

9. Traffic, transport, and access

9.1 Existing environment and background

This chapter draws on information from Appendix H (Traffic, transport, and access assessment).

9.1.1 Overview

Public transport

Central Station is Australia's busiest transport interchange. Over 270,000 customers visited the station in 2018, the equivalent of about 85 million passenger movements across the year.

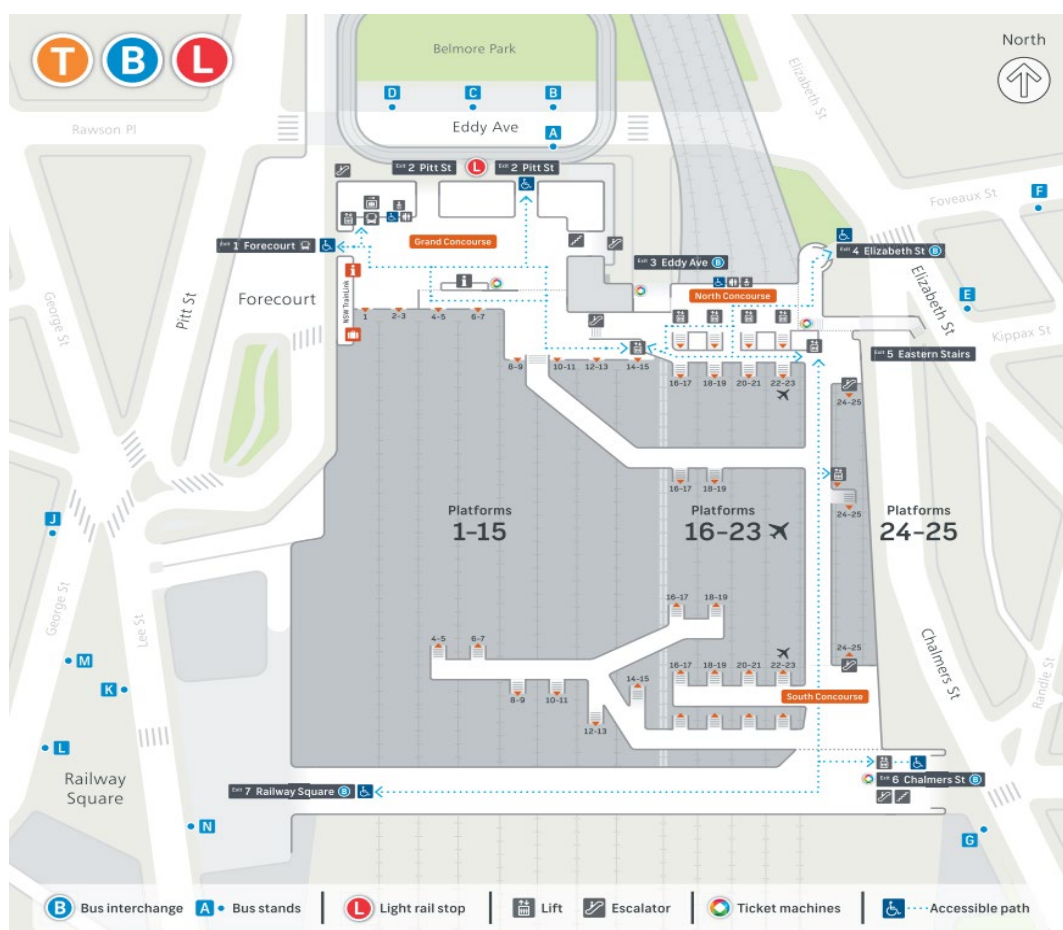
There are 25 platforms that service suburban, intercity, regional, and interstate trains, as well as light rail, bus, and coach services. The planned introduction of Sydney Metro in 2024 will further increase the number of customers interchanging at the station.

The suburban rail lines can easily see trains arriving and leaving every three minutes during the busiest periods, with the light rail service running once every 10 to 15 minutes to Dulwich Hill, and the Randwick to Kingsford service stopping roughly once every four minutes.

Regional and intercity train services run less frequently depending on the destination. The main bus services depart from Eddy Avenue, or nearby in Elizabeth Street or Railway Square. Central Station also sees several long-distance coach services departing from the Western Forecourt and Pitt Street to other regional cities and state capitals.

Walking and cycling

Central Station's complex layout makes it difficult and confusing for people to navigate between transport modes, something that the project is looking to resolve. Despite there being seven pedestrian entrances/exits around the station (see Figure 9-1 below), customers find it hard to enter and leave via the easiest access point for the service they are trying to use (see Section 10.1.3 of Chapter 10 (Place, design and movement)).



Source: *Central Precinct Renewal Transport Strategy and Transport Impact Assessment* (Transport for NSW, 2022e)

Figure 9-1: Central Station layout plan

The station also makes it hard for people to walk between Lee Street and Chalmers Street, as the 25 platforms act as a barrier. The Devonshire Tunnel, located under the South Concourse and shown on Figure 9-1, is the only dedicated east-west pedestrian link in the area. There are about 155,000 pedestrian movements through the tunnel every day. At the north of the station, people either use the Grand Concourse or Eddy Avenue if they are walking between Pitt Street and Elizabeth Street.

While people are not allowed to cycle through the project area and there is no bike parking, there is an established cycle network immediately to the east along Chalmers Street and through Prince Alfred and Belmore Parks. The cycle network comprises a mix of separated off-road cycleway sections, shared use areas, low-traffic streets, and roads with dedicated bike lanes. The main cycle route from the south to the City passes in front of Eddy Avenue Plaza. The existing streets around Central Station are also well suited to walking, with footpaths on both sides of the road and many signalised crossing points.

Road traffic and parking

The main roads around Central Station have low-speed limits and support traffic volumes that are similar to other parts of the Central Business District (CBD) (see Table 9-1 below with further details in Appendix H (Traffic, transport and access assessment)). The volumes reflect the introduction of traffic calming measures through the City over the past decade, and the fact that most people typically choose not to drive into the CBD.

The surrounding roads also support a mix of kerbside uses such as bus, loading, mail and taxi zones, on-street standard, motorbike, and mobility parking, and emergency vehicle spaces. That said, there are no kerbside provisions on the sections of road immediately next to the station.

The loading dock and Porte Cochere are used by Sydney Trains and emergency vehicles. The loading dock is also used by delivery and maintenance vehicles.

People are allowed to park for 15-minutes in the few public spaces in the Western Forecourt to pick-up and drop-off people at the station. Maintenance vehicles are also permitted to park here.

Table 9-1: Existing traffic and road network conditions

Source: *Central Precinct Renewal Transport Strategy and Transport Impact Assessment* (Transport for NSW, 2022e)

Road	Configuration	Posted Speed Limit	Indicative daily volumes
Eddy Avenue	Dual carriageway with three lanes in each direction	40km/h	10,000–15,000
Pitt Street	Dual carriageway with three lanes in each direction		20,000–25,000
Elizabeth Street	Dual carriageway with three lanes in each direction including a dedicated bus lane		20,000–25,000
Chalmers Street	One-way northbound carriageway with two lanes and a dedicated parking and bus lane		5,000–10,000

9.1.2 Policy and planning setting

The following policies, guidelines, and plans have been considered when assessing the traffic, transport, and access impacts:

- [Guide to Traffic Generating Developments Version 2.2](#) (Roads and Traffic Authority (RTA), 2002)
- [Planning Guidelines for Walking and Cycling](#) (Department of Infrastructure, Planning and Natural Resources, 2004)
- [NSW Bicycle Guidelines Version 1.2](#) (RTA, 2005)
- [Guide to Traffic Management – Part 3 Traffic Studies and Analysis](#) (Austroads, 2007)
- [Cycling Aspects of Austroads Guidelines](#) (Austroads, 2014)
- [Movement and Place Framework](#) relevant guidelines including the [Walking Space Guide: Toward Pedestrian Comfort and Safety](#) (Transport for NSW, 2020g) and the [Cycleway Design Toolbox: Designing for Cycling and Micro-mobility](#) (Transport for NSW, 2020b)
- [Central Precinct Renewal Transport Strategy and Transport Impact Assessment](#) (Transport for NSW, 2022e).

9.2 Assessment of potential impacts

9.2.1 Construction

Public transport

The project would not involve work in the rail corridor or on the platforms, ensuring that all services would not be impacted. In addition, the work could be carried out without impacting the bus services operating from Eddy Avenue, Elizabeth Street, or Railway Square, or the coach services operating from the Western Forecourt.

The only public transport impact would be to the Dulwich Hill light rail service, which would be affected while the track is realigned under the Porte Cochere.

Signs, along with staff, would help people navigate through the terminal building and external areas when work is being carried out. People would also be advised to allow extra time for their journeys through Central Station. This would help minimise any disruption to people's journeys and interchange.

Walking and cycling

There are no intended cycle diversions, or detours needed to build the project, and therefore people would not be delayed or inconvenienced by the works. The only potential impact maybe along Eddy Avenue where temporary pedestrian management controls maybe needed throughout to maintain public safety, and the occasional introduction of controls elsewhere around the construction footprint to help safely move equipment and machinery. This would have minimal impact on people's journey times.

There would be some locations in the construction footprint that would be cordoned off while specific work takes place. As noted above, signage and staff would be used to help the public navigate through the station when the work is taking place. The public would also be given early notice of up-and-coming work, and areas that would be temporarily closed off; noting however, that all emergency exits would remain in use and signposted.

Dynamic pedestrian analysis was undertaken for the project. Overall, the model conditions showed high levels of capacity with typically level of service (LoS) A and B along Eddy Avenue and adjacent to the light rail platform within the Porte Cochere. The footpath could accommodate reductions in width due to construction activities (for example, from construction hording) and still provide acceptable levels of service. The results of the construction pedestrian modelling are provided in Section 6.4.1 in Appendix H (Traffic, transport and access assessment).

The Devonshire Tunnel would be unaffected.

Road traffic and parking

As work would only take place in the confines of the station there is no need to introduce kerbside restrictions on the surrounding public roads. This means there would be no impact on public, residential or kerbside parking or accesses, taxi ranks, motorbike zones, loading zones, or bus stops. Anyone working on the project would not be allowed to park on the street.

There may be occasions when traffic management controls need to be temporarily introduced next to the construction footprint. This may involve closing the nearside traffic lanes for safety-critical activities such as when working at height or during crane lifts. This would cause slight temporary delays on local roads. However, it is unlikely to materially impact overall journey times, especially as the controls would be removed during busy periods.

The project would use the established road entrance and exit points to the construction footprint, loading dock, and Western Forecourt, removing the need to introduce temporary traffic lights or other access controls. As noted below, because construction traffic volumes would be occasional and low, they can be easily accommodated on the local roads. This means there would be no impacts on general traffic other than the rare occasions when oversized deliveries arrive and leave site as discussed below.

The available parking in the Western Forecourt would be unaffected.

As the loading dock would be used during construction (see Section 5.3 of the EIS) and work would be carried out on the Porte Cochere, it means these locations would no longer be available for use by Sydney Trains, the emergency services, and for loading and servicing. Transport would identify alternatives that would not impact on other transport services in the area (for example, kerbside uses) or affect the station's use or operation.

Emergency vehicle access to Central Station would be maintained and prioritised throughout construction. This would include providing specific briefings with Sydney Trains who regularly review the emergency management procedure for Central Station to ensure emergency service workers can quickly and easily navigate to all parts of the station on foot throughout construction.

Haulage

Figure 5-10 shows the indicative haulage routes around the construction footprint. These routes support heavy vehicle traffic and would direct it away from the streets within the CBD as required under the NSW Government's Road Rules 2014. It would allow traffic to enter and leave the City via the shortest route to the motorway network to the south.

Construction traffic would need to travel clockwise on the roads around the station to support 'left in-left out' access. This is standard practice as it prevents the need to cross oncoming traffic. It is safer and it reduces delays.

Deliveries would be prioritised to avoid the busiest periods, including morning and afternoon peak traffic, and when key events are happening in the CBD, or in and around the station. Further restrictions would be placed on oversized vehicles, meaning they would only arrive and leave in the evening and at night.

Construction traffic

Section 5.2 of Appendix H (Traffic, transport, and access assessment) predicts that 20 to 30 heavy vehicles would arrive and leave site every day during the busiest periods. Heavy vehicles would be prevented from arriving and leaving during the morning and afternoon peaks unless it is critical such as during a concrete pour.

The highest number of light vehicles arriving and leaving site (around 50 per day) would occur when the refurbished buildings are being fitted out. This would happen towards the end of the project. These vehicles would make smaller deliveries.

There would also be the need for oversized vehicles to occasionally arrive and leave site. These would be used to deliver large, prefabricated elements, such as the roof panels. These deliveries would be restricted to the evening and night-time, and they may require additional traffic management controls, including a police escort.

Table 9-1 above shows that there are at least 5,000 two-way vehicle movements on the local roads around the station every day, increasing to 25,000 along Pitt Street and Elizabeth Street in the busiest periods. At worst, the volumes of construction traffic would only add between 0.3 and two per cent to the existing volumes. This means the construction would not cause or add to road congestion.

9.2.2 Operation

The project would not change any road access into and out of the station. It would also not require any changes to be made to the local roads around the area. This means traffic would be unaffected.

The new retail offerings at Central Station, such as cafes, restaurants, and small shops, are not expected to lead to a rise in private vehicle use or induced traffic. Instead, increased activity may attract more pedestrians and cyclists to the area, who may visit the Sydney Terminal Building and Eddy Avenue Plaza. As Central Station is a significant public transport hub, it is expected that customers will reach the station via existing walking and cycling paths, as well as light rail and trains.

All bus and coach stops would be maintained in their current locations, and there would be no changes to the supporting services, routes, or timetables. Once the work to realign the Porte Cochere is finished, the light rail would be reinstated, with no operational impact to the Dulwich Hill service.

There would be no loss or change to the public parking provisions, while Transport is working to find a solution to the loss of service and emergency vehicle parking in the loading dock and Porte Cochere. This includes on street loading and mail zones. Similarly no impacts are proposed for public on-street parking including mobility parking and motorbike zones. The existing bus and taxi zones will continue to operate as existing.

The loading dock will also be restricted to a single access point during business hours (understood to be from 7.30am to 6pm). After hours the existing northern entry to the loading dock from Pitt Street will be available enabling vehicles to drive through the area without the need to turn round within the dock. It is understood that this is still being reviewed and negotiated with stakeholders with plans for Sydney Trains functions to be relocated to other areas operationally.

There would be no change to the footpaths or cycle network around the station other than the plan to widen the Eddy Avenue footpath and the realignment of the light rail stop at the Porte Cochere to cater for more customers and improve pedestrian flow. Dynamic pedestrian analysis was undertaken for the operating conditions of the project along Eddy Avenue, the light rail platform under the Porte Cochere and within Eddy Avenue Plaza. Overall, the model conditions showed high levels of capacity with typically LoS A and B along Eddy Avenue and adjacent to the light rail platform within the Porte Cochere. However, alighting at the end of the light rail platform displayed LoS B and C level before returning to LoS A. Pedestrian performance of Eddy Avenue Plaza shows largely LoS A with areas of LoS B. The new provision of seating within the plaza space does not impact the circulation and movement of pedestrians under a future year 2056 morning peak hour demand. The results of the operational pedestrian modelling are provided in Section 7.1.4 in Appendix H (Traffic, transport and access assessment).

New bicycle parking will be provided within Eddy Avenue Plaza to accommodate a minimum of 50 bicycles, subject to detailed design. Additional bicycle parking areas will be provided in the broader precinct as part of the Central Precinct Renewal Program.

Existing modal conflicts have been considered in the design of the project. There would be no additional modal conflicts created by the project, however, the proposal will minimise some of the existing modal conflicts along Eddy Avenue, Pitt Street and around the light rail platform under the Porte Cochere. Further discussion of modal conflicts is provided in Section 10.3.5.

Signage, lifts, and staircases would be installed to improve access to specific areas of the station, the existing light rail, bus, and coach stops, and the new retail spaces.

The new signage would help people interchange between transport modes more quickly and efficiently, while there would be some form of bike parking provided to allow cyclists to make better use of the retail facilities introduced under the project. Finally, new street furniture, seating, and other urban improvements would be introduced (see Chapter 10 (Place, design and movement)) to encourage people to stop and enjoy the new facilities. These improvements would also cater for the predicted increase in visitors.

9.3 Environmental management measures

Traffic, transport and access impacts will be addressed in the form of management measures. Measures to minimise impacts relating to place, design and movement, noise and vibration, and air quality are addressed in other impacts chapters and have not been included here. Table 9-2 lists the measures to manage traffic, transport and access impacts specifically.

Table 9-2: Environmental management measures - traffic, transport, and access

Ref	Impact / Uncertainty	Environmental management measure	Timing
TT01	Uncertainty Construction traffic impacts	<p>Construction traffic numbers, haulage routes, oversized vehicle requirements, and traffic management controls will be finalised to confirm they are consistent with the assessment presented in the EIS.</p> <p>City of Sydney Council will be consulted on the use of any alternative haulage routes, and the traffic management measures will be revised in the Construction Traffic Management Plan (see measure TT05).</p> <p>The following will be provided to support consultation with City of Sydney Council on the use of alternative roads for haulage:</p> <ul style="list-style-type: none"> • A swept path analysis • Information to show the roads will not compromise public safety, and the traffic has no more than a minimal amenity impact • Completion dates of the road dilapidation surveys for the proposed haulage roads • Details on the measures that will be implemented to avoid hauling past schools, and aged-care, child-care and community facilities during the morning and afternoon peak periods, or at specific times such as during church services or exams. 	Detailed design
TT02	Uncertainty Operations and emergency vehicles	The Sydney Trains and emergency vehicle parking will be relocated from the western loading dock and Porte Cochere to an alternative location to avoid operational or servicing impacts or effects on other road users. The final locations will be agreed in consultation with Sydney Trains, and the emergency services.	Detailed design
TT03	Uncertainty Dulwich Hill light rail	Final construction methods and times for the for impact on the Dulwich Hill light rail line under the Porte Cochere will be confirmed in consultation with Sydney Metro and Transport. Measures will be included in the Construction Traffic Management Plan (see measure TT05) to notify, provide signage, and develop a strategy for low-mobility and disabled passengers to help them interchange with the light rail stop at Capitol Square for the period the Central Station stop is not in use.	Detailed design
TT04	Uncertainty Final pedestrian and cycle numbers	Final pedestrian and cyclist numbers will be confirmed based on predicted business types and customer numbers to ensure pedestrian, bike parking, and street furniture provisions are sufficient. The design will be revised to increase the provisions where needed. The additional enhancement of pedestrian and cycle infrastructure within the Central Precinct will also be investigated in consultation with user-groups, Sydney Trains, City of Sydney Council, and Transport.	Detailed design

Ref	Impact / Uncertainty	Environmental management measure	Timing
TT05	Impact Construction traffic impacts	A Construction Traffic Management Plan (CTMP) will be prepared and implemented in accordance with <u>Traffic Control at Work Sites</u> (Transport for NSW, 2022v) and <u>QA Specification G10 - Traffic Management</u> (Transport for NSW, 2020e). The CTMP will focus on maintaining general traffic flows, finalising site entry and exit arrangements, including haulage and circulation around the station, and construction parking. The CTMP will be prepared in consultation with City of Sydney Council, Sydney Trains, Sydney Metro, and the emergency services.	Pre-construction / construction
TT06	Impact Movement restrictions in Central Station	A Delivery and Service Management Plan will be prepared and implemented as part of the CTMP. The Plan will confirm the procedure to ensure emergency, delivery, operation, and maintenance vehicles can still service Central Station throughout construction.	Pre-construction / construction
TT07	Impact Emergency and evacuation management	Consultation with the emergency services will be carried out as part of the Emergency Management and Evacuation Plan . The plan will include: <ul style="list-style-type: none"> • Evacuation procedures and the locations where to evacuate • Emergency vehicle entry and exit points to-and-from Central Station during construction • Confirm response time requirements and priority access routes to all parts of Central Station on foot and by vehicle as needed to protect the public • Emergency vehicle and service access requirements throughout construction. Briefings will be carried out to ensure emergency service workers can quickly and easily navigate to all parts of Central Station during construction on foot • All workers will be inducted by Sydney Trains Customer Experience on the current fire evacuation procedures. 	Pre-construction / construction
TT08	Impact Traffic management restrictions	The temporary restrictions and traffic management controls on public roads around Central Station will be managed and implemented in accordance with the provisions of Road Occupancy Licence(s) .	Pre-construction / construction
TT09	Impact Pedestrian and cyclist management	Signage and line markings will be used to guide pedestrians and cyclists past all site entrances and exits, and through and around the project area, to ensure access is maintained. Measures will also be provided to help and guide low-mobility, deaf, and visually impaired customers when work is being carried out. Specific routes and additional assistance will be provided to these people, along with disabled customers who are unable to walk.	Pre-construction / construction
TT10	Impact Loss of wayfinding and navigation	The emergency services, public transport operators, and other key users will be notified in advance of all internal and external changes in Central Station. The public will be advised to allow additional travel time.	Pre-construction / construction
TT11	Impact Road damage	A Road Dilapidation Report will be prepared along all confirmed haulage routes before work starts. The report will be sent to City of Sydney Council within three weeks of completing the surveys and at least five days before starting work.	Pre-construction / construction
TT12	Impact Safety	Safety Audits will be carried out to confirm and finalise safety measures at construction traffic entry and exit points, and all locations that will remain open to the public. The Audits will	Pre-construction / construction

Ref	Impact / Uncertainty	Environmental management measure	Timing
		be submitted to, and accepted by, Transport. They will be provided to City of Sydney Council for information.	
TT13	Impact Construction traffic impacts	<p>Construction traffic, including deliveries and waste vehicles, will be prevented from arriving and leaving site during the morning and afternoon peaks other than in critical periods such as concrete pours. Outside of these periods, construction traffic movements will be prioritised to less busy periods.</p> <p>Oversized vehicle movements and routes will be confirmed in advance in consultation with NSW Police, Transport, and City of Sydney Council. They will be scheduled with the guidance of the above authorities. Additional traffic controls such as police escorts will be used where needed or directed.</p>	Pre-construction / construction
TT14	Impact Pedestrian, cyclist, road user and worker safety	<p>Vehicle access to and from construction sites will be managed to ensure pedestrian, cyclist, and motorist safety. Depending on the activity, this may require manual supervision, physical barriers, or temporary traffic management.</p> <p>These measures will comply with the requirements of the <u>Guide Road Design Part 6A Paths for Walking and Cycling</u> (Austroads, 2017), and relevant Australian Standards, while accounting for City of Sydney Council design codes and technical specifications.</p>	Construction
TT15	Impact Pedestrian navigation	Signage and staff will be used to help customers and the public navigate through Central Station during construction. Hoardings and other measures will be used to partition and screen-off work areas to maintain safety and amenity.	Construction
TT16	Impact Road damage	Any roads damaged during construction will either be repaired within three months, or a compensation payment will be made to the relevant road authority.	Construction/ post-construction