CBD AND SOUTH EAST LIGHT RAIL PROJECT

ENVIRONMENTAL IMPACT STATEMENT

VOLUME 3

Technical papers

TECHNICAL PAPER 4: ECONOMIC IMPACT ASSESSMENT

CBD and South East Light Rail
Economic Impact Assessment

PREPARED FOR

Transport for NSW

Final

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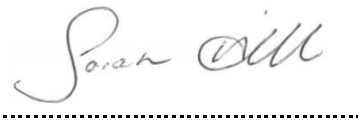

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LIST OF ABREVIATIONS

CBD – central business district

CCAS – City Centre Access Strategy

CCTV – Close Circuit Television

CSELR – CBD and South East Light Rail (the proposal)

Cos – City of Sydney Council

DGRs – Director General's Requirements

DP&I – (NSW) Department of Planning & Infrastructure

DSEWPaC – (Commonwealth) Department of Sustainability, Environment, Water, Populations and Communities

EcIA – Economic Impact Assessment

EIS – Environmental Impact Assessment

EP&A Act – NSW *Environmental Planning & Assessment Act 1979*

EPA – Environment Protection Authority

LEP – Local Environmental Plan

LGA – Local Government Area

Master Plan – The NSW Long Term Transport Master Plan (December 2012)

QVB – Queen Victoria Building

RMS – NSW Roads and Maritime Services

SEPP – State environment planning policy

SICEEP – Sydney International Convention, Exhibition and Entertainment Precinct

SSI – State Significant Infrastructure

EXECUTIVE SUMMARY

THE CASE FOR CHANGE

The central business district (CBD) and South East Light Rail (CSELR) Project (the proposal) proposes to improve connections and capacity for travel between one of Sydney's key gateways (Circular Quay), the heart of Global Sydney (George Street) and some of the City's key clusters of leisure, entertainment, education and medical services (Moore Park, Randwick and Kingsford). Combined these areas are forecast to experience a net increase of close to 35,000 residents and 111,000 jobs over the next 18 years representing a 36% and 34% increase on existing levels respectively[1].

This growth is not unprecedented. The City of Sydney was one of the fastest growing local government areas in NSW over the past Census gaining an additional 50,000 jobs or 40% of employment growth in NSW[2]. Much of this growth has occurred within areas such as Haymarket, Surry Hills and Central with a changing dynamic of both workers and residents seeking the convenience of inner city living without significant compromises to their amenity. Randwick and Kingsford have also experienced significant change and have been identified by the NSW Government as one of the key urban areas to activate for further economic growth and prosperity.

Forecast Growth in the Study Area 2011-2031

Category	2011	2031	Increase
Population	94,168	128,331	34,163 or 36%
Jobs	323,296	433,912	110,616 or 34%
Workforce originating from outside of the Study Area that work in the Study Area	311,160		
Number of Jobs (businesses directly adjoining George Street in 2011-2012)	62,000		
Gross Building Area Fronting George Street	2.6 million sqm		

Combined the suburbs that adjoin the proposed CSELR route corridor (the Study Area) provide employment to over 311,000 workers from outside the Study Area. Over 62,000 jobs alone are generated within the 2.6 million square metres of floorspace that fronts George Street in the Study Area[3].

The NSW Government recognises that this scale of activity, together with the forecast level of growth, cannot be achieved successfully without investment in infrastructure. If left unchecked, the existing level of traffic

[1] Bureau of Transport Data Statistics 2012

[2] According to the City of Sydney Research Team

[3] Data provided by the City of Sydney 2013

congestion across Sydney CBD and the South East, together with the existing constrained and overburdened public transport system and pedestrian environment would lead to a significant economic cost for Sydney.

Accordingly the NSW Government in co-operation with the City of Sydney and Randwick Council is seeking to proactively invest in the improvement of Sydney's public transport system to create a reliable, frequent and user friendly light rail system that is an impetus for urban growth and a means of enhancing business productivity, investment and the liveability of Sydney.

"It is public transport that will be making our cities accessible and attractive in the 21st century".

The Organisation for Economic Co-operation and Development

STUDY PURPOSE

The following Economic Impact Assessment (EcIA) has been prepared to inform part of the environmental impact statement (EIS) of the CSELR. The wider environmental assessment has been prepared by Parsons Brinckerhoff on behalf of Transport for NSW, the proponent of the proposal.

This assessment provides a profile of the geographic localities and businesses that are likely to be affected by the proposal. It assesses potential economic and business impacts during construction as well as operation, in addition to measures to mitigate potential negative impacts whilst enhancing the benefits of the proposal.

WHAT IS AN ECONOMIC IMPACT?

An economic 'impact' affects the level of economic activity generated in a defined area either positively or negatively. The assessment of likely impacts resulting from a particular project allows for the identification (and where possible) quantification of impacts as either likely benefits or negative impacts.

Economic impacts may directly affect the economic well-being of an area's residents, the viability of businesses, workforce availability or trade by changing factors that influence opportunities for employment or business growth, the ease of doing business and the environment in which business is conducted. Economic impacts may also alter the scope of demand for services and the level of accessibility to those services.

The geographic range of an economic impact is dependent on the nature of the proposed development and its scope of influence. The geographic influence of an impact can range from individual dwellings or streets through to suburbs, LGAs, states and countries.

Analysis of likely economic impacts can be compiled into an Economic Impact Assessment that estimates the consequences of a particular project to an economy or society. In addition to identifying impacts however, an impact assessment should recommend ways to enhance the positive effects and reduce or mitigate the negative ones.

MACROECONOMIC IMPACTS

Based on a review of international literature and complementary studies, research and economic modelling we have assessed the key macroeconomic implications of the proposal to Sydney. It was found that the majority of these broader economic impacts would be experienced upon operation and would have a positive longer term impact to Sydney and NSW including:

- The generation of additional capacity in the transport system to support connections to key economic activities, tourist locations and employment areas whilst stimulating development and investment across the Study Area (having particular regard to Sydney CBD, Moore Park and associated entertainment and leisure uses as well as the Randwick Urban Activation Precinct and Specialised Centre);
- A potential uplift in property values with retail units fronting George Street anticipated to experience a net increase in capital values (in the order of +$428m or +14%[4] by 2026);
- Increased agglomeration resulting in greater business efficiencies, cost savings, knowledge sharing and innovation;
- Support for economic productivity and output as a result of the nexus between these factors and improved transport infrastructure (as calculated by Otto and Voss, a 1% increase in public capital stock could lead to a 0.4% increase in private output[5]);
- Based on a 6 year project construction period, 4,562 direct (onsite) job years would be generated equating to 760 construction jobs per annum. Over the same period approximately 6,103 indirect (off site) job years would be generated (equivalent to 1,017 jobs per annum);
- An estimated 203 jobs could be created per annum to support the CSELR's operation and maintenance[6]; and
- A $1.6 billion construction cost would generate a further $2.1 billion of activity in production induced effects and $1.6 billion in consumption induced effects. Total economic activity generated by the construction of the proposed development is therefore estimated at $5.3 billion.

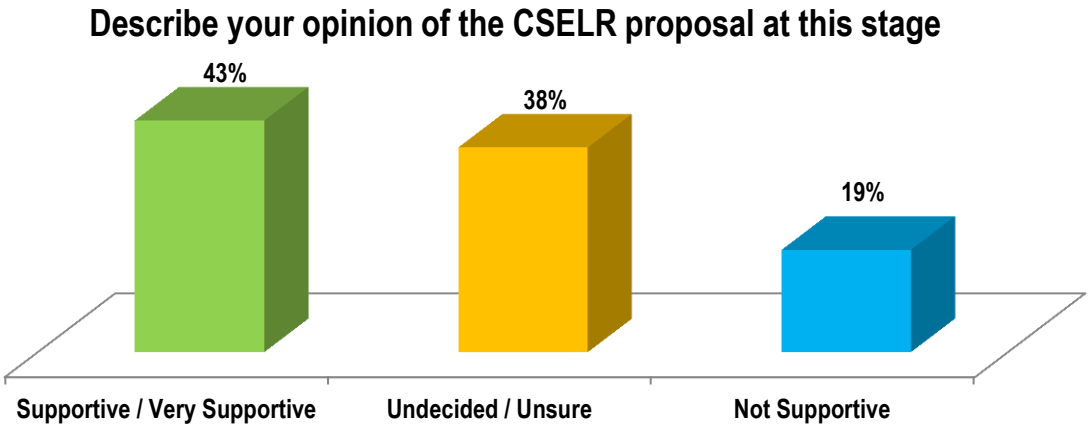
[4] Note the Study calculated the benefits on the basis of Park to Hunter Street being pedestrianised as opposed to Bathurst to Hunter in accordance with the Project and consequently could represent a modest under-estimate of the benefits.
[5] Otto, G and Voss, G (1995) Public Infrastructure and Private Production
[6] Figure has been provided by Transport for NSW (CBD and South East Light Rail Draft Operations Advisor Initial Light Rail Operational Services Plan, 24 May 2013).

Table 1 - Summary of Potential Macro-economic Impacts during Construction and Operation

	Potential Negative Impacts	Potential Positive Impacts
Construction	Tourism Congestion Costs	Economic Multipliers Employment Generation
Operation	N/A	Increased Transport Capacity Housing Supply and Density Uplift Investment Stimulus Reduced Congestion Costs Enhanced Tourism Land Value Benefits Public Infrastructure Investment Agglomeration Efficiencies Employment Generation

IMPACTS TO BUSINESSES

A snapshot survey of businesses located along the proposed CSELR route found that the vast majority (83%) knew of the proposal. A further 43% were either supportive or very supportive and 38% were undecided or unsure. Overall 90% of businesses believed the construction phase would have an impact on their business whilst 93% anticipated that once operational, the proposal would have a positive impact to their turnover and viability.



Concerning specific elements of the proposal:

- 65% of businesses surveyed within Sydney CBD believed that the George Street pedestrianised zone would have a positive influence on their business;
- 74% of businesses surveyed within Sydney CBD believed that more frequent / reliable transport between Central and Circular Quay would have a positive influence on their businesses; and
- 36% of businesses surveyed, that were not located in Sydney CBD, believed that improved transport between Central and the South East would enhance their business.

Based on the snapshot business survey results, Transport for NSW's stakeholder engagement, a review of the Study Area and associated research the likely impacts of the proposal to businesses were identified. These impacts have been summarised in Table 2 below for both the operation and construction phases.

Table 2 - Summary of Potential Impacts to Businesses during Construction and Operation

	Potential Negative Impacts	Potential Positive Impacts
Construction	Servicing and Deliveries On Street Parking Noise, Vibration and Dust Customer Access / Passing Trade Traffic Congestion and Travel Times Vehicle Operating Costs Loss of Power and Utilities Staff Access, Recruitment and Retention Visual Amenity Business Turnover / Viability	Passing Trade Trade Increase Demand for Services Stimulation of Redevelopment Opportunities
Operation	Commercial Rent for Tenants On Street Parking Changed Behaviour during Construction Perceived Fear of Crossing Tracks Delivery and Servicing Constraints Customer Access and Parking Noise, Vibration and Dust	Enhanced Access for Customers Increased Capacity and Development Opportunities Commercial Rent for Landlords Congestion, Deliveries and Servicing Land Values Staff Access, Recruitment and Retention Business Turnover / Viability Visual Amenity

In order to reduce the potential adverse impacts of the proposal, businesses identified the importance of prior notification, ongoing engagement and a preference for a shorter yet more intensive construction period as opposed to longer, drawn out works. Completing works within agreed timeframes was an important factor in allowing businesses to sufficiently plan for and survive the anticipated impacts.

Some businesses identified the potential for positive impacts as a result of the construction phase of the proposal. The construction of the proposal was seen as a signal that the Study Area and its transport capacity would be improved in time. Others identified potential benefits by way of additional local trade and visibility.

These benefits could be enhanced by proactively supporting businesses to tailor their products to the changes in demand that may result from the construction phase of the proposal and thereby helping them to adapt to the conditions experienced during the construction phase.

MITIGATION MEASURES AND COMMITMENTS

Three key plans are recommended in particular to address the potential economic and business impacts identified by this assessment.

- The preparation and commitment to a **Construction Environmental Management Plan**. Such a plan would be a comprehensive document setting out in detail means to minimise the level of disturbance created as a result of the construction process to businesses, pedestrians, visitors and workers across the Study Area.
- The preparation and commitment to **an Access Management Plan**. Such a plan would be prepared in liaison with businesses and landowners to understand their servicing and delivery requirements. The Plan would then identify and implement means of maintaining (and where possible enhancing) access to businesses for deliveries and servicing during both the construction and operational phases of the proposal.
- The preparation and commitment to a **Business Landowner and Engagement Management Plan**. The Plan would support the preparation and effective implementation of the Access Management Plan. It would also identify and implement means by which to keep businesses informed of the proposal and methods to proactively support businesses through the construction phase.

CONCLUSION

Overall this Specialist assessment has found that the proposal would result in a range of positive and negative economic impacts. The impacts would vary however in their distribution across different geographic areas, businesses and stakeholders and during the construction and operational stages of the proposal.

Whilst the construction of the CSELR is likely to stimulate broader economic benefits by way of job generation and construction multipliers, at the more local or Precinct level, businesses and landowners would experience a degree of inconvenience and other temporary negative impacts, particularly those located within close proximity to the draft alignment or construction compounds. These impacts would need to be carefully and proactively managed with any mitigation measures monitored for their effectiveness and outcomes.

Upon completion and operation the impacts at the local and broader geographic levels would become overwhelmingly positive with the enhanced capacity and frequency of the transport network increasing the desirability and ease of visiting Sydney CBD as well as the South East. This would in turn support the attraction of visitors and investors to major economic activities and precincts in the Study Area and the spin off benefits to businesses and in turn landowners. The proposal would also enhance the amenity and appeal of Sydney as a place to live and work raising its attraction and potential success as a global city.

In summary, the implementation of appropriate mitigation measures by Transport for NSW and a commitment to their ongoing monitoring and management would create a proposal that positively supports the economic growth of Sydney and broader NSW in keeping with the State Government's objectives as set out in the NSW State Plan, draft Metropolitan Strategy for Sydney (2013) and NSW Long Term Master Plan (2012).

Table 3 - Sample Quotes from the Snapshot Business Survey

Keep the construction work restricted to the road - don't work on the sidewalks where people are coming in on foot	*Very concerned about how their business would receive deliveries both during construction and once the light rail is operational.*	*Give people more information about the proposal, say when it has been launched and give everyone more frequent updates.*
Operation Need to have a hotline for people to ring in case utilities are cut	*Great! Let's do it! Crazy it wasn't done before. I like the one in Melbourne.*	*Worried if I need to drive how am I we going to get here? Will the lanes cross George Street?*
Where are clients going to park?	*Good for customers, bad for deliveries.*	*The sooner the better*

Image: looking towards Circular Quay Train Station (source: Hill PDA)

1. PURPOSE OF THE ASSESSMENT

The CBD and South East Light Rail (CSELR) Project (the proposal) forms part of a detailed and multi layered strategy to ease congestion in Sydney CBD and to improve transport connectivity with South Eastern Sydney. The CSELR has been declared State Significant Infrastructure as it is considered essential for the State of NSW for economic, environmental and social reasons.

The following Economic Impact Assessment (EcIA) has been prepared to form part of the Environmental Impact Statement (EIS) of the CSELR. The wider environmental assessment work has been undertaken by Parsons Brinckerhoff on behalf of Transport for NSW, the proponent of the proposal.

This assessment provides a profile of the geographic localities and businesses that are likely to be affected by the proposal. It assesses potential impacts during construction as well as operation, in addition to measures to mitigate negative impacts and enhance the benefits of the proposal.

The preparation of this EcIA has had full regard to the NSW Department of Planning and Infrastructure's Director General Requirements (DGRs) for the EIS. Of relevance to this Study, the DGR's require:

> *"an assessment of the economic and social benefits and impacts (during construction and operation) of a higher capacity, integrated public transport system for residents, visitors and businesses within and beyond the study area, including:*
>
> - *An economic analysis of the benefits and impacts on commercial centres (including impact of loss of on-street parking and re-routing of bus services);*
> - *Strategies to provide for business continuity and continuity of services during construction;*
> - *Impacts on residential amenity and uses; and*
> - *Design measures to ensure public safety and security taking into account the principles of Crime Prevention through Environmental Design."*

It has also considered RMS Guidelines for Socio-economic Impact Assessment.

1.1 THE PROPOSAL OBJECTIVES

Following identification of the preferred corridor for the light rail, a number of project-specific objectives were formulated to help guide the development of the potential transport system solutions. The project objectives for the CSELR are outlined below:

- Improve reliability and efficiency of travel to, from and within the CBD and suburbs to the South East;
- Improve access to major destinations in the South East, including Moore Park, UNSW, Royal Randwick racecourse and the Randwick health precinct;
- Satisfy long-term travel demand between the CBD and suburbs to the South East;

- Increase the use of sustainable transport modes in the CBD and suburbs to the South East;
- Improve the overall amenity of public spaces in the CBD and suburbs to the South East; and
- Facilitate the continued, orderly and efficient growth of urban development and economic activity within the CBD and suburbs to the South East.

These objectives are consistent with the aims and objectives of the *NSW Long Term Transport Master Plan.*

1.2 What is an Economic Impact?

An economic 'impact' affects the level of economic activity generated in a defined area either positively or negatively. The assessment of likely impacts resulting from a particular development proposal allows for the identification (and where possible) quantification of impacts as either likely benefits or negative impacts.

Economic impacts may directly affect the economic well-being of an area's residents, the viability of businesses, workforce availability or trade by changing factors that influence opportunities for employment or business growth, the ease of doing business and the environment in which business is conducted. Economic impacts may also alter the scope of demand for services and the level of accessibility to those services.

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Analysis of likely economic impacts can be compiled into an Economic Impact Assessment that estimates the consequences of a particular project to an economy or society. In addition to identifying impacts however, an impact assessment should recommend ways to enhance the positive effects and reduce or mitigate the negative ones.

1.3 Methodology

In order to prepare this Economic Impact Assessment, the following methodology has been applied:

1. A review of relevant available proposal related research and information;
2. A profile of existing geographic areas and businesses that may be influenced by the proposal;
3. A 'snapshot' survey of 100 businesses located along the route alignment;
4. Discussions with the City of Sydney and Randwick Councils;
5. Demographic analysis in collaboration with the City of Sydney;
6. A review of issues and comments raised through the consultation and communications programmes undertaken to date;

7. A scope of the likely changes / impacts that may occur as a result of the proposal;
8. Research of studies and literature establishing impacts of similar projects and issues;
9. Analysis of potential negative and positive impacts, and direct and indirect impacts during construction and operational stages in light of government objectives and strategies; and
10. The identification of plans and strategies for monitoring and managing the impacts during both construction and operational stages.

1.4 Survey Approach

In order to identify the key impacts associated with the proposal, a snapshot survey of 100 businesses located along the proposed route was undertaken. Hill PDA worked in conjunction with Transport for NSW to collect the 100 business surveys from a range of commercial and retail businesses located along the proposed CSELR route.

The surveys encompassed a range of questions relating to the respondents level of knowledge regarding the proposal, existing access requirements and perceptions regarding impacts.

The business surveys were collected within the Surry Hills, Moore Park, Randwick, Kensington / Kingsford Precincts on the 14th and 28th of June 2013 collecting a total of 50 surveys. The Team collected the remaining 50 surveys in the City Centre Precinct (Sydney CBD) on the 26th of June 2013.

An overview of the methods used to collect and collate the data as well as the key findings can be found in Appendix 1. The implications of the findings and how they relate to the proposal are discussed further in Chapters 7, 8 and 9.

1.5 Proposal Scope

The CSELR proposal comprises construction and operation of a light rail service from Circular Quay to Kingsford and Randwick via Surry Hills. The key features of the proposal include:

- Approximately 12 kilometres of new light rail track from Circular Quay to Central and Kingsford and Randwick via Surry Hills and Moore Park (a total of 13 kilometres of track including track required for the maintenance and stabling facilities);
- High frequency, 'turn up and go' services every two to three minutes during peak periods within the CBD and out to Moore Park with services operating every five to six minutes between Moore Park and the Randwick and Kingsford branches;
- A pedestrian zone in George Street from the Circular Quay stop to the Town Hall stop, with light rail vehicles (LRVs) operating overhead wire-free within this zone;

- 20 light rail stops along the route, including interchange with heavy rail at CBD rail stations (Circular Quay, Wynyard, Town Hall and Central), ferry interchange at Circular Quay and bus interchanges at the Town Hall, Queen Victoria Building, Rawson Place, Central Station, Randwick and Kingsford stops;
- Platforms at all stops to accommodate 45 metre long LRVs, except at the Central Station and Moore Park stops, where platforms would be provided to accommodate both 45 metre and 90 metre long LRVs (double–length vehicles for special event services between Central Station and Moore Park);
- Terminus facilities at the Circular Quay, Kingsford and Randwick stops;
- Facilities in Randwick and at Rozelle for LRV stabling and/or maintenance (including washdown) (The Randwick stabling facility would include facilities for the temporary storage of LRVs overnight, inspection and cleaning, and light maintenance or repair work. The Rozelle maintenance depot would consist of maintenance inspection tracks with a building, workshops and storage and would allow for more extensive maintenance and repair of LRVs.);
- Integration with the existing light rail system including a new junction between the two lines at the intersection of Hay Street and George Street;
- Approximately 12 substations along the route (each approximately 80 square metres in area) to supply power for the LRVs, including underground substations at Martin Place and Ward Park;
- A new bridge structure spanning the Eastern Distributor;
- A tunnel under Moore Park and Anzac Parade;
- A fleet of 30 electric-powered LRVs (including spare LRVs), approximately 45 metres long, featuring air conditioning and accessible low-floor design;
- A highly reliable service with the capability to carry up to 9,000 passengers per hour in each direction;
- Capacity for approximately 80 seated and 220 standing passengers in each LRV; and
- Public domain improvements including paving, street trees, lighting and furniture.

The proposal also includes changes to property and utilities access, and traffic management changes as a result of the CSELR and within the direct corridor of the proposal.

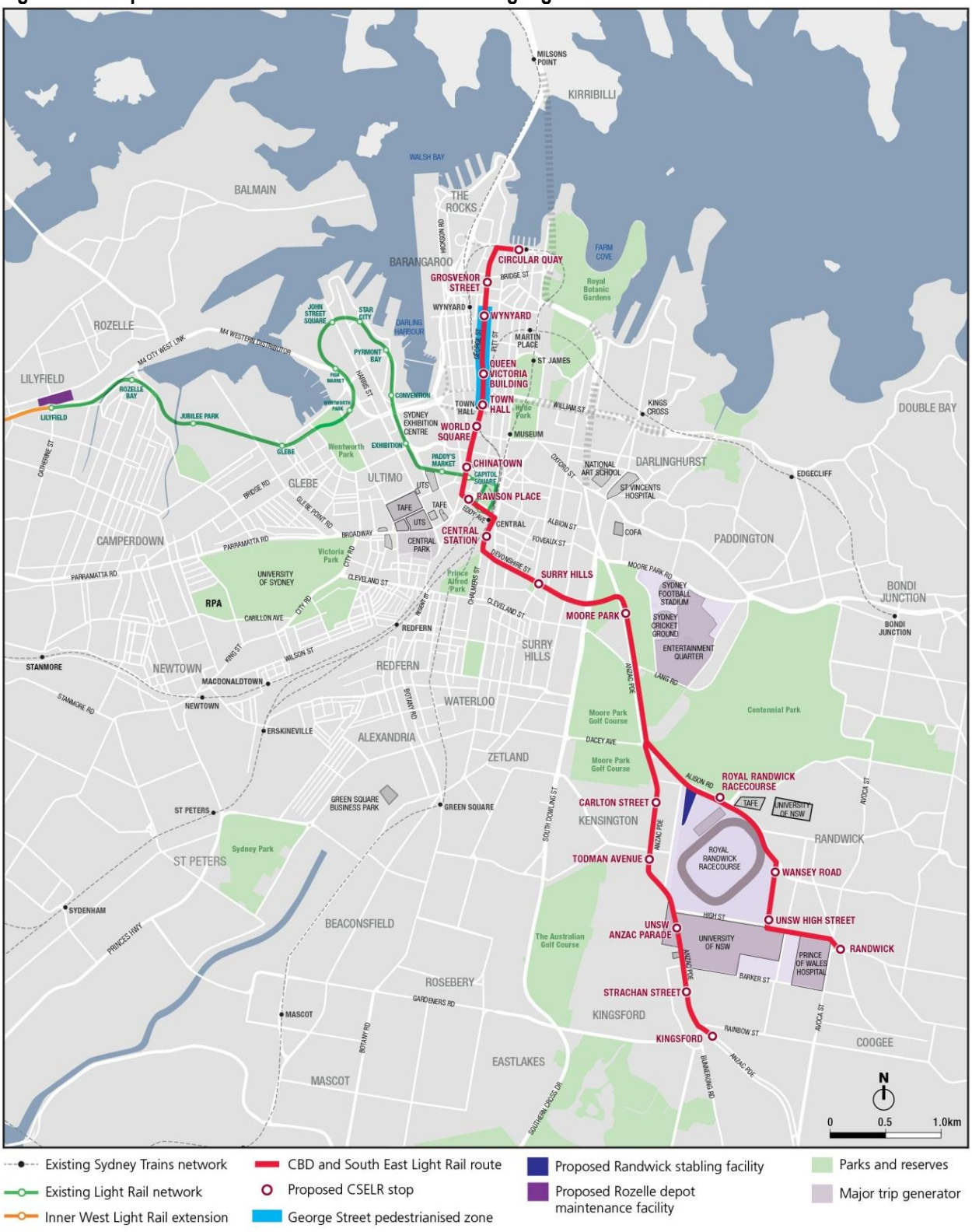
The proposal is also integrated with, but does not include, a redesign of the Sydney bus network, which is proposed as part of a suite of projects under the (draft) *Sydney City Centre Access Strategy* (NSW Government 2013a).

The CSELR proposal would include an 'inbound' track (heading towards Circular Quay stop) and an 'outbound' track (heading away from Circular Quay stop) for LRVs and a series of cross-overs and turnouts throughout the corridor. The track separation between the inbound track and the outbound track centrelines

(i.e. centre of each track) would be nominally 3.2 metres. This distance would increase slightly on curves to allow for vehicle operation at these locations. The proposal corridor would generally be between approximately 6.5 metres and 13 metres in width depending on the track and stop configuration and the location of ancillary infrastructure

It is anticipated that it would take approximately five to six years to build the CSELR, with work beginning at multiple sites from mid-2014 (subject to planning approval). Further details on the likely construction of the CSELR are provided in Chapter 6.

Figure 1 - Proposed Route and Connection with Existing Light Rail



Source: Transport for NSW 2 July 2013

1.6 ASSUMPTIONS

This EcIA has been prepared on the basis of the following proposal assumptions:

- Early works (including property acquisition, service relocations, building demolition and tree / vegetation clearance) would be undertaken from mid-2014 to 2016;
- It would take approximately five to six years to build the CSELR, with work beginning at multiple sites from mid-2014 (subject to planning approval);
- The main works (including earthworks and light rail infrastructure and stops) are anticipated to extend from 2015 to 2019 / 2020;
- The proposal would become operational in 2020 and provide a fast and reliable service every 2 - 3 minutes in peak periods within the CBD;
- The cost of travel would be comparable and in keeping with, existing public transport options;
- The proposal would have a construction cost of $1.6 billion; and
- The proposal would follow the route alignment and stop locations shown in Figure 1 above.

2. RELEVANT GOVERNMENT POLICIES

The following Chapter provides an overview of the key plans, strategies and policies guiding development and Government objectives across the Study Area.

2.1 STATE GOVERNMENT PLANS AND STRATEGIES

NSW 2021: A Plan to Make NSW Number One (2011)

NSW 2021: A Plan to Make NSW Number One sets the Government's agenda for change in NSW. It contains five strategies; of particular relevance to the EcIA is *Return Quality Services* which aims to provide the best transport, health, education, policing, justice and family services[7]. As mentioned above one of the key focus areas of this strategy is transport. *Goal 8 Grow patronage on public transport by making it a more attractive choice* aims to increase public transport patronage and deliver quality public transport services with better frequency and reliability, and better integration of train, bus, ferry and light rail services[8]. There are two pertinent priority actions associated with this goal, these are:

- *Expand light rail in Sydney and integrate into the broader transport network; and*
- *Provide better public transport connections between and within population and economic centres through the development of strategic bus corridors, the potential expansion of Sydney's light rail network, and the upgrade of supporting infrastructure in key centres.*

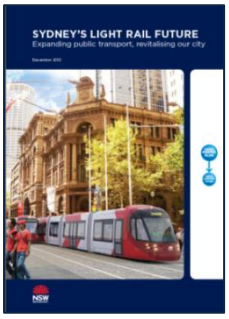
NSW Long Term Transport Masterplan (2012)

The purpose of the *NSW Long Term Transport Master Plan* is to set the framework for the NSW Government to deliver an integrated, modern transport system that puts the customer first. It identifies the challenges that the transport system in NSW should address over the next twenty years and sets out a series of actions to combat these challenges.

Section 4 *Getting Sydney Moving Again* sets out a series of transport challenges facing Sydney having particular regard to keeping Sydney's most important transport corridors moving and providing travel options that support and enhance the strength and success of Sydney CBD. The Plan identifies that one way of addressing these challenges would be to *"build light rail in the CBD and South East, and the Inner West Light Rail extension"*. The Plan identifies that new light rail line to Randwick may enhance access for the South East section of the Strategic Transit Network.

[7] NSW 2021: A Plan to Make NSW Number One (2011)
[8] NSW 2021: A Plan to Make NSW Number One (2011)

Sydney's Light Rail Future (2012)

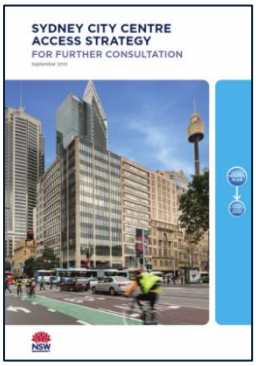


Sydney's Light Rail Future is the State government's Plan to improve Sydney's current transport network and reduce traffic congestion. The Plan identifies that congestion is costing our economy around $5.1 billion each year; this is expected to rise to $8.8 billion a year by 2021[9].

The Plan identifies the CBD and South East Light Rail as a key project for being a catalyst for creating a liveable and globally competitive city. The Plan identifies that the CBD and South East Light Rail would provide the following benefits:

- *Offer a user-friendly way to travel between key attractions (e.g. from the Rocks and Circular Quay to the city's retail services and on to Chinatown). This would link visitors staying in world-class hotels to the in-progress Sydney International Convention and Exhibition Centre[10].*
- *High frequency light rail would benefit commuters travelling from the South East suburbs to the CBD for work, shopping and entertainment. It would also assist students travelling to the University of NSW, Sydney Boys and Sydney Girls high schools at Moore Park. In addition to benefiting customers and staff, patients and visitors travelling to the Randwick health precinct[11].*

Sydney City Centre Access Strategy – For Further Consultation (2013)



The *Sydney City Centre Access Strategy* is a guide for the delivery of a fully integrated transport network that prepares Sydney's City centre for the future. It identifies the challenges that the transport system in NSW should address over the next twenty years and sets out a series of actions to combat these challenges.

The Strategy identifies light rail as a means of improving access to the City Centre and more specifically the construction and operations of the CBD and South East light rail extension through the City Centre to Circular Quay and the University of NSW and Randwick[12]. The Strategy states that the provision of light rail would enable *"more customers to access reliable light rail services with the extension of the inner west line and new lines between the city centre and south eastern suburbs"[13].* The Strategy identifies that the CBD and South East light rail extension would enable:

- *Reliable 15 minute journeys from Circular Quay to Central Station along George Street.*
- *Capacity to move up to 9,000 people per hour in each direction.*

[9] Sydney's Light Rail Future (2012)
[10] Sydney's Light Rail Future (2012)
[11] Sydney's Light Rail Future (2012)
[12] Sydney City Centre Access Strategy – For Further Consultation (2013)
[13] Sydney City Centre Access Strategy – For Further Consultation (2013)

- *180 fewer buses entering the city centre in the morning peak hour between 8:00am-9:00am (rising to 220 fewer buses when combined with other bus network changes).*
- *Urban renewal as a result of the associated improvements to the public domain, including revitalised public spaces.*

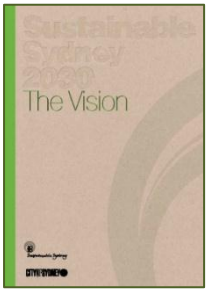
Draft Metropolitan Strategy for Sydney To 2031 (2013)

The *Draft Metropolitan Strategy for Sydney to 2031* sets the strategic framework for the sustainable growth of Sydney to 2031. The Strategy has five key outcomes, being: balanced growth; a liveable city; productivity and prosperity; healthy and resilient environment; and accessibility and connectivity.

Of particular importance to this EcIA is the key outcome *productivity and prosperity*. *Objective 16: Achieve productivity outcomes through investment in critical and enabling infrastructure* relates in particular to the *Long Term Transport Master Plan.* This objective sets out actions to integrate, modernise and grow Sydney's transport infrastructure network with improvements such as the CSELR. The draft Strategy recognises the importance of maximising the productivity advantages of transport investment with supporting land use that delivers strong economic returns and improves Sydney's amenity and way of life[14].

The draft Strategy outlines key priorities for six subregions in Sydney. Of particular importance to this EcIA is the Central Subregion, which identifies the light rail from George Street to Randwick and Kingsford as a priority. Further to this, the Anzac Parade Corridor is included within the Central Subregion. The Anzac Parade Corridor stretches the length of Anzac Parade from Moore Park to La Perouse and light rail is also included as a priority specific to the Anzac Parade Corridor. In addition, the Strategy identifies the Randwick Education & Health Area as a specialised precinct, with the aim of intensifying the existing cluster of education and health activity and to improve public transport access to Sydney CBD from the precinct. It also states that it plays an important economic and employment role of metropolitan significance.

2.2 City of Sydney Local Government Plans & Policies



Sustainable Sydney 2030 Community Strategic Plan (2011)

The *Sustainable Sydney 2030 Community Strategic Plan* is the City of Sydney's response to the community's ideas for creating a better Sydney. The overarching vision of the Plan is a Green, Global, Connected City. The Plan contains ten targets, of particular relevance is Target 6 which identifies that by 2030 trips to work using public transport will increase to 80%, for both residents of the City and those travelling to the City from elsewhere.

[14] Metropolitan Strategy for Sydney To 2031 (2013)

The Plan also identifies ten strategic directions. Of note to this EcIA is strategic direction number *3. Integrated Transport for a Connected City.* More specifically within this strategic direction is Action *3.1.3 Support and plan for the integration of cross-regional public transport services, including light rail and metropolitan rail systems and the quality of modal interchanges*. The Plan also suggests developing a north-south central spine in the City Centre connecting three squares at Circular Quay, Town Hall, and Central; with priority for public transport, cycling, and pedestrians (Action 5.1.1).

Sydney Local Environmental Plan (2012)


New South Wales Government
NSW legislation

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Sydney Local Environmental Plan 2012

Status Information

Part 1 Preliminary

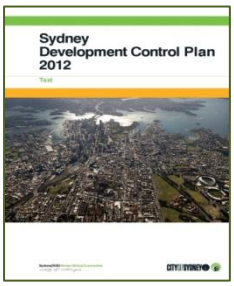
1.1 Name of Plan
1.1AA Commencement
1.2 Aims of Plan
1.3 Land to which Plan applies
1.4 Definitions
1.5 Notes
1.6 Consent authority
1.7 Maps
1.8 Repeal of planning instruments applying to land
1.8A Savings provision relating to development applications
1.9 Application of SEPPs
1.9A Suspension of covenants, agreements and instruments

Part 2 Permitted or prohibited development

2.1 Land use zones
2.2 Zoning of land to which Plan applies
2.3 Zone objectives and Land Use Table
2.4 Unzoned land
2.5 Additional permitted uses for particular land
2.6 Subdivision—consent requirements

Sydney Local Environmental Plan 2012 is the relevant environmental planning instrument for land use planning within the City of Sydney. One of the overarching aims of the Plan is *Clause 1.2 2(g) to ensure that the pattern of land use and density in the City of Sydney reflects the existing and future capacity of the transport network and facilitates walking, cycling, and the use of public transport.*

Sydney Development Control Plan (2012)



Sydney Development Control Plan 2012 supports the aims of the *Sydney Local Environmental Plan 2012* and contains numerous provisions for improving transport links and public spaces around transport interchanges.

City of Villages – 2030 in Your Village – City Transformation (2011)

The City of Sydney states that Sydney contains ten village groups. *Sustainable Sydney 2030 Community Strategic Plan (2011)* identifies that improved links between each of its ten village groups is important in order to achieve a more connected Sydney. The route of the CSLER would travel through the following village groups: CBD and Harbour, Chinatown and CBD South, and Crown and Baptist Streets.

In 2012 the City of Sydney held workshops for the ten village groups, asking participants what their vision for their village would be looking toward 2030. Of those who participated in the workshops the following was mentioned in relation to public transport: improved public transport, the pedestrianisation of George Street and light rail connecting the CBD to the south east. In addition to this, the *City Transformation project and light rail* is identified as a major project by the City of Sydney to increase space for pedestrians, reduce congestion, create a major city spine, and unlock the city centre's potential.

City of Sydney Economic Development Framework (2007)

The purpose of the *draft Economic Development Framework* provides input into Council's strategic planning processes and guide economic development initiatives. The overarching vision of the Framework is "*A prosperous, dynamic and outwardly focused urban economy is essential to the well-being and quality of life of the city's residents".* The Framework identifies the City of Sydney as a major transport hub for Sydney's rail and bus network. Furthermore, it states that approximately 70% of workers travel to jobs in the City by public transport, which is considered a high modal split favouring public transport by national and international standards[15].

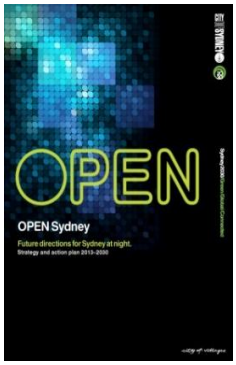
Section 7 of the Framework sets out guiding principles for an economic development strategy. It identifies that the quality of infrastructure assets (e.g. transport) are critical determinants of Sydney's competitiveness.

Draft George Street Concept Design (2012)

The *Draft George Street Concept Design* builds on the research undertaken by Gehl Architects and investigates the key issues around integrating light rail into George Street and makes recommendations for creating a beautiful, functional and high quality public realm[16].

Key components of the Concept Design include the introduction of light rail and the pedestrianisation of George Street. It is stated that the pedestrianisation of George Street would help to alleviate the congestion of overcrowded footpaths. Furthermore, it *would also allow George Street to transform into a place for outdoor dining, late night shopping, art and culture[17].*

OPEN Sydney: Future directions for Sydney at night



OPEN Sydney: Future directions for Sydney at night presents a direction for the development of Sydney's night time economy over the next 20 years. The document contains five goals; one of these is *Goal 2. A Connected Sydney – including connected transport and connecting visitors, business and events.*

The above mentioned goal identifies that the City of Sydney has large crowds in the night-time economy that are not well serviced by public transport[18]. It also identifies that train services end at around 1am, when crowds in areas like Kings Cross and George Street are at their peak.

[15] City of Sydney Economic Development Framework (2007)
[16] Draft George Street Concept Design (2012)
[17] Draft George Street Concept Design (2012)
[18] OPEN Sydney: Future directions for Sydney at night

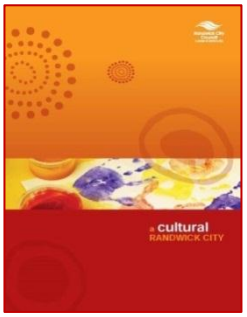
The document identifies ways to improve public transport infrastructure at night, one of these is the provision of light rail along George Street. The document suggests that the provision of light rail along George Street would transform the street into a pedestrian friendly, light rail and retail boulevard, ensuring services operate late into the night, especially over the busy weekend period[19]. Providing this would be critical to improving Sydney's night time economy.

2.3 Randwick Local Government Plans & Policies

An Inclusive Randwick City (2010)

An Inclusive Randwick City is Randwick City Council's ten year plan to enhance opportunities for people living within the City of Randwick. The Plan is part of a series of social/community related plans aimed at addressing social issues within Randwick City. The Plan identifies six key areas; one of these is *"increasing accessibility of community transport"*. The Plan highlights that within the Randwick LGA there are a range of transport options, however not all of these options are accessible and affordable to people with specialised needs (i.e. older residents).

A Cultural Randwick City (2010)



A Cultural Randwick City was prepared to guide the City's cultural activities over a ten year period. The Plan identifies that cultural facilities should be accessible to people of all abilities; this can be achieved through providing accessible transport.

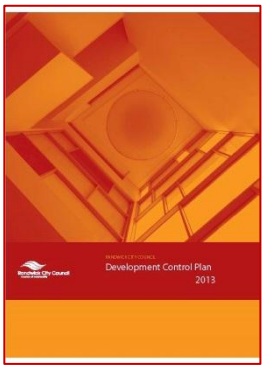
Randwick Local Environmental Plan (2012)

Randwick Local Environmental Plan 2012 is the environmental planning instrument for land use planning. The Plan sets out a series of aims, of particular relevance are:

- 1.2 (2c) to support efficient use of land, vibrant centres, integration of land use and transport, and an appropriate mix of uses; and
- 1.2 (2e) to promote sustainable transport, public transport use, walking and cycling.

[19] OPEN Sydney: Future directions for Sydney at night

Randwick Development Control Plan (2013)

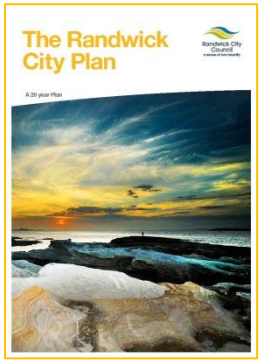


The *Randwick Development Control Plan 2013* provides detailed planning and design guidance for new development, which complements the provisions of Randwick Local Environmental Plan. Part B7 Transport, Traffic, Parking and Access sets out a series of objectives, of particular relevance two of the objectives:

- *To promote sustainable transport options for development, particularly along transport corridors, in commercial centres and strategic/key sites; and*
- *To support integrated transport and land use options which can demonstrate shared and effective car parking provision with car share facilities, motorbikes/scooters, bikes and links to public transport.*

The Plan states that over the last decade there has been increasing pressure on the bus networks, as such there has been a great amount of interest in the reestablishment of the light rail system in the City of Randwick. Furthermore, it recognises that an integrated light rail system would facilitate access to a large range of services and facilities. In addition, it stipulates that commitment by the NSW Government to light rail would deliver benefits for local residents and businesses[20].

Randwick City Plan: A 20 year Plan (2009)



The *Randwick City Plan: A 20 year Plan* is Randwick City Council's strategic plan which reflects the community's vision and long term goals pertaining to health and well-being of its people, its economy and the natural and built environment.

The Plan contains six key areas; of particular importance is *A prospering City* which states that Randwick City's economy is part of a diverse network of activities that extend beyond its boundaries. It acknowledges that one way Randwick City Council is supporting local economic development is by lobbying for improved transport links.

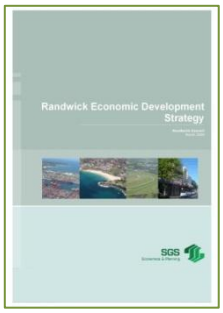
A prospering City identifies key issues, one of these is *Transport and access.* The Plan sates that *"transport choice, convenience and ease of access determine how people travel to and around an area. Transport can influence where a business locates and how it grows".* In addition, the Plan mentions that Randwick City Council will continue to work with key local institutions (e.g. University of NSW, Australian Turf Club) to advocate with the State Government for transport improvements such as light rail to Randwick.

The Northern Gateway sector is identifies as a priority within the LGA, the route of the CSLER would fall within the Northern Gateway sector. The relevant priorities for the Northern Gateway sector are to enhance the public domain along Anzac Parade and to support the growth of the University of NSW and Randwick

[20] Randwick Development Control Plan (2013)

Hospitals complex through public transport improvements. Improved public transport has also been identified as a priority for the Kingsford commercial Centre.

Randwick Economic Development Strategy (2009)



The *Randwick Economic Development Strategy* has been prepared to support the *Randwick City Plan's* economic theme of 'a prospering city'. The Strategy sets out a series of strengths and challenges, it notes one of the challenges as *"the key economic hubs are generally inward-looking and are not well connected by transport links".* The Strategy has six key themes, one of these is Theme 5: Transport. One of the actions associated with this key theme is *Action 5.1 - Continue to lobby for improved public transport* which states *"ways to improve bus operations should be investigated but serious consideration of new mass transit options is particularly necessary. Consideration should be given to the preferred location of mass transit stations, key destinations and redevelopment opportunities that might be associated with additional transport infrastructure. The Anzac Parade corridor, and centres along or near it, is an obvious candidate".*

Kingsford Town Centre Strategy

Randwick City Council commissioned a Kingsford Town Centre Strategy in 2013 to gain a better understanding of how the Kingsford Town Centre operates and the issues that affect its economic viability. The Strategy also sets out a series of strategies and actions for improving the precinct. The Strategy mentions the potential for light rail to contribute to the vision of Kingsford as an important community and retail hub within the City of Randwick.

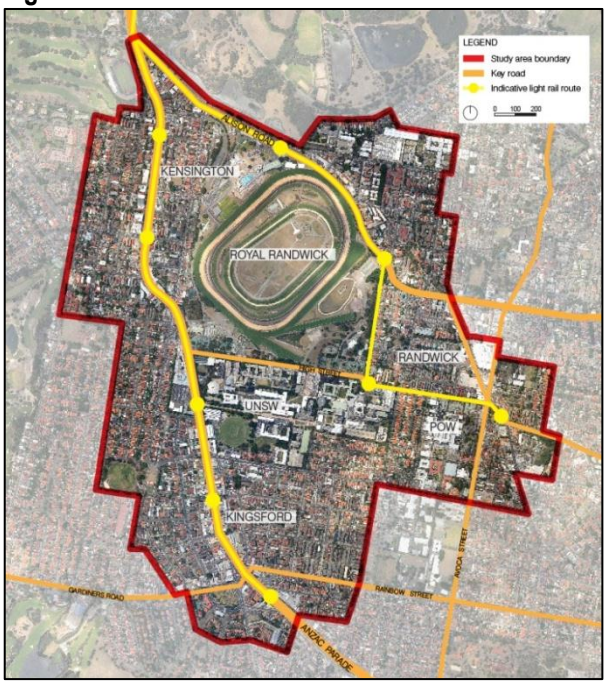
The Strategy sets out a series of actions; of relevance is *Action 4.3 Liaise with relevant government agencies regarding timing and ramifications of light rail through Kingsford, including likely infrastructure requirements and impact on existing parking.*

The Randwick Urban Activation Precinct

On 16 March 2013 the NSW Premier announced the Urban Activation Precincts program as an important component of a package of wider housing delivery and jobs initiatives. The Urban Activation Precincts aim to deliver more homes for Sydney residents in places with access to infrastructure, transport, services and jobs. As a consequence Urban Activation Precincts, such as Randwick, are likely to result in notable increases in population.

The NSW Government identified Randwick as an Urban Activation Precinct, citing the introduction of light rail in this Precinct as a catalyst for urban renewal. A contributing factor in selecting this Precinct was NSW Government's commitment to providing light rail from Central Station to Moore Park and the University of NSW[21].

Figure 2 - Randwick Urban Activation Precinct



Source: http://www.planning.nsw.gov.au/

Potential opportunities for growth are to be investigated within the Urban Activation Precinct. These investigations would focus primarily on the proposed light rail stops (e.g. Royal Randwick Racecourse and the University of New South Wales).

The Randwick Urban Activation Precinct is shown in the figure above. The Precinct boundary is within a 5-10 minute walk from each of the light rail stops.

[21] http://www.planning.nsw.gov.au/

3. THE STUDY AREA AND ITS ECONOMIC VALUE

The following Chapter defines the geographic boundary of the Study Area for the purposes of this assessment. It also describes some of the key land uses and activities that are presently located within the Study Area and their notable contribution to the economy of not only the Study Area but the economies of the Sydney Metropolitan Region, NSW and Australia.

3.1 THE STUDY AREA'S SCOPE OF INFLUENCE

As a 'State Significant' project located within Global Sydney, the geographic scope of the proposal ranges from the site specific through to broader land uses, economic clusters and specialized centres which the CSELR route passes in addition to local government areas (LGAs) and NSW.

The proposal would have different influences at varying stages of development and at different geographic levels. For simplicity we have identified three geographic localities for assessment as follows:

1. The route corridor (13km long track inclusive of the stabling yards) and the associated suburbs;
2. The local government areas (LGAs) that the proposal would transverse i.e. the City of Sydney and Randwick LGAs; and
3. The State of NSW.

For the purposes of assessment, Six Precincts have been designated and are shown in Figure 3 below. The Precincts may be defined as:

City Centre Precinct: incorporates the suburbs of Millers Point, Sydney and Haymarket extending from Circular Quay (Alfred Street) in the north, south along George Street to Chalmers Street Station.

Surry Hills Precinct: comprises the suburb of Surry Hills extending along Devonshire Street to Moore Park from the intersection of Charmers Street in the west to Bourke Street in the east.

Moore Park Precinct: comprises the suburbs of Moore Park and Centennial Park extending through Moore Park along Anzac Parade to the intersection with Allison Road.

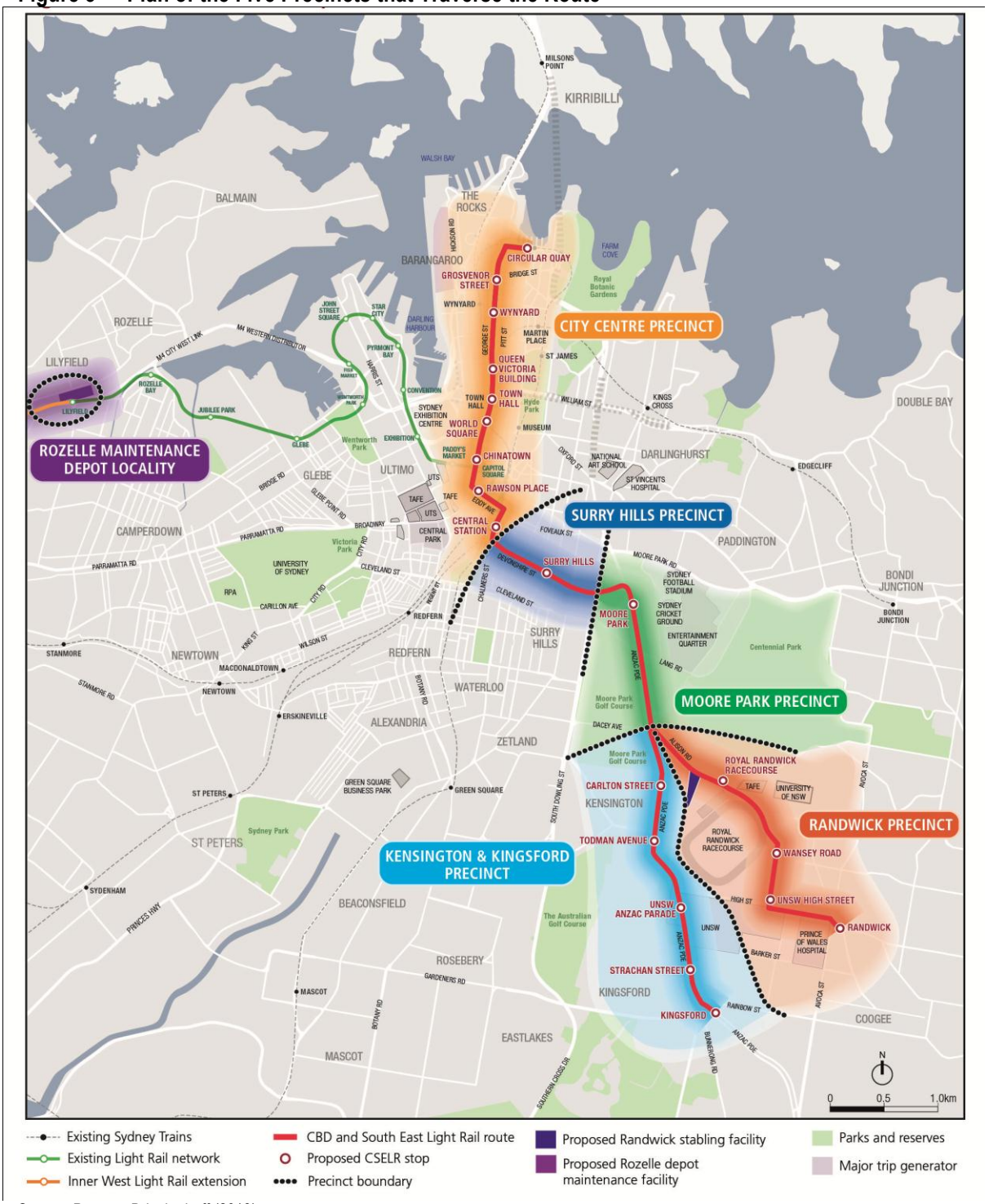
Randwick Precinct: comprises the suburbs of Kensington and Kingsford extending along Anzac Parade to the intersection with Wallace Street.

Kensington / Kingsford Precinct: comprises the suburb of Randwick extending along Alison Road, turning south along Wansey Road, east along High Street and terminating in Belmore Road.

Rozelle Locality: This locality comprises the the Rozelle maintenance depot site and is located within the suburb of Lilyfield at the western end of the existing Inner West Light Rail network. The Precent is bordered by Lilyfield Road to the north and the City West Link Road to the South.

For the purposes of this assessment, the Study Area has been defined at the route corridor and suburbs that surround it.

Figure 3 - Plan of the Five Precincts that Traverse the Route



Source: Parsons Brinckerhoff (2013)

3.2 THE ECONOMIC VALUE OF THE STUDY AREA

The following section profiles some of the key economic drivers operating within the Study Area.

3.2.1 GLOBAL SYDNEY

The Study Area incorporates the heart of Global Sydney which is represented by Sydney CBD. The significance of this is reflected in Global Sydney being ranked by the 2012 Global Cities Index as the 12th most influential metropolitan area in the world[22]. The Global Cities index is based on a range of criteria, including business activity, human capital, information exchange, cultural experience and political engagement. With this global recognition comes a range of positive economic benefits including increased business investment, tourism as well as broader international media and financial market coverage. From a purely economic output perspective PricewaterhouseCoopers estimated that in 2005 Sydney produced a total of $160 US billion in output and ranked 26th amongst the world's 150 major cities[23].

Global Sydney contains Australia's most significant concentration of economic, educational, medical, creative and cultural activities and accounts for over one third or $99bn of the NSW Gross Regional Product (GRP). The NSW Government's draft Metropolitan Strategy for Sydney 2031 (discussed in Chapter 2) states that Global Sydney is the "Primary focus for national and international business. A cultural, recreation and entertainment destination for the Sydney Metropolitan Area." Under the same draft Strategy, Central Sydney is expect to accommodate 102,000 additional jobs between 2011 and 2031 whilst the Randwick Education and Health Specialised Precinct has been set a target of 6,000 additional jobs over the same period. However, the realisation of these targets and the broader success of Sydney as a Global City (and thereby its desirability for business) is threatened by a number of key challenges including growing traffic congestion and a lack of suitable commercial office, exhibition and conference space.

Image: Looking towards Sydney Harbour and the Harbour Bridge from Circular Quay (Source: Hill PDA)

In response to these challenges the NSW Government has commenced initiatives such as the redevelopment of the Sydney International Convention, Exhibition and Entertainment Precinct and the development of Barangaroo as a major mixed use

22 2012 Global Cities Index and Emerging Cities Outlook, AT Kearney

23 Price Waterhouse Coopers, 2007, 'Which are the largest city economies in the world and how might this change by 2020?' UK Economic Outlook, March 2007 in Nation Building Projects for Australia's Capital Cities Securing our cities' future, The Allen Consulting Group 2013

precinct. In respect to traffic constraints the NSW Government has committed to reducing Sydney's road congestion and increasing the capacity and patronage of public transport. The State Plan includes goals to reduce travel times (Goal 7) and grow patronage on public transport by making it a more attractive option (Goal 8)[24]. The State Plan recognises that achieving these goals would:

- Save people valuable time and provide significant benefits to business and industry; and
- Reduce traffic congestion, improve travel times and provide significant environmental benefits.

The NSW Government has also released its Long Term Transport Master Plan (2012), which provides a comprehensive plan for managing Sydney's growth up to 2031. The Master Plan also commits to implementing the City Centre Access Strategy which contains a suite of eight initiatives to improve the transportation system within Sydney CBD.

Image: Apple Store, George Street, Sydney (source: Hill PDA)

The City of Sydney's strategic plan, Sustainable Sydney 2030, recognises that *"Sydney is Australia's only truly global city"*[25]. The Strategy creates a vision for a "Green, Global and Connected" Sydney that leverages and builds on its status as a hub for culture, tourism, business and retail activities and a City that is open 24/7 providing a wealth of experiences for residents, business and visitors alike[26].The City of Sydney's Sustainable Sydney 2030 includes the following 10 strategic directions that are intended to guide and connect the City of Sydney's efforts to achieve its long term vision:

- A globally competitive and innovative City;
- A leading environmental performer;
- Integrated transport for a connected City;
- A City for pedestrians and cyclists;
- A lively, engaging City Centre;
- Vibrant local communities and economies;
- A cultural and creative City;
- Housing for a diverse population;
- Sustainable development, renewal and design; and

24 NSW Government, NSW 2021 Plan to Make NSW Number One (2011)

25 City of Sydney,www.sydney2030.com.au

26 SGS Global Cities Retail Study for the City of Sydney, September 2011.

- Implementation through effective partnerships.

The City of Randwick is also a notable contributor to the Gross Regional Product of Sydney and NSW (i.e. 1.7% and 1.1% respectively) which are estimated at $282.3 billion and $455.3billion respectively. The LGAs Gross Regional Product was also found to be growing in 2011/12 at a rate of 5.5% for the year which was greater than the equivalent rate for both the Sydney Region (3.1%) and NSW (2.4%).[27]

3.2.2 CENTRES AND RETAIL

Commercial business and retail within centres are major contributors to Global Sydney's economy. The retail sector alone is estimated to employ approximately 52,000 people and 13.5% of the City's workforce[28]. There is an estimated 500,000sqm of retail floorspace in the Sydney CBD alone, of which 156,000sqm has frontage to George Street. It is estimated that retail within Sydney CBD serves a trade area population in the order of 1.9 million persons, generating a retail expenditure capacity of $26.3 billion per annum. This market is projected to increase by about 1.5% per annum, to $32.6 billion by 2026. In addition over the next 14 years it is forecast that the total available retail spending capacity of the Sydney CBD residential catchment alone would increase by $6.3 billion in real terms.

The unique agglomeration of financial, professional, ICT and media business services means that the City of Sydney accounts for 7.5% of Australia's gross domestic product[29] and leads Australia in terms of labour productivity[30]. Research undertaken by the City of Sydney also shows that the City's night time economy makes a major contribution generating $15.1 billion in economic activity and 28% of the LGA's jobs in 2009[31]. The same research estimated that the City of Sydney's night-time economy also generated tax revenues in the order of $457 million[32]. The major components of the City's night time economy are:

- Beverage-led businesses such as liquor retail and pubs;
- Cafés, restaurants and takeaway food shops;
- Entertainment-led businesses such as cinemas, creative and performing arts, clubs, sports and recreation, amusement, horse and dog racing;
- Shops and retail; and
- Libraries and archives, architectural, engineering and technical services, market research and statistical services as well as advertising services[33].

[27] City of Randwick, Randwick City Economic and Demographic Profile

28 SGS, Global Cities Retail Study for the City of Sydney, September 2011.

29 City of Sydney (2013): OPEN Sydney-Future directions for Sydney at night, Draft Strategy and Action Plan 2012–2030

30 The Committee for Sydney, Sydney Issues Paper No. 1, May 2013

31 City of Sydney (2013): OPEN Sydney-Future directions for Sydney at night, Draft Strategy and Action Plan 2012–2030

32 IBID

33 Bevan, T., Turnham, A., Longwood, M & Hadfield P (2011) Sydney's Night Time Economy: Cost Benefit Analysis. A Report for the City of Sydney Council in City of Sydney (2013): OPEN Sydney-Future directions for Sydney at night, Draft strategy and action plan 2012–2030

The component of the Study Area within the City of Randwick also has an array of business clusters including those along High Street and Anzac Parade. Centres include Randwick, Kingsford and Kensington with an estimated 4,000 businesses located within the Kingsford / Kensington area alone[34].

A Study by the City of Randwick found that Professional, Scientific and Technical Services was the largest industry in terms of business numbers in the Kensington- Kingsford area, accounting for 16.1% of the total number of businesses, followed by the Rental, Hiring &Real Estate Services (14.4%), Construction (10.0%) and Health Care & Social Assistance (8.3%) sectors[35].

Image: Anzac Parade (source: Kingsford Town Centre Strategy)

3.2.3 TOURISM IN GLOBAL SYDNEY

Sydney forms an important part of the Australia's tourist economy with more than half of all foreign visitors and two-thirds of international business travellers to Australia visiting Metropolitan Sydney[36]. According to one study, 29.9 million people visited Sydney in the 12 months to June 2011 of which 2.6 million were international visitors, 7.9 million were domestic overnight visitors and 19.4 million were domestic day visitors[37]. The same study estimated the quantum of expenditure generated by visitors to Metropolitan Sydney in 2012:

- International visitors – $5.4 billion;
- Domestic day trippers – $2.2 billion; and
- Domestic overnight visitors – $5.6 billion[38].

An international visitor survey found that the City of Sydney contains seven of the top ten most popular attractions in Australia[39]. Circular Quay in particular is a key gateway to Sydney and a location of local, national and international significance. In all cases Circular Quay is strategically positioned amongst Sydney's commercial core; the city's most historic, entertainment, leisure and cultural precinct (The Rocks, Sydney Opera House and the Royal Botanic Gardens); and the largest mixed use development to occur in Sydney (Barangaroo). This multifaceted role and the range of stakeholders that underpin it, creates a vibrancy and vitality that defines Circular Quay as a major tourist attraction a place of public celebration and congregation as well as an economic driver for Sydney.

34 Randwick City Council, Kingsford Town Centre Strategy

35 Randwick City Council, Kingsford Town Centre Strategy

36 SGS, Global Cities Retail Study for the City of Sydney, September 2011.

37 MacroPlanDimasi, George Street Pedestrianisation Retail & Economic Benefit Appraisal, January 2013

38 MacroPlanDimasi, George Street Pedestrianisation Retail & Economic Benefit Appraisal, January 2013

39 City of Sydney (2005) Sydney at a glance in SGS Global Cities Retail Study for the City of Sydney, September 2011.

3.2.4 EDUCATION AND RESEARCH

In 2010/11 international education generated over $5.8 billion in export income and was NSW's second largest export[40]. In a submission to the International Education Advisory Commission the NSW Government highlighted that the State's international education sector comprised of approximately 208,847 students in 2011 making it the largest in Australia[41].

For the City of Randwick, the Education and Training Industry made the greatest contribution (16.3%) to the LGA's $4.9billion Gross Regional Product in 2011/12 followed by Health Care & Social Assistance (14.9% see section 2.2.7).

These statistics are pertinent to this EcIA with one world class university (the University of New South Wales) located within the Study Area and numerous universities and educational institutions being located within its broader area of influence including Sydney University, University of Technology Sydney, University of Notre Dame, Randwick TAFE, Sydney Institute TAFE and Ultimo College TAFE.

The University of New South Wales is one of Australia's leading research and teaching universities with more than 50,000 students from over 120 countries. Located in Precincts 4 and 5, the University is also a major element of the Randwick Education and Health Specialised (REHS) Precinct as identified in the draft Metropolitan Strategy for Sydney. The proposed light rail would contribute to the Draft Strategy's goals for the REHS Precinct which includes:

- Intensifying the existing cluster of education and health activity around the University of NSW, NIDA, Prince of Wales Hospital and Sydney Children's Hospital;
- Providing capacity for at least 6,000 additional jobs in 2031; and
- Improving public transport access to Sydney CBD.

3.2.5 ENTERTAINMENT, SPORT & LEISURE – ROYAL RANDWICK RACECOURSE

Royal Randwick Racecourse is NSW's racing headquarters and is considered to be "a cultural landscape of State heritage significance for the local area, Sydney generally, and thoroughbred racing in Australia"[42]. Located just 5km from the Sydney CBD, Royal Randwick has evolved over time to include racing, spectator and training facilities and become a major sporting facility as well as a tourism, leisure and entertainment venue. The Royal Randwick Racecourse employs more than 100 full time staff increasing to 1,000 staff during major race events which occur throughout the year[43].

40 NSW Government Submission to the International Education Advisory Council's Discussion Paper for the Development of an International Education Strategy for Australia, June 2012.

41 IBID

42 Planning Matters Preliminary Assessment Royal Randwick Racecourse Stage 1 Masterplan works, 2007

43 IBID

According to a recent report prepared for the Australian Turf Club, Royal Randwick has a "history of a variety of racing and non-racing events and has traditionally been used for a range of minor events (up to 5,000 patrons) over a number of years and a number of major events more recently with the Future Music Festival (2006-2012)"[44].

The Royal Randwick Racecourse is located in the Centre of the Randwick Urban Activation Precinct as designated by the NSW Department of Planning & Infrastructure. In recent years a masterplan has been created to transition Royal Randwick into a major racing, events and entertainment destination via the development of 600 international standard stables, a Centre of Excellence/Lifestyle Centre, a 10,000sqm convention centre; and a 170 room hotel, restaurant and bar[45]. The Randwick Urban Activation Precinct will also experience a notable population increase as a result of greater residential development.

3.2.6 Entertainment, Sport & Leisure - Moore Park & Centennial Park

Moore Park is home to many of Sydney's premier sporting, recreation entertainment and shopping destinations, including: Allianz Stadium, Centennial Parklands, the Hordern Pavilion, Royal Hall of Industries and Byron Kennedy Hall, Sydney Cricket Ground and The Entertainment Quarter.

Moore Park is the former location of the Royal Agricultural Society's Sydney Showground, which hosted the annual Sydney Royal Easter Show until 1998 when it moved to Homebush Bay (the site of the 2000 Olympic Games). The old showgrounds have since been redeveloped as Fox Studios, a commercial venture designed at supporting Australia's film industry. The Entertainment Quarter is a retail, dining and entertainment district beside the studios. It contains cinemas, live venues, restaurants, cafes, pubs, and retailers of fashion and home wares. The Farmer's Market operates every Wednesday and Saturday in the old showground.

Moore Park is also the location of two of Sydney's largest sporting venues, the Sydney Cricket Ground and Sydney Football Stadium with a combined capacity of 91,000 people. Each year the grounds host a range of events including Australian Rules Football, Rugby League, Rugby Union, Cricket, Soccer and music concerts. The Sydney Cricket Ground is currently going through a $186 million refurbishment that will see its capacity increase to 50,000 people.

The Hordern Pavilion is a multipurpose entertainment venue, while next door the Royal Hall of Industries (fondly remembered as the old Showbag Pavilion during the Royal Easter Show days) hosts a range of exhibitions, social and commercial events and shows. Moore Park also houses Kippax Lake, the E.S. Marks Athletics Field, the Moore Park Golf Course, the Parklands Sports Centre and a number of sports fields.

44 Urbis, Non-Race Day Events Australian Turf Club Section 75W Modification, prepared for the Australian Turf Club, May 2013
45 Australian Turf Club https://www.australianturfclub.com.au/future_vision.html 2013

3.2.7 HOSPITALS AND HEALTH CLUSTERS

The Randwick Education and Health Specialised Precinct is situated includes the UNSW, the Prince of Wales Hospital, Royal Hospital for Women, Sydney Children's Hospital and Prince of Wales Private. The centre employs 14,000 workers and is expected to grow to around 20,000 workers by 2031[46]. The following table provides a snapshot of the services provided by each of the hospitals in the Precinct.

Table 4 - Services provided by hospitals in Randwick Education and Health Precinct (2010/2011)

Hospital	Services	Beds	Same day admissions	Overnight admissions
Prince of Wales Hospital	Cancer treatment services, coronary care unit, dialysis unit, elective surgery, emergency, geriatric assessment, intensive care unit, outpatient services, psychiatric unit, rehabilitation unit	Over 500	19,498	22,032
Royal Hospital for Women	Cancer treatment, some elective surgery, intensive care unit , neonatal intensive care unit, obstetrics, outpatient services	100-200	4,240	7,408
Sydney Children's Hospital	Cancer treatment, dialysis unit, elective surgery, emergency, intensive care, neonatal intensive care, outpatient services, paediatrics, psychiatric unit, rehabilitation unit	100-200	8,967	9,029
Prince of Wales Private Hospital	Chemotherapy, coronary care unit, elective surgery, intensive care, obstetrics, oncology, paediatrics	100-200	-	-

Source: My Hospitals, Commonwealth of Australia 2013

A range of complementary and ancillary services support the REHS Precinct including: short term accommodation for patients and families, medical centres, retail facilities and specialist medical services.

46 NSW Government, draft Metropolitan Strategy for Sydney 2013

4. THE EXISTING AND FUTURE CHARACTER OF THE STUDY AREA

This Chapter discusses the existing characteristics of the five precincts that make up the Study Area. The Chapter has particular regard to the characteristics of the resident population and workforce in addition to modes of travel, future population and employment growth. The Chapter also considers the future directions and the key land uses within each Precinct.

The Chapter uses a range of sources including the Australian Bureau of Statistics (ABS), the Bureau of Transport Statistics (BTS) and the City of Sydney 2011/2012 floorspace survey data. BTS population and employment forecasts have been used for each Precinct as they are the most recent data sets (as of 2012) and will ensure consistency of data sources across both Randwick LGA and the City of Sydney LGA.

For consistency and clarity we have applied the boundaries used by these data sources (i.e. suburbs and travel zones) for our assessment rather than altering the data to fit the boundaries of the Precincts nominated for the purposes of the EIS (as shown in Figure 3). The geographical locations that have informed the analysis for each Precinct have consequently been highlighted a corresponding colour and represented in a map within the subsequent sections of this Chapter.

It should also be noted that when determining people's mode of travel to work the BTS data applies a hierarchical system[47]. This means if a person uses more than one mode of transport to get to work (e.g. train then walk) the BTS will only recorded the higher ranked mode.

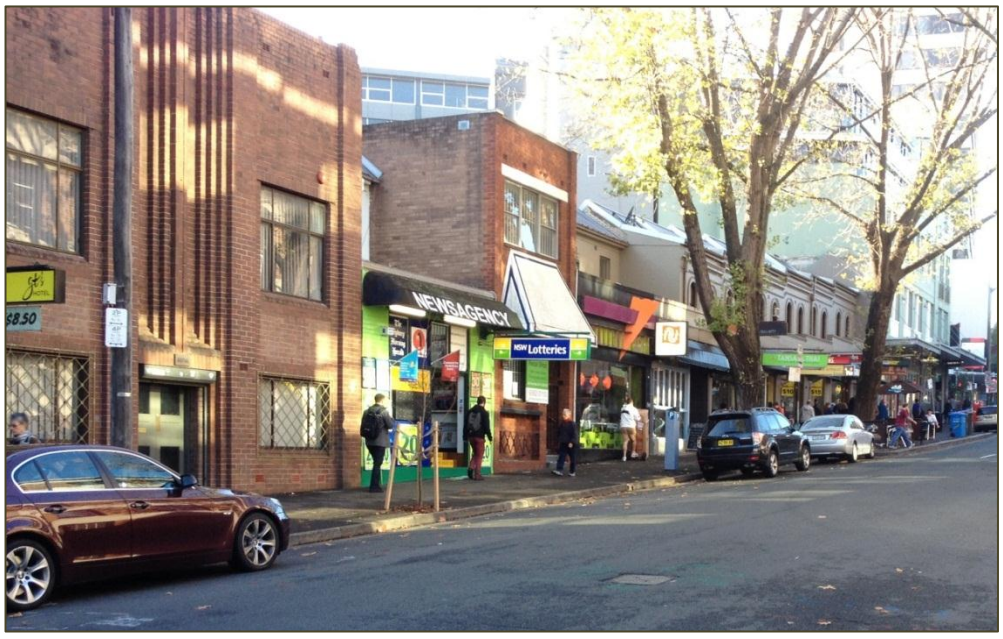


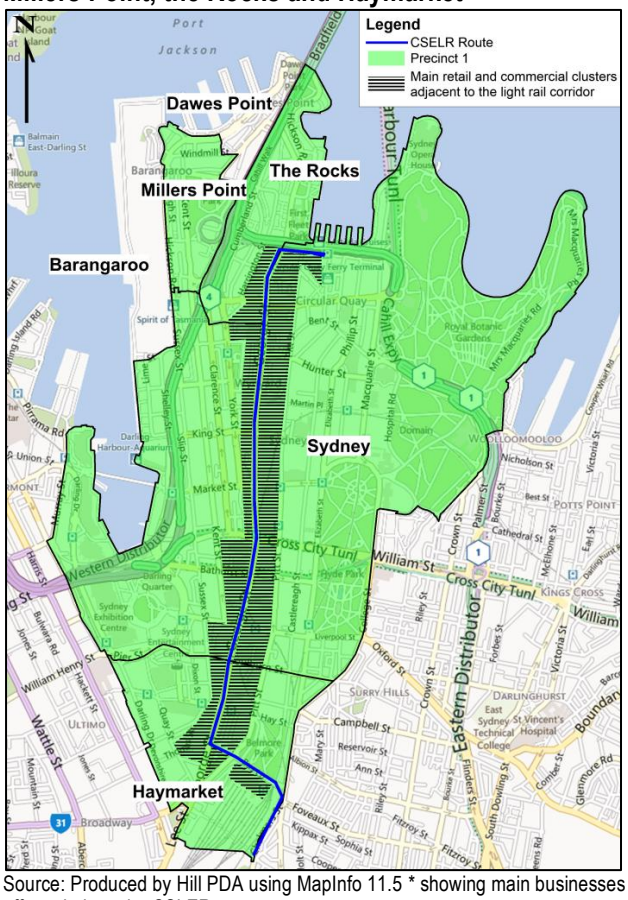
Image: Devonshire Street looking south east towards Elizabeth Street (source: Hill PDA)

[47] The hierarchical system for this data set is Train then Bus, Ferry, Tram/Light rail, Taxi, Vehicle driver, Vehicle passenger, Truck, Motorbike, Bicycle, Other mode (not specified), Walk only

4.1 City Centre Precinct

The City Centre Precinct incorporates the suburbs of Millers Point, Sydney and Haymarket extending from Circular Quay (Alfred Street) in the north, south along George Street to Central Stop.

Figure 4 - The suburbs (shown in green) of Sydney, Millers Point, the Rocks and Haymarket



Source: Produced by Hill PDA using MapInfo 11.5 * showing main businesses affected along the CSLER rout.

Table 5 - Summary of key Precinct drivers and characteristics

City Centre Precinct key drivers and characteristics			
Category	**2011**	**2031**	**Increase**
Population	22,103	37,092	14,989 or 68%
Employment	270,210	362,620	92,410 or 34%
Workforce from outside the Precinct	264,184 or 98%		
Number of Jobs (businesses directly adjoining George Street)	62,000		
Gross Building Area	2.6 million sqm		

4.1.1 EXISTING CHARACTERISTICS

The Precinct contains the central business district (CBD) for Sydney which is classified as a Global Sydney in the Draft Metropolitan Strategy for Sydney (2013). The draft Strategy identifies the CBD as the "*Primary focus for national and international business. A cultural, recreation and entertainment destination for the Sydney Metropolitan Area*."

Additional key characteristics of note:

- The Precinct contained 270,210[48] jobs as of 2011 with 264,184 or 98% of these occupied by persons who resided outside of the Precinct; and
- Further analysis reveals that the Precinct contained 10,980[49] employed residents, of these 6,026 lived and worked within the Precinct while the remaining 4,864 employed persons travelled outside the Precinct for employment.

City Centre Precinct: Sample of land uses, activities and tenants along the alignment

Hotels: Four Seasons Hotel, The Menzies, Hilton Hotel, Mantra Hotel and Sydney Central YHA.

Landmarks: Circular Quay tourist destination, Museum of Contemporary Art, Overseas Passenger Terminal, Australia Square, Martin Place, GPO Sydney, Queen Victoria Building, Central Station and Town Hall.

Transportation Nodes: Town Hall Station, Wynyard Station, Martin Place Station, Circular Quay Station and Central Rail Station.

Shopping Centres: World Square Shopping Centre, Sydney Central Plaza, Westfield, Hunter Connection, Queen Victoria Building, Galleries Victoria, Skyview Shopping Plaza, Met Centre, The Strand and City Mark, Mid City Centre and Market City.

Retail and Commercial Uses: Jackson's on George, Apple Store, Myer, City of Sydney RSL Club, retail in the The Woolworths (cnr George Street and Park Street), Burberry, various strip retailing along George Street, Commonwealth Bank, Westpac, NAB, HSBC and Starbucks.

Education, Religious, Health and Community Facilities: St Andrews Cathedral and St Andrews Cathedral School.

Entertainment: City Recital Hall, Event Cinemas, State Theatre and Capitol Theatre.

Public Space: Martin Place, Circular Quay, Wynard Park and Belmore Park.

[48] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

[49] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

4.1.2 EXISTING TRAVEL PATTERN

The Precinct has a high level of connectivity to other parts of Metropolitan Sydney resulting in a multitude of travel modes being used by workers, residents and visitors to and within the Precinct. The following section provides a summary of these existing travel patterns.

Table 6 - Travel mode to work

Travel mode to work as of 2011		
Category	**Number**	**Percentage**
Rail	120,500	45%
Car	38,384	14%
Bus	55,751	21%
Ferry	6,471	2%
Walking	15,661	6%
Other [50]	33,508	12%

Travel by Rail

Sydney CBDs rail network comprises six lines, which are fed by eight inner lines which in turn are fed by 15 outer lines[51]. The City Centre Precinct contains seven out of the eight heavy rail stations located within Sydney CBD and it is estimated that approximately 560,560[52] persons used these stations on a daily basis in 2011. This substantial rail patronage ranks three of these stations (Central, Town Hall and Wynyard) as the three busiest stations within the Metropolitan Sydney rail network.

Of the approximate 10,900 working residents that lived within the Precinct as of 2011, 1,653 or 15% travelled to work by train. Of the proportion (4,846 persons) that travelled outside of the Precinct for employment, 1,434 or 29% travelled by train.

Travel by Road

The Precinct enjoys high connectivity both internally as a result of its grid like road network and to other regions of Sydney. Some of the key characteristics relating to road travel in the Precinct include:

- The key arterial roads are Elizabeth Street, George Street, Castlereagh Street and Pitt Street which transect the Precinct North and South;
- The Precinct has good connectivity to other parts of Sydney via major arterial roads such as the Western Distributor Motorway, Bradfield Highway, Eastern Distributor Motorway and the Cahill Expressway;
- The Precinct contains approximately 62 car parking stations[53] that accommodate the 38,384 workers who travelled to the Precinct each day by car as of 2011. Of the approximate 10,900 working residents that lived within the Precinct, 1,367 or 13% travelled to work by car;

[50] Travel modes include: bicycle, motorbike, did not go to work,, tram, tuck, other mode, taxi, worked at home and mode not stated

[51] Rail options for the Sydney Greater Metropolitan area Draft options paper November 2011, Transport for NSW

[52] BTS CityRail Station Barrier Counts CBD 2011 excluding Redfern

[53] City of Sydney http://www.cityofsydney.nsw.gov.au/explore/facilities/parking/car-parks

- The Precinct contains a number of major bus nodes mainly located at Circular Quay, Wynyard, Town Hall and Central Station; and
- Of the 270,210 persons identified as being employed within the Precinct approximately 55,751 or 21% travelled to work by bus. Of the approximate 10,900 working residents that lived within the Precinct 1,333 or 12% travelled to work by bus.

Travel by Ferry

The Precincts main ferry node is located at Circular Quay which is the central destination for all of the Sydney Harbours ferry routes. Of the 270,210 persons identified as being employed within the Precinct approximately 6,417 or 2% travelled to work by ferry. Of the approximate 10,900 working residents that lived within the Precinct 10 or 0.1% travelled to work by ferry.

Travel by Walking

The Precinct has high connectivity to surrounding residential suburbs such as Pyrmont, Woolloomooloo, Potts Point, Paddington, Surry Hills, Ultimo, Kirribilli, McMahons Point, North Sydney and Neutral Bay. Due to the growing priority placed on healthy lifestyles an increasing number of residents are choosing to walk to work.

Of the 270,210 persons identified as being employed within the Precinct approximately 15,661 or 6% chose to walk to work. Of the approximate 10,900 working residents that lived within the Precinct 5,014 or 46% walked to work.

4.1.3 FUTURE VISION

The City of Sydney has four main objectives for the Precinct consistent with the broader LGA – greater sustainability, culture and creativity, diversity and difference and transport and access.

In relation to this EcIA the City of Sydney's transport and access objective aims to create an integrated transport network that can relieve the current public transport network which is often at or beyond capacity. To do this the City of Sydney intends to provide more sustainable travel options by:

- Making pedestrians a priority and creating wider, safer footpaths;
- Creating safe and accessible cycling paths;
- Rewarding sustainable transport, including low-emission vehicles and those taking part in car share;
- Transforming George Street into a wide, pedestrian-friendly boulevard with a light rail link that would connect three town squares at Railway Square (Central train station), Sydney Town Hall and Circular Quay; and
- Working with the State government for better public transport options that are more convenient and able to carry more passengers[54].

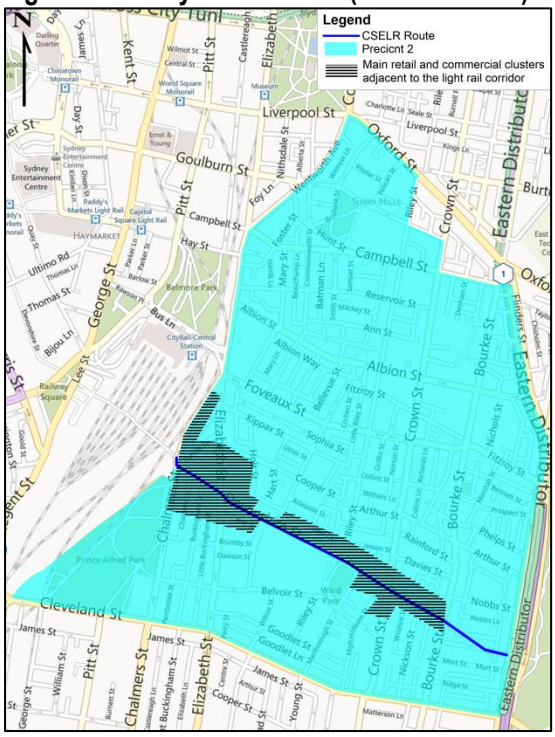
[54] City of Sydney Vision Objectives Transport and Access

These objectives become increasingly important in light of the scale of forecast resident and employment growth in the Precinct by 2031 (i.e. +14,989 persons or +68% increase and 92,410 jobs or +34%)[55]. The most significant employment growth forecast is to occur within the "white collar" industries such as professional, scientific and technical services, financial and insurance services and information media and telecommunications.

4.2 SURRY HILLS PRECINCT

The Surry Hills Precinct comprises the suburb of Surry Hills extending along Devonshire Street to Moore Park from the intersection of Charmers Street in the west to Bourke Street in the east.

Figure 5 - Surry Hills suburb (shown in blue)



Source: Produced by Hill PDA using MapInfo 11.5 * showing main businesses affected along the CSLER rout.

Table 7 - Summary of key Precinct drivers and characteristics

Surry Hills Precinct key drivers and characteristics			
Category	**2011**	**2031**	**Increase**
Population	15,342	21,731	6,389 or 42%
Employment	25,161	27,714	2,553 or 10%
Workforce from outside the Precinct that works within the Precinct	23,742 or 94%	94%	

[55] The BTS forecasts population and employment within the Greater Metropolitan Area of Sydney. The BTS August 2012 forecasts use the Department of Planning and Infrastructures (DOP&I) 2010 population projections 2006 population as a base for their projections. As such the BTS use 2006 ABS geographical boundaries, for this Precinct the Statistical Local Area (SLA) of Sydney – Inner has been used to project the Precincts Population as this boundary approximates the SA2 used earlier.

4.2.1 EXISTING CHARACTERISTICS

According to the ABS the Precinct contained approximately 15,342 persons and 8,878 private dwellings as of 2011. Using the ABS geographical SA2 boundary known as Surry Hills, which closely aligns with the Precinct, it was found that that the Precinct contained 25,161[56] jobs as of 2011 with 23,742 or 94% of these being occupied by persons who lived outside the Precinct. Further analysis reveals that the Precinct contained 9,328[57] employed residents as of 2011, of these 1,419 lived and worked within the Precinct while the remaining 7,909 employed persons travelled outside the Precinct for employment.

The Precinct is a mixture of residential, commercial and light industrial areas with Devonshire Street containing a mixture of retail, commercial, residential and public space uses. Devonshire Street is narrow in nature with two lanes and on street parking available to visitors and residents.

Surry Hills Precinct: Sample of land uses, activities and tenants along the alignment

Hotels: Central Hotel, Madison Hotel, Royal Exhibition Hotel, Clarenden Hotel, Strawberry Hills Hotel, Shakespeare Hotel and Trinity Bar.

Transportation Nodes: Central Station.

Retail and Commercial: various cafes, bars, restaurants, specialty stores, convenience stores, art galleries, hair dressers, laundromats, design firms, clothing stores and electrical stores.

Education, Religious, Health and Community Facilities: Bourke Street Public School, Saint Patrick's Business College and Australian College of Vocational Studies and Royal Australian College of Ophthalmologists, Saint Peters Church, Quakers Service Australia, Holistic Medical Centre, The Private Clinic, Dental Hospital, St Vincent Child Care Centre, Langton Clinic, Twinkle Toes Child Care Centre, Centacare Catholic Community Services and Anglican Church Sydney Diocese.

Public Space: Prince Alfred Park, Ward Park, Wimbo Park and Moore Park.

[56] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

57 BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

4.2.2 EXISTING TRAVEL PATTERNS

The Precinct has good connectivity to other parts of Metropolitan Sydney with two major rail nodes and a number of arterial roads in close proximity.

Table 8 - Travel mode to work

Travel mode to work as of 2011			
Category		**Number**	**Percentage**
Rail		9,363	37%
Car		6,278	25%
Bus		2,942	12%
Walking		2,410	10%
Other [58]		4,168	16%

Travel by Rail

The Precinct contains no heavy rail stations but is in close proximity to Central and Redfern Stations. According to the BTS of the 25,161 persons that worked within the Precinct as of 2011[59] 9,363 or 37% travelled to work by rail. Of the 9,328 working residents that lived within the Precinct 1,496 or 16% travelled to work by rail

Travel by Road

The Precinct enjoys high connectivity as a result of various collector and arterial roads including the Eastern Distributor. Of the 25,161 working persons that travelled to the Precinct for employment as of 2011 6,278 or 25% travelled to work by car. Of the 9,328 working residents that lived within the Precinct 1,801 or 20% travelled to work by this mode.

As of 2011 around 12% or 2,942 of the 25,161 persons that worked within the Precinct[60] travelled to work by bus. Of the 9,328 working residents that lived within the Precinct 1,252 or 13% travelled to work by bus.

Travel by Walking

The Precinct has high connectivity to surrounding residential areas and suburbs such as Alexandria, Paddington, Surry Hills, Ultimo and residents within the CBD. Of the 25,161 persons identified as being employed within the Precinct approximately 2,410 or 10% travelled to work by walking. Of the 9,328 working residents that lived within the Precinct 3,077 or 37% travelled to work by walking.

[58] Travel modes include: bicycle, motorbike, did not go to work,, tram, tuck, other mode, taxi, worked at home, ferry and mode not stated

59 BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

60 BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

4.2.3 FUTURE VISION

The Precinct is within the City of Sydney's jurisdiction and as such has many of the same aims and objectives as the City Centre Precinct (i.e. greater sustainability, culture and creativity, diversity and difference and transport and access). The Surry Hills Precinct is recognised as being an area with a "*design industry focus*" and recent gentrification has seen the area transform from an industrial inner city precinct to an artistic and cultural hub. As such the City of Sydney is focused on developing Surry Hills culture and creativity. The City of Sydney also recognises the unique residential and working nature of the suburb with a purpose-built childcare centre in the Surry Hills Library and Community Centre with space for 26 children currently under consideration.

The BTS forecasts that the resident population of Surry Hills would increase from 15,342[61] persons as of 2011 to 21,731[62] persons in 2031, representing an increase of 6,389 or 42%[63]. BTS employment projections forecast that the Precinct would experience an increase of 2,553 jobs or 10% between 2011 and 2031, increasing from 25,161[64] jobs to 27,714[65] jobs. Employment industries projected to experience the greatest growth between 2011 and 2031 are "white collar" industries such as professional, scientific and technical services. The next industries expected to experience the greatest growth proportionally are service industries such as education and training and health care and social assistance.

61 2011 ABS Quick Statistics

62 BTS 2012 Population Projections

63 The BTS use 2006 ABS geographical boundaries, as such the 2006 Surry Hills suburb boundary has been used to project the Precincts Population as this boundary approximates the SA2 used earlier (with the exception of Alfred Park).

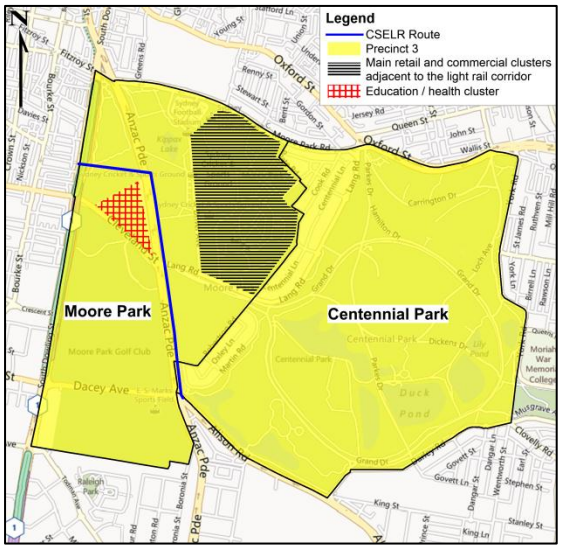
64 BTS 2011 JTW Data

65 BTS 2012 Employment Projections

4.3 MOORE PARK PRECINCT

The Moore Park Precinct comprises the suburbs of Moore Park and Centennial Park extending from Moore Park along Anzac Parade to the intersection with Alison Road.

Figure 6 - The suburbs (shown in yellow) of Moore Park and Centennial Park



Source: Produced by Hill PDA using MapInfo 11.5

Table 9 - Summary of key Precinct drivers and characteristics

Moore Park Precinct key drivers and characteristics			
Category	**2011**	**2031**	**Increase**
Population	2,106	2,949	843 or 40%
Employment	2,711	3,804	1,093 or 40%
Workforce from outside the Precinct that work within the Precinct	2,611 or 96%		

4.3.1 EXISTING CHARACTERISTICS

According to the ABS the Precinct contained 2,106 persons and 1,298 private dwellings as of 2011. Using the BTS geographical boundary's known as Travel Zones[66] 527, 564, 565, 566 and 567, which closely aligns with the Precinct, it was found that as of 2011 the Precinct contained 2,711[67] jobs with 2,611 or 96% of these occupied by persons who lived outside of the Precinct. Further analysis reveals that the Precinct contained 1,361[68] employed residents as of 2011, of these 100 lived and worked within the Precinct while the remaining 1,261 employed persons travelled outside the Precinct for employment.

The Precinct is comprised of a unique mixture of residential, commercial, retail, entertainment and historic public lands. The Precinct contains two parks the first being Centennial Park which opened in 1888 and comprises 189 hectares. Centennial Park has a Victorian period layout and features formal gardens, ponds, grand avenues, statues, historic buildings and a sporting field. The second park, named Moore Park, opened in 1869 and comprises 115 hectares. Moore Park boasts a range of leisure choices including open spaces, playing fields, an athletics field, golf course, tennis courts and netball courts. The Precinct also contains

[66] A Travel Zones is the smallest unit that the BTS uses for their analysis
[67] BTS 2011 Journey to Work (JTW) data, Origin TZ and Destination TZ
[68] BTS 2011 Journey to Work (JTW) data, Origin TZ and Destination TZ

Sydney's Entertainment Quarter, Sydney Cricket Ground, Allianz Stadium, Hordern Pavilion, Royal Hall of Industries, Byron Kennedy Hall and is the heart of Sydney's film industry. These uses contribute to the Precincts unique character while allowing it to play a distinct and vital role as a recreation, entertainment and sporting hub within Sydney.

Moore Park Precinct: Sample of land uses, activities and tenants along the alignment

Hotels: Bat and Ball Hotel, Moore Park View Hotel and Fox Studios.

Retail and Commercial Uses: Sydney's Entertainment Quarter (Brent Street Performing Arts Centre, Comedy Store Sydney, Golden Century, Spectrum Films) Hordern Pavilion, Royal Hall of Industries, Byron Kennedy Hall and Moore Park Stables.

Schools, Religious and Health Facilities: Sydney Girls High, Sydney Boys High and KU Children's Services.

Sporting Facilities: Moore Park Golf Course, Sydney Cricket Ground, Allianz Stadium, Parklands Tennis, Legends Netball Courts, Moore Park Golf Course and E.S Marks Field.

Entertainment: Sydney's Entertainment Quarter (Hoyts Cinema and Hoyts Cinema Paris).

Public Space: Moore Park and Centennial Park.

4.3.2 Existing Travel Patterns

The Precinct has high connectivity to other parts of Metropolitan Sydney with three major arterial roads surrounding or transecting the Precinct and various collector and local roads contained within. The Precinct contains no heavy rail stations although it is serviced by buses and contains public parking facilities.

Table 10 - Travel mode to work

Travel mode to work as of 2011			
Category		**Number**	**Percentage**
Rail		210	8%
Car		1,760	65%
Bus		162	6%
Walking		87	3%
Other [69]		481	18%

Travel by Rail

Whilst the Precinct lacks heavy rail stations there are three stations in close proximity, these being:

- Central Station which is located approximately 1km or a 12 minute walk[70] west from the Precinct's western border;
- Redfern Station which is located 1.9km or a 24[71] minute walk to the west; and
- Bondi Junction Station which is located 600m or a 7 minute walk east from the Precincts eastern border.

[69] Travel modes include: bicycle, motorbike, did not go to work,, tram, tuck, other mode, taxi, worked at home, ferry and mode not stated

[70] Google Directions

[71] Google Directions – measured to the Precincts western boarder

Despite the proximity of these stations only 210[72] people or 8% of the approximate 2,700 persons that worked within the Precinct as of 2011 travelled to work by rail.

Travel by Road

The Precinct's main arterial roads of South Dowling Street, Moore Park Road, Oxford Street, Anzac Parade, and Alison Road coupled with ample parking facilities located within the Precinct make travelling to the Precinct by car convenient. This is evident in the 1,760[73] persons or 65% of the persons that worked within the Precinct travelling to work by car as of 2011. Whilst the Precinct contains various bus stops along Anzac Parade only 6% of people employed in the Precinct travelled to work by bus as of 2011.

Travel by Walking

The Precinct has good connectivity to surrounding residential areas such as Paddington, Randwick, Surry Hills, Kensington and Woollahra. Although the Precinct is in close proximity to these residential suburbs BTS data indicates that only 3% of people employed in the Precinct walked to work as of 2011[74].

4.3.3 FUTURE VISION

The Precinct is under the jurisdiction of a number of trusts these being The Centennial Park and Moore Park Trust and Sydney Cricket and Sports Ground Trust. The Centennial Park and Moore Park Trust have just recently announced a Strategic Land Use Vision for Centennial and Moore Parks. This vision includes an underground car park for 2,000 cars under Moore Park, an adventure and sporting centre, expanded development at Fox Studios and a "substantial redevelopment" of the ES Marks Fields for the purpose of a sports centre with spectator stands and possible campus style accommodation. The Vision also makes notice of the CSELR to the Precinct saying it would provide more transport especially for major events.

The BTS August 2012 population projections forecast the Precincts resident population to increase by 843 persons or 40% between 2011 and 2031 (from 2,106[75] persons to 2,949 persons[76]).

BTS employment projections forecast that the Precinct would experience an increase of 1,093 jobs or 40% between 2011 and 2031 increasing from 2,711[77] jobs to 3,804[78] jobs. Employment industries that are projected to increase the most between 2011 and 2031 are "white collar" industries such as professional, scientific and technical services. The next biggest industries forecasts to proportionally increase are service industries such as education and training and health care and social assistance.

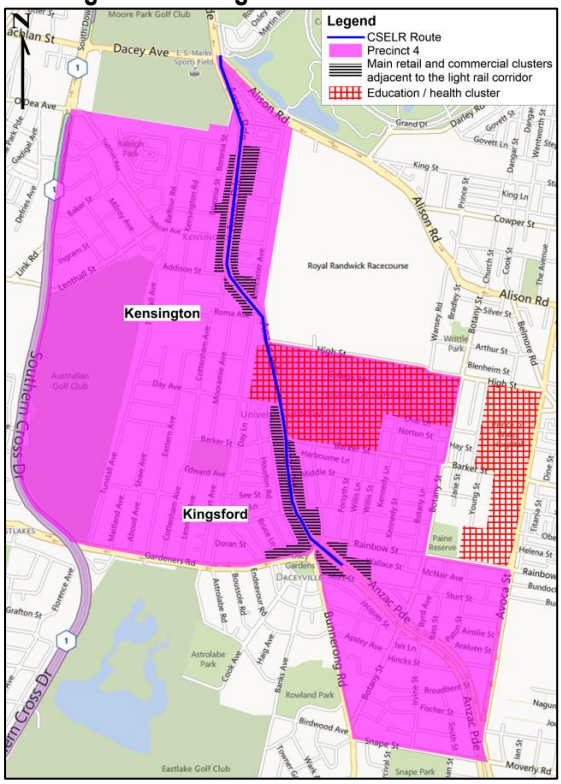
[72] BTS Journey to Work Data 2011 Destination TZ
[73] BTS Journey to Work Data 2011 Destination TZ
[74] BTS Journey to Work Data 2011 Destination TZ
[75] ABS 2011 Quick Statistics
[76] The BTS 2006 TZ boundaries of 210, 211, 212, 213 and 507 have been used as they comprise the Precincts Boundary.
[77] BTS 2011 JTW Data
[78] BTS 2012 Employment Projections

Image: Moore Park facing north twoards Sydney CBD (source: Hill PDA)

4.4 KENSINGTON / KINGSFORD PRECINCT

The Kensington / Kingsford Precinct comprises the suburbs of Kensington and Kingsford extending along Anzac Parade to the intersection with Wallace Street.

Figure 7 - The suburbs (shown in pink) of Kensington and Kingsford



Source: Produced by Hill PDA using MapInfo 11.5

Table 11 - Summary of key Precinct drivers and characteristics

Kensington / Kingsford Precinct key drivers and characteristics			
Category	**2011**	**2031**	**Increase**
Population	26,877	36,401	5,192 or 19%
Employment	9,863	14,436	4,573 or 46%
Workforce from outside the Precinct that works within the Precinct		8,045 or 82%	

4.4.1 EXISTING CHARACTERISTICS

According to the ABS the Precinct contained 26,877 persons and 10,609 private dwellings as of 2011. Using the ABS geographical SA2 boundary known as Kensington - Kingsford, which closely aligns with the Precinct, the BTS recorded that the Precinct contained 9,863[79] jobs as of 2011 with 8,045 or 82% of these occupied by persons who lived outside the Precinct. Further analysis reveals that the Precinct contained 11,827[80] employed residents, of these 1,818[81] lived and worked within the Precinct while the remaining 10,009 employed persons travelled outside the Precinct for employment.

The Precinct is a mixture of residential, retail, commercial, leisure / public and educational land uses with Anzac Parade containing the core retail and commercial uses. The Precinct contains Anzac Parade which the CSELR follows. Anzac Parade is a six lane arterial road with parking on each side.

Kensington / Kingsford Precinct: Sample of land uses, activities and tenants along the alignment

Hotels: Centennial Parkview Private Hotel, Addison Hotel, Doncaster Hotel and Regent Hotel.

Retail and Commercial Uses: Peter's of Kensington, various cafes, bars, restaurants, specialty stores, convenience stores, petrol station, hair dressers, laundromats, design firms, clothing stores, electrical stores and mechanics.

University and Training: University of New South Wales (Lower Campus) and National Institute of Dramatic Art.

Schools, Religious, Health and Community Facilities: Kensington Public School, Rainbow Street Public School, Our Lady of the Rosary School, Our Lady of the Sacred Heart Primary School, St Spyridon College, Coptic Orthodox Church, Convent of Our Lady of the Sacred Heart, St Spyridon Greek Orthodox Church, Royal Hospital for Women, Prince of Wales Hospital, Sydney Children's Hospital, UNSW Medicine Lifestyle Clinic, Cardiac Clinic, doctor's surgeries, medical centres, student accommodation, Kensington Masonic Centre, South Sydney Juniors Club and Kensington War Memorial Club.

Entertainment: Royal Randwick Racecourse.

Public Space: Centennial Park, Kokoda Memorial Park and Kensington Park.

[79] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

[80] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

[81] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

4.4.2 Existing Travel Pattern

The Precinct enjoys good connectivity to other parts of Metropolitan Sydney with the arterial road of Anzac Parade transecting the Precinct and Southern Cross Drive. The Precinct lacks access to heavy rail although is well serviced by bus routes.

Table 12 - Travel mode to work

Travel mode to work as of 2011		
Category	**Number**	**Percentage**
Rail	1,140	12%
Car	4,683	47%
Bus	1,112	11%
Walking	1,114	11%
Other [82]	1,814	18%

Travel by Rail

The Precinct contains no heavy rail stations although Green Square Station is located 1.2km or a 15 minute walk west of the Precinct boarder. As such of the 9,863 persons that worked within the Precinct as of 2011[83] 1,140 or 12% travelled to work by rail. Of the 11,827 working residents that lived within the Precinct only 608 or 5% travelled to work by rail.

Travel by Road

The Precinct enjoys good connectivity with various local roads and to Anzac Parade which connects the Precinct to the CBD, Sydney Airport and the M5 Freeway. Of the 9,863 persons that worked within the Precinct as of 2011, 4,683 or 47% travelled to work by car.

In relation to buses only 11% of people employed within the Precinct travelled to work by bus as of 2011. Bus patronage to work amongst the Precinct's residents was however higher at 25%[84].

Travel by Walking

Approximately 1,114 or 11% of people employed within the Precinct travelled to work by walking as of 2011. Of the approximate 11,827 working residents that lived within the Precinct 1,083 or 9% travelled to work by walking.

4.4.3 Future Vision

The Precinct lies within Randwick local government area and falls under the strategic direction of Randwick Council's City Plan 2013. This Plan outlines how Council would work with the community to ensure a "*bright future*" for the city, community, environment and the economy of the local government area. The Plan intends to achieve this through six main actions, these being responsible management, a sense of community, places for people, looking after the environment and, more importantly to this EcIA, a prospering city and moving around.

[82] Travel modes include: bicycle, motorbike, did not go to work,, tram, tuck, other mode, taxi, worked at home, ferry and mode not stated

[83] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

[84] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

Key elements of the Plan are as follows:

- Transport and access is a key driver to economic growth – "Transport choice, convenience and ease of access determine how people travel to and around an area. Transport can influence where a business locates and how it grows";
- Sustainable transport choices and accessibility should be encouraged within the LGA – "Showing leadership in sustainable vehicle use and promoting accessibility to public transport, walking and cycling for residents, workers and visitors";
- Public transport and infrastructure should be improved and diversified as it is currently entirely bus dependant – "Advocating for improvements to the public transport network"; and
- Community transport is an important element for many sections of the community in accessing daily requirements – "Assisting residents and community groups to have access to community transport".

The BTS forecasts that the Precinct's resident population would increase from 26,877[85] persons as of 2011 to 36,401[86] persons in 2031, representing an increase of 5,192 or 19% over this period[87]. BTS employment projections forecast that the Precinct would experience an increase of 4,573 jobs or 46% between 2011 and 2031 increasing from 9,863[88] jobs to 14,436[89] jobs. The Precinct contains a major educational institution and as such the employment sectors of education and training is projected to experience the greatest proportional growth increasing by approximately 3,400 jobs or 74%. "White collar" industries such as professional, scientific and technical services are projected to increase by the second largest margin followed by agriculture, forestry and fishing.

[85] 2011 ABS Quick Statistics

[86] BTS 2012 Population Projections

[87] Based on the BTS TZ boundaries of 508, 509, 519, 520, 524, 525, 526, 530 and 532 which roughly align with the Precincts boundary

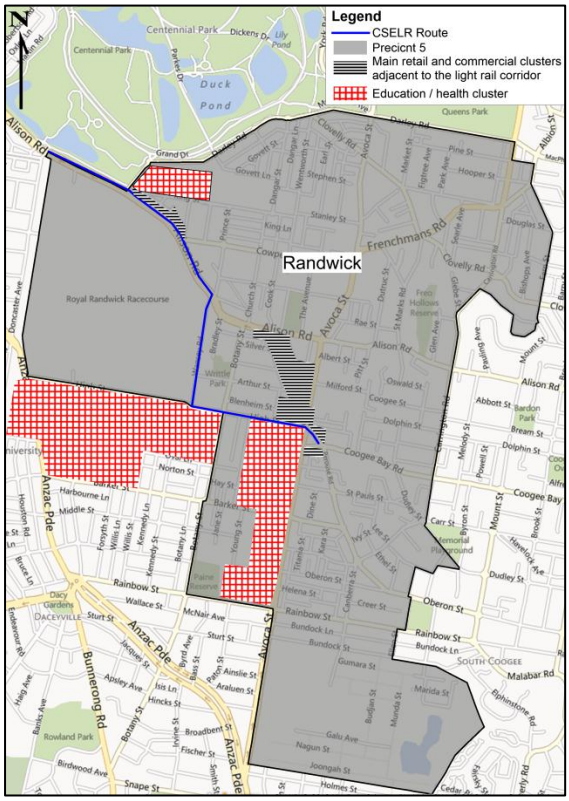
[88] BTS 2011 JTW Data

[89] BTS 2012 Employment Projections

4.5 RANDWICK PRECINCT

The Randwick Precinct comprises the suburb of Randwick with the alignment in this Precinct extending along Alison Road, turning south along Wansey Road, east along High Street and terminating at High Cross Park.

Figure 8 - The suburb (shown in grey) of Randwick



Source: Produced by Hill PDA using MapInfo 11.5

Table 13 - Summary of key Precinct drivers and characteristics

Randwick Precinct key drivers and characteristics			
Category	**2011**	**2031**	**Increase**
Population	27,740	30,158	3,018 or 11%
Employment	15,351	25,338	9,987 or 65%
Workforce from outside the Precinct that work within the Precinct	12,578 or 82%		

4.5.1 EXISTING CHARACTERISTICS

According to the ABS the Precinct contained 27,740 persons and 12,768 private dwellings as of 2011. Using the ABS geographical SA2 boundary known as Randwick, which aligns with the Precinct, the BTS recorded that the Precinct contained 15,351[90] jobs as of 2011 with 12,578 or 82% of these occupied by persons who lived outside of the Precinct. Further analysis reveals that the Precinct contained 15,231[91] employed residents. Of these 2,773[92] lived and worked within the Precinct while the remaining 12,458 employed persons travelled outside the Precinct for employment.

[90] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

[91] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

[92] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

The Precinct is a mixture of residential, retail, commercial, leisure / public, health and educational land uses. The Precinct includes the major educational and health institutions such as the University of New South Wales (UNSW) and the Prince of Wales Private Hospital.

Randwick Precinct: Sample of land uses, activities and tenants along the alignment

Hotels: Randwick Lodge, Alison Private Hotel, the Blenheim Randwick, Royal Hotel Randwick and Avoca Lodge.

Retail and Commercial Uses: Petrol Stations, mechanic, Kmart Tyre and Auto Services, convenience store and take away food, cafes, pharmacy and hairdresser.

University and Training: University of New South Wales and TAFE NSW Campus.

Schools, Religious, Health and Community Facilities: Joseph Varga School, Coogee Boys Preparatory School, Marcellin College, Baptist Union of New South Wales, Presbyterian Church NSW, Roma Private Hospital, Royal Hospital for Women, Prince of Wales Hospital, Sydney Children's Hospital, UNSW Medicine Lifestyle Clinic, Cardiac Clinic, doctor's surgeries, medical centres, Randwick Labor Club and Randwick Library.

Entertainment: Randwick Racecourse.

Public Space: Centennial Park, High Cross Park and Alison Park.

4.5.2 Existing Travel Patterns

The Precinct is well connected to other parts of Metropolitan Sydney via a road network which includes the arterial roads of Anzac Parade and Alison Road. With no access to heavy rail 74% of the 15,351 people employed within the Precinct travel to work by driving, catching a bus or walking.

Travel by Rail

As of 2011 just 7% or 1,047 people employed in the Precinct used rail to travel to work[94]. Of the 15,231 working residents that lived within the Precinct 888 or 6% travelled to work by rail.

Table 14 - Travel mode to work

Travel mode to work as of 2011			
Category		**Number**	**Percentage**
Rail		1,047	7%
Car		8,371	55%
Bus		1,408	9%
Walking		1,565	10%
Other [93]		2,960	19%

[93] Travel modes include: bicycle, motorbike, did not go to work,, tram, tuck, other mode, taxi, worked at home, ferry and mode not stated

[94] BTS 2011 Journey to Work (JTW) data, Origin SA2 and Destination SA2

Travel by Road

According to the BTS 8,371 or 55% of the 15,351 persons that worked within the Precinct as of 2011 travelled to work by car. Furthermore, of the 15,231 working residents that lived within the Precinct 6,285 or 41% travelled to work by this mode. Interestingly, only 9% of people employed in the Precinct travelled to work by bus as of 2011. In contrast, 24% of the Precinct's residents used the bus to travel to work.

Travel by Walking

Of the 15,351 persons identified as being employed within the Precinct approximately 1,565 or 10% travelled to work by walking. Of the approximate 15,231 working residents that lived within the Precinct, 1,534 or 10% travelled to work by walking.

4.5.3 FUTURE VISION

Randwick City Council's City Plan 2013 acknowledges the unique nature of the Precinct by identifying specific directions related to the health and education industries located within the Precinct which aim at increasing the range of services and employment opportunities offered. The Precinct also contains Royal Randwick Race course, built in 1833. In 2010 a negotiation between the NSW State Government, Tabcorp and Racing NSW resulted in the provision of $150m for the purpose of the redevelopment of Royal Randwick. This redevelopment would include the refurbishment of the QEII Stand, rebuilding Paddock Stand, relocation of the mounting yard from the front to the rear of the new Grandstand, the development of a four star 170 room on site hotel and a two level convention and exhibition centre.

Key tenets of the Randwick City Plan 2013 are as follows:

- Council identifies actions that would strengthen the range of services and employment opportunities within the health and education precincts – "Implement plans and strategies that strengthen the Hospital and University precinct's education, health and medical research functions";
- Transport and access is a key driver to economic growth – "Transport choice, convenience and ease of access determine how people travel to and around an area. Transport can influence where a business locates and how it grows";
- Sustainable transport choices and accessibility should be encouraged within the LGA – "Showing leadership in sustainable vehicle use and promoting accessibility to public transport, walking and cycling for residents, workers and visitors";
- Public transport and infrastructure should be improved and diversified as it is currently entirely bus dependant – "Advocating for improvements to the public transport network"; and
- Community transport is an important element for many sections of the community in accessing daily requirements – "Assisting residents and community groups to have access to community transport".

The BTS forecasts that the Precinct's resident population would increase from 27,740[95] persons as of 2011 to 30,158[96] persons in 2031, representing an increase of 3,018 or 11%. BTS employment projections forecast that the Precinct would experience an increase of 9,987 jobs or 65% between 2011 and 2031 (increasing from 15,351[97] jobs to 25,338[98] jobs). The education and training and health care and social assistance sectors are projected to increase the by the greatest margin, increasing by approximately 624 jobs or 39% and 6,812 jobs or 70% respectively over the same period.

4.6 ROZELLE LOCALITY

The Rozelle maintenance depot site is located at the western end of the existing Inner West Light Rail network. The depot would provide facilities for maintenance of light rail vehicles via the existing light rail line from Lilyfield to Central via Pyrmont. The maintenance depot configuration would provide a single track entry / exit, with a connection to existing Inner West Light Rail line, after the existing Catherine Street overbridge. It is estimated that there would be approximately four light rail vehicle movements per day into and out of the maintenance depot.

The northern half of site is currently used for various uses and contains a series of large warehouse buildings. These buildings would be required to be demolished as part of the proposal.

[95] 2011 ABS Quick Statistics
[96] BTS 2012 Population Projections
[97] BTS 2011 JTW Data
[98] BTS 2012 Employment Projections

5. INTERNATIONAL LITERATURE REVIEW

The following Chapter provides an overview, based on international literature, of the key economic implications of light rail transport projects as well as the pedestrianisation of space within major cities. The key findings of this research have helped to inform the identification and likely scale of impacts associated with the proposal.

5.1 TRANSPORTATION IMPROVEMENTS AND ECONOMIC DEVELOPMENT

Improvements to public transport can provide economic development benefits, particularly when it serves large cities where cost savings and productivity gains tend to be high[99]. By attracting discretionary travellers, increasing transit ridership and providing a catalyst for more efficient land use, rail transit provides various *cost savings* and *efficiency gains*, including congestion reduction, road and parking cost savings, consumer savings, reduced crash damages and improved public health. These economic savings and efficiency benefits filter through the economy as savings to consumers, businesses and governments, making a city and region more productive and competitive.

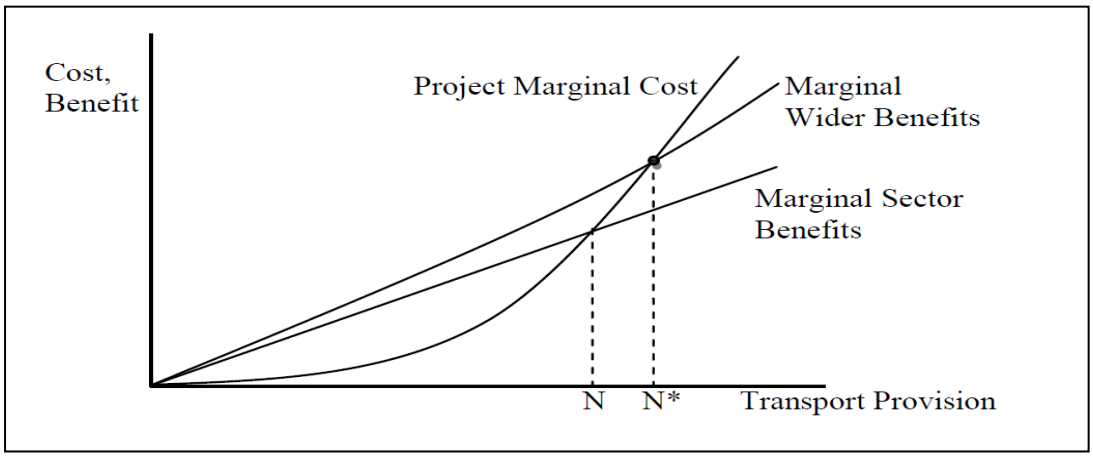
5.2 MEASURING THE BENEFITS OF TRANSPORTATION IMPROVEMENTS

The economic benefits of transport improvements are wide ranging and include economic growth, increased productivity, employment generation and greater levels of investment and competition. Quantifying the economic benefits of transport improvements is however difficult as the impacts are often widespread and gradual. The agglomeration effects of transport projects are also difficult to identify and evaluate.

As a consequence many of the wider benefits generated by transport improvements are not calculated in benefit cost analysis. Figure 9 below shows that this can lead to the scale of transport provision being less than the social optimum (N rather than N*).

99 Cambridge Systematics (1998), Economic Impact Analysis of Transit Investments: Guidebook for Practioners, Report 35, Transit Cooperative Research Program, TRB (www.trb.org); David J. Forkenbrock and Glen E. Weisbrod (2001), Guidebook for Assessing the Social and Economic Effects of Transportation Projects, NCHRP Report 456, TRB (www.trb.org); MKI (2003), Transit Means Business – The Economic Case for Public Transit in Canada, Canadian Urban Transit Association (www.cutaactu.ca); Hass-Klau, C. and Crampton, G. (2002), Future of Urban Transport: Learning from Success and Weakness (Brighton, Environmental and Transport Planning); Litman, T. (2011), Evaluating land use impacts. Retrieved from the Victoria Transportation Policy Institute, http://www.vtpi.org/landuse.pdf.

Figure 9 - The Relationship between Cost/Benefits and the Scale of Transport Improvements



Source: Revised from Chatman and Noland (2011)

There is however an increasing numbers of methods being developed to evaluate the wider benefits of transport improvement. A recent study in the United Kingdom has shown that the inclusion of the wider economic benefits (which include agglomeration benefits) raised the Benefit-Cost Ratio (BCR) of the London Cross rail project from 2.55 to between 3.47 and 4.91[100]. Similarly a Victorian Government study found the inclusion of wider economic benefits raised the BCR of the proposed East–West rail line in Melbourne by approximately 40%[101].

5.3 The Impact of Transportation Improvements on Agglomeration Effects and Productivity

Agglomeration effects can be divided into two categories:

1. *Location externalities*, which are external to the firm but internal to the industry, such as the labour market pool, knowledge sharing and spill over; and

2. *Urbanization externalities*, which are external to the firm and the industry but internal to the city, arising from the sharing of public goods, the proximity of input-output, inter-industry interaction and so on[102].

As one of the main effects of agglomeration, productivity in city areas will increase as the size of the city grows. There is a body of empirical studies aimed at identifying the relationship between city size and

100 Jenkins, J., Colella, M. and Salvucci, F. (2011), Agglomeration benefits and transportation projects, Transportation Research Record, 2221, 104-111.

101 Eddington, R. (2008), Investing in transport: East West Link needs assessment. Government of Victoria, Melbourne.

102 Marshall, A. (1920), Principles of economics, McMillan Publishers, London; Jacobs, J. (1969),The economy of cities, Random House, New York.

productivity, the majority of which comes to positive conclusion[103]. Numerous excellent up-to-date surveys of the empirical literature on the relationship between productivity and agglomeration are known to exist[104].

However, research has also found that agglomeration is accompanied by additional costs, the main one being transport related. Transport costs are crucial in determining the scope of economic activity that firms and households can access. Improvements to transport can improve the accessibility of economic activities and technology spill overs by reducing travel times or the costs of travel, giving rise to positive agglomeration benefits which in turn increase firm productivity and enhance consumer welfare. Therefore, transport improvements can be beneficial to agglomeration and productivity, directly or indirectly.

Eberts and McMillen indicated that transport improvement, which brings economic agents closer, could increase the potential for interaction and therefore enhance the benefits of agglomeration economies[105]. They also showed that the agglomeration equilibrium is even more centralised under the assumption of decreased transportation costs. Mori developed an analytical model that describes the formation of the megalopolis among central cities, largely in response to the lower cost of transportation[106]. The Core-Periphery structure model of Krugman argued that the combination of scale economies and moderate transportation costs encourages the users and suppliers of intermediate inputs to cluster near each other[107]. Venables developed a theoretical model to demonstrate that there are external benefits from transport investment related to agglomeration and that these can be measured from the elasticity of productivity with respect to employment density[108].

The relationship between transport, agglomeration effect and urban productivity can be illustrated simply by Figure 10.

103 Moomaw, R. L. (1983), Is population scale a worthless surrogate for business agglomeration economies?' Regional Science and Urban Economics, 13, 525-545; Henderson, J. V. (1986), Efficiency of resource usage and city size. Journal of Urban Economics, 19, 47-70; Ciccone, A. and Hall, R. E. (1996), Productivity and the density of economic activity'. American Economic Review, 86, 54-70; Ciccone, A. (2002), Agglomeration effects in Europe. European Economic Review, 46, 213-227.

104 Rosenthal, S. S. and Strange, W. C. (2004), Evidence on the nature and sources of agglomeration economies', in Henderson, J. V. and Thisse, J. F. (ed.), Handbook of regional and urban economics,4, North Holland Publisher, New York; Melo, P. C., Graham, D. J. and Noland, R. B. (2009), A meta-analysis of estimates of urban agglomeration economies', Regional Science and Urban Economics, 39, 332-342.

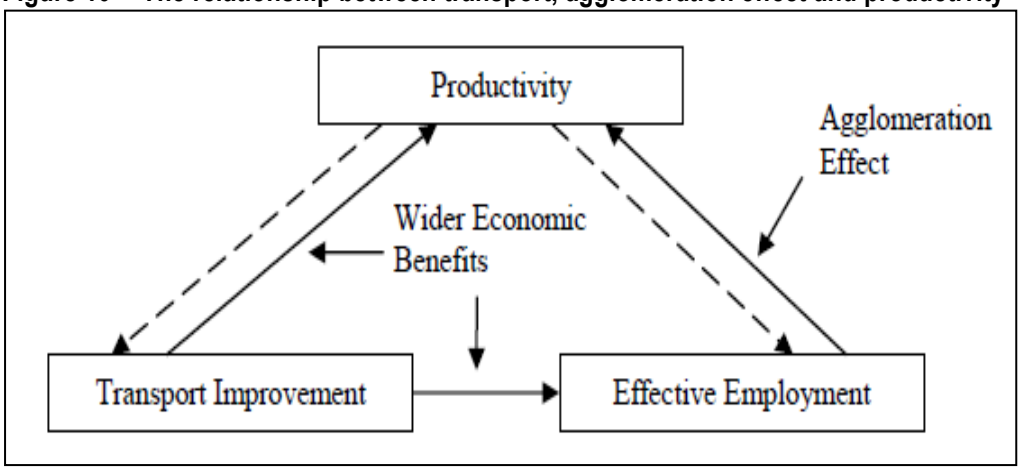
105 Eberts, R. W. and McMillen, D. P. (1999), Agglomeration economies and urban public infrastructure', in Mills, E. S. (ed.), Handbook of regional and urban economics,3, North-Holland Publisher, New York.

106 Mori, T. (1997), A modelling of megalopolis formation: the maturing of city systems', Journal of Urban Economics, 42, 133-157.

107 Krugman (1991) Krugman, P. (1992), A dynamic spatial model, National Bureau of Economic Research, Cambridge.

108 Venables, A. J. (2007), Evaluating urban transport improvements: cost-benefit analysis in the presence of agglomeration and income taxation', Journal of Transport Economics and Policy, 41, 173-188.

Figure 10 - The relationship between transport, agglomeration effect and productivity



Source: A. J. Venables, 2007

5.4 Light Rail and Urban Renewal

Light rail can have a positive impact on urban growth, land use, intensification and revitalization[109]. These impacts are not accidental[110]. However, significant impacts and stimulated economic benefits only occur when a system is planned with policies and complementary land-use strategies in place[111]. Positive development impacts of light rail systems are restricted to regions that are rapidly growing and have a healthy underlying demand for high density, mixed-use development[112] . When light rail stops are in areas where the existing surrounding land uses and policies are conducive to high-density development, they can have positive impacts to quality of life[113].

Transport oriented developments (TODs) are typically those that mix residential and commercial land uses in a way that improves access to transport and cycling infrastructure. Growth policies that are conducive to the development of walkable, mixed-use developments are conditions that need to be in place for improving quality of life with rapid transport investments[114]. As a relatively permanent investment along a fixed corridor, light rail

109 Carver, R. (1984), Light rail transit and urban development. Journal of the American Planning Association, 50(2), 133–147; Carver, R., & Sullivan, C. (2011), Green TODs: Marrying transit-oriented development and green Urbanism. International Journal of Sustainable Development and World Ecology, 18(3), 210–218; Crampton, G. R. (2003), Economic development impacts of urban rail transport. Jyvaskyla, Finland: European Regional Science Conference; Filion, P., & McSpurren, K. (2007), Smart growth and development reality: The difficult co-ordination of land use and transport objectives. Urban Studies, 44(3), 501–523; Geller, A. (2003), Smart growth: A prescription for livable cities. American Journal of Public Health, 93(9), 1410–1415; Handy, S. (2005), Smart growth and the transportation—land use connection: What does research tell us? International Regional Science Review, 28(2), 146–167; Litman, T. (2011), Evaluating land use impacts. Retrieved from the Victoria Transportation Policy Institute, http://www.vtpi.org/landuse.pdf; Marstens, M. (2006), Adaptive cities in Europe: Interrelationships between urban structure, mobility and regional planning strategies. Ph.D. dissertation. The Netherlands: University of Amsterdam.

110 Carver, R. (1984), Light rail transit and urban development. Journal of the American Planning Association, 50(2), 133–147.

111 Ibid

112 Handy, S. (2005), Smart growth and the transportation—land use connection: What does research tell us? International Regional Science Review, 28(2), 146–167.

113 IBID

114 Litman, T. (2011), Evaluating land use impacts. Retrieved from the Victoria Transportation Policy Institute, http://www.vtpi.org/landuse.pdf.

can encourage urban development in city centres and declining areas, change the pattern of urban development, influencing land uses and increasing nearby property values. It can also help strengthen development in existing neighbourhoods, rejuvenate declining areas and attract new clusters of development around stop sites[115]. These benefits being particularly pronounced in areas with existing poor levels of transport.

Development investments influenced by the implementation of a light rail system can include the creation of new housing, offices, services, and shops. Cities (such as San Diego) which have successfully implemented light rail systems have reported an increase in shopping commerce generated adjacent to the light rail line, the development of new residential and commercial areas and increased employment nodes. Although urban development has been reported around many implemented light rail lines, a 1995 report from the Transit Cooperative Research Program (TCRP)[116] concluded that rail transit may not actually create new growth but simply redistribute growth that would have otherwise taken place elsewhere without the transit investment. However, light rail systems consistently influence and direct where and what kind of growth will take place[117].

Investment in light rail also has the potential to revitalise declining areas within city central business districts (CBD) where existing levels of transport are poor. An example is Portland's CBD which was once declining with office vacancy rates rising and retail activity fading. However, when their light rail system, (MAX), was implemented, office vacancy rates declined to levels below those of suburban office parks; there was an increase in rents; and the development of an attractive retail hub in the CBD.

Portland has seen over $2 billion of development surrounding the downtown station areas[1]. Dallas and Denver experienced similar success stories. With the introduction of Dallas Area Rapid Transit (DART), Dallas has experienced over $1.3 billion in development, while Denver's Lower Downtown (LoDo) has been recognized as one of the United States' most successful new urban neighbourhoods with the implementation of light

A light rail system will likely only influence changes in land use if it adds significantly to the accessibility, both geographically and economically, that is already provided by the roadway system[118]. It is therefore important to not overstate the benefits of such a proposal to cities such as Sydney that already have strong transport routes through their CBD. Notwithstanding this the strongest development potential of light rail has been found to relate to CBDs, especially when paired with the use of increased density/development incentives and policies restricting parking supply as part of a broader redevelopment effort[119]. An example of this is the success of Calgary's light rail system, the C-Train. The Project was implemented as a tool to encourage intensification of densities and land use development along their chosen corridors. The C-Train has contributed significant benefits to the city's urban form, especially in the CBD, partly due to their commitment

115 Carver, R. (1984), Light rail transit and urban development. Journal of the American Planning Association, 50(2), 133–147.

116 Handy, S. (2005), Smart growth and the transportation—land use connection: What does research tell us? International Regional Science Review, 28(2), 146–167

117 Carver, R. (1984), Light rail transit and urban development. Journal of the American Planning Association, 50(2), 133–147.

118 Handy, S. (2005), Smart growth and the transportation—land use connection: What does research tell us? International Regional Science Review, 28(2), 146–167

119 Ibid.

to the consolidation of land use, roadway and transit planning[120]. Calgary adopted a policy that limited not only the amount but also the location of CBD parking. The development took place on most of their former surface parking lots in the CBD. They combined limited roadway capacity and high priced, long stay parking rates in order to encourage travel via transit[121]. Calgary's successful light rail system is due partly to their vision of an integrated policy solution and existing economic complementary forces[122].

Light rail is not the development ''silver-bullet'' but it is an important tool in encouraging smart growth. Without an appropriate, transport oriented policy context and urban environment development, revitalisation, intensification and investments are unlikely. However, even with these conditions fulfilled the desired development and densities are not guaranteed[123]. The smart growth strategy that can foster successful implementation of rapid transit projects is also important for improving quality of life, health and environmental sustainability, as this development pattern encourages walking, cycling and improves access to transit[124].

5.5 Light Rail and Land Values

The evidence shows that there is a strong positive connection between Light Rail and land values, even in the pre-construction phase of the transit system. Proximity to transit nodes, smart growth, Transit Orientated Development (TOD) and property tax levels all affect the benefits that light rail can provide. Data from land value sales in Washington County, Oregon indicate that high-density TOD is favoured at planned, future Light Rail stop sites over low density housing[125]. This gives some proof to the fact that planning can be used to influence land development and thereby influence land values before any tracks are actually laid. Whilst those against high-density development site issues such as increased pedestrian traffic and crime, the positive benefits such as increased accessibility and decreased congestion tend to outweigh the negatives (Knapp et al. 2001).

Further evidence shows that plans for Light Rail can increase land values and discourage low-density development that does not make effective use of the identified Light rail stops. Many studies (Hess and Almeida 2007) indicate that land values increase at Light Rail stops as early as 1 year before stop construction or approximately 3 years after plans for the Light Rail are announced.

A study of the Dallas Area Rapid Transit (DART) system in 1999 found that the value added premium for retail spaces near stops is 30% over spaces located further away from Light Rail stops[126]. Another study of a light rail system linking Silicon Valley in Santa Clara County, California, found that development around transit

120 Charles, B., Hubbell, J., McKendrick, N., & Colquhoun, D. (2006), Calgary's CTrain—effective capital utilization. Calgary, ON: Calgary Transit.

121 Ibid.

122 Hubbell, J., & Colquhoun, D. (2006), Light rail transit in Calgary: The first 25 years. Calgary, ON: Calgary Transit.

123 Handy, S. (2005), Smart growth and the transportation—land use connection: What does research tell us? International Regional Science Review, 28(2), 146–167

124 Frank, L., Andresen, M., & Schmid, T. (2004), Obesity relationships with community design, physical activity and time spent in cars. American Journal of Preventive Medicine, 27(2), 87–89.

125 Knapp, G. J., Ding, C., & Hopkins, L. D. (2001), Do plans matter? The effects of light rail plans on land values in station areas. Journal of Planning Education and Research, 21, 32–39.

126 Carver, R., & Duncan, M. (2002), Transit's value-added effects. Transportation Research Record, 1805, 8–15.

nodes was higher than in other areas; these developments included housing, office building complexes and commercial floor space. This transit-oriented development was accompanied by incentives such as tax-exemptions, public assistance with land assembly and rezoning permits for higher than normal densities[127]. In the CBD of San Jose, commercial properties in proximity to Light Rail stops were worth $19/ft^2 ($204/m^2) more than other properties. The study also found that proximity to a rail corridor without nearby access to a stop might have little benefit[128].

Evidence for the benefits of light rail development can be seen in the trend for transit authorities to aggressively purchase areas around potential transit nodes. In 1999 the Washington Metropolitan Area Transit Authority (WMATA)'s long-term lease arrangements near transit nodes lead to 24 joint development projects, and generated $6 million in annual income. These value-added benefits can be captured by the municipality in property taxes[129]. It is fairly evident that all the stakeholders in a transit project stand to benefit financially, socially and environmentally. These benefits are tied to connectivity and accessibility, which comes from stop access and travel time savings. Fixed track systems such as light rail have the largest benefit, especially over bus rapid transit, because they typically do not travel in traffic and operate similar to heavy rail at road crossings[130].

It is important to note that a number of studies have concluded that Light Rail has had little or no effect on land values and property taxes. While these studies are in the minority, it is important to ensure that regions investigating transit as a catalyst for improved quality of life take into consideration a variety factors in addition to land values, in determining the success of its light rail transit system. Land values, quality of life, environmental sustainability and population health are related[131]. When there is a financial benefit to encourage transit oriented developments, health impacts can be realised by promoting the business case for undertaking large infrastructure projects[132].

5.6 Light Rail and Its Effect on Health Outcomes

Light Rail and Obesity

Studies linking obesity with health care costs have established a direct link between these two measures. The World Health Organization (WHO) estimates that where obesity-related diseases are concerned, *"80% of cardiovascular diseases and type 2 diabetes and 40% of cancers could be avoided if major risk factors associated with the environment, were eliminated"*[133]. Public health officials regard the increase in *"chronic disease rates associated with physical inactivity, sedentary lifestyles, overweight and obesity"* as an

[127] IBID

[128] IBID

[129] IBID

[130] IBID

[131] Frank, L., Andresen, M., & Schmid, T. (2004), Obesity relationships with community design, physical activity and time spent in cars. American Journal of Preventive Medicine, 27(2), 87–89.

[132] Frumkin, H. (2002), Urban sprawl and public health. Public Health Reports, 117, 201–217.

133 Metcalfe, O., & Higgins, C. (2009), Healthy public policy—is health impact assessment the cornerstone? Public Health, 123, 296–301.

"epidemic"[134]. The cost of direct health expenses as a result of obesity in the United States is estimated to be $75 billion dollars[135]. When taking into account indirect expenses such as treatment of chronic diseases and loss of work time, the number raises to $1 trillion[136].

According to research estimating the effect of light rail on health care costs[137], light rail plays a part in decreasing these costs. The study measured the increase in activity rates that could occur near transit-oriented developments. When people choose rapid transit over the use of single occupancy vehicles, they walk an average of 30 min more a day than those who drive their car. Therefore, through modelling it was determined that the increased activity level amongst transit users would save $12.6 million in the first nine years of the city of Charlotte, North Carolina's operation of its light rail system[138].

Research conducted by Kelly-Schwartz et al.[139], found a correlation between urban sprawl and occurrence of illness related to sedentary lifestyle for those living further from the urban centre, dependent on car travel[140]. Craig et al. found that urban design elements, which encourage walkable neighbourhoods, have an effect on whether people walk to work[141]. Frank et al. compared obesity rates to car travel hours and found that for each additional hour spent in a car per day correlated to a 6% increase in the probability of being obese[142]. Alternatively, each additional kilometre walked each day was found to reduce the odds of being obese by almost 5%.

Light Rail and its Relationship to Walking

Analysis of access modes to San Francisco Bay Area Rapid Transit (BART) stations and light rail stops in Edmonton, Canada, found that very few people walked farther than 1,750m to reach a stop and that walking accounts for more than 50% of the access mode from distances up to approximately 900m. Beyond that the bus or car becomes the dominant access mode. Another study of BART found that 32% of residents living within 457m of a suburban BART station took transit to work, compared with approximately 5% of residents living further away. The results strongly indicate that walking distance guidelines used for bus stops should not be used for light rail stops[143].

134 Williams, M., & Wright, M. (2007), The impact of the built environment on the health of the population: A review of the literature. Simcoe Muskoka District Health Unit. Retrieved from http://www.simcoemuskokahealth.org/JFY/OurCommunity/healthyplaces/links.aspx.

135 Finkelstein, E. A., Fiebelkorn, I. C., & Wang, G. (2003), National medical spending attributable to overweight and obesity: How much, and who's paying? Health Affairs, W3, 219–226.

136 Adams, K., & Corrigan, J. M. (2003), Priority areas for national action: Transforming health care quality. Washington, DC: National Academy Press

137 Stokes, R. J., MacDonald, J., & Ridgeway, G. (2008), Estimating the effects of light rail transit on health care costs. Health and Place, 14, 45–58.

138 Ibid.

139 Kelly-Schwartz, A. C., Stockard, J., Doyle, S., & Schlossberg, M. (2004), Is sprawl unhealthy? A multilevel analysis of the relationship of metropolitan sprawl to the health of individuals. Journal of Planning Education and Research, 24(2), 184–196.

140 Frank, L., Andresen, M., & Schmid, T. (2004), Obesity relationships with community design, physical activity and time spent in cars. American Journal of Preventive Medicine, 27(2), 87–89.

141 Craig, C., Brownson, C., Cragg, S., & Dunn, A. (2002), Exploring the effect of the environment on physical activity: A study examining walking to work. American Journal of Preventive Medicine, 23, 36–43.

142 Frank, L., Andresen, M., & Schmid, T. (2004), Obesity relationships with community design, physical activity and time spent in cars. American Journal of Preventive Medicine, 27(2), 87–89.

143 www.citiesforpeople.dk

The Gold Coast Rapid Transit is a significant urban transit project that recognises that its success lies substantially with its relationship with the urban environment. The mode, permeability of the corridor, the route and stop locations and ultimately the surrounding precinct are inextricable tied to the success of the project. Underpinning the design of the project has been the City Building vision with its three objectives to achieve an enjoyable whole of journey experience, an attractive and active place experience and the wellbeing, safety, liveability and sustainability of communities through the transit corridor. These are all tied to the quality of the pedestrian environment. To achieve this element alone contributes significantly to all other elements. It also ensures that the communities through the corridor benefit from the system regardless of whether they use it or not. The GCRT provides a useful Australian example of how transit might be planned in the future.

6. ECONOMIC IMPACTS

The following Chapter reviews and assesses the wider or 'macro' economic impacts of the proposal during both the construction and operational phases. It draws on the international research set out in Chapter 5, Government policies and strategies as well as a review of comparable proposal. The Chapter provides the overarching economic implications of the proposal to Sydney and NSW which is followed by a more in depth analysis of the specific impacts likely to be experienced by businesses in the Study Area in Chapters 7 and 8.

6.1 INCREASED TRANSPORT CAPACITY

By 2031 it is forecast that Sydney's population will grow by 1.3 million people and an additional 625,000 jobs would need to be generated over the same period[144]. Of this growth, 16% of all new job growth is anticipated to occur within Central Sydney pressing the importance of better utilizing existing capacity and stimulating additional capacity in the Study Area.

Chapter 3 of this EcIA identified that the number of people living and working in Sydney's CBD is forecast to increase dramatically over the next 35 years (+18,000 residents and +128,000 jobs). At the same time substantial growth is forecast in the suburbs of Surry Hills (+9,700 residents and +5,300 jobs), Kensington and Kingsford (+8,900 residents and +6,300 jobs) and Randwick (+5,500 residents and +14,300 jobs).

With Sydney's transport network almost at peak capacity accommodating this level of growth would be a challenge. Over the next 20 years traffic into the CBD is expected to increase by 31% or 56,600 trips, which is the equivalent of 942 standard buses.

Unless the capacity of Sydney's transport network is increased it is unlikely the City can accommodate the anticipated level of growth in coming years without incurring significant economic, social and environmental costs.

The *NSW Long Term Master Plan* (2012) and *Sydney's Light Rail Future* (2012) have both identified the CSELR between Circular Quay and Randwick/Kingsford as a one of the means to unlock capacity in the system, increase patronage on public transport and reduce traffic congestion in Sydney CBD. With light rail having the same capacity as five buses, combined with 'turn up and go' services running every two to three minutes, it is forecast the CSELR would carry up to 9,000 passengers per hour and result in 220 fewer buses being required during the CBD's morning peak.

The CSELR, along with the North West Rail Link, second harbour rail crossing and Sydney Centre Bus Plan, represent a suite of key actions by the NSW Government that will unlock capacity within Sydney's transport system and enable Sydney to accommodate population and employment growth whilst remaining liveable, productive and competitive for years to come. As outlined in the literature review (Chapter 5) the benefits associated with light rail can be particularly pronounced in areas that are rapidly growing and benefit from

[144] NSW Government Draft Metropolitan Plan for Sydney to 2031, 2013

complementary land use strategies (such as the *NSW Long Term Master Plan* (2012) and the NSW Government Draft Metropolitan Plan for Sydney to 2031, 2013 .

6.2 HOUSING SUPPLY AND DENSITY UPLIFT

In recent years Sydney has experienced its lowest rate of housing growth in 50 years[145] exacerbating the gap between housing demand and supply. According to Deloitte Access Economics, NSW has slumped from contributing more than one third of new housing in Australia to less than a fifth in a single decade, with little indication that this trend will change in the short term. To exemplify this point, between 2007 and 2008 only 15,000 additional dwellings were built in the Sydney Statistical Division in comparison to 32,000 between 1999 and 2000[146]. Housing completions in NSW peaked in 1999-2000 and have since fallen by 47%[147]. Over the same period, private completions across Australia increased by 26% implying that NSW is not keeping pace with other States in terms of housing developments.

The NSW Government recognises that constrained housing supply within Sydney is adversely impacting on housing affordability and the economic competitiveness of NSW. A key objective of the Draft Metropolitan Strategy for Sydney is to improve the affordability of homes by increasing supply to meet market demand. The delivery of new housing will be accelerated through a number of policies including the Urban Activation Precincts program. The draft Strategy states *"the first tranche of Urban Activation Precincts will transform many of Sydney's highly accessible suburbs to improve housing choice and local prosperity".* The draft Strategy identifies that areas suitable for transformative urban renewal and regeneration under the Urban Activation Precincts program – such as Randwick and Anzac Parade South – will be supported by new infrastructure and improvements to public transport.

This approach recognises that higher density development is only attractive and sustainable when integrated with public transport connections that offer a convenient alternative to the private car. The NSW Government's draft Strategy to support urban densification with transport improvements is underpinned by the concept that:

> *"strong connections … can create economic opportunities, reduce congestion, and connect people to a greater range of jobs, educational opportunities and services. These connections make it easier for people to be a part of their local community and can complement sustainable active transport choices like walking and cycling that have environmental and health benefits and contribute to more attractive vibrant communities."*[148]

This approach is consistent with best practice being applied worldwide. Our literature review (Chapter 5) found that:

- Public transport improvements, and more specifically light rail, can drive investment, urban renewal and revitalization along transport corridors and around centres;

[145] Source: Rents to soar as housing crisis worsens, Daily Telegraph March 25, 2009
[146] Source: Metropolitan Strategy Review, Sydney Towards 2036, NSW Government
[147] Source: NSW Treasury
[148] NSW Government Draft Metropolitan Plan for Sydney to 2031, 2013

- Light rail can support the intensification of residential densities by decreasing car dependency and traffic generation whilst increasing access to housing, jobs, services, and shops;
- The introduction of the light rail is a catalyst for urban renewal by rejuvenating declining areas and attracting new clusters of development around station sites; and
- High-density development when supported by convenient, safe and accessible light rail can have positive impacts to quality of life of residents.

The CSELR would support the objectives of the NSW Government's draft Metropolitan Plan for Sydney to improve housing supply, choice and affordability. It would also improve the work/life balance of existing and new residents that live on or adjacent to the CSELR route by providing improved access to homes, jobs, services and recreation facilities. Finally, the CSELR would drive improvements to amenity and livability through public domain upgrades and the activation of streets and public spaces. Businesses, residents and visitors alike would benefit from streetscape improvements made to George Street, Surry Hills, Kingsford and Randwick including the removal of traffic and congestion, pedestrianisation of George Street, improvements to paving, lighting, furniture and street tree planting.

6.3 The Economic Cost of Congestion

As existing public transport in the City of Sydney LGA and inner city areas becomes increasingly constrained (particularly during peak periods) travel by private car potentially becomes more attractive, despite mounting road congestion.

The effect of increased road congestion has a negative impact to the attraction of Sydney as a place to invest in and to operate a business as a result of:

- Increased travel times and therefore business service times, transportation costs and vehicle operating costs;
- Impeded staff access and therefore access to workforce and work related skills; and
- The reduced attraction of Sydney as a place to base a business and invest.

The factors listed above would or could influence the decision of global organisations to base their headquarters within Sydney. Congestion also has a personal cost through time delays, vehicle operating costs and stress.

To quantify the economic cost of congestion, a study was commissioned by the Council of Australian Governments (COAG) and undertaken by the Bureau of Transport and Regional Economics (BTRE) . The study sought to estimate the average costs incurred as a result of congestion to trip travel times and how they would vary over time. The study also assessed costs relating to air quality, travel time variability, vehicle engine operation and efficiency.

The study found that the 'avoidable' cost of congestion to Australian Capital Cities (as of 2005), was in the order of $9.4 billion. This figure could be broken down into:

- $3.5 billion in private time costs (trip delay plus variability);
- $3.6 billion in business time costs (trip delay plus variability);
- $1.2 billion in extra vehicle operating costs; and
- $1.1 billion in extra air pollution damage costs.

By city, Sydney had the highest estimated avoidable cost of congestion of $3.5 billion followed by Melbourne at $3.0 billion.

Forecasting the growth in cost, the BTRE estimated that the avoidable cost of congestion would more than double over the 15-year period between 2005 and 2020 to $20.4 billion. Over $9 billion of this cost would be related to business vehicle use. For Sydney alone, the cost of avoidable congestion was forecast to increase to $7.8 billion by 2020.

The BTRE study also identified the additional flow on costs of congestion that were not assessed as part of the study. Relevant to this assessment were the likely costs incurred by businesses having to re-locate or close due to restrictions to their operations as a result of congestion. A cost of congestion to business includes reduced business productivity. Additional social costs that were identified, but not quantified by the BTRE study, related to increasing housing costs (people seeking to live in closer proximity to city centres) as well as widespread stress and irritation from having to cope with heavy traffic levels.

In relation to the Study Area, congestion severely impacts the amenity and experience of pedestrians, businesses and public/private transport uses along George Street. During the morning peak (7am-9am) George Street carries 290 buses and by 2015 this is expected to increase to 350[149]. Similarly buses servicing the major trip generators around Moore Park (the Entertainment Quarter, SCG and Sydney Football Stadium), Kingsford and Randwick (Royal Randwick Racecourse and the Health and Education Precinct) are often operating at capacity with less than a third of services arriving in the CBD within 2 minutes of the scheduled time[150].

The literature review undertaken as part of this EcIA identified that upon operation light rail can result in various *cost savings* and *efficiency gains*, including congestion reduction as well as road and parking cost savings, consumer savings, reduced crash damages, and improved public health. As such it is expected the CSELR proposal would help to address the congestion issues within the Study Area by:

- Increasing capacity on Sydney's transport network;
- Reducing the need for a large number of bus services and private car usage;
- Reducing congestion and improving amenity and pedestrian safety across the Study Area; and

[149] Transport for NSW, CBD and South East Light Rail Project State Significant Infrastructure Application, June 2013

[150] Ibid

- Reducing the potential economic cost of congestion to business operations as well as the socioeconomic cost to factors such as mental and physical health and wellbeing.

Notwithstanding the likely benefits listed above upon operation, the CSELR would need to be carefully managed during its construction phase to ensure that the works do not have a significant knock on impact to traffic congestion in the Study Area. This would need to be managed and mitigated through the CSELR's Construction Environmental Management Plan (CEMP).

6.4 TOURISM

The considerable number of visitors to Sydney and NSW annually described in Chapter 3, has a positive flow-on effect to the local, State and National economy. Tourism generates over 159,000 direct jobs and a further 120,000 indirect jobs in NSW, with tourism contributing around $30.5 billion to the NSW economy per annum[151].

In the Sydney Metropolitan Region over 26,800 businesses are tourism based with a further 98,500 related to the tourism industry[152]. There is also an important relationship between Sydney's role as global city and the business tourist industry, with business related travellers spending one third of all nights spent in Australia, in Sydney.

The attraction of Sydney as a place to visit for leisure or business, relates however to more than its iconic attractions. The lifestyle attributes of Sydney is an important factor as is the ease of moving around the City. Transport systems such as the CSELR can provide clear and user-friendly travel options for visitors.

Additional reasons why visitors to a City may prefer rail (including light rail) networks as a means of moving around a city include:

- The ability to easily compare a light rail system to similar transport infrastructure in other international cities;
- The comparative ease with which tourists can understand the direction of travel or a route network;
- The frequency of service; and
- The price point – cheaper than a taxi yet more readily understood than a bus network.

The benefits of light rail to both domestic and international tourism also relates to the extended hours of service and the support this can bring to Sydney's night time economy. A stronger night time economy is not only beneficial for economic reasons but also creates activity and excitement in a city centre improving its sense of safety and lifestyle appeal.

[151] State Tourism Satellite Accounts, 2010-2011; TRA at Tourism New South Wales - www.tourism.nsw.gov.au

[152] Regional Tourism Profiles NSW 2007, Tourism Australia www.tra.australia.com

6.5 LAND VALUES

One economic implication of the proposal relates to land value. Land values have a tendency to move in response to all positive and negative influences in a given area. As such they can be seen as a barometer of the net effectiveness of various changes.

With respect to the impact of rail infrastructure to land value, Vladimir Bajic found that when the metro was introduced in Toronto, Canada *"the direct savings in commuting costs have been capitalized into housing values"*[153]. This research suggests that land values are likely to increase in response to transport infrastructure improvements in inner city areas such as Sydney CBD, Haymarket, Surry Hills in addition to Randwick and Kingsford as people are willing to pay more to live in accessible locations. The intensity of the effect will be related to the net transport benefit resulting from the new system[154].

Tse et al also found a general improvement in land values in close proximity to rail stations in Hong Kong[155] whilst Carver and Duncan found that retail capital values could benefit notably (as much as 30%) in locations close to light rail stops.

6.5.1 HOW FAR WOULD THE IMPACTS OF CSELR EXTEND?

The impact of the proposal on land values would most probably extend as far as a person is likely to travel by foot to reach a CSELR Stop. It would diminish with distance and be capped by the maximum walking time a person could be expected to walk before selecting some other form of transport. The importance of walking times will be particularly apparent in the Study Area given that it already enjoys a high level of walking as a means of travel (as discussed in Chapter 3).

In this regard some studies have observed measurable effects to land values up to 1.5km from infrastructure, however 10 minutes walking time is the more likely limit. Experience suggests that the effect on land values would begin as soon as the community is reasonably confident that the CSELR would proceed. This is reinforced by the literature in Chapter 5 which found that even in the pre-construction phase there can be a strong correlation between light rail transit and land values[156]. However, the effects would not be fully realised until sometime after the proposal was completed and the community had time to appreciate the extent of benefits.

This means that improvements in land value would be likely to occur from the time of the announcement of the CSELR. However, it could be anticipated that property prices would not completely absorb the effect of the CSELR until perhaps 2-3 years after its commissioning.

[153] Bajic, V. (1983). "The Effects of a New Subway Line on Housing Prices in Metropolitan Toronto." Urban Studies 20(147-158).

[154] Carroll, T. M., T. M. Clauretie, et al. (1996). "Living next to Godliness: Residential Property Values and Churches." Journal of Real Estate Finance and Economics.

[155] Tse, R. Y. C., Y. C. Lee, et al. (1997). "Effects of Railway on House Prices in Hong Kong." Australian Land Economics Review 3(1): 33-35.

[156] Hess and Almeida 2007

Some studies[157] relating to other forms of infrastructure have also found that the level of charges for use can negate the positive influence on land values. By way of example, land values in response to some new motorways have had only minor or delayed impacts due to the high perceived cost of use. However for the purposes of this assessment we have assumed that the cost of travelling on the CSELR would be comparable to other public transport modes. Accordingly, it is anticipated that the cost of use would not have a significant impact on negating land value increases.

6.5.2 WHO WOULD BENEFIT FROM CSELR?

The economic benefits of changing land values brought about by the CSELR would be distributed between owner / occupiers and landowners. The economic value of commuting benefits would be capitalised into land values in areas along the route corridor including Surry Hills, Randwick, Haymarket and Kingsford. Therefore the net economic benefit to residents would be experienced as a change to land value and not as a direct commuting benefit. This means that the eventual economic beneficiaries would be those who own the affected properties at the time the benefit is capitalised. Notwithstanding these benefits, it may be argued that existing tenants could be adversely affected on account of greater rents.

The impact on the Sydney CBD component of the CSELR would be more complex to estimate. The CBD is already served by buses and the heavy rail system. Whilst the CSELR would ease demand for these transport modes, it is understood that it would not produce substantial travel time savings. For this reason the section of the CSELR from Central Station to Circular Quay (with the exception of the George Street pedestrianised zone as discussed in Section 6.5.3 below) may not experience a significant change in land values as a result of direct travel time savings alone.

Indirectly, the provision of the CSELR would however enable Sydney CBD to develop further by delaying the likely prospect of the existing transport systems exceeding capacity. This means that the benefit of the CSELR would be considered through its action in allowing the CBD to continue to grow rather than the alternative where its absence could result in Sydney CBD becoming stunted as a result of a limited transport system. The question for the CBD may therefore not so much be how land values would increase as a result of the CSELR, but rather how they could stall in the future in the 'no change scenario'.

6.5.3 WHO WOULD BENEFIT FROM PEDESTRIANISATION?

Improvements to land value benefits can also be gained through the component of the proposal that proposes to pedestrianise George Street between Hunter and Bathurst Streets. These would largely be a result of:

- The visual and physical amenity of the public domain;
- Improved access and connectivity for people with a range of mobility's; and
- Increased activity and sense of safety.

[157] McMillen, D.P. & McDonald, J. 2004, 'Reaction of House Prices to a New Rapid Transit Line: Chicago's Midway Line 1983 – 1999' Real Estate Economics, vol. 32, no. 3, pg 463 – 487

A Study[158] undertaken for the City of Sydney with respect to the economic benefits of pedestrianising George Street[159] found that the potential uplift in retail property capital values alone could be in the order of $428m (+14%) by 2026.

The majority of this benefit (64%) would be attributable to the increase in the rental potential of properties whilst the remaining portion (36%) would relate to lower capitalisation rates owing to the reduced risk associated with premium locations.

To support these estimates and the economic case for the pedestrianisation of parts of George Street, a comparison was made of the capital value of other centres in Australia's capital cities as follows:

- Bourke Street Mall, Melbourne – which enjoys a 150% to 400% rental premium and very tight yields compared to the rest of Melbourne CBD;
- Queen Street Mall, Brisbane – which enjoys 200% - 300% rental premium compared to the rest of Brisbane CBD;
- Hay Street, Perth – which enjoys a 200% to 400% rental premium and very tight yields compared to the rest of Perth CBD; and
- Rundle Mall, Adelaide – which enjoys a 200% to 300% rental premium and very tight yields compared to the rest of Adelaide CBD.

For Sydney CBD itself, Pitt Street Mall achieves the highest rents and capital values with the latter ranging between $10,000/sqm and $35,000/sqm[160]. It is worth noting that Pitt Street Mall is pedestrianised in its own right.

The Study subsequently concluded that the pedestrianisation of parts of George Street would be a means for Sydney to strengthen its position at the *"peak of Sydney's retail experience"* and as *"a world class boulevard"*[161].

6.6 AGGLOMERATION

Agglomeration relates to the concentration of related or similar activities within a common geographic area such as a city centre. Sydney CBD has grown to support the agglomeration of economic activity through an increase in the density of the built environment and the associated clustering of industries. Improvements to the existing Sydney CBD transport network would enhance workforce accessibility thereby allowing for greater building densities and agglomeration.

[158] George Street Pedestrianisation, Retail and Economic Benefit Appraisal, MacroPlanDimasi January 2013

[159] It is important to note that the Study calculated the benefits on the assumption that Park to Hunter Street would be pedestrianised. The Project proposes however to pedestrianise from Bathurst Street to Hunter Street and therefore the potential benefits by this calculation are likely to be lower.

[160] Ibid.

[161] Ibid.

As discussed in Chapter 3, Sydney CBD has developed a strong cluster of businesses in the finance, telecommunications, scientific, technical, legal, retail and property industries. These industries seek to co-locate within Sydney CBD despite its comparatively higher cost of space because of the productivity benefits of agglomeration.

The literature review undertaken as part of this EcIA established that productivity is one of the main effects of agglomeration. More specifically, the review discussed how investment in public transport can:

- Lead to higher density employment and increase urban productivity by enabling agglomeration economies; and
- Bring economic agents closer, increasing the potential for interaction and therefore enhance the benefits of agglomeration economies.

Other empirical research in the UK and Europe has tested and ratified the positive relationship between agglomeration and economic benefits to businesses. Controlling for other factors, these studies have found that business productivity increases in line with city density.

The economic benefits of agglomeration may be a result of:

- Improved opportunities to network;
- Increased innovation and service sophistication;
- Cost savings through input sharing and economies of scale;
- Knowledge and technological sharing/spillovers;
- Labour market pooling;
- The ability to specialise and use other services to complement business activity; and
- A larger available customer and supplier market.

The consumer also benefits from the economic effect of agglomeration through better access to choices and lower prices as a result of price competition. The NSW State Government recognises the economic importance of agglomeration and the need to cluster businesses in strategic centres. The success of strategic centres (such as Sydney CBD) and their ability to support the agglomeration of industries relies however on their ability to increase densities and thereby the integration of land use with workforce transport.

The CSELR would therefore play an important role (as part of the wider public transport system in inner Sydney) in supporting the densification of the CBD and areas nominated as the Urban Activation Precincts. This would in turn enhance Sydney CBD's capacity to support the agglomeration of businesses, the associated economic benefits to private business and consumers in addition to Sydney's role as a global city.

6.7 BENEFITS OF PUBLIC INFRASTRUCTURE INVESTMENT

Infrastructure has an important role to play in determining the level of economic activity and productivity of a metropolitan economy. A substantial amount of economic activity in cities relies on a range of infrastructure including transport, telecommunication, water and energy networks. Furthermore, infrastructure can have a positive impact on an economy's productivity which in turn can improve economic output and increase employment[162].

The nexus between economic growth, greater productivity and public infrastructure provision has been well documented. Research undertaken by Otto and Voss quantified the relationship between public infrastructure provision and private production. The research stemmed from economic theory that public investment in infrastructure projects, such as electricity grids, water supply and transportation systems (i.e. light rail) could have a positive flow on effect to private production and economies. Some forms of public infrastructure (such as education and health care) can have additional external or social benefits, that is, benefits to society beyond those accrued to the individuals or firms immediately involved.

Otto and Voss' research stemmed from debate in the US that the reduction in government infrastructure spending and investment had been in-part responsible for the observed slowdown in productivity growth. The potential correlation between these factors was applied to an Australian context, to determine whether a similar decline in public infrastructure investment was sacrificing future economic growth in Australia.

> *"Well targeted investment in physical infrastructure can increase productivity by both increasing the capital stock and improving the efficiency of other factors of production."*
>
> Source: Budget Statement 4: Boosting Australia's Productivity Capacity: The Role of Infrastructure and Skills. Canberra.

Whilst the research by Otto and Voss advocated further detailed research and testing, it found that positive economic effects and enhanced production could be gained by private enterprises as a result of public infrastructure. Furthermore these supply side effects could be accrued when the economy was strong or close to full employment capacity.

Quantifying this, Otto and Voss[163] found that with everything else constant, a 1% increase in public capital stock could lead to a 0.4% increase in private output. In fact the Otto and Voss research results implied that *"the marginal returns to additional investment in public infrastructure capital are very high, and significantly higher than the returns to additional investment in private capital".* These findings are significant and are presented by many economists as justification for capital expenditure on infrastructure projects.

[162] The Allen Consulting Group, Nation Building Projects for Australia's Capital Cities Securing our cities' future Second Draft Report to the Council of Capital City Lord Mayors 25 March 2013

[163] Otto, G and Voss, G (1995) Public Infrastructure and Private Production

> *"Infrastructure is the critical enabler of productivity."*
>
> Source: The Hon Anthony Albanese, Infrastructure: Driving Productivity – Address to the Sydney Institute (2013)

Expenditure on infrastructure projects is also seen as a key means to improve Australia's productivity which is essential to improving the countries growth and standard of living. The rate of Australia's productivity growth has declined over the last decade and while the causes behind this a varied, costs imposed by limited infrastructure capacity (e.g. travel and freight delays on roads and at ports, reduced production from water and energy limitations) has not helped[164]. A report by Infrastructure Australia found that the rate of investment in, and modernisation of, Australia's infrastructure is likely to be a key determinant of national productivity[165].

> *"Productivity isn't everything, but in the long run it is almost everything."*
>
> Source: Paul Krugman, The Age of Diminished Expectations.

The NSW Long Term Transport Master Plan acknowledges that transport infrastructure generates economic value and that nearly all economic activity in the State depends on transport at some level. As such one of the Plan's eight objectives for the NSW transport system is to:

> ***Support economic growth and productivity*** *– by providing a transport system that responds directly to customer needs, is more efficient, increases freight efficiency and improves the connectivity and accessibility of people to other people, opportunities, goods and services*

The Long Term Transport Master Plan identifies the CSELR as one of the key projects to achieving this objective in Sydney.

6.8 EMPLOYMENT

The CSELR would generate employment in two ways – through construction and through operation. This section quantifies and discusses the direct and indirect employment benefits of the proposal using the following assumptions:

- A base year of 2014 for the CSELR start up;
- A 5-6 year construction period (from 2014 to 2020); and
- Operation commencing in 2020.

[164] Infrastructure Australia, Communicating the Imperative for Action, a Report to COAG, June 2011

[165] Ibid

Hill PDA has estimated the number of direct and indirect jobs generated as a result of the proposed 6 year construction period. Direct jobs were defined as those relating to the proposal's development through commissioning, operating and managing the facility. Direct jobs that would be generated include onsite labour, supervision, professional services and project managers.

Indirect jobs were defined as jobs (within Australia) that support the proposal through the provision of goods and services such as offsite manufacturing.

Major infrastructure projects can also have flow on or indirect secondary benefits to job generation through the raw material supply chain and jobs created as a result of the new infrastructure (such as food and beverage services, public facilities and services and related infrastructure projects). Secondary indirect jobs were not however included in the job generation calculations.

In summary, Hill PDA estimates that based on a 6 year proposal construction period, 4,562 direct (onsite) job years[166] would be created between 2014-2020, which is the equivalent to 760 jobs per annum. Furthermore, approximately 6,103 indirect (off site) job years would be generated, equivalent to 1,017 jobs per annum based on a similar project period.

Transport for NSW has estimated approximately 203 jobs would be created per annum to support the CSELR's operation and maintenance[167].

6.9 Economic Multipliers

The construction industry is a significant component of the economy accounting for 7.3% of Gross Domestic Product (GDP) and employing almost one million workers across Australia[168]. The industry has strong linkages with other sectors, so its impacts on the economy go further than the direct contribution of construction. Multipliers refer to the level of additional economic activity generated by a source industry.

There are two types of multipliers:

- **Production induced**: which is made up of:
  - first round effect: which is all outputs and employment required to produce the inputs for construction; and
  - an industrial support effect: which is the induced extra output and employment from all industries to support the production of the first round effect; and
- **Consumption induced**: which relates to the demand for additional goods and services due to increased spending by the wage and salary earners across all industries arising from employment.

[166] One job year relates to one job for 12 months

[167] Figure has been provided by Transport for NSW (CBD and South East Light Rail Draft Operations Advisor Initial Light Rail Operational Services Plan , 24 May 2013). It is noted however that a cumulative impact of the project could be a reduction in bus services and the associated jobs.

[168] Source: IBIS World Construction Industry Report 2011

The source of the multipliers adopted in this report is ABS Australian National Accounts: Input-Output Tables 2008-09 (ABS Pub: 5209.0).

For the purposes of this assessment we have estimated the Capital Investment Value (CIV) of the proposed CSELR at $1.6 billion. Table 15 below shows the estimated first round effects, industrial support effects, and consumption induced multiplier effects at rates of $0.646, $0.673 and $0.989 respectively to every dollar of construction.

Table 15 - Construction Multiplier Effect

	Direct Effects	Production Induced Effects		Consumption Induced Effects	Total
		First Round Effects	Industrial Support Effects		
Output multipliers	1	0.646	0.673	0.989	3.309
Output ($million)	$1,600m	$1,034m	$1,077m	$1,582m	$5,294m

Source: Data Sources: Australian National Accounts: Input-Output Tables 2008-09 (5209.0), Price Index of the Output of the Building Industry - Producer Price Indexes (6427.0), CPI All Groups - RBA Bulletin (Table G2) These multipliers are based on both the building and non-building industry and therefore the effects are an approximation only.

The table shows that $1.6 billion of CIV would generate a further $2.1 billion of activity in production induced effects and $1.6 billion in consumption induced effects. Total economic activity generated by the construction of the proposed development would be approximately $5.3 billion.

It is important to note however when reviewing these estimates that multiplier effects have a national impact and not necessarily a local impact. The ABS notes that *"Care is needed in interpreting multiplier effects; their theoretical basis produces estimates which somewhat overstate the actual impacts in terms of output and employment. Nevertheless, the estimates illustrate the high flow-on effects of construction activity to the rest of the economy. Clearly, through its multipliers, construction activity has a high impact on the economy."*[169]

[169] Source: ABS Year Book 2002 - The Construction Industry's Linkages with the Economy

6.10 SUMMARY OF IMPACTS

The following table provides a summary of the potential economic impacts discussed in this Chapter.

Table 16 - Summary of Potential Macro-economic Impacts during Construction and Operation

Potential Impact - During Construction Main Effects	*Potential Mitigation*
Employment generation	
Slight Positive Based on a 5-6 year project construction period, 4,562 direct (onsite) job years would be created between 2014-2020 equivalent to 651 jobs per annum. Furthermore, approximately 6,103 indirect (off site) job years would be generated, equivalent to 872 jobs per annum based on a similar project period. Approximately 203 jobs would be created per annum to support the CSELR's operation and maintenance.	N/A
Economic multipliers	
Moderate Positive The CSELR, with a CIV of $1.6 billion would generate a further $2.1 billion of activity in production induced effects and $1.6 billion in consumption induced effects. Total economic activity generated by the construction of the proposed development would be approximately $5.3 billion.	N/A
Tourism	
Slight Negative – particularly within key tourist and visitor destinations such as Circular Quay, parts of George Street and the Rocks owing to noise and amenity impacts from construction works as well as changes to transport access.	Access Plan as part of a broader Construction Environmental Management Plan (please see Chapter 8 for an explanation of what this plan would include).
Congestion	
Moderate Negative – owing to work occurring within Sydney's major transport and access corridors such as Anzac Parade and George Street resulting in the redirection of traffic.	Detailed transport and traffic access plans that aim to minimise congestions and flow on impacts as part of the Construction Environmental Management Plan

Potential Impact - During Operation	*Potential Mitigation*
Increased capacity	
Moderate Positive The CSELR would unlock capacity within Sydney's transport system and enable Sydney to accommodate population and employment growth whilst remaining liveable, productive and competitive for years to come.	N/A
Housing supply and density uplift	
Moderate Positive The CSELR would support the NSW Government's policy objective to improve housing supply, choice and affordability providing improved access to homes, jobs, services and recreation facilities. Finally, the CSELR would drive improvements to amenity and liveability through public domain upgrades and the activation of streets and public spaces.	N/A
Congestion	
Moderate Positive Enhanced opportunities for safe, rapid and reliable public transport travel would encourage a modal shift away from private car use and therefore assist in reducing road and transport related congestion.	N/A
Tourism	
Slight Positive As a result of a high quality, accessible and reliable means of moving around Sydney (that can be easily understood by visitors) visitors experience would be made more convenient.	N/A
Land values	
Slight Positive Land values surrounding stops would in most cases benefit from the operation of the CSELR and pedestrianising parts of George Street.	N/A
Agglomeration	
Moderate Positive The CSELR would therefore play an important role (as part of the wider public transport system in inner Sydney) in supporting the densification of the CBD and areas nominated as the Urban Activation Precincts. This would in turn enhance Sydney CBD's capacity to support the agglomeration of businesses, the associated economic benefits to private business and consumers in addition to Sydney's role as a global city.	N/A

Potential Impact - During Operation	*Potential Mitigation*
Public infrastructure investment	
Slight Positive A positive flow on benefit to the function and operation of private business and its productivity.	N/A

7. ECONOMIC IMPACTS TO BUSINESSES

The following Chapter provides an overview of the more specific impacts likely to be experienced by businesses within the Study Area during both the construction and operational phases of the proposal. It draws on the comments and information gathered by the surveys along with information gained through interviews with Stakeholders and an appreciation of the Study Area. Chapter 8 follows on from this Chapter to investigate how these more specific impacts influence each Precinct.

7.1 THE CONSTRUCTION PHASE – LIKELY NEGATIVE IMPACTS

The following section profiles some of the likely impacts during the construction phase across the Study Area.

Servicing and Deliveries: one of the key challenges identified for the construction phase relates to business deliveries and servicing. Businesses rely on deliveries for products to sell and to inturn products to distribute as well as services such as refuse collection. These activities are often required to occur daily, and in some cases, multiple times a day. It therefore follows that temporary street closures, the relocation / removal of car parking along the street frontage and the location of construction sites could collectively restrict and hinder servicing and delivery opportunities across each of the five Precincts resulting in time and vehicle related costs as well as lost revenue for businesses.

These concerns were identified by 74% of businesses surveyed with a further 4% being unsure of the potential impacts. In light of these concerns, Transport for NSW and the City of Sydney have been proactively identifying means to mitigate the impacts and where possible improve existing outcomes to the benefit of businesses and the efficient operation of Sydney as a whole. In this regard it is recognised that proactive solutions need to be location specific and in many cases, site specific.

Within the City Centre Precinct, the City of Sydney has implemented a policy over time to minimise the number of crossovers and delivery docks onto George Street. Notwithstanding this, a small number of delivery points remain including those that service Myer Department Store (also used by Westfield and other businesses) as well as the Hilton Hotel, Hunter Connection, No.1 Martin Place (i.e. the Westin) and 420 George Street (Mid-City Centre and Commercial uses).

Access to these key tenants and economic drivers for Sydney would need to be retained and managed during all phases of development. Where possible alternative access points, basement level tunnels or controlled access through the construction site located along George Street are being considered to ensure these businesses do not incur an unreasonable level of impact. Access arrangements are also being considered for the operational phases of the proposal whereby improvements to existing arrangements may even be achieved by allowing deliveries from George Street during controlled periods i.e. between 5am and 7pm which is presently not possible owing to the designated bus lanes.

Challenges could also arise for the City Centre Precinct with respect to the spill over effect of street closures to businesses located in connecting streets to George, requiring access via George Street to their servicing areas. Where possible during construction George Street would continue to provide vehicle connectivity across George Street in an east west direction, the existing rear lanes to properties for servicing would be prioritised and priority measures would be put in place for loading and unloading.

For the Surry Hills Precinct, which has over 100 existing businesses[170], servicing and deliveries would be problematic owing to the narrow character of Devonshire Street and the nature of the surrounding street network. Careful planning and ongoing engagement would be required to minimise the level of impact to businesses in these areas similar to those in the Kensington / Kingsford Precinct and Randwick Precinct which collectively have over 400 businesses along the route alignment and have limited opportunities in some cases for alternative servicing and delivery access.

Mitigation measures in these locations could relate to the use of smaller delivery vehicles and priority loading and unloading areas (as already implemented in dense inner city areas with restricted delivery access such as Potts Point). In each of these Precincts bespoke measures would need to be designed in consultation with local businesses. Once implemented, they would need to be reviewed and managed in accordance with an ongoing Access Plan which would also:

- Identify, map and sign appropriate alternate routes, access periods or arrangements for businesses and landowners affected by the proposal:
- Implement and monitor agreed measures to minimise the impacts and disruption to business and property access and servicing during all stages of the construction period and the Project's operation;
- Effectively communicate access arrangements to businesses, landowners and other interests in the Study Area; and
- Be implemented, managed and monitored by an Access Liaison Group comprising of representatives of the City of Sydney, the City of Randwick, Transport for NSW and businesses within the Study Area.

Parking: studies estimate that there are 1,020 on street car parking spaces within the CSELR route corridor of which 956 will be influenced[171] by the construction of the CSELR. Concerns regarding car parking during the construction phase were raised by 66% of respondents to the snapshot business survey. More specifically over 57% of respondents to the snapshot survey identified the potential negative impacts associated with the removal of street level car parking during construction. This was identified as having a potential impact to opportunities for deliveries and servicing along with parking convenience for workers, clients and customers potentially leading to decisions by customers / clients to use an alternative service or visit a different business.

[170] Estimate provided by Transport NSW 2013

[171] Booz and Company and AECOM, Transport Operations Report May 2013

To build and operate the CSELR, it will be necessary to remove street front car parking in locations such as Devonshire Street and along parts of Anzac Parade. This change would be likely to have the greatest impact to businesses such as convenience stores that rely on customer access along with uses that have less mobile customers and clients such as child care centres and medical centres / medical specialists. It would also be likely to have a notable impact to centres such as Kingsford and Kensington Centres that rely on passing trade or the convenience of street front parking for local trade.

These concerns would need to be addressed through a range of parking management measures discussed further in Chapter 8 through the life of the proposal.

Noise, Vibration and Dust: a noticeable level of noise is likely to be generated during the construction phase of the proposal along the route corridor and around construction compounds (i.e. Belmore Park and Ward Park).

Whilst the background noise levels in the Study Area are already considered higher than many locations in Sydney (particularly in the CBD and town centre locations) noise generated during the construction process has the potential to negatively affect employee productivity, interaction with clients and workplace ambience. It can also affect the function of services, especially those that are dependent on a serene environment (such as beauticians or outdoor dining areas).

Concerns regarding noise, vibration and dust impacts were raised by 85% of business survey respondents. Such concerns and potential impacts would need to be addressed through the Construction Environmental Management Plan, in consultation with businesses and reviewed regularly throughout the construction phase to ensure that adverse impacts to businesses are not unreasonable and minimised wherever possible.

With respect to vibration across the Study Area, the Noise and Vibration Assessment undertaken for the Project identified three main categories of ground-borne vibration impacts being: human comfort (disturbance); impacts on building contents and structural damage. The Study explains that people can detect floor vibration at levels well below those likely to cause damage to building content or affect the operation of typical buildings and accordingly schemes are designed to address human comfort levels.

The Noise and Vibration Assessment found that there were no likely exceedences with respect to human comfort levels as a result of the Project along the route alignment. There was however some potential for exceedence in locations with vibration sensitive equipment (i.e. hospitals, medical practices, research centres) that would need to be mitigated through measures in the Construction Environmental Management Plan.

With respect to the Randwick Stabling Yard and Rozelle Maintenance Depot, the Noise and Vibration Assessment recommended the design of an acoustic shed to control noise to receptors. Where the recommended measures are implemented in full, operational noise is predicted to comply with the NSW Industrial Noise Policy. In some locations the proposed substations would also require noise shielding or enclosure.

Customer Access / Passing Trade: the construction phase of the proposal would result in changes to vehicle and pedestrian flows that could influence the level of trade passing businesses and subsequent

customers and sales. Some businesses could benefit as trade is re-directed towards their business (i.e. through pedestrian or traffic diversions) whilst others might not as traffic is diverted away or construction hoardings reduce the ease of access to / visibility of their business.

This mixed outcome was reflected by the results of the snapshot business survey whereby 58% of respondents anticipated the proposal would have an adverse impact to customer access by walking during the construction phase whilst 30% identified no impact, 8% were unsure and 4% identified a potential benefit. These factors should be considered as part of the broader Construction Management Environmental Plan for the proposal and in accordance with an Access Plan.

Traffic Congestion and Travel Times: impacts to businesses as a result of traffic delays and congestion may be both direct and indirect. Businesses may be directly affected as a result of a delayed or hindered access to work places or servicing areas owing to local traffic constraints and congestion. A business may be indirectly affected by increased traffic and therefore travel times for staff or deliveries on major thoroughfares such as Anzac Parade owing to construction works.

As a consequence the proposal could have an adverse impact to travel times with 77% of respondents identifying that traffic congestion during construction would be likely to have an adverse impact to their business. With respect to staff travel times, 56% of respondents identified the proposal as having the potential to have an adverse impact. To address these challenges, an Access Plan should be prepared in co-operation with affected businesses and form part of the broader Construction Management Environmental Plan.

Vehicle Operating Costs: owing to potential disruptions to travel / route redirections and extended travel times, businesses could incur an increase in vehicle operating costs. This would be a particular issue for service and delivery based businesses (i.e. couriers or distributors) in more congested parts of the Study Area such as the CBD and Devonshire Street.

Loss of Power and Utilities: this was a concern voiced by some businesses as a result of accidental or planned shutdowns of electricity or other utilities to enable construction works. Whilst significant advance notice would be given to all businesses of a power or utility shutdown, accidental events would be more difficult to manage. All reasonable endeavours would be undertaken by Transport for NSW and its contractors however to avoid the latter in accordance with the Construction Management Environmental Plan.

Staff Recruitment: the amenity and accessibility of a working environment are factors that can support the successful recruitment and retention of staff. In this regard, the snapshot business survey identified that 38% of businesses anticipated a negative impact to staff recruitment and retention during the construction process. Notwithstanding this, 53% of businesses identified that there would be no effect and 2% identified a potential benefit (the latter response being a likely result of the future prospect of enhanced transport accessibility).

Visual Amenity: construction sites and disturbances have the potential to negatively affect the visual and aesthetic amenity of locations within the Study Area such as the Rocks, Ward Park, Belmore Park and

High Cross Park. A reduction in the quality of these environments and their amenity value could influence the number of visitors to these locations having an economic impact to local businesses dependent on passing trade and tourism such as cafes, newsagents and clothing stores.

Business Turnover: the cumulative effect of elements of the construction phase could have an adverse impact to business turnover which could in turn lead to the closure of some businesses in the Study Area that were already experiencing viability challenges. In order to minimise this potential, it would be important from the outset to understand the likely impacts so as to distinguish genuine impacts directly resulting from the proposal from the common business challenges and thereby closures resulting from the proposal and its construction impacts as opposed to the normal turnover rate for new businesses.

Furthermore as identified by the City of Sydney, adverse impacts to business turnover and viability may be minimised in some instances where businesses can tailor their products to the demands generated by such a major construction process (i.e. demand for food and drink services by construction workers). Examples and methods of how businesses could make these changes and adapt to the conditions experienced during the construction phase could be provided in the Business and Landowner Engagement and Management Plan to reduce the scope of the impact and the potential for net benefits.

Property Acquisition: whilst it is not envisaged at this stage that it would be necessary to acquire any business properties to facilitate the proposal, some private residential properties are likely to be required (i.e. Olivia Gardens and a private dwelling in Parkham Place). This would create disturbances and costs for existing residents / property owners. To minimise these impacts Transport for NSW would however use best endeavours to acquire any property through negotiation and purchase or lease rather than compulsory acquisition. Should any property need to be acquired it would be acquired in accordance with Section 55 (a) – (f) of the Land Acquisition (Just Terms Compensation) Act 1991. This means that any property owners affected by the proposal would not only be paid fair market value, but other costs and losses such as disturbances to business operation due to relocation. This approach would aim to address any potential adverse economic impacts.

In order to reduce the potential adverse impacts of the proposal, businesses identified the importance of prior notification, ongoing engagement and a preference for a shorter yet more intensive construction period as opposed to longer, drawn out works. Completing works within agreed timeframes was an important factor in allowing businesses to sufficiently plan for and survive likely impacts.

In addition many of the identified impacts could be reduced through proactive actions such as construction site controls, way finding, improvements to access and business relocations prior to works commencing. Detailed and early consultation with businesses concerning the proposal, its construction programme and business management techniques were also identified as ways to minimise business concerns and the potential for negative impacts.

7.2 The Construction Phase – Positive Impacts

During the construction phase potential positive business impacts were identified as:

Passing Trade: dependant on their location, some businesses may benefit from a net gain in passing trade during construction owing to changes to pedestrian traffic and vehicle access. In the case of Sydney CBD, these improvements could be experienced by businesses that are located at pedestrian crossing points i.e. at breaks along the route corridor or by businesses located in connecting streets that would be used more frequently during the construction phase.

Trade Increase: this benefit is most likely to be experienced by businesses located in close proximity to construction sites or on route to construction sites that sell goods to construction workers or related industries such as service stations, take-away food shops and hotels. In response to the snapshot business survey, 5% of businesses identified a potential positive impact as a result of the proposal during construction to their business turnover.

Demand for Services: this potential positive impact relates to the growth in demand for construction related businesses such as construction recruitment agencies, construction companies and resource suppliers. Owing to the range of businesses located across the Study Area, there would be multiple opportunities for these types of businesses to benefit.

In summary, some businesses identified the potential for positive impacts as a result of the construction phase of the proposal. The construction of the proposal was seen as a signal that the Study Area and its transport capacity would be improved in time. Others identified potential benefits by way of trade and visibility.

These benefits could be enhanced by proactively supporting businesses to tailor their products to the changes in demand that may result from the construction phase of the proposal and thereby helping them to adapt to the conditions experienced during the construction phase.

7.3 The Operational Phase – Negative Impacts

During the proposal's operational phase, potential negative business impacts could relate to:

Commercial Rent: as a result of the likely enhanced attraction of locating a business in close proximity to the route corridor, light rail stops and within the pedestrianised section of George Street, competition for space and thereby commercial rents could increase across the Study Area. Where this occurs there would be some negative impacts to smaller businesses that are not able to quickly absorb higher rents or businesses that are presently experiencing challenges to viability. Conversely the ability to command higher rents would be a positive benefit for property owners.

Changed Behaviour during Construction: this impact relates to the effect that a forced change in consumer behaviour (such as travel route or diversion) may have to longer term trends. For example, an alternative pedestrian route provided during construction (that moves passing trade away from a given

business) may result in a permanent change in behaviour or travel direction even when no longer enforced. This can negatively affect businesses from which trade was diverted and conversely may benefit others.

Perceived Fear of Crossing Tracks: although a less apparent issue, initial consultation regarding the proposal identified concerns that customers and clients would be less inclined to cross the Street to alternative businesses and services owing to a fear of crossing the light rail tracks or route. This concern would reduce over time as Sydneysiders become more comfortable with light rail and sharing pedestrian / road space with it. The implementation of a public education programme regarding light rail (and the course of time) would help to efficiently address these concerns.

Traffic Congestion, Delivery and Servicing Constraints: upon operation, businesses identified the likelihood of ongoing challenges relating to traffic congestion, business deliveries and servicing (40% and 46% identifying negative impacts respectively). Concerns were raised with respect to traffic diversions, turning circles and vehicle circulation patterns that would influence the ease and ability to access and service businesses. These concerns would need to be addressed and managed in accordance with the Access Plan during the life of the proposal.

Customer Access and Parking: upon operation concerns were raised by a notable proportion of business that identified customer access by vehicle and customer parking (48% and 45% identifying negative impacts respectively) as an adverse impact of the proposal. These concerns were largely related to the permanent loss of street frontage car parking in locations such as Devonshire Street, Anzac Parade and High Street. This was a particular concern for businesses reliant on passing trade stopping to pick up goods (i.e. trade supplies, newsagents, bakeries or convenience stores) or parking to service less mobile clients (i.e. patients, the elderly or children). These concerns would need to be addressed through a range of parking management measures, on a Precinct by Precinct basis as discussed further in Chapter 8.

Noise, Vibration and Dust: whilst the CSELR is expected to have lower noise generating potential than existing vehicle traffic within the Study Area, 31% of businesses surveyed believed that it would have an adverse impact to their operation by way of noise, vibration or dust (29% stated it would have a positive impact and the remaining 41% were either unsure or undecided). Many of these concerns could be addressed through the information and education component of a Business Engagement Plan that clarifies the noise generating potential of light rail and existing light rail services in other parts of inner Sydney could be used as a case in point. It is not likely however to be until operation that the majority of concerns would be appeased.

7.4 The Operational Phase – Positive Impacts

During the operational phase of the proposal, potential positive business impacts could relate to:

Enhanced Access for Customers: numerous businesses that were consulted identified the improved customer access and enhanced passing trade as a benefit of the proposal. The reduction in traffic along the route corridor and the removal of some left and right hand turning lanes (particularly along George Street) could lead to increased footpath dimensions, the reduction in time required to cross roads, greater frequency

of pedestrian crossing times as well as the relocation of taxi ranks to areas that are better aligned with major trip generators in support of both the daytime and night time economies.

These benefits in addition to the provision of more reliable public transport (that operates at a greater frequency for longer periods) has the potential to keep a larger target market in the Study Area and to thereby extend peak shopping, dining and leisure times to the benefit of businesses. In this respect 41% of businesses surveyed anticipated a positive impact to the visibility of their business upon operation and 36% of businesses thought that pedestrian access to their business would improve.

Congestion: analysis by the City of Sydney has identified that a simplification of the current road network, by eliminating the ability to travel along George Street could in fact improve traffic flows through the City, particularly given that the main level of demand is in an east west direction. This would help to reduce congestions, delivery and servicing times and thereby vehicle operating costs.

Amenity: the Noise and Vibration Assessment[172] identified overall positive impacts along the route corridor upon operation as a result of the likely reduction in traffic and background noise levels (particularly from fewer buses). The amenity impact with respect to noise and visual improvements are most significant in the section of George Street that is proposed to be pedestrianised (i.e. Bathurst to Hunter). To minimise disturbances upon operation, the use of PA's and bells would need to be controlled.

Increased Capacity and Development Opportunities: the implementation and operation of the CSELR is likely to stimulate and support an increase in the capacity and density of floorspace and activities within close proximity to the route corridor and stops. This would enhance opportunities for redevelopment and therefore the viability of development related businesses including development organisations, architects, property consultants, construction related industries, property services and real estate agents.

Land Values: as discussed in Chapters 5 and 6, improvements to transportation and public realm improvements can have a positive correlation with land values with the benefits experienced as early as the announcement of a proposal. The potential for these benefits were reiterated by 37% of the snapshot business survey respondents who anticipated that land values would increase upon operation. A further 51% of respondents were either unsure or undecided on the topic.

Commercial Rents: as a result of the likely enhanced attraction of locating a business in close proximity to the route corridor, light rail stops and within the pedestrianised section of George Street, competition for space and thereby commercial rents could increase across the Study Area. This would represent a benefit for landowners.

Staff Access, Recruitment and Retention: the proposal would enhance workforce accessibility, creating a larger labour pool, increasing staff choice and broadening the available skill set to businesses located within reasonable proximity to the route corridor. To this effect, 24% of businesses surveyed identified that staff recruitment and retention would improve with the operation of the CSELR (49% anticipated no change). Furthermore 41% of businesses identified improved travel times for their staff were likely as a result of the proposal.

[172] SLR Consulting, CBD and South East Light Rail Project Environmental Impact Assessment Noise and Vibration July 2013

Business Viability: owing to the potential cumulative effect of the positive outcomes of the proposal to the Study Area, 39% of businesses surveyed identified that their turnover would improve when the proposal was operational.

7.5 CONCLUSION

The likely impacts of the proposal to the viability of individual businesses would vary dependant on the stage of the development, the location of the business, the type of business and the severity of the impact.

Consultation undertaken for this EcIA, found that over 90% of businesses interviewed believed they would be affected by the proposal during the construction phase and 93% believed they would be affected upon operation. There was a general belief that the construction impacts would have a negative impact to business operations, whilst the operation of the CSELR would have a positive influence on business viability and opportunities.

The health and viability of the businesses that contribute to the Study Area are of great importance to the success of the City's economy and the wellbeing of its population. It consequently follows that negative impacts resulting from the proposal should be minimised and positive ones enhanced to support and maximise business viability. In order to achieve this, based on the impacts identified above, various measures have been identified through the course of this Chapter and the following Chapter 9. These measures are also discussed and detailed further in Chapter 10.

8. SIGNIFICANCE OF ECONOMIC IMPACTS BY PRECINCT

The following Chapter provides a more detailed analysis of potential business impacts during both the construction and operational phases of the proposal at a Precinct level. It builds on the discussion in Chapter 7 to recommend potential means of mitigations (as detailed in Section 8.2). The Chapter also ranks the significance of the impacts in accordance with methodology set out in the Table below as either:

1. Positive or negative;
2. Significant, moderate, slight or neutral; and
3. During construction and/or upon operation.

Table 17 - Assessment Rating Levels

Rating Level	Description
Significant Negative	Impacts with serious, long term or possibly irreversible effects. These impacts may lead to serious damage or degradation of the environment. This category also includes more localised impacts that can only be addressed through compensatory measures (as in the case of property acquisition).
Moderate Negative	Impacts may be short, medium or long term in duration and most likely to respond to management actions.
Slight Negative	Impacts have minimal effect, could be short term, can be mitigated and would not cause substantial detrimental effects. May be confined to a small area.
Neutral	No discernable or predictable positive or negative impact.
Slight Positive	Impacts have minimal effect, could be short term. May be confined to a small area.
Moderate Positive	Impacts may be short, medium or long term in duration. Positive outcome may be in terms of new opportunities and outcomes of enhancement or improvement.
Significant Positive	Impacts resulting in substantial and long term improvements or enhancements to the existing environment.

Source: Adapted from the Strategic Merit Test, National Guidelines for Transport System Management in Australia (2nd Edition) by Hill PDA

The definitions provided in the table below have been adapted from the rating levels recommended by the Strategic Merit Test which forms part of the National Guidelines for Transport System Management in Australia (2nd Edition). The definitions have however been amended so that they are suitable for economic impact assessment.

8.1 RECOMMENDED MITIGATION MEASURES

It is widely recognised practice for Economic Impact Assessments to not only identify the impacts of a proposal, but to provide recommendations regarding appropriate methods of minimising or mitigating negative impacts. Accordingly this Section identifies a series of mitigation methods and plans to best treat (and where appropriate enhance) the impacts identified in Chapters 6 and 7. Accordingly this section sets out the

recommended mitigation measures and plans to be implemented during the construction and operational phases of the CSELR.

8.1.1 MITIGATION MEASURES DURING CONSTRUCTION

Prepare a **Construction Environmental Management Plan** that seeks to:

- Minimise the level of disturbance created as a result of construction related vehicle movements (particularly during peak periods) to the road, pedestrian and cycle network within, and influenced by, the Study Area;
- Minimise disturbances to pedestrian access ways and bicycle paths. Where changes are made to existing travel routes, suitable signage for alternative options should be provided and maintained during the period of works;
- Minimise disturbances to taxi stands, bus layovers, bus stops and footpaths and provide suitable alternatives where required;
- Minimise disturbances to the availability of customer and employee car parking spaces, business loading docks and servicing areas;
- Minimise disturbances to the effective operation and reliability of existing transport services such as buses and heavy rail;
- Clearly demarcates construction sites and public safety zones particularly when using equipment that may induce vibration or other negative effects;
- Minimises the use of (and where required carefully locates) hoardings, construction fencing or other barriers that may hinder the visibility of business frontages;
- Incorporates an Air Quality Management Plan that provides a Dust Control Program which minimises dust emissions and their transition to sensitive receivers as a result of works such as building demolition, spoil removal, storage or transportation; and
- Screens construction sites to minimise their negative visual impact to localities and the emission of dust and noise.

To achieve these outcomes the **Construction Environmental Management Plan** should include:

- Site specific **Construction Traffic Management Plans** (TMPs) which include individual Traffic Control Plans (TCPs);
- A **Parking Management Plan** that implements a range of parking measures that are carefully tailored to each Precinct in the Study Area. Such measures may include:
  - The extension of parking permit schemes, particularly in predominately residential precincts surrounding the proposal corridor. These would be designed to afford priority to local residents and businesses to park in the vicinity of their home or business with an allowance for short term

parking for visitors and for vehicle access to commercial land uses and other short stay trip generators;

- Providing priority on streets immediately adjacent to the proposal corridor where commercial land uses are present for loading and short term parking. For example, allocation of the first 50 metres of kerbside capacity on side streets directly off the corridor for locations where commercial land uses are present for loading and short term parking;
- Adjusting parking configuration to increase capacity, where possible; and
- Collaborative working between Transport for NSW with the key stakeholders involved in the management and operation of the road network and management of kerbside activity (including the City of Sydney and City of Randwick) to implement the mitigation measures described above. Joint working would also ensure appropriate and satisfactory measures are implemented which promote better utilisation and efficiency of use for kerbside space, while considering the access requirements of local residents, businesses, sporting, health and education use and all other land uses along and in the vicinity of the corridors.

- A **Construction Noise and Vibration Management Plan** that seeks to minimise the negative impacts of noise generated from construction related machinery and equipment to surrounding sensitive receivers (particularly during the evening) through the use of reasonable and feasible mitigation measures.
- Access **Plans** that:
  - Through liaison with businesses and landowners establishes existing servicing and delivery requirements across the Study area;
  - Identifies, maps and signs appropriate alternate routes, access periods or arrangements for businesses and landowners affect by the proposal:
  - Implements and monitors agreed measures to minimise the impacts and disruption to business and property access and servicing during all stages of the proposal and its operation;
  - Effectively communicates access arrangements to businesses, landowners and other interests in the Study Area; and
  - Is implemented, managed and monitored by an Access Liaison Group comprising of representatives of the City of Sydney, the City of Randwick, Transport for NSW and local businesses.

Prepare and implement a **Business and Landowner Engagement and Management Plan** that seeks to**:**

Support the preparation and effective implementation and monitoring of the Access Management Plan;

- Provides ongoing information through a variety of sources including information packs, a website, regular newsletters / brochures and email alerts. The Plan should also identify effective means for ongoing cooperation and communication with the business community;

- Establish a direct toll free telephone line 24 hours a day during construction to ensure any urgent concerns regarding works can be addressed;
- Establish clear lines of responsibility and timetables for work that are adhered to;
- 'Make good' or provide appropriate compensation for any damages that may occur to properties as a result of the proposal's construction or operation; and
- Prepare a Business Management and Assistance Strategy that aims to proactively work with businesses to identify:
  - Businesses that may be adversely affected by the proposal during construction or upon operation;
  - Suitable alternative locations (for businesses that would be significantly adversely affected by the operation of the proposal) within the same locality or area in order to reduce business disturbance and to maintain the existing level of service to Sydney;
  - Means to adapt business offer to benefit from changes such as construction workers (i.e. high number of contractors in the area) and changed travel patterns during both the construction and operation stages; and
  - Possible town centre economic revitalisation and activity strategies that may be prepared by Councils as part of their centre planning strategies.

Additional Recommended Measures during construction:

- The considered and detailed design of stops and other CSELR features to ensure they integrate with existing surrounding land uses and businesses, enhance pedestrian safety and security and improve pedestrian access and connectivity whilst improving the visual appeal and quality of the broader public domain.
- Undertake pre-construction dilapidation asset surveys of buildings in close proximity to construction sites in order to assess and monitor any potential impacts to building structures.
- Retain Transport for NSW staff as Place Managers yet expand their remit so that they also become a point of contact for business queries and information during the construction process.

Property Acquisition

- Transport for NSW use best endeavours to acquire any property through negotiation and purchase or lease rather than compulsory acquisition. Should any property need to be acquired it would be acquired in accordance with Section 55 (a) – (f) of the *Land Acquisition (Just Terms Compensation) Act 1991.* This means that any property owners affected by the proposal would not only be paid fair market value, but other costs and losses such as disturbances to business operation due to relocation.

8.1.2 MITIGATION MEASURES UPON OPERATION

Proposed mitigation measures we have made reference to for inclusion during operation include:

- The **regular maintenance of infrastructure** and equipment within the light rail corridor to ensure air and ground borne noise levels and disturbances (as a result of train movements and related equipment usage) are kept to a minimum.
- Stop design, access to stops and rolling stock to be **fully accessible and wheel chair compliant.** Stop designs to incorporate tactile tiling and signage for sensory impaired persons.
- The **ongoing review and revision of measures** implemented by the proposal to ensure they effectively minimise negative impacts to the operation and function of businesses through all reasonable mitigation, management and maintenance measures.

8.2 Precinct City Centre Precinct

The City Centre Precinct incorporates the suburbs of Millers Point, Sydney and Haymarket extending from Circular Quay (Alfred Street) in the north, south along George Street to Chalmers Street Stop.

Table 18 - City Centre Precinct – Summary of Impacts

Potential Impacts - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Changes to access and local traffic conditions		
Moderate Negative Potential impacts in this Precinct relate to changes to vehicle access including taxis and buses as well as the redirection of some pedestrians during construction reducing the perceived ease of access for visitors / clients. Potential access challenges to construction sites i.e. 200, 333 and 383 George Street as well as car parking stations such as Grimes and Wilson Parking. Potential flow on challenges to access within connecting streets and for commercial services (including buses) presently using parts of the Study Area (such as Eddy Avenue) to pick up / drop off goods and passengers.	1. Access Plan i.e. Maps and plans that show diversion routes and maintain access to properties at all times; - Implementation of pedestrian priority measures at key intersections and signage; and - consideration and planning for access implications as a result of multiple development activities in the Precinct such as Barangaroo and various development sites along George Street. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses. **Impact Post Mitigation: Slight Negative**	Rocks Markets, the Museum of Contemporary Arts, cafes and restaurants, tourist retailers, specialty retail, commercial offices, Overseas Passenger Terminal, Grimes and Wilson Parking Station, hotels and shopping centres and bus operators at Central Station.

Potential Impacts - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Amenity impacts i.e. noise and vibration		
Moderate Negative Impacts to the operation of businesses without adequate soundproofing or businesses reliant on the amenity of outdoor areas i.e. outdoor dining	Construction Environmental Management Plan with a detailed Construction Noise and Vibration Management Plan. i.e. Assessment and making good of any structural impacts; - A Noise Management Plan that phases construction to minimise duration in any one location; and - Includes appropriate mitigation measures such as acoustic sheds and controlled construction periods in light of sensitive uses and events occurring in the Precinct. **Impact Post Mitigation: Slight Negative**	Surrounding retail and commercial businesses, workers, customers, buskers, tourist operators, cafes and restaurants, Four Seasons Hotel, Hostels, serviced apartments and hotels hosting events.
Access to loading docks / servicing areas		
Moderate Negative Constraints to the frequency / ease of access for businesses that rely on delivery docks off George Street. Potential time delays and additional travel time for businesses that use George Street as part of their travel route for deliveries / access.	1.Access Plan i.e. Maps and plans that show diversion routes and maintain access to properties at all times; and - Restrictions in favour of smaller delivery vehicles and the rescheduling of deliveries as agreed with businesses. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Staging to minimise construction period duration in any given location. **Impact Post Mitigation: Slight Negative**	Myer loading dock (affecting Swiss Hotel, Westfield, foodcourt and Tower Apartments and associated users), Hilton Hotel, No.1 Martin Place, Hunter Connection, Police Station, Australia Post and businesses reliant on loading docks in streets connecting with George Street.

Potential Impacts - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Impact to night time economy		
Moderate Negative Some impacts to restaurants / bars as a result of perceived access constraints, changes to taxis pick up and drop off points as well as the amenity of George Street.	1. Access Plan - i.e. Alternative drop off and pick up locations for taxis; and - Alternative pathways and access points to transport for patrons. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan - A Noise Management Plan that phases construction to minimise duration in any one location; and - Suitable lighting around construction areas to ensure safety and security. **Impact Post Mitigation: Slight Negative**	Patrons, public houses, small bars, restaurants, retailers, taxi industry, cinemas, hotels and other leisure / entertainment / event facilities.
Passing trade & demand for services		
Moderate Negative Owing to the amenity and access changes in the Precinct businesses may experience a reduction in demand for trade and services. Other businesses may benefit (i.e. food retailers) as a result of an increase in demand owing to construction workers. Businesses close to crossing points between construction hoardings could benefit from greater visibility, those that are located between two crossings would be less visible and thereby have a greater potential for adverse impact to trading levels.	1. Access Plan i.e. Maps and signage that show diversion routes; - Access to the Rocks maintained via alternative routes; and - Retention of pedestrian access to George Street at all times and at existing crossing points. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses. **Impact Post Mitigation: Slight Negative**	All businesses located at street level along the route alignment in the Precinct.

Potential Impacts - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Stimulation of redevelopment opportunities		
Moderate Positive A commitment to the proposal and the commencement of works could create a positive catalyst for the redevelopment of some underutilised sites and locations in the Precinct.	Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and the benefits it would provide to the Precinct. **Post Mitigation Impact: Moderate Positive**	The entire Precinct yet the area to the west of George Street is recognised by the City of Sydney as having notable capacity for redevelopment and increased development density. A combination of the CSELR to the east and Barangaroo to the west of this location could help to stimulate redevelopment.
Access to work, retail and leisure		
Moderate Negative Impacts to the perceived ease of getting to work or other land use activities could lead to the reduced attraction of working / visiting / operating facilities in the Precinct.	1. Access Plan i.e. Maps and plans that show diversion routes and maintain access to properties at all times; - Access to the Rocks maintained via alternative routes; - Retention of pedestrian access to George Street at all times and at existing crossing points; and - Appropriate diversions for other traffic / commuters to routes other than George Street. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses – i.e. visual or physical. **Impact Post Mitigation: Slight Negative**	All businesses directly fronting George Street along the route alignment (particularly those at ground level reliant on passing trade) or located within adjoining side streets. Employees and customers accessing work or services / facilities.

Potential Impacts - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Visual Impact		
Moderate Negative Likely adverse impact to the visual and aural amenity of a George Street and Belmore Park reducing the attraction of visiting them.	Construction Environmental Management Plan - A plan to minimise the visual impact of hoardings and other construction related equipment. **Impact Post Mitigation: Slight Negative**	All businesses directly fronting George Street or construction compounds (particularly those at ground level).
Potential Impact - During Operation	***Recommended Minimum Mitigation Measures***	***Example Stakeholders Influenced***
Access to work, retail or leisure		
Moderate Positive Improved accessibility, visibility and connectivity as a result of the reduction / elimination of vehicles (including buses) and the pedestrianisation of parts of George Street. These benefits would be particularly notable for workers within the Precinct accessing locations along George Street as well as visitors travelling to major events in Moore Park travelling via Central Station. Potential concerns however regarding the safety of crossing over the light rail tracks resulting in missed opportunities for businesses.	Access Plan i.e. improvements to landscaping and the public realm to enhance access to and around the CSELR route and stops. **Impact Post Mitigation: Moderate Positive**	All businesses directly fronting George Street (particularly those at ground level reliant on passing trade) or located within adjoining side streets. Employees and customers accessing work or services / facilities in the Precinct as well as visitors connecting at Central Station to travel to other destinations (such as Moore Park).
Enhanced tourism perception		
Significant Positive Improved quality and amenity of urban environment as well as a legible, user friendly transport service that connects key tourist attractions in the Precinct i.e. Circular Quay and the Rocks to the QVB and hotel accommodation in Haymarket and Central areas etc.	Access Plan i.e. improvements to landscaping and the public realm to enhance access to and around the CSELR; and - Improvements to signage and information regarding frequency of service. **Impact Post Mitigation: Significant Positive**	Visitors to Sydney and tourism related businesses i.e. hotels, retail and tourist operators.

Potential Impact - During Operation	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Impact to night time economy		
Moderate Positive Improved levels of safe and reliable public transport that connects the Precinct with other key locations for the night time economy (such as Surry Hills). Whilst the taxis may no longer able to pick up and drop off on George Street, alternative arrangements would be made for connecting streets to address these requirements.	Access Plan i.e. new drop off and pick up points for taxis, suitable lighting at stops to enhance sense of safety and security. **Impact Post Mitigation: Moderate Positive**	Patrons, public houses, small bars, restaurants, retailers, taxi industry, cinemas, hotels and other leisure / entertainment / event facilities.
Impact to land values		
Slight to Moderate Positive Improved capacity of public transport and pedestrianisation of parts of George Street likely to create positive spin off benefits to landowners having particular regard to retailers fronting George Street.	None Required	Land and property owners in the Precinct, particularly those in close proximity to stops and fronting George Street in the proposed pedestrianised zone.
Amenity		
Significant Positive Improvements in most locations to existing levels of visual amenity and noise levels as a result of the reduction in traffic (including buses) as well as improvements to landscaping, expansion of pedestrian areas and de-cluttering of street furniture. Amenity improvements are particularly likely in the proposed pedestrianised section of George Street.	Maintenance and Review i.e. Controlled use of PA System and bells to minimise noise disturbance of operating the CSLER; and - High quality landscaping and urban realm improvements. **Impact Post Mitigation: Significant Positive**	Surrounding retail and commercial businesses, workers, customers, buskers, tourist operators, cafes and restaurants, Four Seasons Hotel and hotels hosting events.

Potential Impact - During Operation	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Access to loading docks / servicing areas		
Neutral On-going access to service and delivery areas along George Street and connections for businesses that presently use George Street for access.	Access Plan A plan agreed with businesses that identifies permanent alternative routes or shared use of space in the Precinct to enable efficient deliveries without adversely affecting the operation of the CSELR. **Impact Post Mitigation: Neutral**	Myer loading dock (affecting Swiss Hotel, Westfield, foodcourt and Tower Apartments and associated users), Hilton Hotel, No.1 Martin Place, Hunter Connection, Police Station, Australia Post and businesses reliant on loading docks in streets connecting with George Street.

8.3 SURRY HILLS PRECINCT

The Surry Hills Precinct focuses on Surry Hills extending along Devonshire Street to Moore Park from the intersection of Charmers Street in the west to Bourke Street in the east.

Table 19 - Surry Hills Precinct – Summary of Impacts

Potential Impact - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Changes to access and local traffic conditions		
Moderate Negative Changes to vehicle access along Devonshire Street would influence the level of passing trade to businesses. It would also have a flow on impact to businesses in streets adjoining Devonshire Street potentially increasing travel times or reducing the attraction of visiting the area.	1. Access Plan i.e. designation of alternative routes to minimise impacts of closure of Alfred and George Street as well as works on Devonshire Street. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses. **Impact Post Mitigation: Slight Negative**	Cafes, restaurants, hotels, convenience stores, child care facilities, design studios and professional suites fronting Devonshire Street and in the streets directly adjoining.

Potential Impact - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Amenity impacts i.e. noise and vibration		
Moderate Negative Impacts to the operation of businesses without adequate soundproofing (some hotels) or businesses reliant on the amenity of outdoor areas (i.e. cafes with outdoor dining) along the route corridor and surrounding the construction site in Ward Park.	Construction Environmental Management Plan with a detailed Construction Noise and Vibration Management Plan. i.e. Assessment and making good of any structural impacts; - A Noise Management Plan that phases construction to minimise duration in any one location; and - Includes appropriate mitigation measures such as acoustic sheds and controlled construction periods in light of sensitive uses and events occurring in the Precinct. **Impact Post Mitigation: Slight Negative**	Retail and commercial businesses, cafes, child care facilities, hotels and restaurants, design studios and professional suites along the route corridor and surrounding Ward Park.
Access to loading docks / servicing areas		
Significant Negative Constraints to the frequency and ease of access for businesses that rely on delivery docks off Devonshire Street. Potential time delays and additional travel time for businesses that have used Devonshire Street as part of their travel route for deliveries and access. Challenges for businesses that have large vehicles to deliver goods (i.e. art studios) or that rely on Devonshire Street for refuse collection.	1. Access Plan i.e. Maps and plans that show diversion routes and maintain access to properties at all times; - Restrictions in favour of smaller delivery vehicles and rescheduling of deliveries as agreed with businesses; and - Maintenance of access for all driveways onto Devonshire Street through the construction phase. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Staging and minimisation of construction period duration. **Impact Post Mitigation: Moderate Negative**	All businesses directly fronting Devonshire Street (and potentially adjoining streets) reliant on street access for servicing i.e. art studios, trade supplies, bakeries, cafes, child care centres, clothing stores etc.

Potential Impact - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Loss of on street car parking		
Significant Negative The proposal would result in the removal of car parking in Devonshire Street having an immediate direct impact to existing businesses and landowners as a result of lost convenience for passing trade and access, particularly where alternative parking is not available in the same locality.	1. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 2. The implementation and management of a Parking Management Plan that implements a range of parking measures including parking permit and priority schemes as well as more efficient parking arrangements in consultation with key stakeholders and affected businesses. **Impact Post Mitigation: Moderate Negative**	Retailers and commercial uses fronting Devonshire Street having particular regard to those that provide convenience services i.e. newsagent, bakeries, convenience store etc.
Passing trade and demand for services		
Moderate Negative Owing to the amenity and access changes in the Precinct businesses may experience a reduction in demand for trade and services. This impact may also occur during special events in the Moore Park Sports and Entertainment Precinct as visitors are directed to alternative routes to Central Station other than Devonshire's Street. On a day to day basis, some businesses may benefit (i.e. food retailers) as a result of an increase in demand owing to construction workers. Businesses close to crossing points between construction hoardings could benefit from greater visibility, those that are located between two crossings would have a greater potential for adverse impact to trading levels.	1. Access Plan i.e. Maps and signage that show temporary diversion routes for pedestrians, cycle and vehicle traffic. 2. Business and Landowner Engagement Plan i.e. Information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses. **Impact Post Mitigation: Slight Negative**	Retailers and commercial uses fronting Devonshire Street as well as those in Streets connecting to Devonshire.

Potential Impact - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Perceived impact and business viability		
Moderate Negative Owing to prospective amenity impacts and access constraints during the construction period as well as access constraints upon operation, some businesses may choose to relocate from the area / not renew their lease or not invest in the area. This may be a short term impact but would reduce the appeal of the area until the completion of the construction phase.	1. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. - Information regarding means to minimise impacts to businesses and maximises the benefits of a local construction workforce. 2. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses. **Impact Post Mitigation: Slight Negative**	Businesses fronting Devonshire Street (or in adjoining streets) reliant on passing trade or direct servicing access.
Stimulation of redevelopment opportunities		
Moderate Positive A commitment to the proposal and the commencement of works could create a positive catalyst for the redevelopment of some underutilised sites and locations in the Precinct.	Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and the benefits it would provide to the Precinct. **Post Mitigation Impact: Moderate Positive**	All land and properties in the Precinct, particularly those in closer proximity to the proposed stops.

Potential Impact - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Access to work, retail and leisure		
Moderate Negative Impacts to the perceived ease of getting to work or other land use activities could lead to the reduced attraction of working / visiting / operating facilities in the Precinct.	1. Access Plan i.e. Maps and plans that show diversion routes and maintain access to properties at all times. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses – i.e. visual or physical. **Impact Post Mitigation: Slight Negative**	Employees, customers and businesses operating along Devonshire Street or in adjoining streets.
Property acquisition		
Significant Negative This would create disturbances and costs for existing landowners affected however Transport for NSW would use best endeavours to acquire any property through negotiation and purchase or lease rather than compulsory acquisition. Should any property need to be acquired it would be acquired in accordance with Section 55 (a) – (f) of the Land Acquisition (Just Terms Compensation) Act 1991. This means that any property owners affected by the proposal would not only be paid fair market value, but other costs and losses such as disturbances to business operation due to relocation.	Compensation in accordance with Section 55 (a) – (f) of the Land Acquisition (Just Terms Compensation) Act 1991. **Impact Post Mitigation: Neutral**	Land and property owners associated with Olivia Gardens and the Langton Clinic's Car Park.

Potential Impact - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Visual impact		
Moderate Negative Impact to visual amenity of Devonshire Street and impact to businesses reliant on this characteristic (i.e. cafes)	Construction Environmental Management Plan - A plan to minimise the visual impact of hoardings and other construction related equipment. **Impact Post Mitigation: Slight Negative**	Employees, customers, visitors and businesses operating along Devonshire Street or in adjoining streets.

Potential Impact - During Operation	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Access to work, retail and leisure		
Moderate Positive Improved accessibility via public transport and connectivity with other locations within the City. An education programme may be required to address concerns from the public regarding crossing the street i.e. over the light rail tracks to avoid missed opportunities for businesses on opposing sides of the Street.	Access Plan i.e. improvements to landscaping and the public realm to enhance access to and around the CSELR route and stops. **Impact Post Mitigation: Moderate Positive**	Employees, customers and businesses operating along Devonshire Street or in adjoining streets.
Loss of Car Parking		
Moderate Negative The proposal would result in the permanent loss of 155 car parking spaces within the Precinct. Whilst the car parking demand study identifies that there would be sufficient latent capacity across the Precinct (following the implementation of appropriate parking mitigation measures), the loss of car parking along Devonshire Street would reduce the ability for customers and clients to park directly outside businesses (i.e. retailers and child care). This would impact the desirability of visiting some businesses especially where alternative temporary parking is not available in the same locality. Whilst some of the impact would be offset through improvements to customer access via light rail, improvements to amenity and parking mitigation measures (such as more short term car parking restrictions), the loss of parking would notably impact businesses (such as convenience stores, child care centres or trade supplies) reliant on customers being able to park.	The implementation and management of a Parking Management Plan that implements a range of parking measures including parking permit and priority schemes as well as more efficient parking arrangements in consultation with key stakeholders and affected businesses. **Impact Post Mitigation: Moderate Negative**	Retailers and commercial uses fronting Devonshire Street having particular regard to those that provide convenience services i.e. newsagent, bakeries, convenience store etc.

Potential Impact - During Operation	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Impact to land values		
Slight to Moderate Positive Improved capacity and reliability of public transport likely to create positive spin off benefits to landowners.	None Required	Land and property owners in the Precinct, particularly those in close proximity to stops.
Passing Trade		
Slight Negative A modest negative impact could be experienced by businesses that currently benefit from passing trade pre and post special events in the Moore Park Sports and Entertainment Precinct. The operation of the CSELR will shuttle commuters directly between Central Station and Moore Park reducing opportunistic purchases i.e. drinks or food from some retailers in Devonshire Street.	Access Plan i.e. improvements to landscaping and the public realm to enhance access to and around the CSELR route and stops attracting additional potential customers to the Precinct.	Retailers, restaurants and cafes fronting Devonshire Street.
Amenity		
Slight Positive Improvements to existing levels of visual amenity and noise levels as a result of the reduction in traffic and appropriate landscaping (including means of reducing the impact of tree loss). Potential creation of pocket parks and public plazas would lead to the overall improvement of the environment to the benefit of the local business community and landowners.	Maintenance and Review i.e. Controlled use of PA System and bells to minimise noise disturbance; and - High quality landscaping and urban realm improvements. **Impact Post Mitigation: Moderate Positive**	Retail and commercial businesses, cafes, child care facilities, hotels and restaurants, design studios and professional suites along the route corridor and surrounding Ward Park.

Potential Impact - During Operation	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Access to loading docks / servicing areas		
Slight Negative The ability to access service and delivery areas along and adjacent to Devonshire Street would need to be addressed along with access implications for businesses that use connecting streets. A clear education and engagement programme being required for businesses concerning local access rights and arrangements / routes in and out of the Precinct.	Access Plan A plan agreed with businesses that identifies permanent alternative routes or shared use of space in the Precinct to enable efficient deliveries without adversely affecting the operation of the CSELR. **Impact Post Mitigation: Neutral**	All businesses directly fronting Devonshire Street (and potentially adjoining streets) reliant on street access for servicing i.e. art studios, trade supplies, bakeries, cafes, child care centres, clothing stores etc.

8.4 MOORE PARK PRECINCT

The Moore Park Precinct comprises the suburbs of Moore Park and Centennial Park extending along Anzac Parade to the intersection with Allison Road.

Table 20 - Moore Park Precinct – Summary of Impacts

Potential Impact - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Changes to access and local traffic conditions		
Moderate Negative Changes to vehicle access surrounding Moore Park and the Moore Park Sports and Entertainment Precinct may reduce the attraction of working in the area and / or visiting its facilities i.e. sporting stadiums, leisure and restaurant facilities.	1. Access Plan i.e. Maps and plans that show diversion routes and maintain access to properties at all times; and - modifications to the busway to maintain operations. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. pausing of construction activities during special events to improve safety for visitors accessing the venues; - Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses. **Impact Post Mitigation: Slight Negative**	All businesses and landowners in the Precinct.

Potential Impact - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Amenity impacts i.e. noise and vibration		
Slight Negative Potential impacts to the operation of businesses without adequate soundproofing or businesses sensitive to noise (i.e. schools and cafes with outdoor dining) as well as the use of outdoor training / sporting / leisure facilities.	Construction Environmental Management Plan with a detailed Construction Noise and Vibration Management Plan. i.e. pausing of construction activities during special events to improve safety for visitors accessing the venues. - A Noise Management Plan that phases construction to minimise duration in any one location; and - Includes appropriate mitigation measures such as acoustic sheds and controlled construction periods in light of sensitive uses and events occurring in the Precinct. **Impact Post Mitigation: Neutral**	Sydney Boys High School and Sydney Girls High School, Swans training ground, some potential impact to more sensitive businesses / uses within the Moore Park Sports and Entertainment Precinct.
Passing trade and demand for services		
Slight Positive Businesses within the Moore Park Sports and Entertainment Precinct (i.e. convenience stores and cafes) may benefit from additional expenditure from construction workers.	1. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 2. Construction Environmental Management Plan - Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to visibility of businesses. i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. - Information regarding means to minimise impacts to businesses and maximises the benefits of a local construction workforce. **Post Mitigation Impact: Slight Positive**	Businesses within the Moore Park Sports and Entertainment Precinct (i.e. convenience stores and cafes).

Potential Impact - During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Loss of Car Parking		
Slight Negative To enable works the Parklands Tennis Centre may experience some loss of car parking (an estimated 8 spaces) whilst the use of the oval for spill over car parking for events in Moore Park may also be limited.	1. Access Plan i.e. identification of alternative access points or arrangements during construction period. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3.The implementation and management of a Parking Management Plan that implements a range of parking measures including parking permit and priority schemes as well as more efficient parking arrangements in consultation with key stakeholders and affected businesses. **Impact Post Mitigation: Neutral**	Moore Park Trust, Moore Park Sports and Entertainment Precinct and Parklands Sports Centre.
Visual impact		
Moderate Negative Impact to visual amenity of Moore Park and entrance to Moore Park Showground owing to construction works, facilities and spoil. Likely adverse impact as a result of the need to remove mature trees.	Construction Environmental Management Plan - A plan to minimise the visual impact of hoardings and other construction related equipment. **Impact Post Mitigation: Slight Negative**	Moore Park users, Moore Park Trust, Moore Park Sports and Entertainment Precinct and Parklands Sports Centre and associated visitors.

Potential Impact - During Operation	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Access to Work, Retail and Leisure		
Moderate Positive Improved accessibility, reliability and connectivity to Central Station during events and other Precincts in the Study Area enhancing the attraction, number of visitors and frequency of visits and thereby potential success of sporting facilities and businesses in this Precinct.	1. Access Plan i.e. improvements to landscaping and the public realm to enhance access to and around the CSELR. **Post Mitigation Impact: Significant Positive**	Moore Park users, Moore Park Trust, Moore Park Sports and Entertainment Precinct and Parklands Sports Centre and associated visitors.
Amenity		
Neutral Some improvements to the quality of the environment as a result of new landscaping (including means of reducing the impact of tree loss).	Maintenance and Review i.e. Controlled use of PA System and bells to minimise noise disturbance; and - High quality landscaping and urban realm improvements. **Post Mitigation Impact: Slight Positive**	Moore Park users, Moore Park Trust, Parklands Sports Centre and associated visitors, Sydney Boys High School and Sydney Girls High School.

8.5 KENSINGTON / KINGSFORD PRECINCT

The Kensington / Kingsford Precinct comprises the suburbs of Kensington and Kingsford extending along Anzac Parade to the intersection with Wallace Street.

Table 21 - Kensington / Kingsford Precinct – Summary of Impacts

Potential Impact – During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Changes to access and local traffic conditions		
Moderate Negative Anzac Parade is a key arterial route for the South East. Accordingly the CSELR's construction works (that reduce the existing 6 lanes to 4) could reduce the capacity of this area to carry traffic having a knock on delay to commuting and travel times for the broader community and businesses.	1. Access Plan i.e. Maps and plans that show diversion routes and maintain access to properties at all times; and - plans of appropriate bus diversions and tidal flow changes to minimise disruptions; - consideration and planning for access implications as a result of multiple development activities i.e. as a result of the Urban Activation Precinct. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Traffic Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses. **Impact Post Mitigation: Slight Negative**	Businesses and commuters using Anzac Parade, the Gardeners Road intersection and connecting streets.

Potential Impact – During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Amenity impacts i.e. noise and vibration		
Moderate Negative Impacts to the operation of businesses without adequate soundproofing (some hotels) or businesses reliant on the amenity of outdoor areas (i.e. cafes with outdoor dining) along the route corridor and surrounding the proposed turn back facility at the Gardeners Road roundabout.	Construction Environmental Management Plan with a detailed Construction Noise and Vibration Management Plan. i.e. A Noise Management Plan that phases construction to minimise duration in any one location; - Includes appropriate mitigation measures such as acoustic sheds and controlled construction periods in light of sensitive uses and events occurring in the Precinct; and - Assessment and making good of any structural impacts. **Impact Post Mitigation: Slight Negative**	Retail and commercial businesses, workers, clients and customers, cafes, child care facilities, hotels, restaurants, the South Sydney Juniors Leagues Club and other facilities located along the route corridor or surrounding construction compounds.
Access to loading docks / servicing areas		
Moderate Negative Constraints to the frequency and ease of access for businesses that rely on services and refuse collection from Anzac Parade. Potential time delays and additional travel time for businesses that have used Anzac Parade as part of their travel route for deliveries and access i.e. use Anzac Parade to access service and delivery docks in Harbourne and Houston Roads.	1. Access Plan i.e. Maps and plans that show diversion routes and maintain access to properties at all times. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Staging to minimise construction period duration. **Impact Post Mitigation: Slight Negative**	Some businesses directly fronting Anzac Parade and relying on the street for servicing / deliveries.

Potential Impact – During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Loss of on street car parking		
Significant Negative The proposal will result in the permanent removal of 125 car parking spaces in the Precinct. Whilst parking demand studies identify that there would be sufficient latent supply across the Precinct, many of these spaces are directly located in front of existing retail and commercial uses in Kensington and Kingsford. Accordingly there loss is likely to have an immediate direct impact to existing businesses and landowners as a result of lost convenience for passing trade and access, particularly where alternative parking is not available in the same locality. The proposal would also result in the loss of car parking south of the Gardeners Road roundabout affecting businesses such as South Juniors Club, Crystal Car Wash and the Rotary Markets	1. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 2. The implementation and management of a Parking Management Plan that implements a range of parking measures including parking permit and priority schemes as well as more efficient parking arrangements in consultation with key stakeholders and affected businesses. **Impact Post Mitigation: Moderate Negative**	Retailers and commercial uses fronting Anzac Parade in the Precinct that are reliant on passing trade to provide convenience services (i.e. newsagent, convenience store) or that provide destination services to visitors from a broader area that need to travel by car (i.e. specialty retailers).
Passing trade and demand for services		
Moderate Negative Owing to the amenity and access changes in the Precinct businesses may experience a reduction in demand for trade and services. Other businesses may benefit (i.e. food retailers) as a result of an increase in demand owing to construction workers.	1. Access Plan i.e. Maps and signage that show temporary diversion routes for pedestrians, cycle and vehicle traffic. 2. Business and Landowner Engagement Plan i.e. Information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses. **Impact Post Mitigation: Slight Negative**	Retailers and commercial uses fronting Anzac Parade Street as well as those in connecting Streets.

Potential Impact – During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Perceived impact and business viability		
Moderate Negative Owing to the prospective adverse amenity and access constraints during the construction period and access constraints upon operation, some businesses may choose to relocate from the area / not renew their lease or to not invest in the area. This may be a short term impact (i.e. limited to the construction period) but would reduce the appeal of the area until the completion of the construction phase.	1. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. - Information regarding means to minimise impacts to businesses and maximises the benefits of a local construction workforce. 2. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses. **Impact Post Mitigation: Slight Negative**	Retailers and commercial uses fronting Anzac Parade Street as well as those in connecting Streets.
Stimulation of redevelopment opportunities		
Moderate Positive A commitment to the proposal and the commencement of works, together with the Urban Activation Precinct Programme would create a positive catalyst for the redevelopment of some underutilised sites and locations in the Precinct.	Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and the benefits it would provide to the Precinct. **Post Mitigation Impact: Moderate Positive**	All land and properties in the Precinct, particularly those in closer proximity to the proposed stops

Potential Impact – During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Access to work, retail and leisure		
Moderate Negative Impacts to perceived ease of getting to work or other land use activities could lead to the reduced attraction of working / visiting / operating facilities in the Precinct.	1. Access Plan i.e. Maps and plans that show diversion routes and maintain access to properties at all times. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses – i.e. visual or physical. **Impact Post Mitigation: Slight Negative**	Employees, students, customers and businesses operating along Anzac Parade or in adjoining Streets.
Visual impact		
Moderate Negative Impact to the visual amenity of Anzac Parade and businesses reliant on this characteristic (i.e. cafes)	Construction Environmental Management Plan - A plan to minimise the visual impact of hoardings and other construction related equipment. **Impact Post Mitigation: Slight Negative**	Employees, students, customers and businesses operating along Anzac Parade or in adjoining Streets.

Potential Impact - During Operation	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Access to Work, Retail and Leisure		
Moderate Positive Improved accessibility via public transport and connectivity with other locations along the corridor to expand the trade area of local businesses and the attraction of visiting important regional services, employment and economic drivers such as the University of NSW, NIDA and Kingsford Shopping Centre. The transport interchange south of the Gardeners Road roundabout would act as important focal point that would be likely to have flow on benefits to the retailers and services provided on Anzac Parade. An education programme may be required to address concerns from the public regarding crossing the Street i.e. over the light rail tracks to avoid missed opportunities for businesses i.e. perceived barriers from the Kingsford Interchange to South Juniors Club or the main retail strip.	Access Plan i.e. improvements to landscaping and the public realm to enhance access to and around the CSELR route and stops. **Impact Post Mitigation: Moderate Positive**	Employees, students, customers and businesses operating along Anzac Parade or in adjoining Streets.
Loss of Car Parking		
Significant Negative The proposal is likely to result in the removal of car parking along Anzac Parade reducing the ability for customers and clients to park directly outside businesses (i.e. retailers, commercial and leisure premises). This would impact the desirability of visiting some businesses especially where alternative parking is not available in the same locality. Whilst some of the impact would be offset through improvements to customer access via light rail and improvements to amenity, the loss of parking would notably impact businesses reliant on customers being able to park.	The implementation and management of a Parking Management Plan that implements a range of parking measures including parking permits and priority schemes as well as more efficient parking arrangements in consultation with key stakeholders and affected businesses. **Impact Post Mitigation: Moderate Negative**	Retailers and commercial uses fronting Anzac Parade in the Precinct that are reliant on passing trade to provide convenience services (i.e. newsagent, convenience store) or that provide destination services to visitors from a broader area that need to travel by car (i.e. specialty retailers).

Potential Impact - During Operation	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Impact to land values		
Slight to Moderate Positive Improved capacity and reliability of public transport likely to create positive spin off benefits to landowners.	None Required	Land and property owners in the Precinct, particularly those in close proximity to stops.
Amenity		
Slight Positive Improvements to existing levels of visual amenity and noise levels as a result of the reduction in traffic and appropriate landscaping would lead to the overall improvement of the environment to the benefit of the local business community and landowners.	Maintenance and Review i.e. Controlled use of PA System and bells to minimise noise disturbance; and - High quality landscaping and urban realm improvements. **Impact Post Mitigation: Moderate Positive**	Retail and commercial businesses, workers, clients and customers, cafes, child care facilities, hotels, restaurants, the South Sydney Juniors Leagues Club and other facilities located along the route corridor.
Access to loading docks / servicing areas		
Slight Negative The ability to access service and delivery areas along and adjacent to Anzac Parade would need to be addressed along with access implications for businesses that use connecting streets. A clear education and engagement programme being required for businesses concerning revised access arrangements and routes in and out of the Precinct.	Access Plan A plan agreed with businesses that identifies permanent alternative routes or shared use of space in the Precinct to enable efficient deliveries without adversely affecting the operation of the CSELR. **Impact Post Mitigation: Neutral**	Some businesses directly fronting Anzac Parade and relying on the street for servicing / deliveries.

8.6 RANDWICK PRECINCT

The Randwick Precinct comprises the suburb of Randwick extending along Alison Road, turning south along Wansey Road, east along High Street and terminating in Belmore Road.

Table 22 - Randwick Precinct – Summary of Impacts

Potential Impact – During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Changes to access and local traffic conditions		
Moderate Negative During construction access to the Royal Randwick Racecourse from Alison and Wansey Road will be restricted. These and other changes to vehicle access within the Precinct would have a knock on delay to commuting and travel times for the broader community and businesses.	1. Access Plan i.e. Alternative routes / entrances provided along Ascot Street and High Street, alternative bus drop off and pick up points and pedestrian crossing areas; - maintenance of emergency access to Hospitals at all times; - consideration and planning for access implications as a result of multiple development activities in the Precinct i.e. developments at the hospital, university and as a result of the Urban Activation Precinct. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. **Impact Post Mitigation: Slight Negative**	Businesses, visitors, students, workers and commuters using Alison and Wansey Roads and High Street as well as connecting streets.

Potential Impact – During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Amenity impacts i.e. noise and vibration		
Moderate Negative Impacts to the operation of businesses without adequate soundproofing (some hotels/ short term accommodation associated with the Hospital), some potential hospital activities or businesses reliant on the amenity of outdoor areas (i.e. cafes with outdoor dining on High Street) or facilities with sensitivity to vibration (hospitals, medical practices, research centres) and surrounding the construction sites.	Construction Environmental Management Plan with a detailed Construction Noise and Vibration Management Plan. i.e. that phases construction to minimise duration in any one location; - Includes appropriate mitigation measures such as acoustic sheds and controlled construction periods in light of sensitive uses in the Precinct; and - Assessment and making good of any structural impacts. **Impact Post Mitigation: Slight Negative**	Surrounding retail and commercial businesses, cafes, hotels, educational facilities, hospitals and medical facilities located along the route corridor and Royal Randwick Racecourse.
Loss of on street car parking		
Significant Negative The proposal would result in the removal of car parking in Wansey Road, High Street and surrounding High Cross Park having an impact to clients of local businesses relying on these streets for parking to access local services and facilities.	1. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 2. The implementation and management of a Parking Management Plan that implements a range of parking measures including parking permits and priority schemes as well as more efficient parking arrangements in consultation with key stakeholders and affected businesses. **Impact Post Mitigation: Moderate Negative**	Retail and commercial uses (including medical and educational facilities) located along High Street and surrounding High Cross Park.

Potential Impact – During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Access to loading docks / servicing areas		
Moderate Negative The ability to access service and delivery areas along and adjacent to High Street and High Cross Park would need to be addressed along with access implications for businesses that use connecting streets. A clear education and engagement programme being required for businesses concerning the revised travel routes and changes to servicing in the Precinct.	Access Plan i.e. A plan agreed with businesses that identifies permanent alternative routes or shared use of space in the Precinct to enable efficient deliveries without adversely affecting the operation of the CSELR. **Impact Post Mitigation: Slight Negative**	All businesses and property tenants with accessways fronting High Street or High Cross Park. Access for emergency vehicles will be maintained at all times.
Perceived impact and business viability		
Moderate Negative Owing to prospective adverse amenity and access constraints during the construction period, there may be concerns from businesses (such as the retailers on High Street) as to the potential impact to their businesses. These impacts could be in part addressed through the communication of how access and connections between land uses (such as the services provided by High Street and their connection to the Hospital and University) would be maintained through the construction phase.	1.Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. - Information regarding means to minimise impacts to businesses and maximises the benefits of a local construction workforce. 2. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses. **Impact Post Mitigation: Slight Negative**	Retail and commercial uses located along High Street and surrounding High Cross Park.

Potential Impact – During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Stimulation of redevelopment opportunities		
Moderate Positive A commitment to the proposal and the commencement of works, together with Urban Activation Precinct Programme could create a positive catalyst for the redevelopment of some underutilised sites and locations in the Precinct.	Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and the benefits it would provide to the Precinct. **Post Mitigation Impact: Moderate Positive**	Land and properties in the Precinct, particularly land in closer proximity to the proposed stops.
Potential Impact - During Operation	***Recommended Minimum Mitigation Measures***	***Example Stakeholders Influenced***
Access to work, retail and leisure		
Moderate Negative Impacts to perceived ease of getting to work or other land use activities could lead to the reduced attraction of working / visiting / operating facilities in the Precinct.	1. Access Plan i.e. Maps and plans that show diversion routes and maintain access to properties at all times. 2. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and on-going engagement regarding changes, diversions and timeframes. 3. Construction Environmental Management Plan i.e. Minimisation of construction period duration, careful placement of hoardings and diversions to minimise impact to businesses – i.e. visual or physical. **Impact Post Mitigation: Slight Negative**	Businesses, visitors, students, workers and commuters using facilities within High Street or surrounding High Cross Park as well as directly connecting streets. With particular regard given to some of the major facilities including Royal Randwick Racecourse, the Prince of Wales Hospital and the University of NSW.
Visual impact		
Moderate Negative Impact to visual amenity of the Precinct including High Street and High Cross Park and impact to businesses reliant on this characteristic (i.e. cafes, hotel)	Construction Environmental Management Plan - A plan to minimise the visual impact of hoardings and other construction related equipment. **Impact Post Mitigation: Slight Negative**	Businesses, visitors, students, workers and commuters using facilities within High Street or surrounding High Cross Park.

Potential Impact - During Operation	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Access to Work, Retail and Leisure		
Moderate Positive Improved accessibility via public transport and connectivity with other locations along the corridor to expand the trade area of local businesses and the attraction of visiting important regional services, employment and economic drivers such as the TAFE, University of NSW, Lowy Cancer Research Centre, Royal Randwick Racecourse and medical services. The transport interchange at High Cross Park would act as important focal point that would be likely to have flow on benefits to the retailers and services provided on High Street / in Avoca Street including the Royal Randwick Shopping Centre. An education programme may be required to address concerns from the public regarding crossing the Street i.e. over the light rail tracks to avoid missed opportunities for businesses i.e. perceived barriers from the hospital or High Cross Park to High Street shops and businesses.	Access Plan i.e. improvements to landscaping and the public realm to enhance access to and around the CSELR route and stops. **Impact Post Mitigation: Significant Positive**	Businesses, visitors, students, workers and commuters using facilities within High Street or surrounding High Cross Park as well as directly connecting streets. With particular regard given to some of the major facilities including Royal Randwick Racecourse, the Prince of Wales Hospital and the University of NSW.

Potential Impact - During Operation	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Loss of Car Parking		
Significant Negative The proposal would result in the permanent loss of 225 car parking spaces across the Precinct. The overall loss in car parking in the Precinct (particularly surrounding High Street) would impact the desirability of visiting some businesses (such as medical and professional services) especially where alternative parking is not available in the same locality. Whilst some of the impact would be offset through improvements to customer access via light rail and improvements to amenity, the loss of parking would notably impact businesses (particularly medical uses for the mobility impaired) reliant on customers being able to park.	The implementation and management of a Parking Management Plan that implements a range of parking measures including parking permits and priority schemes as well as more efficient parking arrangements in consultation with key stakeholders and affected businesses. **Impact Post Mitigation: Moderate Negative**	Retail, medical and professional services reliant on convenient access for the mobility impaired.
Impact to land values		
Slight to Moderate Positive Improved capacity and reliability of public transport likely to create positive spin off benefits to landowners.	None Required	Land and property owners in the Precinct, particularly those in close proximity to stops.
Amenity		
Slight Positive Improvements to existing levels of visual amenity and noise levels as a result of the reduction in traffic and appropriate landscaping. Some longer term impacts owing to reduction in scale of High Cross Park. Potential however for some noise and vibration impacts as a result of the Randwick Stabling Yard.	Maintenance and Review i.e. Controlled use of PA System and bells to minimise noise disturbance; - Use of acoustic sheds and enclosures for Randwick Stabling Facility; and - High quality landscaping and urban realm improvements. **Impact Post Mitigation: Moderate Positive**	Surrounding retail and commercial businesses, cafes, hotels, educational facilities, hospitals and medical facilities located along the route corridor and Royal Randwick Racecourse.

Potential Impact - During Operation	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Access to servicing areas		
Slight Negative The ability to access service and delivery areas along and adjacent to High Street would need to be addressed along with access implications for businesses that use connecting streets. A clear education and engagement programme being required for businesses concerning the revised travel routes and changes to servicing in the Precinct.	Access Plan i.e. a plan agreed with businesses that identifies permanent alternative routes or shared use of space in the Precinct to enable efficient deliveries without adversely affecting the operation of the CSELR. **Impact Post Mitigation: Neutral**	All businesses and property tenants with accessways fronting High Street or High Cross Park.

8.7 Rozelle Maintenance Depot

The Rozelle Maintenance Depot is located at the western end of the existing Pyrmont light rail network within the Leichhardt LGA.

Potential Impact – During Construction	*Recommended Minimum Mitigation Measures*	*Example Stakeholders Influenced*
Changes to access and local traffic conditions		
Significant Negative To enable construction, the existing light industrial and storage businesses located within the site must be relocated.	1. Business and Landowner Engagement Plan i.e. information pack regarding the CSELR and clear timeframes as to periods for relocation. 2. Compensation / Relocation Support - Dependant on the nature of the lease arrangements, compensation / support to enable relocation and identification of alternative premises. **Post Mitigation: Moderate Negative**	Existing businesses within the depot site.

Amenity impacts i.e. noise and vibration		
Moderate Negative Potential noise and vibration impacts to surrounding businesses and facilities owing to constructions works.	Construction Environmental Management Plan with a detailed Construction Noise and Vibration Management Plan. i.e. that phases construction to minimise duration in any one location; - Includes appropriate mitigation measures such as acoustic sheds and controlled construction periods in light of sensitive uses in the Precinct; and - Assessment and making good of any structural impacts. **Post Mitigation Impact: Slight Negative**	Businesses and facilities surrounding the depot site.
Potential Impact - During Operation	***Recommended Minimum Mitigation Measures***	***Example Stakeholders Influenced***
Amenity		
Moderate Negative Potential impacts by way of noise to the operation of surrounding businesses and facilities.	Implementation of noise mitigation strategy / design such as acoustic sheds to control noise to receptors. **Post Mitigation Impact: Neutral**	Businesses and facilities surrounding the depot site.

9. CONCLUSION

Overall this Specialist assessment has found that the proposal would result in a range of positive and negative economic impacts. The impacts would vary however in their distribution across different geographic areas, businesses and stakeholders and during the construction and operational stages of the proposal.

Whilst the construction of the CSELR is likely to stimulate broader economic benefits by way of job generation and construction multipliers, at the more local or Precinct level, businesses and landowners would experience a degree of inconvenience and other temporary negative impacts, particularly those located within close proximity to the proposed stops or construction compounds. These impacts would need to be carefully and proactively managed with any mitigation measures monitored for their effectiveness and outcomes.

Upon completion and operation the impacts at the local and broader geographic levels would become overwhelmingly positive with the enhanced capacity and frequency of the transport network increasing the desirability and ease of visiting Sydney CBD as well as the South East. This would in turn support the attraction of visitors and investors to major economic activities and precincts in the Study Area and the spin off benefits to businesses and in turn landowners. The proposal would also enhance the amenity and appeal of Sydney as a place to live and work raising its attraction and potential success as a global city.

In summary, the implementation of appropriate mitigation measures by Transport for NSW and a commitment to their ongoing monitoring and management would create a proposal that positively supports the economic growth of Sydney and broader NSW in keeping with the State Government's objectives as set out in the NSW State Plan, draft Metropolitan Strategy for Sydney (2013) and NSW Long Term Master Plan (2012).

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Appendix 1 - **BUSINESS SURVEY**

BUSINESS SURVEY RESULTS

In order to identify the key impacts associated with the CSELR, a snapshot survey of 100 businesses located along the proposed route was undertaken. The following Appendix provides an overview of the methods used to collect and collate the data as well as the key findings. The implications of the findings and how they relate to the proposal have been discussed in Chapters 6, 7 and 8.

METHODOLOGY

Hill PDA worked in conjunction with Transport for NSW to collect 100 business surveys from a range of commercial and retail businesses located along the proposed CSELR route. The surveys encompassed a range of questions relating to the respondents level of knowledge regarding the Project, existing access requirements and perceptions regarding impacts.

Hill PDA conducted business surveys in conjunction with a Transport for NSW representative within Precincts 2 – 5 on the 14th and 28th of June 2013 collecting a total of 50 surveys. The Team collected the remaining 50 surveys in Precinct 1 (Sydney CBD) on the 26th of June 2013.

A summary of the surveys and their key findings are provided below.

BUSINESS SURVEY RESULTS

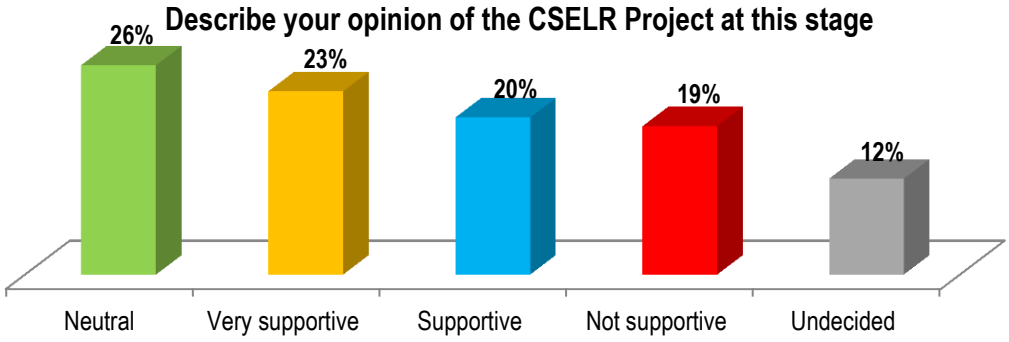
QUESTIONS REGARDING KNOWLEDGE AND PERCEPTION OF THE CSELR

Have you previously heard about the CSELR Project?

Of the businesses that responded to this question, 83% stated that they had heard of the CSELR with 17% stating that they were unaware of the Project.

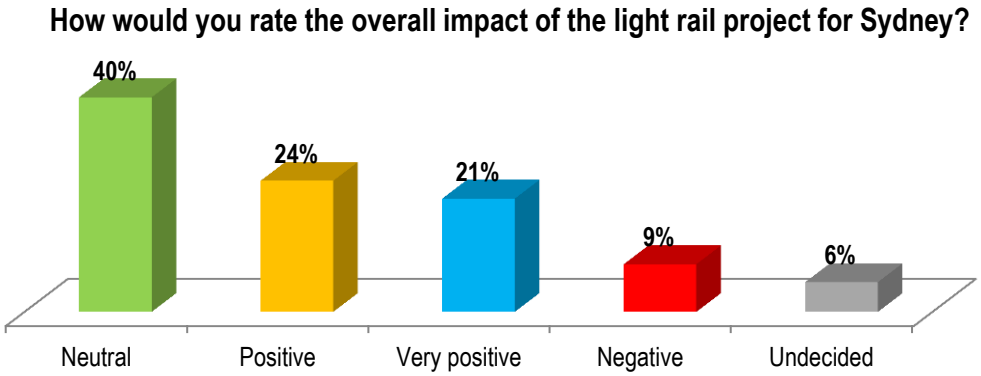
What is your opinion of the CSELR Project?

Of the businesses that responded to this question, 26% stated that they were neutral in their opinion, 43% were either very supportive or supportive, 19% were not supportive and 12% were undecided.



How would you rate the overall impact of the CSELR Project for Sydney?

Of the businesses that responded to this question, 40% stated that they were neutral in their opinion of the proposed CSELR Project in relation to Sydney as a whole, 45% stated that they believed it would have a very positive or positive impact, 9% were negative and 6% were undecided about the benefits of the CSELR Project.

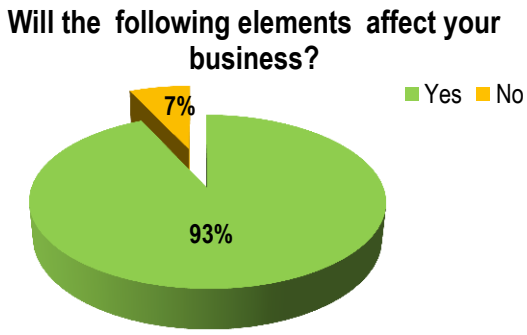


QUESTIONS REGARDING IMPACTS DURING CONSTRUCTION

Do you think any of the following project elements would affect your business?

This question related to aspects of the CSELR Project that may affect the success or operation of businesses within the Study Area. Key project elements related to:

- The pedestrianisation of George Street;
- Improved public transport to Moore Park; and
- Fewer buses entering CBD.



Of the businesses that responded to this question, 93% stated that such elements would affect their businesses while 7% believed that they would not.

Do you think any of the following project elements may affect your business?

Of the businesses that responded to this question, 45% stated that **improved public transport to Moore Park** would have no effect upon their business, 36% stated it would have a positive impact, 11% were unsure and 9% stated it would have a worse effect;

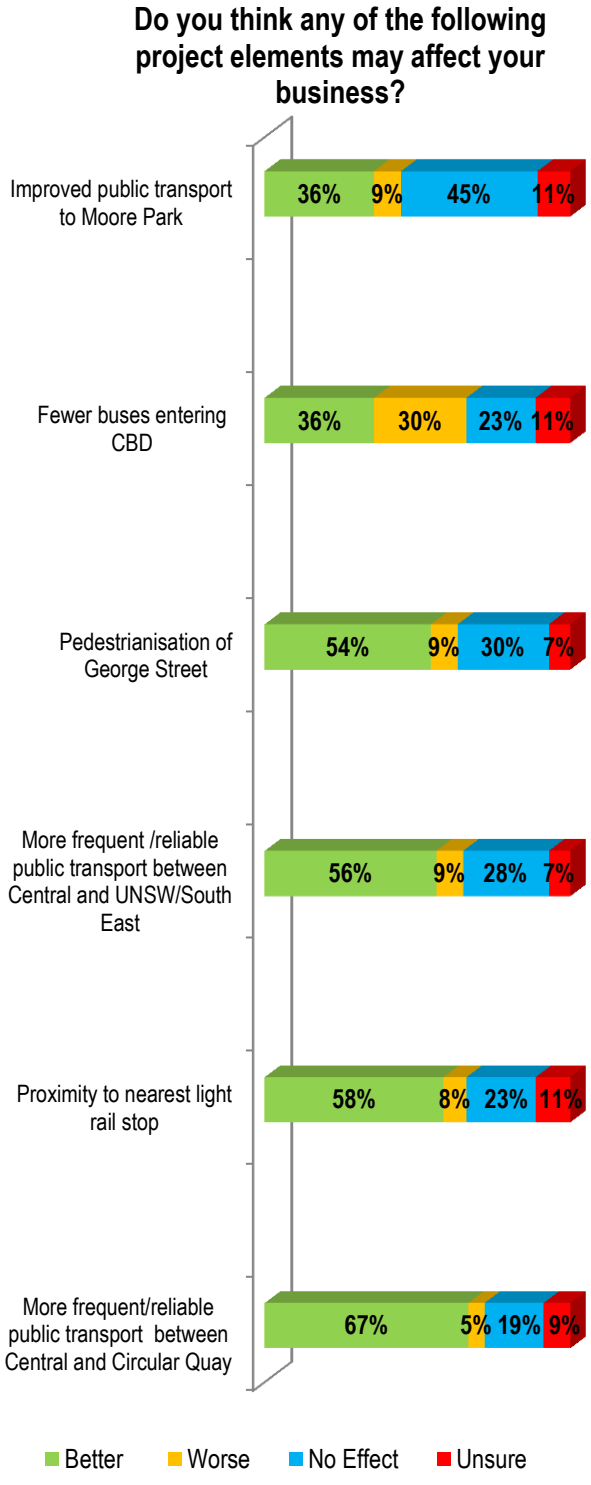
36% stated that **fewer buses entering Sydney CBD** would affect their business in a positive way, 30% stated it would be worse, 23% stated that it would have no effect and 11% were unsure;

54% stated that the **pedestrianisation of George Street** would affect their business in a positive way, 30% stated it would have no effect, 9% stated worse and 7% were unsure;

56% stated that **more frequent / reliable public transport between Central and UNSW / the South East** would affect their business in a positive way, 28% stated it would have no effect, 7% stated that they were unsure and 9% felt it would have a negative impact;

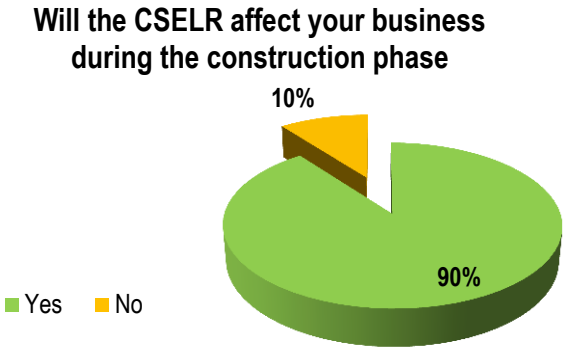
58% stated that the **proximity of the nearest light rail stop** would affect their business in a positive way, 23% stated it would have no effect, 11% stated that they were unsure and 8% felt it would have a negative impact; and

67% stated that **more frequent / reliable public transport between Central and Circular Quay** would affect their business in a positive way, 19% stated it would have no effect, 9% stated that they were unsure and 5% felt it would have a negative impact.



During the Construction phase do you think the project would affect your business?

Of the respondents 90% stated that the construction phase of the Project would affect their business while 10% stated that it would not.



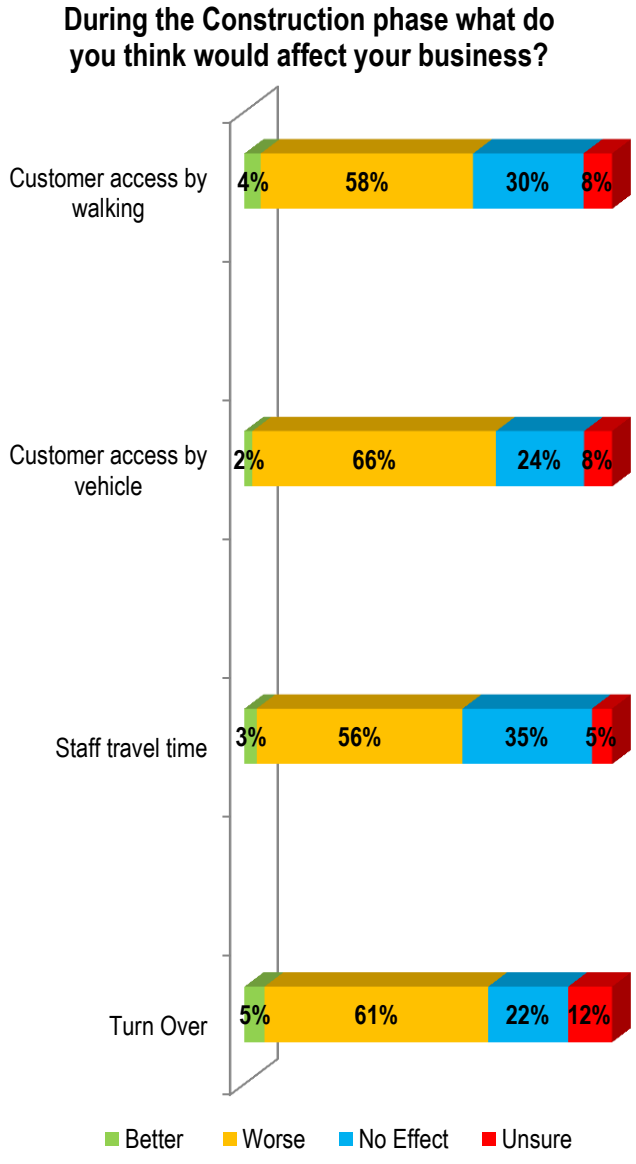
During the Construction phase what do you think would affect your business?

Of the businesses that responded to this question, 58% stated that **customer access by walking** would be negatively affected during the construction phase of the Project, 30% stated it would have no effect, 8% were unsure and 4% stated their business would be better off as a result of changes to customer access;

66% stated that **customer access by vehicle** would be negatively affected during the construction phase of the Project, 24% stated it would have no effect, 8% were unsure and 2% stated their business would be better off;

56% stated that **staff travel times** would be negatively affected during the construction phase of the Project, 35% stated it would have no effect, 5% were unsure and 3% stated that their business would be better off;

61% stated that their **turnover** would be negatively affected during the construction phase of the Project, 22% stated it would have no effect, 12% were unsure and 5% stated their business would be better off;



41% stated that **property / land values** would be negatively affected during the construction phase of the Project, 28% stated it would have no effect, 25% were unsure and 6% stated their business would be better off;

69% stated that the **visibility of their business to customers** would be negatively affected during the construction phase of the Project, 17% stated it would have no effect, 10% were unsure and 3% stated their business would be better off;

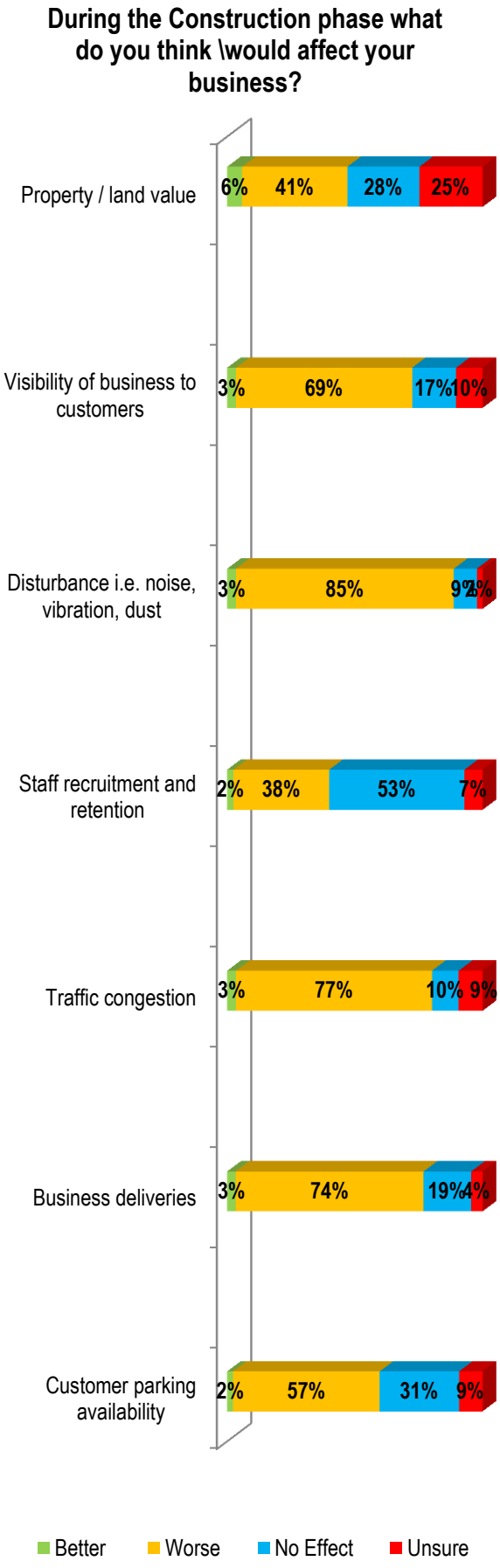
85% stated **disturbance such as noise, vibration and dust** would be worse during the construction phase of the Project, 9% stated there would be no effect, 3% stated that it would be better and 3% were unsure;

53% stated that **staff recruitment** and retention would not be affected during the construction phase of the Project, 38% stated it would be negatively affected, 7% were unsure and 2% stated their business would be better off;

77% stated that **traffic congestion** would be negatively affected during the construction phase of the Project, 10% stated it would have no effect, 9% were unsure and 3% stated their business would be better off;

74% stated that **business deliveries** would be negatively affected during the construction phase of the Project, 19% stated it would have no effect, 4% were unsure and 3% stated their business would be better off; and

57% stated that **customer parking availability** would be negatively affected during the construction phase of the Project, 31% stated it would have no effect, 9% were unsure and 2% stated their business would be better off.



What could minimise the negative impacts and enhance any positives during the construction phase?

The following is a summary of possible mechanisms and methods that were identified by respondents to minimise the negative impacts and enhance any positives of the CSELR during the construction phase as identified by surveyed businesses.

Negative Impacts

Businesses surveyed proposed various ways to mitigate the negative impacts of the CSELR during the construction phase, the most frequent responses were as follows:

- Notifying businesses of construction time frames;
- Conducting the construction outside business hours;
- Working at night;
- Not doing any construction;
- Managing any noise, vibration, traffic congestion and dust;
- Maintaining clear pedestrian and vehicle access points;
- Keeping businesses informed / maintaining consultation with businesses;
- Set up a hotline for people to call about inquires;
- Allow alternative parking and loading zone arrangements;
- Be flexible on sensitive issues;
- Provide compensation; and
- Conduct impact studies.

Enhancement of Positives

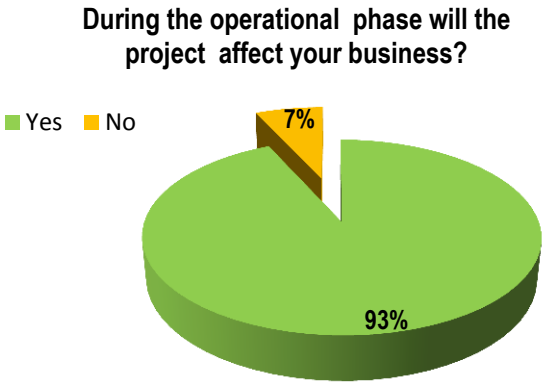
There was a low response rate to this part of the question with only three businesses responding. The answers were as follows:

- Do a good job;
- Fix up the flooding on George Street, make it easier for the water to flow out of the street; and
- Increase revenue.

QUESTIONS REGARDING IMPACTS DURING OPERATION

Once complete, do you think the operation of the project would affect your business?

Of the businesses that responded, 93% stated that once complete and operational the CLSER would affect their business while 7% stated that it would not.

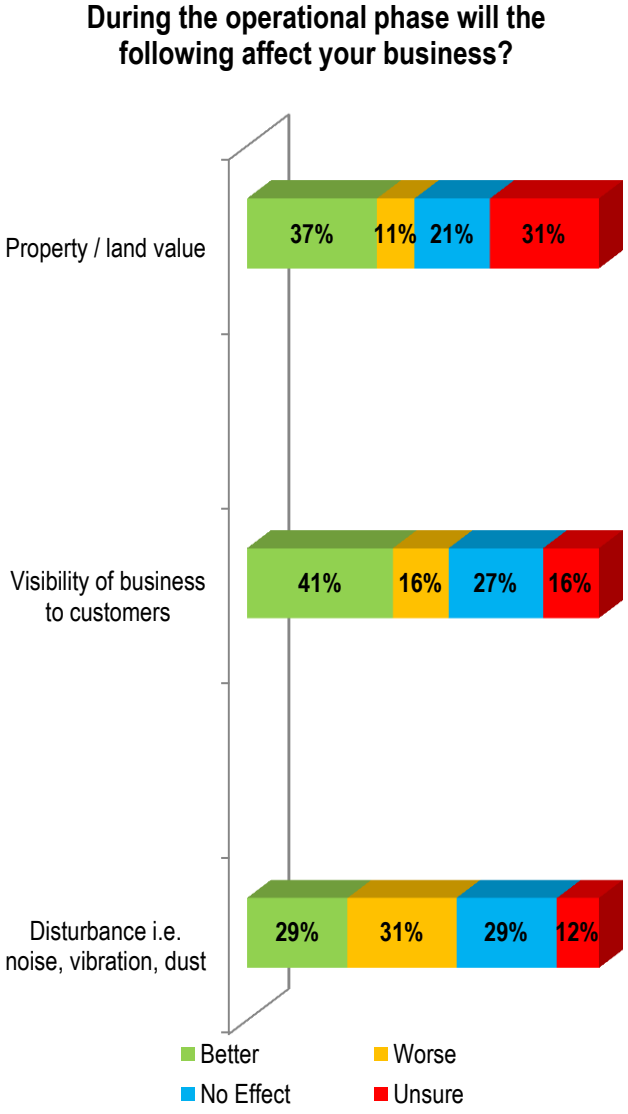


During the operational phase, how would your business be affected?

Of the businesses that responded, 37% stated that **property / land value** would be better off during the operational phase of the Project, 31% were unsure, 21% stated there would be no effect and 11% stated it would be worse;

41% stated that the **visibility of their business to customers** would be better off during the operational phase of the Project, 27% stated there would be no effect, 16% stated it would be worse and 16% stated they were unsure;

31% stated that **disturbances such as noise, vibration and dust** would be worse during the operational phase of the Project, 29% stated it would be better off, 29% stated that there would be no effect and 12% stated they were unsure;



49% stated that **staff recruitment and retention** would be not be affected during the operational phase of the Project, 24% stated it would be better off, 14% stated it would be worse and 11% stated they were unsure;

40% stated that **traffic congestion** would be negatively affected during the operational phase of the Project, 31% stated it would be better off, 19% stated that there would be no effect and 11% stated they were unsure;

46% stated that **business deliveries** would be negatively affected during the operational phase of the Project, 24% stated it would have no effect, 18% stated it would be better off and 12% were unsure;

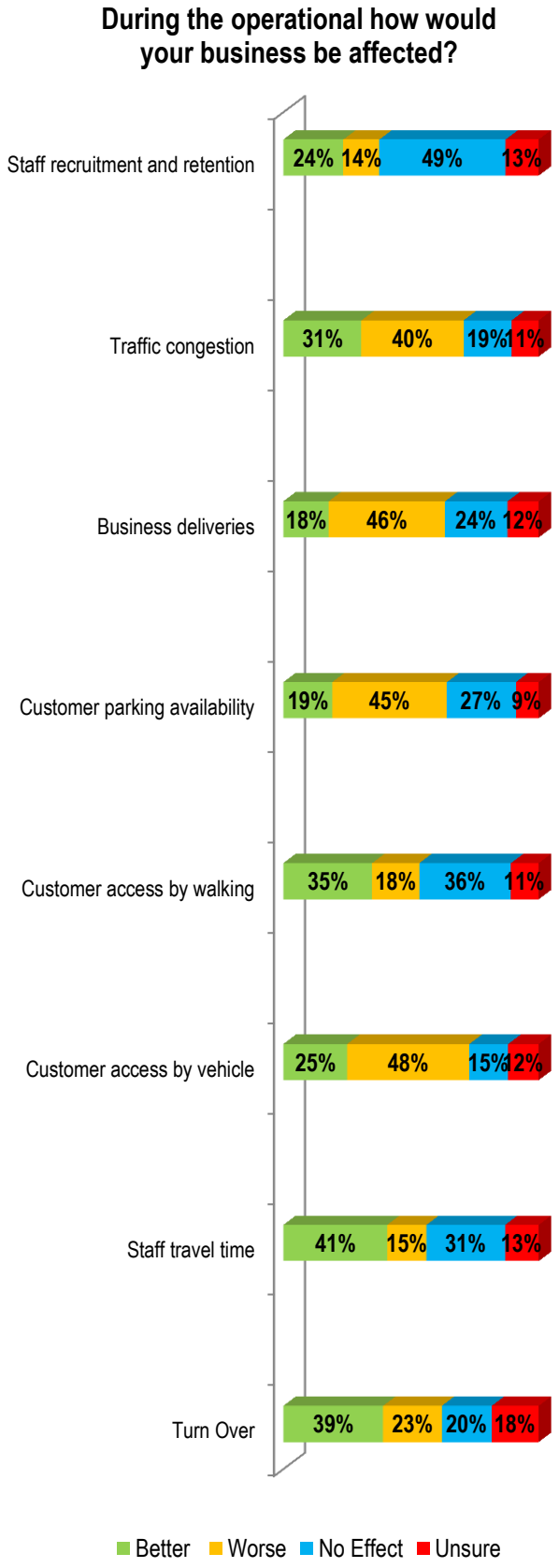
45% stated that **customer parking availability** would be negatively affected during the operational phase of the Project, 27% stated it would have no effect, 19% stated it would be better off and 9% were unsure;

36% stated that **customer access by walking** would not be affected during the operational phase of the Project, 35% stated it would be better off, 18% stated it would be worse and 11% were unsure;

48% stated that **customer access by vehicle** would be negatively affected during the operational phase of the Project, 25% stated it would be better off, 15% stated that there would be no effect and 12% stated they were unsure;

41% stated that **staff travel times** would be better off during the operational phase of the Project, 31% stated there would be no effect, 15% stated that it would be worse and 13% were unsure; and

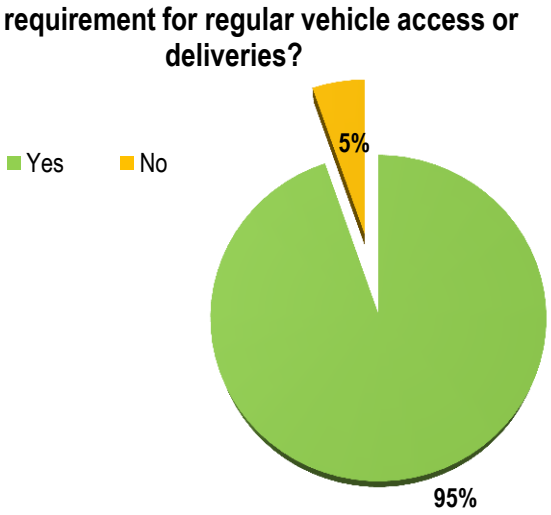
39% stated that their **turnover** would be better off during the operational phase of the Project, 23% stated it would be worse, 20% stated that there would be no effect and 18% were unsure.



QUESTIONS REGARDING BUSINESS OPERATION AND DELIVERY

Do you have regular requirements for vehicle access or deliveries?

Of the businesses that responded, 95% stated that they had regular requirements for vehicle access such as deliveries. The key issues for the majority of businesses related to the removal of loading zones during construction and upon operation of the CSELR. Businesses also stated that a large proportion of their couriers needed to be able to park / double park to deliver daily and weekly packages.



Do you have any further comments about the Project?

Responses to this question have been summarised below under four main headings

Comment 1: The Project is a positive step for Sydney

Some quotes from respondents were as follows:

- *"It will be better and will give Sydney more international visibility, every big city in the world has a promenade"*
- *"Great! Let's do it! Crazy it wasn't done before. Like the one done in Melbourne"*
- *"The sooner the better"*
- *"Great Idea -Long Over Due-Too Much Traffic in CBD and Anzac Parade"*
- *"I think we will have a positive outcome"*
- *"It's a positive step forward for Sydney in terms of the environment friendly aspects, but I think the project must begin and finish in the shortest time ever"*
- *"Looking forward to see how it runs"*
- *"I am a green person and I support it"*
- *"Good for staff, Randwick very poorly serviced by public transport"*
- *"Light Rail is more efficient"*
- *"It is a fantastic proposal and great for Sydney"*
- *"Can't stop progress"*
- *"Good for customers"*

Comment 2: The Project should not go ahead

Some quotes from respondents were as follows:

- *"Don't do the project"*
- *"Leave it as it is"*
- *"We don't like things to change in Sydney, we don't like change"*
- *"The street is already too narrow "thin"*
- *"What is going to be achieved"*
- *"What makes them think this will work, trams failed in the past why not now"*
- *"This is not the best street for the route"*
- *The project is a "waste of money"*

Comment 3: Provide more information about the Project for businesses

Some quotes from respondents were as follows:

- *"Give people more information about the project, say when it has been launched and give everyone more frequent updates"*
- *"What is the construction phase length"*
- *"Regular consultation and face to face"*
- *"Don't know a lot of details, construction information and design information needed"*

Comment 4: Delivery and parking issues

Some quotes from respondents were as follows:

- *"How are the big trucks going to deliver their products?"*
- *"Where do the parents park to drop of their kids"*
- *"I rely on parking for customers, deliveries and passing traffic for sale"*
- *"Need car parking for this business, do the quickest option"*
- *"Where are clients going to park? The construction phase is going to be messy, are clients going to complain? Will we be compensated"*
- *"Parking restrictions surrounding the Hotel must be addressed and we would require a loading zone on both Perouse and Cuthill sides of the building"*
- *"Bad for deliveries"*
- *"No on street parking reduction"*
- "Very concerned about how their business would receive deliveries both during construction and once the light rail is operational"

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