noise.

Source: North East Link business case (NELA, 2018a)



### 16.1.3 Cost benefit analysis

The PER Guidelines require discussion of ‘projected economic costs and benefits of the project, including the basis for their estimation through cost/benefit analysis or similar studies’.

A cost benefit analysis (CBA) was undertaken for North East Link comparing the Project Case scenario (the scenario where North East Link is completed) against the Base Case scenario (where North East Link does not proceed).

The CBA discounts future benefits and costs into today’s terms reflecting the time value of money. Benefits were accumulated over a 50-year appraisal period reflecting the asset life of key scope elements of North East Link and expressed as a single, discounted dollar value to represent what future streams of benefits are worth today.

CBA is a well-established and widely accepted methodology which is commonly used by governments to not only assess the economic feasibility of a project or initiative, but also to compare it with others.

#### Transport benefits

North East Link would provide considerable transport benefits, primarily through direct user benefits, which refers to the benefits provided to users of the transport network through improved travel times, reduced congestion and lower vehicle operating costs.

Overall the action is estimated to provide \$103.5 billion in transport benefits, which is equivalent to \$10.8 billion in present value terms. This comprises \$10.9 billion in user benefits in present value terms, \$520 million in non-user benefits and resource-cost corrections, \$95 million from the residual value of the action that remains at the end of the appraisal period and reduction of \$713 million resulting from the impact of land use change estimated to be induced by the action.

The significant improvement North East Link is modelled to generate for the road network is expected to encourage some people to locate their residence and/or business in areas that benefit most from the improved access. The analysis suggests the induced change in land use would likely reduce transport benefits, as the improved accessibility would attract more population and jobs to an already well-established corridor. This additional activity would partially offset the network improvements provided directly by North East Link.

While the reduction of \$713 million associated with the impacts of land use change is a significant value, it represents around 7 per cent of total transport benefits. The high level of benefits expected to be achieved after taking these impacts into account demonstrates the resilience of the action to these longer-term demand drivers. This is an important finding given the recent focus on these issues by Infrastructure Australia and the Victorian Auditor General when reviewing the assessments of other major toll road projects.

In terms of the distribution of transport benefits, freight users would be the greatest beneficiaries of North East Link with around \$4.1 billion (present value) in benefits provided over the appraisal period, accounting for approximately 37 per cent of the total transport benefits. There would also be significant benefits for households (from commuting and other trips) and business users, with around \$3.6 billion and \$2.7 billion (present value) in benefits respectively over the appraisal period. Amenity benefits (reduced emissions and improved safety) account for around 4 per cent of total transport benefits.

## Wider economic benefits

North East Link would provide significant improvements in terms of accessibility for businesses, helping businesses become more productive. These wider economic benefits are expected to generate \$890 million of additional benefits, which represents approximately 8 per cent of the value of conventional transport benefits.

## Summary of economic benefits

Transport benefits, including the impacts of induced land use change, account for most of the total economic benefits of the action, providing over \$10.8 billion (present value) in economic value. The addition of wider economic benefits results in \$11.7 billion (present value) in total economic benefits provided by North East Link.

Table 16-2 summarises the economic benefits of North East Link.

**Table 16-2** Economic benefits of North East Link

	Transport benefits present value	Wider economic benefits present value
User benefits	\$10,938 million	-
Non-user benefits	\$520 million	-
Transport impacts due to land use change	- \$713 million	-
Residual value	\$95 million	-
Agglomeration	-	\$590 million
Labour supply	-	\$89 million
Imperfect completion	-	\$211 million
	\$10,840 million	\$890 million
<b>Total</b>	<b>\$11,730 million</b>	



## Economic costs

Two main costs are relevant to the CBA:

- Capital costs – inclusive of capital expenditure including state delivery costs, planning, construction, land acquisition costs, inherent/contingent risk allowance and real escalation
- Operating and maintenance costs – relating to operating and lifecycle maintenance expenditure for the 50-year project evaluation period, including the costs for periodic and ongoing maintenance.

The outcome of the CBA takes into account all necessary discounts and adjustments to make sure monetary comparisons between now and in the future are accurate and show the economic costs of North East Link. Both the P50 and P90 estimates (cost estimates that are respectively 50 per cent and 90 per cent likely not to be exceeded) are provided in Table 16-3 (difference in estimates is based on different levels of risk).

Table 16-3 Economic costs of project

	Capital costs	Operating and maintenance costs	Total
Present value cost (P50)	\$8,191 million	\$462 million	\$8,653 million
Present value cost (P90)	\$8,688 million	\$488 million	\$9,176 million

## Summary of CBA findings

Reduced constraints to economic journeys generate improvements for the wider Melbourne, Victorian and national economies. Using the above result, the Business Case CBA found that North East Link has an estimated Benefit-Cost Ratio of 1.3. This means that for every dollar spent on North East Link, the Victorian and national economies would receive \$1.30 of value in return. With the wider economic benefits included this value increases to \$1.40 for every dollar spent.

The CBA results for the Base Case scenario suggest that North East Link would deliver significant economic value for Victoria and the national economy, with total benefits around \$3.1 billion greater than the capital and operating costs of North East Link.

## 16.2 Predicted employment opportunities

### 16.2.1 Construction employment

The construction workforce for North East Link would vary in size over the course of the construction period and is expected to peak at around 2,800 people across the project alignment per shift. The economic modelling completed for the business case (NELA, 2018a) predicted additional employment supported by North East Link during the construction of North East Link to be approximately 10,300 jobs.

### 16.2.2 Operational employment

Improving labour market accessibility and business-to-business accessibility is likely to increase the attractiveness of an area for businesses to establish operations, leading to more jobs. This can create opportunities for commercial and industrial intensification in places with capacity for growth while also decreasing demand in other areas with lower levels of accessibility.

To identify areas likely to be impacted by changes in demand from improved accessibility from North East Link, a land use and transport interaction modelling approach was used to understand the redistribution of employment. North East Link is expected to attract an additional 5,500 jobs to businesses in Melbourne's north and north-east.

Providing additional employment opportunities in areas of high growth (especially to regions like Whittlesea, where population growth is forecast to increase by over 140,000 from 2016 to 2036) would help local workers in these regions to avoid having to travel long distances to jobs. This is not only highly beneficial for individual workers and households, it is also necessary for the city's long-term sustainability and liveability (NELA, 2018a).

## 16.3 Social impacts

People and communities are at the heart of every infrastructure project and this is the case for North East Link.

The features and qualities of the built environment influence the way that people use areas and identify with their communities. The benefits and impacts of new infrastructure on people and communities tend to be felt at a local and sometimes regional level.

The social and community impacts of North East Link are summarised in Table 16-4. Information on proposed avoidance and mitigation measures is provided in Chapter 10 – Proposed avoidance and mitigation measures.

Table 16-4 Summary of project wide social impacts

Impact	Scale	Temporary/permanent	Description	Mitigation measures
Property acquisition and relocation	Local	Temporary and permanent	<p>The action would require the acquisition of residential, business and open space land. At a household level, residential property acquisition under Victoria's Land Acquisition and Compensation Act 1986 (LAC Act) and subsequent relocation of residents is likely to result in lifestyle disruption and pose demands on individual and family time. Relocation of households introduces the potential for reduced or loss of social ties at the neighbourhood and community level.</p> <p>Temporary and permanent land acquisition would affect approximately 100 businesses potentially reducing local employment opportunities. This can occur if employees choose not to continue work with a business due to its relocation, or if the business does not continue to operate as a result of the land acquisition. Potential loss of employment opportunities may impact those vulnerable to unemployment such as those close to retirement age or with limited skill sets.</p> <p>The action would require the acquisition of up to 36 residential properties across the North East Link corridor, potentially resulting in lifestyle disruption and imposing demands on individual and family time. Generally people that have lived at the same residence for a long time would likely have stronger ties and attachment to the area.</p>	<p>Key measures to mitigate impacts associated with residential property acquisition and temporary occupation include reducing disruption as much as possible.</p> <p>Acquisition of residential and business properties would be in accordance with the LAC Act. The potential for disruption would be managed by the following approach:</p> <ul style="list-style-type: none"> <li>• Follow through interactions with affected landholders on a case by case basis using a case management approach</li> <li>• Endeavour to reach agreement on the terms for possession of the land</li> <li>• Consider the relative vulnerability and special needs of land owners and occupants.</li> </ul> <p>Following the implementation of the measures outlined above, the impacts are expected to be minor.</p> <p>The level of impact associated with commercial property acquisition largely depends on the successful relocation of displaced businesses.</p> <p>North East Link would seek, as far as practicable, to minimise disruption to businesses, work with affected parties to agree the terms for possession, design and construct the works to minimise disturbance in consultation with those potentially affected, and rectify any damage caused.</p>

Impact	Scale	Temporary/permanent	Description	Mitigation measures
Amenity and character	Local	Temporary	<p>Construction would lead to changes to noise, air and visual amenity. Visual change includes the removal of existing vegetation, potential construction compounds, construction screening and additional lighting. These works have implications for the character and feel of a neighbourhood.</p> <p>Construction activities and truck movements have the potential to lead to increased noise levels. The increased noise levels may result in residents spending less time outdoors and disturbance to normal home activities and sleep. Construction activities also have the potential to temporarily reduce air quality from intermittent dust and odour and may impact residents' ability to enjoy and use their properties.</p>	<p>A number of mitigation measures would be implemented to minimise impacts on amenity and character:</p> <ul style="list-style-type: none"> <li>• Temporary landscaping and urban design to minimise visual impacts</li> <li>• Preparation and implementation of a Construction Environmental Management Plan including a Construction Noise and Vibration Management plan, Dust and Air Quality Management and Monitoring Plan, Odour Management Plan and Spoil Management Plan.</li> </ul>
Access and connectivity	Local		<p>Connectivity refers to people's ability to move through their community and access a range of places safely and conveniently. Construction work would impact the road and traffic network surrounding North East Link.</p> <p>For road users, traffic changes due to construction activities would temporarily increase their travel time for daily commute or usual trips. Public transport facilities, including bus stops, bus routes, Watsonia railway station and the Hurstbridge rail line, would be temporarily disrupted during the construction phase.</p>	<p>Changes to public transport can be confusing and stressful for people, especially vulnerable groups such as the elderly, children, people with disabilities and people with English language difficulties. To mitigate these impacts, the action would provide alternative transport for disruption to rail services and engage with public transport users before and during construction to effectively communicate changes to services.</p> <p>The action would be required to engage with residents, cyclists and vulnerable groups prior to and during construction. This would minimise impacts due to delays by allowing residents to anticipate traffic changes and plan their journeys ahead.</p>

Impact	Scale	Temporary/permanent	Description	Mitigation measures
Function and viability of community infrastructure facilities:	Local	Temporary	<p>Emergency services would not be impacted by property acquisition, and are not expected to have significant amenity impacts or changes to access and connectivity</p> <p>No aged care facilities would be acquired, but some are likely to experience amenity impacts due to noise levels and changes to access, particularly around Watsonia and Rosanna. This may deter some elderly people from making some trips due to congestion and a reduced sense of road safety.</p> <p>Community infrastructure, such as aged care facilities, emergency services and recreational facilities serve an important function to meet social needs and enhance community wellbeing.</p>	<p>Various traffic management measures would be implemented to maintain access and connectivity to and from these facilities, which would allow community members to continue travelling safely on roads.</p> <p>To minimise impacts due to property acquisition and temporary occupation, the North East Link Project would work with relevant local councils to identify available local alternative facilities for formal recreational users displaced from recreational facilities due to the works.</p> <p>A Communications and Community Engagement Plan would be implemented to engage and consult the community and potentially affected stakeholders and discuss progress of construction activities and operation.</p>
Visual amenity – social impacts	Local	Permanent	<p>The operation of North East Link would involve a number of changes to visual amenity for residential communities mainly from new permanent infrastructure including noise walls, viaducts, elevated road structures, shared use path overpasses and street lighting. Some open spaces would also be permanently removed. While the degree to which residents' enjoyment would be impacted from the items above would vary, it is considered unlikely that this would impact on people's ability to continue with their everyday lives. People also tend to adjust to visual changes over time, particularly once vegetation matures and filters views of the infrastructure. It is therefore unlikely that infrastructure would cause severance of communities or residential areas, leading to a sense of isolation, increased sense of disadvantage and vulnerability.</p>	<p>Visual impacts would be addressed through the Urban Design Strategy which has the following key design directions:</p> <ul style="list-style-type: none"> <li>• Develop an integrated design response</li> <li>• Support a natural and connected corridor</li> <li>• Recognise cultural and historic values</li> <li>• Provide a great experience for road users</li> <li>• Create a context-sensitive design.</li> </ul>

Impact	Scale	Temporary/permanent	Description	Mitigation measures
Operational noise amenity – social impacts	Local and regional	Permanent	As a result of traffic diversion onto North East Link, the operation phase would result in reduced traffic-related noise on a number of local and arterial roads in the surrounding road network. Reduced traffic noise is expected to improve the noise amenity of residential areas close to these roads. This may contribute to slightly quieter residential amenity and encourage residents to enjoy outdoor spaces.	North East Link is predicted to have a net-benefit in terms of operational noise, where over 8,100 properties are predicted to experience a reduction in road traffic noise. This is a result of proposed noise mitigation measures including provision of noise walls in locations close to North East Link.
Operational air quality amenity – social impacts	Local and regional	Permanent	Improved air quality is predicted for the 2026 and 2036 scenarios due to decreased traffic on the surface road network. This is expected to enhance the air quality amenity of surrounding residential areas.  Increases in air emissions are predicted along some roads, including the M80 Ring Road (otherwise known as the Metropolitan Ring Road), Eastern Freeway and Middleborough Road particularly near intersections. The tunnel ventilation structures would result in minor exceedances in dust levels for both 2026 and 2036 scenarios, although this is due to high background concentrations.	While air quality changes during operation are not expected have significant social impacts, North East Link would be required to meet relevant air quality requirements, and monitor ambient air quality, in-tunnel air quality and ventilation structure emissions during operation in accordance with the relevant standards.



Impact	Scale	Temporary/permanent	Description	Mitigation measures
Operational access and connectivity	Local and regional	Permanent	Impacts to access and connectivity result from changes to roads, traffic, shared use paths and public transport. Large decreases in traffic volumes are expected on a number of roads due to medium and longer cross-city trips being diverted to North East Link resulting in faster travel times. Faster travel times would benefit road users including cars, trucks, buses, on-road trams, cyclists and pedestrians, allowing more time for many people in the north-east to spend time with families and undertake leisure and social activities.	<p>North East Link would include new shared use paths to create a more direct shared use corridor between the city and the north-eastern suburbs. The separation of cyclists from general traffic would enhance safety of cyclists.</p> <p>New pedestrian bridges, land bridges and signalised crossings across a number of arterial roads would improve east-west connectivity for the community, such as Greensborough Road. Generally community members who rely on pedestrian and cycling facilities are expected to benefit from these crossings and this may lead to increased walking and cycling.</p> <p>Improved traffic flow and faster travel times would benefit community members who rely on public transport services.</p>

Impact	Scale	Temporary/permanent	Description	Mitigation measures
Open space and recreational areas during operation	Local and regional	Permanent	<p>The project would require the permanent acquisition of a combined total of 182,300 square metres of open space and recreational areas across the municipalities of Banyule, Yarra, Manningham, Boroondara and Whitehorse. With the exception of Watsonia railway station carpark reserve, Borlase Reserve, and two unnamed reserves (one south of Doncaster Road and the other behind existing Boroondara Tennis Centre), the open space acquired at every other location is minimal and generally involves strip acquisition along existing road infrastructure for the purpose of establishing shared use paths and trails.</p> <p>All functional space within these areas would return to passive and active recreational use. The establishment of shared use paths would increase the connectivity and active recreational values of some areas, which would allow for greater engagement in active lifestyles and provide spaces for engaging with others in the community. This would allow and encourage community participation in active and passive recreational activities and community networking, including for vulnerable groups.</p>	<p>During operation, open space and recreational facilities temporarily acquired during construction would be reinstated generally in accordance with the Urban Design Strategy and in consultation with relevant councils and land owners, to provide a positive contribution to the open spaces.</p> <p>In addition to the mitigation measures, new open space would be created through land bridges built over North East Link in Watsonia. They would create approximately 8,450 square metres of new open space, and provide north-south linear parkland between Wittman Reserve and Winsor Reserve.</p>