Sydney International Speedway

Environmental Impact Statement

Technical Paper 1
Traffic, Transport and Parking

Sydney International Speedway

Technical Paper: Transport, Traffic and Parking

Final

30 July 2020

Sydney Metro

Jacobs

Sydney International Speedway

Project No:	IA199800
Document Title:	Technical Paper: Transport, Traffic and Parking
Revision:	Final
Date:	30 July 2020
Client Name:	Sydney Metro
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File Name:	SIS_EIS_TP1_Traffic, Transport and Parking

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Glossary of terms and acronyms

Term	Meaning
Active transport	Includes walking and cycling
Arterial road	A road that forms a critical network link with priority given to the safety and efficiency of through traffic movements. Arterial roads provide access between centres and usually carry higher volumes of traffic
Average delay	Duration, in seconds, of the average vehicle waiting time at an intersection
Capacity	The nominal maximum number of vehicles which has a reasonable expectation of passing over a given section of a lane or roadway in one direction during a given time period under prevailing roadway conditions
CBD	Central business district
CTMF	Construction Traffic Management Framework
Cumulative impacts	Impacts that, when considered together, have different and/or more substantial impacts than a single impact assessment on its own
Heavy vehicle	Classified as a Class 3 vehicle (a two-axle truck) or larger, in accordance with the Austroads Vehicle Classification System
Impact	Influence or effect exerted by a project or other activity on the natural, built and community environment
Local road	A road or street used primarily for access to abutting properties
Motorway	Fast, high capacity, access-controlled roads that primarily link regional hubs and cities usually with grade separated interchanges and without traffic signals. May be tolled or un-tolled
NSW	New South Wales
Public transport	Includes, metro, train, bus, ferry and light rail
Transport for NSW	Transport for New South Wales

Executive summary

Overview of the project

The NSW Government has committed to relocating speedway racing to Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports, creating a true motorplex for the NSW motorsport racing community. The new speedway would provide the community and racing supporters a unique sporting facility that would cater for local, regional, national, and international racing events while continuing to support the growth of speedway racing in NSW.

Once complete, the project would include world class racing infrastructure in the form of a clay-based racetrack benchmarked to national and international best practice for both speedway vehicles and motorcycles. To facilitate the use of the speedway racetrack, the following ancillary racing infrastructure would be constructed:

- New vehicle access to the raceway area, including a gated access via an intersection off Ferrers Road
- A racing competitor's pit area, comprising around 150 parking bays for race vehicles and their tenders, including 20 bays for heavy vehicles transporting racing vehicles to and from the speedway and viewing platforms for pit crews
- Workshops/garages and track-side operational support areas to be used by pit crews.

High quality event support infrastructure provided to maximise the spectator experience at speedway events would comprise:

- A grandstand with the capacity to seat around 3750 spectators
- Ticketing and entryway structures
- Spectator facilities, including terraced seating for up to around 7000 spectators, public amenities, corporate boxes, provision for food and beverage operators together with merchandise outlets
- Dedicated parking provided for spectators, visitors and users of the Sydney International Speedway in Carpark A, available for use by other motorsport operators by agreement
- Dedicated parking for Sydney Dragway to replace the existing spectator parking areas which would form part of the Sydney International Speedway project site. The New Dragway Parking in Carparks C and D would be available for use by other motorsport operators by agreement.

Operational support infrastructure would be provided to enable the operation of the Sydney International Speedway. Such infrastructure would include:

- Public safety including fencing and fire safety systems
- Communications including a fibre optic network (to suit internet broadcasting bandwidth and PA/AV provisions), signage and large broadcasting screens
- Services including the provision of stormwater, drainage and flooding, utilities and lighting.

Construction of the project would include earthworks and land forming activities, construction of project infrastructure, environmental management measures, utilities connections, landscaping and finishing works. Construction of the project is expected to take around 13 months to complete.

Approach to transport, traffic and parking assessment

A summary of the methodology used to assess the impact of the project on the transport network is provided in Table ES-1.

Table ES-1: Summary of the traffic and transport assessment approach

Component of transport, traffic and parking assessment	Construction	Operation	Assessment approach
Impacts on road network performance	✓	✓	Traffic modelling to determine the performance of the road network with construction and operation of the project
Impacts on parking	✓	✓	Analysis of existing parking provision and comparing with parking provision during construction and operation of the project
Impacts on access	✓	✓	Analysis of existing access provisions and comparing with access provisions during construction and operation of the project
Impacts on public transport	✓	✓	Analysis of proposed changes to public transport operations including bus routes and bus stop infrastructure to determine impacts on public transport customers during construction and operation of the project
Impacts on pedestrians and cyclists	✓	✓	Analysis of proposed changes to shared user paths, cycleways, footpaths and pedestrian crossings to determine impacts on access to and availability of pedestrian and cycle infrastructure during construction and operation of the project
Concurrent operation of the project and Sydney Dragway	-	✓	Traffic modelling to determine the performance of the road network during concurrent operation of the project and Sydney Dragway

Overview of potential impacts – construction

Potential impacts of the project during construction have been identified as follows:

- There would be minor impacts to road network performance resulting from construction worker travel to and from the site, heavy vehicle movements associated with the delivery of materials and the transport of excavated material between areas of the project site
- Provision of offset parking for Sydney Dragway would minimise parking and access related impacts
- There would be minimal impact to bus service operation and no impact on the operation of bus stops
- There would be no impacts to pedestrians and cyclists
- A cumulative construction traffic impact assessment was not undertaken as there are no major projects occurring near the project site that coincide with the proposed construction period or proposed construction vehicle access and egress routes, based on information that is currently available to the public.

Overview of potential impacts – operation (project only)

Potential impacts of the project during operation of the project only have been identified as follows:

- There would be minor impacts to road network performance
- Provision of offset parking for Sydney Dragway would minimise parking and access related impacts
- There would be minimal impact to bus service operation and no impact on the operation of bus stops
- There would be no impacts to pedestrians and cyclists.

Overview of potential impacts – concurrent operation (project and Sydney Dragway)

Potential impacts of the project during concurrent operation of the project and Sydney Dragway have been identified as follows:

- There would be minor impacts to road network performance
- Provision of offset parking for Sydney Dragway would minimise parking and access related impacts
- There would be minimal impact to bus service operation and no impact on the operation of bus stops
- There would be no impacts to pedestrians and cyclists.

Summary of mitigation measures

Planning of the project and the arrangements of the construction sites have been developed to avoid and minimise transport, traffic and parking related impacts where possible.

Mitigation and management measures relevant to transport, traffic and parking impacts of the project have been identified and include:

- Coordinating with Transport Coordination and/or the Transport Management Centre's Operations Manager in the event of a traffic related incident
- Providing access to properties for emergency vehicles at all times
- Ensuring all trucks enter and exit construction sites in a forward direction, where feasible and reasonable
- Minimising construction movements during peak periods
- Providing staff parking on-site and not on surrounding local streets
- Minimising construction-related impacts to the transport and traffic network during major events
- Investigating opportunities to enhance public transport accessibility to the project during operations, including the provision of bus services and bus stop infrastructure to service major events.

1. Introduction

The NSW Government has committed to relocating speedway racing to Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports, creating a true motorplex for the NSW motorsport racing community. The new Sydney International Speedway (the project) would provide the community and racing supporters a unique sporting facility that would cater for local, regional, national, and international racing events while continuing to support the growth of speedway racing in NSW.

The new speedway would be located alongside the existing Sydney Dragway to the north and east and the Sydney Motorsports Park (operated by the Australian Racing Drivers' Club) to the north.

Western Sydney Parklands Trust in conjunction with the NSW Office of Sport, is leading a masterplanning process for Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports, with opportunities to share infrastructure and coordinate events across the three venues. This masterplan sets the context for the planning of the new Sydney International Speedway, which is the subject of this Environmental Impact Statement.

As part of delivering Sydney Metro West - the city's next big underground railway, the existing government land currently used for speedway racing is required for a future stabling and maintenance facility. The project is planned to be constructed and operational prior to the closure of the current speedway.

The project site is located on land owned and managed by Western Sydney Parklands Trust. Sydney Metro is applying for State significant infrastructure approval and is proposing to build the project on behalf of and pursuant to arrangements with Western Sydney Parklands Trust.

Section 5.12(4) of the EP&A Act provides for the declaration of specified development on specified land as State significant infrastructure. A declaration is being sought for the Sydney International Speedway as State State significant infrastructure under Sections 5.12(4) of the EP&A Act. Schedule 4 of *State Environmental Planning Policy (State and Regional Development) 2011* will be amended to include Sydney International Speedway.

1.1 Location

The project would be located within Western Sydney Parkland's Precinct 5: Eastern Creek Motor Sports, which sits within the Blacktown Local Government Area (LGA) in the Central River City sub-region of Greater Sydney, about six kilometres south-west of Blacktown City Centre, and 32 kilometres west of the Sydney Central Business District. The location of the project is shown on Figure 1-1.

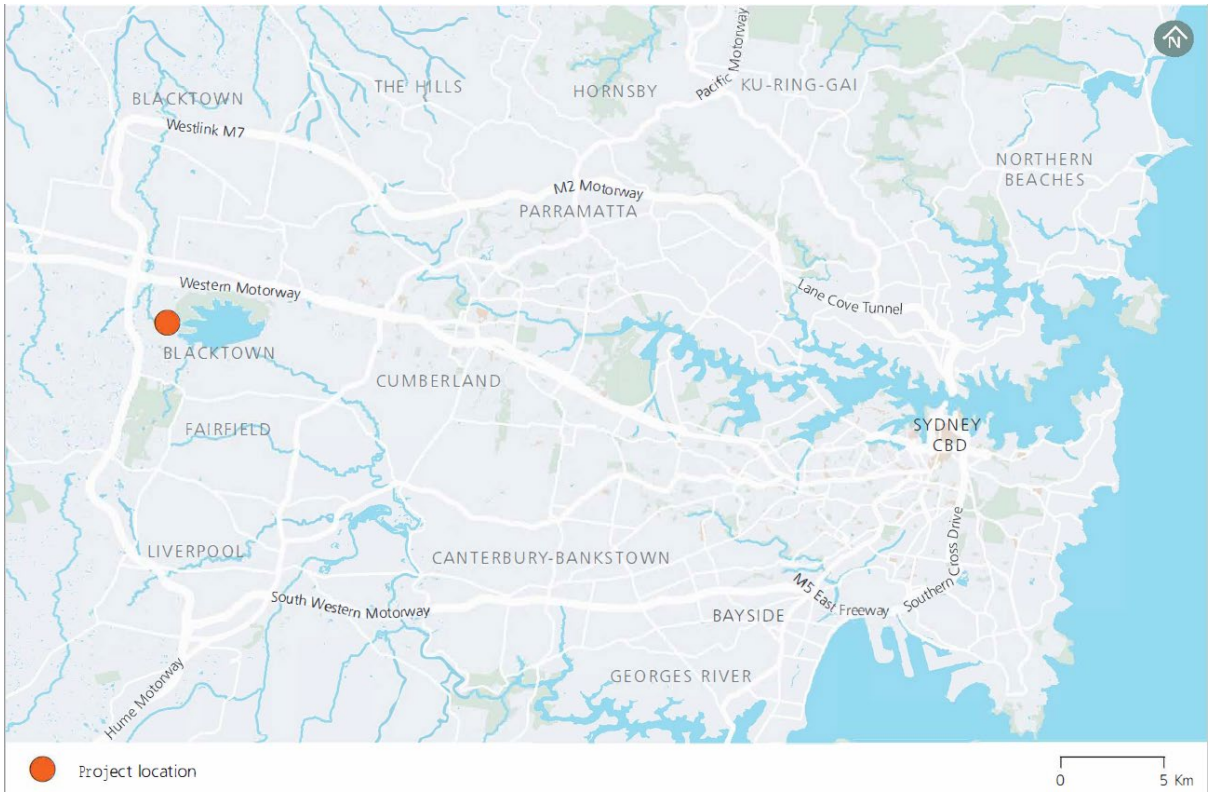

Figure 1-1: Location of the project

1.1.1 Local context of the project

The footprint of the project site is about 21 hectares. The Western Motorway (M4 Motorway) is about 1.4 kilometres north, and the Westlink M7 is about 1.2 kilometres west of the project. Industrial and commercial developments are located to the north and west of these major roads. The Prospect Nature Reserve, which contains the Prospect Reservoir, is about 150 metres east of the project. The local context of the project is shown on Figure 1-2.

Sixteen precincts have been identified within the Western Sydney Parklands, each with its own character and land uses, infrastructure, issues and opportunities. The project would be situated within Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports. The project is bounded by Ferrers Road to the north-west, Ferrers Road and vegetation as part of Western Sydney Parklands in the west, the Warragamba Pipeline to the south and the Austral Bricks Horsley Park Brickworks located further south. Other motorsport operators within Western Sydney Parklands' Precinct 5: Eastern Creek Motor Sports include the Sydney Dragway immediately to the north and east and Sydney Motorsports Park (operated by the Australian Racing Drivers' Club) to the north. A full list of stakeholders is provided in Chapter 4 (Stakeholder and community engagement).

Other businesses in the vicinity include:

- The SUEZ Eastern Creek Resource Recovery Park, about 1.1 kilometres west of the project
- Global Renewables waste processing facility, about 650 metres west of the project.

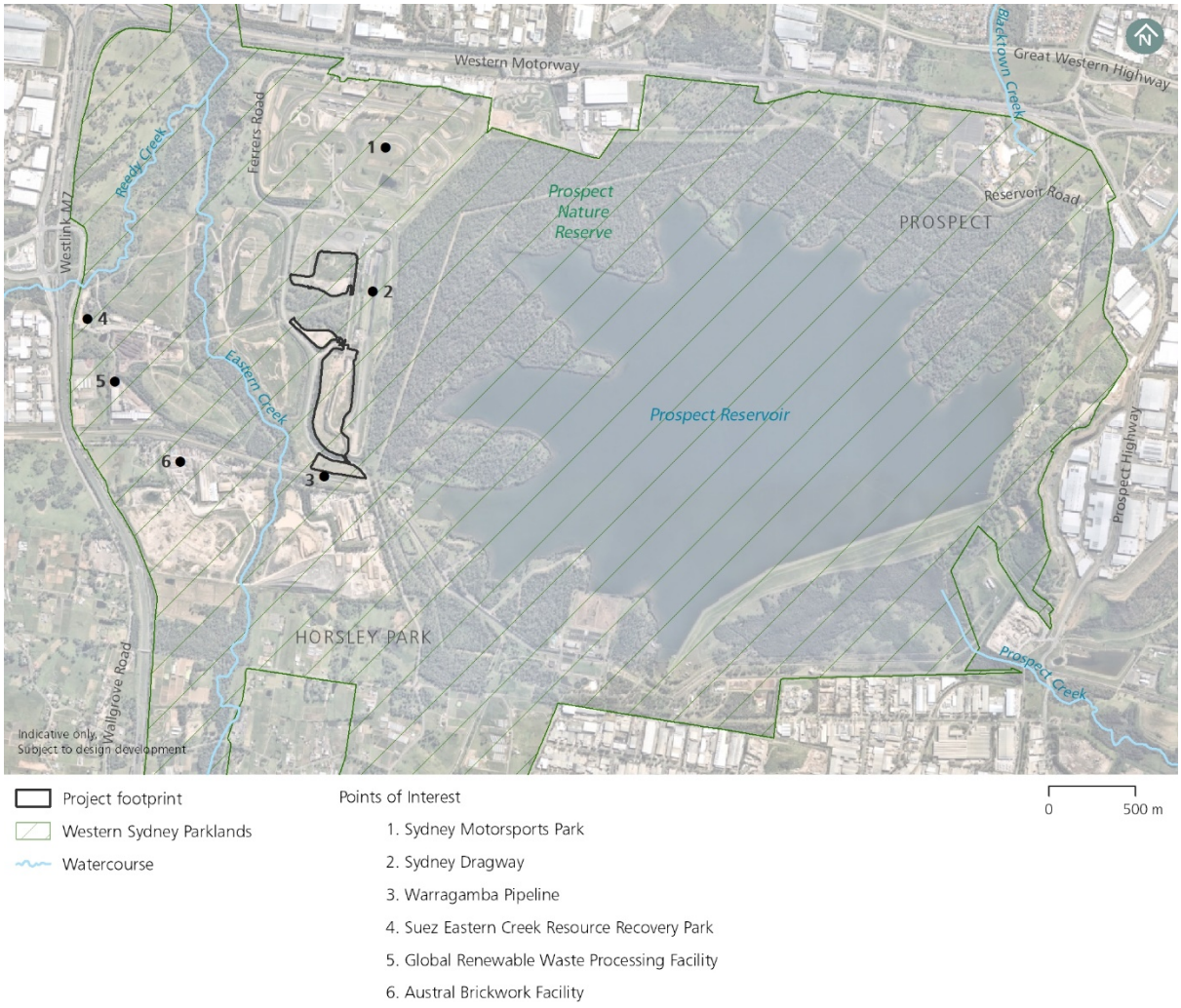

Figure 1-2: Local context of the project

1.1.2 Overview of the project

Once complete, the project would include world class racing infrastructure in the form of a clay-based racetracks benchmarked to national and international best practice for both speedway vehicles and motorcycles. To facilitate the use of the speedway racetracks, the following ancillary racing infrastructure would be constructed:

- New vehicle access to the raceway area, including a gated access via an intersection off Ferrers Road
- A racing competitor's pit area, comprising around 150 parking bays for race vehicles and their tenders, including 20 bays for heavy vehicles transporting racing vehicles to and from the speedway and viewing platforms for pit crews
- Workshops/garages and track-side operational support areas to be used by pit crews.

High quality event support infrastructure provided to maximise the spectator experience at speedway events would comprise:

- A grandstand with the capacity to seat around 3750 spectators
- Ticketing and entryway structures
- Spectator facilities, including terraced seating for up to a total of around 7000 spectators, public amenities, corporate boxes, provision for food and beverage operators together with merchandise outlets

- Dedicated parking provided for spectators, visitors and users of the Sydney International Speedway, available for use by other motorsport operators by agreement
- Dedicated parking for Sydney Dragway to replace the existing spectator parking areas which would form part of the Sydney International Speedway project site. The new Sydney Dragway parking would be available for use by other motorsport operators by agreement.

Operational support infrastructure would be provided to enable the operation of the Sydney International Speedway. Such infrastructure would include:

- Public safety including fencing and fire safety systems
- Communications including a fibre optic network (to suit internet broadcasting bandwidth and PA/AV provisions), signage and large broadcasting screens
- Services including the provision of stormwater, drainage and flooding, utilities and lighting.

The operational site layout is shown on Figure 1-3. Operation would also include maintenance activities required to support the project.

Construction of the project is expected to take around 13 months to complete. The following construction activities would be carried out:

- Clearing, earthworks and levelling
- Land forming works
- Establishment of carparks
- Construction of racing and event support infrastructure
- Utilities connections, landscaping and finishing works.

Further detail on the project is provided in Chapter 5 (Project description) of the Sydney International Speedway Environmental Impact Statement.

1.2 Purpose and scope of this report

This technical paper is one of several technical papers that form part of the Environmental Impact Statement. The purpose of this technical paper is to identify and assess the potential impacts of the project in relation to transport, traffic and parking. In doing so it responds directly to the Secretary's Environmental Assessment Requirements outlined in Section 1.2.1.

The objectives of this investigation were to:

- Review the existing transport network, including a description of transport infrastructure in the study area, public transport service provision, pedestrian and cycle networks, parking provision, and traffic volumes and patterns
- Carry out an assessment of the potential transport, traffic and parking impacts of the project during construction and operation, including consideration of cumulative impacts
- Provide measures to mitigate and manage the identified transport, traffic and parking impacts during construction and operation of the project.

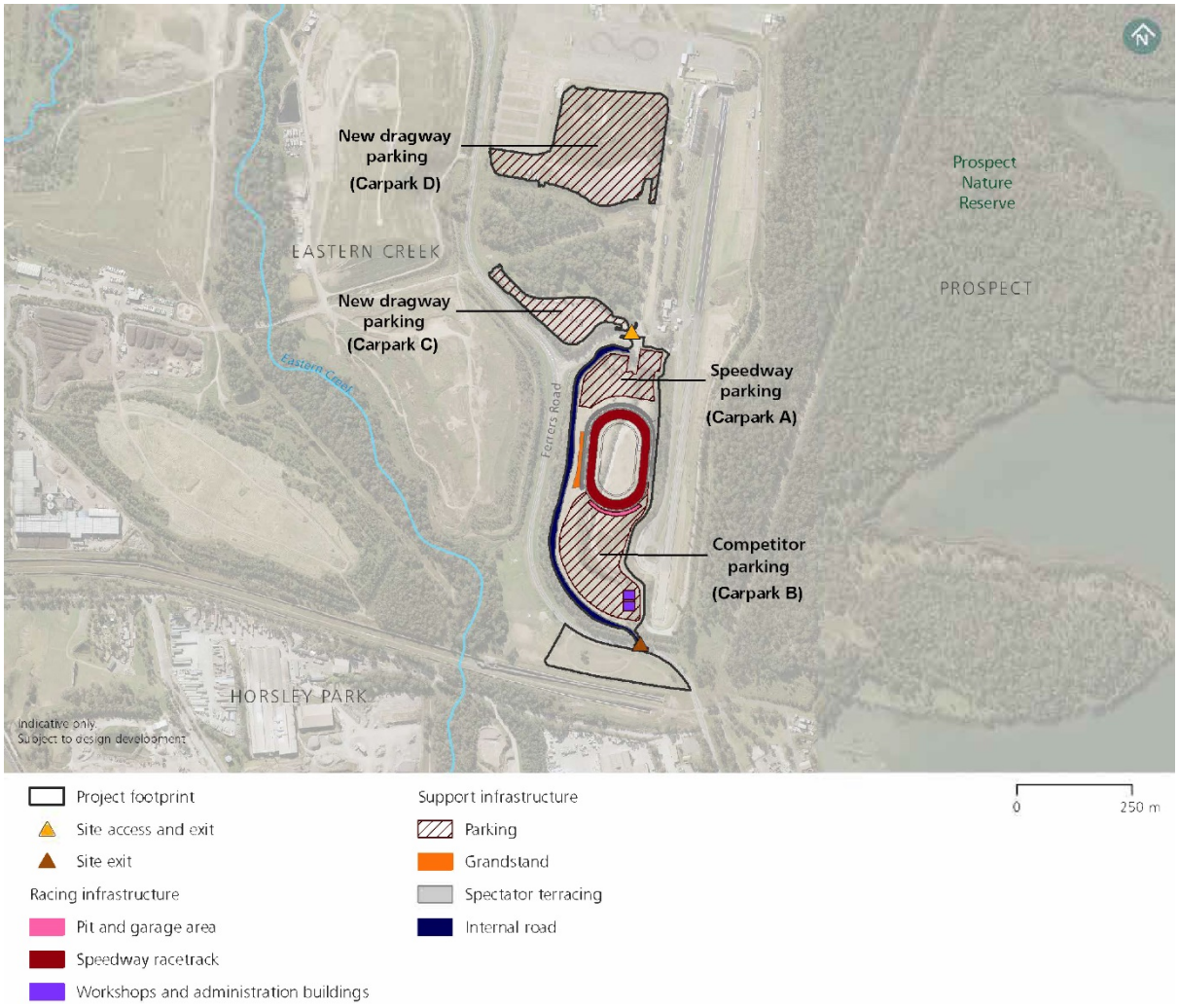

Figure 1-3: Project overview

1.2.1 Secretary's Environmental Assessment Requirements

The Secretary's Environmental Assessment Requirements were issued for Sydney International Speedway on 19 May 2020. The requirements specific to traffic, transport and parking and where these requirements are addressed in this technical paper are outlined in Table 1-1.

The Secretary's Environmental Assessment Requirements also refer to the further investigations and assessments as identified in the Sydney International Speedway Scoping Report (Sydney Metro, 2020). Where these requirements are addressed in this technical paper are outlined in Table 1-2.

Table 1-1: Secretary's Environmental Assessment Requirements – Transport, traffic and parking

Reference	Secretary's environmental assessment requirements	Where addressed
1. Traffic and transport		
1	1. The Proponent must assess construction transport and traffic (vehicle, pedestrian and cyclists) impacts, including, but not necessarily limited to:	
	a) route identification, site access and egress and the nature of existing traffic on construction access routes;	Section 3.1
	b) the indicative number and frequency of daily and peak construction related vehicle movements (passenger, commercial and heavy vehicles, including spoil management movements);	Section 4.1.6
	c) construction worker parking; and	Section 4.1.5
	d) impacts to pedestrian, cyclist and public transport access and movement.	Sections 4.4 and 4.5
	2. The Proponent must assess the operational transport impacts of the project, including:	
	a) an assessment of existing local traffic volumes against forecast volumes including year of opening and 10 years from opening;	Section 5.2
	b) performance of key intersections by undertaking a level of service analysis at key locations; and	Section 5.2
	c) assessment of the traffic and parking capacity of Ferrers Road and the wider Eastern Creek Motor Sports Precinct during concurrent events with the adjacent Sydney Dragway.	Sections 6.2 and 6.3
	3. The Proponent must describe the accessibility impacts of and initiatives of the project and the broader precinct, including in relation to:	
	a) public transport infrastructure and services;	Sections 4.4, 5.4 and 6.4
	b) cyclists and pedestrian access, amenity and safety across and adjoining the project; and	Sections 4.5, 5.5 and 6.5
	c) strategies and initiatives to integrate and enhance accessibility including the provision of public transport infrastructure.	Sections 5.4, 6.4 and 7

Table 1-2: Further investigations and assessment as identified in the Sydney International Speedway Scoping Report

Further investigations and assessment	Where addressed
The following government guidelines will be considered as relevant during the preparation of the traffic and transport impact assessment: ▪ Guide to Traffic Management – Part 3 Traffic Studies and Analysis (Austroads, 2017) ▪ Guide to Traffic Generating Developments Version 2.2 (Roads and Traffic Authority, 2002).	Chapter 8
Traffic monitoring data will inform the assessment. Monitoring will be carried out to understand existing traffic (types and number of movements) on access routes (including consideration of peak traffic times and sensitive road users).	Section 2.3
The assessment of construction traffic and transport impacts will include: ▪ Identification of heavy vehicle routes, site access and egress points ▪ Identification of daily and peak traffic movements likely to be generated from construction of the project ▪ Traffic modelling to identify the potential impacts of construction traffic movements on the performance of the surrounding road network ▪ Consideration of potential impacts on cyclists and pedestrian safety and infrastructure, where relevant ▪ Consideration of potential impacts on local bus services.	Chapter 4
The assessment of operational traffic and transport impacts will include: ▪ Assessment of the existing local traffic volumes against forecast volumes ▪ Traffic modelling, including for the opening year, being the planned year of completion of the project, and 10 years from the anticipated opening date ▪ Parking assessment to determine whether there is sufficient capacity for visitors to park on site ▪ Consideration of impacts to public transport and pedestrians and cyclists who use the nearby local road network.	Chapters 5 and 6
Measures to minimise or mitigate identified construction and operational traffic and transport impacts would also be developed as part of the traffic and transport assessment in accordance with relevant best practice guidelines.	Chapter 7
Where required, consultation with other sections of Transport for NSW, key stakeholders and relevant local councils will be undertaken as part of the traffic and transport assessment.	Not applicable

1.3 Structure of this report

The remainder of this report is structured as follows:

- Chapter 2 documents the assessment methodology including the traffic modelling approach adopted to assess the potential transport, traffic and parking impacts of the project during construction and operation
- Chapter 3 details the existing transport and traffic environment
- Chapter 4 provides an assessment of the potential transport, traffic and parking impacts of the project during construction
- Chapter 5 provides an assessment of the potential transport, traffic and parking impacts of the project during operation of the project only
- Chapter 6 provides an assessment of the potential transport and traffic impacts of the project during concurrent operation of the project and Sydney Dragway
- Chapter 7 identifies mitigation and management measures.

2. Assessment methodology

2.1 Overall assessment approach

A summary of the methodology used to assess the impact of the project on the transport network is provided in Table 2-1.

Table 2-1: Summary of the traffic and transport assessment approach

Component of transport, traffic and parking assessment	Construction	Operation	Assessment approach
Road network performance	✓	✓	Traffic modelling to determine the performance of the road network with construction and operation of the project
Parking	✓	✓	Analysis of existing parking provisions compared with parking provision during construction and operation of the project
Access	✓	✓	Analysis of existing access provisions compared with access provisions during construction and operation of the project
Public transport	✓	✓	Analysis of proposed changes to public transport operations including bus routes and bus stop infrastructure to determine potential impacts on public transport customers during construction and operation of the project
Pedestrians and cyclists	✓	✓	Analysis of proposed changes to shared user paths, cycleways, footpaths and pedestrian crossings to determine potential impacts on access to and availability of pedestrian and cycle infrastructure during construction and operation of the project
Concurrent operation of the project and Sydney Dragway	-	✓	Traffic modelling to determine the performance of the road network during concurrent operation of the project and Sydney Dragway

2.2 Study area

The study area for this assessment consists of the transport network surrounding the project site. It is bound by proposed construction and operational vehicle routes between the project site and the nearest arterial road inclusive of the arterial road interface. The study area is shown in Figure 2-1.

Figure 2-1: Study area and traffic volume survey locations

2.3 Traffic volume surveys

Traffic volume surveys were undertaken at five intersections on Thursday 6 February 2020 (to account for weekday morning and evening peak periods) and Saturday 8 February 2020 (to account for event peak periods). The intersections that were surveyed are listed below and shown in Figure 2-1.

- Great Western Highway/Doonside Road/Brabham Drive
- Brabham Drive/Huntingwood Drive
- Brabham Drive/Ferrers Road/Peter Brock Drive
- Ferrers Road/Chandos Road
- Ferrers Road/The Horsley Drive.

2.4 Traffic modelling approach

To assess the potential impacts of the project on road network performance during construction and operation of the Sydney International Speedway, traffic modelling has been undertaken of proposed construction and operational vehicle routes between the project site and the nearest arterial road inclusive of the arterial road interface.

Models were developed using the SIDRA INTERSECTION 8 traffic modelling software package. SIDRA INTERSECTION 8 is a microanalytical tool for evaluation of intersection performance mainly in terms of capacity, level of service and a wide range of other performance measures such as delay, queue length and stops for vehicles and pedestrians, as well as fuel consumption, pollutant emissions and operating cost. The SIDRA software can be used as an aid for design and evaluation fixed time/pretimed and actuated signalised intersections, signalised pedestrian crossings, signalised single point interchanges, roundabouts, roundabout metering, two way stop sign control, all way stop sign control, and give way/yield sign control.

Traffic modelling was undertaken for the following time periods:

- Weekday morning (6am to 7am) and evening (5pm to 6pm) periods for the construction traffic scenario
- Friday pre-event (5pm to 6pm) (same as the weekday evening peak period) and post-event (9pm to 10pm) periods for the concurrent (with Sydney Dragway) operations scenario
- Saturday pre-event (5pm to 6pm) and post-event (9pm to 10pm) periods for the project only operations scenario.

These hourly traffic periods represent the times at which vehicle trips generated during construction and operation of the project are anticipated to be the greatest.

2.4.1 Traffic modelling scenarios

A description of the traffic modelling scenarios adopted to determine the impacts of the project on road network performance is provided in Table 2-2.

Table 2-2: Traffic modelling scenarios assessed

Model year	Without project	With project	Modelling scenario	Description	Potential impacts assessed
2020	✓		Existing	The existing road network	N/A
2021	✓		Year of peak construction without the project	The road network without construction traffic movements from the project	Performance of the road network in the year of peak construction without the project
2021		✓	Construction (project only)	The road network with construction traffic movements from the project. This considers the worst case construction traffic scenario	Potential impacts on the road network as a result of construction of the project
2022	✓		First full year of operation without the project	The road network with background traffic growth	Performance of the road network in the first full year of operation without the project

Model year	Without project	With project	Modelling scenario	Description	Potential impacts assessed
2022		✓	First full year of operation with the project	• The road network with background traffic growth and operation of the project (major event on a Saturday evening) • The road network with background traffic growth, operation of the project (minor event) and operation of the Sydney Dragway (minor event) on a Friday evening	Potential impacts on the road network as a result of operation of the project
2032	✓		First full year of operation + 10 years without the project	The road network with background traffic growth	Performance of the road network at 10 years after the first full year of operation without the project
2032		✓	First full year of operation + 10 years with the project	• The road network with background traffic growth and operation of the project (major event on a Saturday evening) • The road network with background traffic growth, operation of the project (minor event) and operation of the Sydney Dragway (minor event) on a Friday evening	Potential impacts on the road network as a result of operation of the project

2.4.2 Intersection performance and level of service

The performance of a road network is largely dependent on the operating performance of intersections, which form critical capacity control points. The performance indicators that are reported for this assessment include:

- Intersection Level of Service – based on criteria outlined in Table 2-3 and defined in the *Guide to Traffic Generating Developments* (Roads and Traffic Authority, 2002). The average delay assessed for signalised intersections is for all movements. The average delay assessed for priority (sign controlled or roundabout) intersections is for the worst movement and is expressed in seconds per vehicle
- Maximum queue length on each approach (in metres) over the assessed hour.

Table 2-3: Intersection level of service criteria

Level of service	Average delay per vehicle (seconds/vehicle)	Traffic signals and roundabouts
A	Less than 15	Good operation
B	15 to 28	Good with acceptable delays and spare capacity
C	29 to 42	Satisfactory
D	43 to 56	Operating near capacity
E	57 to 70	At capacity; at signals, incidents will cause delays Roundabouts require other control mode
F	Over 70	Extra capacity required

Source: Guide to Traffic Generating Developments (Roads and Traffic Authority, 2002)

It is generally accepted that when intersection performance falls to a Level of Service E, investigations should be initiated to determine if suitable remediation can be provided. However, limited road capacity and high demand mean that Level of Service F is regularly experienced by motorists, particularly during peak periods.

3. Existing transport and traffic environment

3.1 Road network

3.1.1 Road network overview

Regional road connections – motorways

- The M7 Motorway extends along the western edge of the study area and forms part of the Sydney Orbital Network linking the M2, M4 Western and M5 Motorways. It operates as a four-lane dual carriageway road with a sign posted speed limit of 100 kilometres per hour. In the context of the metropolitan road freight hierarchy, the M7 Motorway is classified as a primary freight route. Connections to the project site are provided at the Wallgrove Road and The Horsley Drive interchanges with the motorway.
- The M4 Western Motorway extends along the northern edge of the study area. In the study area, it operates as a six lane dual carriageway road with a sign posted speed limit of 100 kilometres per hour. In the context of the metropolitan road freight hierarchy, the M4 Western Motorway is classified as a primary freight route. Connections to the project site are provided at the Reservoir Road and Wallgrove Road interchanges with the motorway.

Regional road connections – arterial roads

- The Great Western Highway extends along the northern edge of the study area and provides east-west connectivity between Sydney and the Central West of NSW. In the study area, it operates as a four to six lane dual carriageway road with a sign posted speed limit of 80 kilometres per hour. It is classified as a tertiary freight route.
- Wallgrove Road extends along the western edge of the study area and runs parallel to the M7 Motorway between the Great Western Highway in the north and Elizabeth Drive in the south. In the study area, it operates as a two lane, single carriageway road with a sign posted speed limit of 70 kilometres per hour. It is classified as a tertiary freight route.
- The Horsley Drive extends along the southern edge of the study area in an east-west direction between the Hume Highway, Lansdowne in the east and Arundel Road. Horsley Park in the west. In the study area, The Horsley Drive operates mostly as a four-lane, single carriageway road with a sign posted speed limit of 60 kilometres per hour. It is classified as primary freight route between Elizabeth Street, Wetherill Park and Wallgrove Road.

Local road connections

- Ferrers Road is a single carriageway road that connects Brabham Drive/Peter Brock Drive in the north and The Horsley Drive in the south. The road operates with a sign posted speed limit of 60 kilometres per hour. At its northern end, Ferrers Road connects to Peter Brock Drive and Brabham Drive via a roundabout. An at-grade signalised intersection connects Ferrers Road with The Horsley Drive at its southern end.
- Brabham Drive is a four-lane, dual carriageway road which connects the Great Western Highway in the north with Ferrers Road/Peter Brock Drive in the south. The road operates with a sign posted speed limit of 60 kilometres per hour. At its northern end, Brabham Drive connects to the Great Western Highway and Doonside Road via an at-grade signalised intersection. A roundabout connects Brabham Drive with Ferrers Road/Peter Brock Drive at its southern end.
- Peter Brock Drive is a two-lane, single carriageway road which connects Reservoir Road, Blacktown in the east with Brabham Drive/Ferrers Road in the west. The road operates with a sign posted speed limit of 50 kilometres per hour. Both ends of Peter Brock Drive are connected to adjoining roads via roundabouts.

- Chandos Road is a two-lane, single carriageway road which connects Trivet Street, Wetherill Park in the east with Wallgrove Road in the west. The road operates with a sign posted speed limit of 50 kilometres per hour. The eastern end of Chandos Road continues as Trivet Street, and the intersection of Chandos Road and Wallgrove Road is controlled by a stop sign with priority given to vehicles on Wallgrove Road.
- Access to the northern portion of the project site is currently provided via an unnamed east-west access road, situated at Gate A of the Sydney Motorsport Park. The access road consists of a four-lane, single carriageway and connects with Ferrers Road via a channelised T-junction.

3.1.2 Traffic volumes and patterns

The Great Western Highway is a major arterial road that carries a high volume of traffic. During the weekday morning hour, the peak direction is eastbound with volumes of about 1510 vehicles per hour. During the weekday evening hour, the peak direction is westbound with volumes of about 1370 vehicles per hour.

The Horsley Drive is an arterial road that services east-west trips and carries a high volume of traffic ranging from 620 to 1690 vehicles in each direction during the weekday morning and evening hours. In the weekday morning and evening hours, the peak direction of travel is westbound due to travel to the M7 Motorway and Wallgrove Road.

Brabham Drive is a sub-arterial road with the peak direction of travel being southbound in the weekday morning hour and northbound in the weekday evening hour. Near its intersection with the Great Western Highway, weekday morning and evening hour volumes on Brabham Drive are between 510 and 960 vehicles in each direction. On Huntingwood Drive, traffic volumes are about equal in both directions during the weekday morning hour and the peak direction of travel during the weekday evening hour is westbound with volumes of up to 650 vehicles.

Ferrers Road runs north-south and carries volumes ranging from 420 to 820 vehicles in each direction in the weekday morning and evening hours. Near Chandos Road, the peak direction of travel on Ferrers Road is northbound during the weekday morning hour and southbound during the weekday evening hour. On Chandos Road, the peak direction is eastbound during the weekday morning hour and westbound during the weekday evening hour. Chandos Road typically carries volumes ranging from 140 to 410 vehicles in each direction during the weekday morning and evening hours.

Volumes on all roads in the study area are substantially lower during the Friday post-event, Saturday pre-event and Saturday post-event hours. Traffic volumes on Peter Brock Drive and Chandos Road do not exceed 60 vehicles in each direction per hour. Traffic volumes on most roads are about equal in both directions. The exceptions are Huntingwood Drive and The Horsley Drive, which exhibit a westbound peak direction of travel during these hours.

Approximate peak hour midblock volumes on key roads in the study area are shown in Table 3-1.

Table 3-1: Existing traffic volumes by direction (2020)

Road	Direction	Weekday morning (6am to 7am) (vehicles/ hour)	Weekday evening (5pm to 6pm) (vehicles/ hour)	Friday post-event (9pm to 10pm) (vehicles/ hour)	Saturday pre-event (5pm to 6pm) (vehicles/ hour)	Saturday post-event (9pm to 10pm) (vehicles/ hour)
Great Western Highway	Eastbound	1510	860	300	470	240
	Westbound	540	1370	280	620	270
Doonside Road	Northbound	920	1220	260	490	270
	Southbound	1130	940	190	420	240
Brabham Drive	Northbound	510	840	90	200	130
	Southbound	960	590	180	200	100
Huntingwood Drive	Eastbound	140	170	40	10	< 5
	Westbound	140	650	80	60	40
Peter Brock Drive	Eastbound	140	60	10	40	10
	Westbound	40	110	30	40	10
Chandos Road	Eastbound	370	140	20	30	10
	Westbound	220	410	40	30	10
Ferrers Road	Northbound	600	420	70	180	110
	Southbound	590	820	110	180	120
The Horsley Drive	Eastbound	860	620	180	400	150
	Westbound	1250	1690	210	510	260

3.1.3 Intersection performance

Modelled intersection performance during the weekday morning (6am to 7am), weekday evening (5pm to 6pm), Friday post-event (9pm to 10pm), Saturday pre-event (5pm to 6pm) and Saturday post-event (9pm to 10pm) hours for key intersections in the vicinity of the project site is shown in Table 3-2.

Modelled intersection performance indicates that the Great Western Highway/Doonside Road/Brabham Drive intersection performs poorly in the weekday evening hour at Level of Service E. This is a result of high volumes of through traffic conflicting with right-turning and cross-street traffic.

Table 3-2: Existing intersection performance (2020)

Intersection and hourly period	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Great Western Highway/Doonside Road/Brabham Drive					
Weekday morning	3880	53	D	NB	80
				EB	125
				SB	240
				WB	40
Weekday evening	4220	57	E	NB	215
				EB	65
				SB	130
				WB	130
Friday post-event	900	36	C	NB	15
				EB	20
				SB	20
				WB	20
Saturday pre-event	1800	46	D	NB	30
				EB	40
				SB	65
				WB	50
Saturday post-event	920	34	C	NB	15
				EB	15
				SB	25
				WB	15
Brabham Drive/Huntingwood Drive					
Weekday morning	2050	9	A	NB	10
				EB	5
				SB	20
				WB	5
Weekday evening	2230	13	A	NB	20
				EB	10
				SB	10
				WB	60

Intersection and hourly period	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Friday post-event	380	8	A	NB	< 5
				EB	< 5
				SB	< 5
				WB	< 5
Saturday pre-event	520	7	A	NB	5
				EB	< 5
				SB	< 5
				WB	< 5
Saturday post-event	280	7	A	NB	< 5
				EB	< 5
				SB	< 5
				WB	< 5
Brabham Drive/Ferrers Road/Peter Brock Drive					
Weekday morning	1570	11	A	NB	-
				EB	10
				SB	20
				WB	< 5
Weekday evening	1660	11	A	NB	-
				EB	10
				SB	20
				WB	5
Friday post-event	300	9	A	NB	-
				EB	< 5
				SB	< 5
				WB	< 5
Saturday pre-event	750	9	A	NB	-
				EB	5
				SB	5
				WB	< 5
Saturday post-event	260	9	A	NB	-
				EB	< 5
				SB	< 5
				WB	< 5

Intersection and hourly period	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Ferrers Road/Chandos Road					
Weekday morning	1870	15	B	NB	35
				EB	45
				SB	50
				WB	10
Weekday evening	1800	18	B	NB	30
				EB	10
				SB	45
				WB	45
Friday post-event	260	7	A	NB	< 5
				EB	< 5
				SB	5
				WB	< 5
Saturday pre-event	440	7	A	NB	5
				EB	< 5
				SB	5
				WB	< 5
Saturday post-event	260	7	A	NB	5
				EB	< 5
				SB	5
				WB	< 5
Ferrers Road/The Horsley Drive					
Weekday morning	2500	23	B	NB	-
				EB	150
				SB	45
				WB	170
Weekday evening	3210	18	B	NB	-
				EB	125
				SB	85
				WB	110
Friday post-event	500	12	A	NB	-
				EB	15
				SB	5

Intersection and hourly period	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
				WB	10
Saturday pre-event	1090	13	A	NB	-
				EB	40
				SB	5
				WB	40
Saturday post-event	550	12	A	NB	-
				EB	15
				SB	5
				WB	20

3.2 Parking and access

Vehicular access to the existing Sydney Dragway and parking areas is currently provided by two accesses (Gate A, north of the project site and Gate D) from Ferrers Road. These accesses are give-way priority controlled and include separate left and right turn lanes on the approach from Sydney Dragway, channelised left and right turn lanes on Ferrers Road and left turn acceleration lanes on Ferrers Road.

Free and premium parking is provided on-site within Sydney Dragway during events. On-street parking is not permitted near the project site on Ferrers Road.

Under the current parking arrangements within Western Sydney Parklands Precinct 5: Eastern Creek Motorsports, there are about 2600 parking spaces provided for use by Sydney Dragway, inclusive of overflow parking areas and excluding the pit area.

3.3 Active transport network

Pedestrian activity near the project site is limited to periods where events are being held at the Sydney Motorsport Park and the Sydney Dragway. During these events, key pedestrian movements occur along Peter Brock Drive. There is an existing shared path along the southern side of Peter Brock Drive and a median provided at the roundabout at the western end of Peter Brock Drive, allowing pedestrians to undertake a staged movement if required. There is no footpath or pedestrian facilities along Ferrers Road or that facilitates connection between the project site and the bus stops located on Peter Brock Drive.

The existing cycle network near the project is shown in Figure 3-1 and includes a combination of cycleways, shared paths and on-road cycling facilities. Cycling infrastructure includes:

- An off-road shared path along the southern side of Peter Brock Drive, which facilitates east-west movements between Auto Place and Ferrers Road
- The M7 Motorway cycleway is a shared path running adjacent to the M7 Motorway. It is a 49-kilometre active transport corridor providing north-south connectivity between Baulkham Hills and Prestons
- A moderate difficulty on-road cycling route along Ferrers Road between Brabham Drive/ Peter Brock Drive and the Austral Brick Access Road.

Figure 3-1: Existing cycle network surrounding the project

3.4 Public transport network

Buses are the principal form of public transport serving the study area with routes connecting to rail services at Blacktown and Rooty Hill railway stations, which form part of the Sydney Trains network. The local bus network is shown in Figure 3-2. Limited bus services are provided in close proximity to the project site.

No bus services currently operate along Ferrers Road. The closest bus route to the project is route 724, which is a loop service from Blacktown railway station operated by Busways. The closest bus stop to the project site is located on Peter Brock Drive, about two kilometres north of the project site and can be accessed via Ferrers Road. Bus services along this route are subject to variations in the route and stop sequence, and infrequent or no services occur on weekends. There are no other public transport services located in the vicinity of the project site.

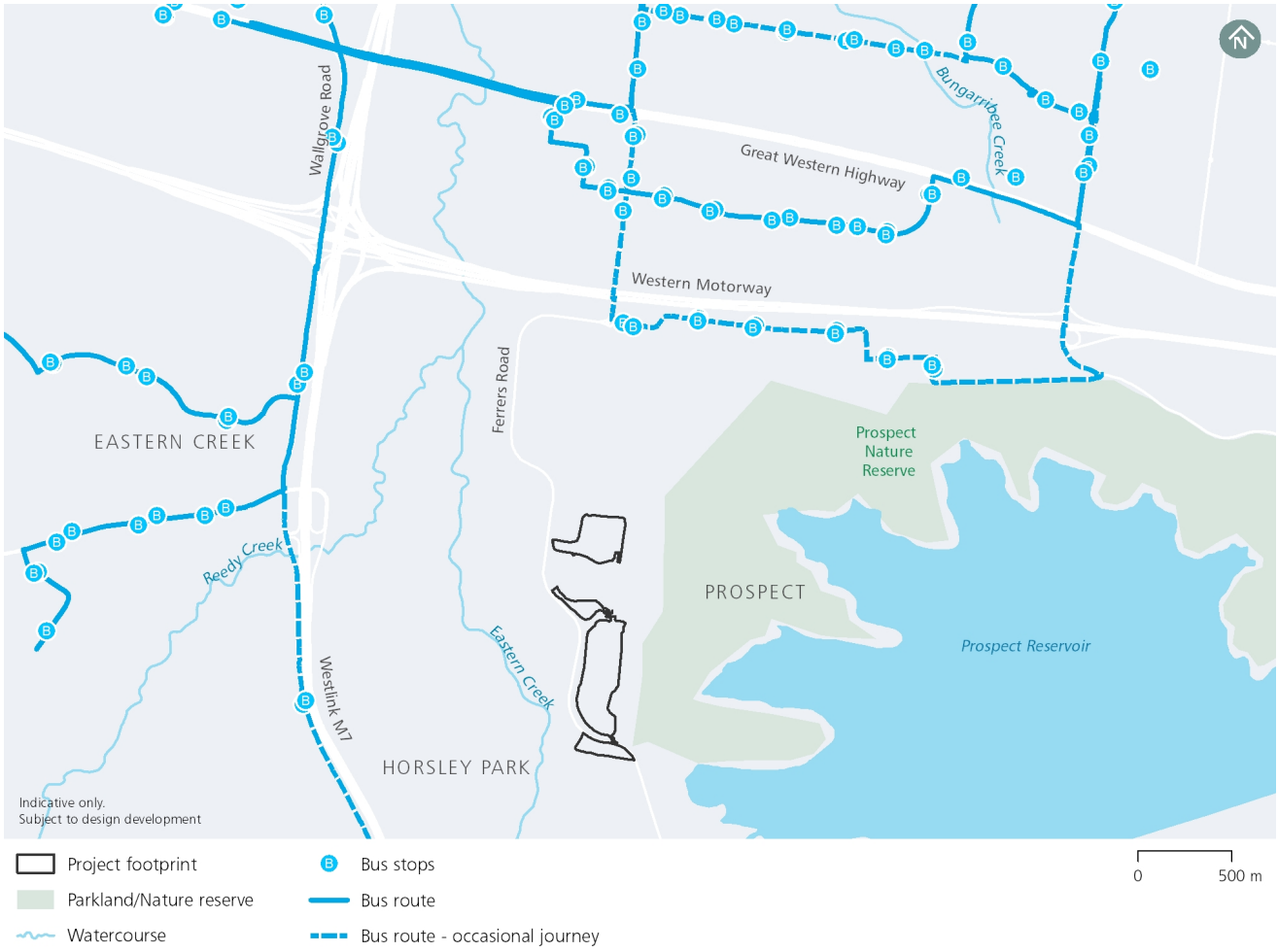

Figure 3-2: Public transport network surrounding the project

4. Construction assessment

4.1 Key assumptions

Key assumptions included in the analysis of construction impacts are outlined as follows.

4.1.1 Construction hours

Construction of the project would be carried out up to 24 hours per day, seven days a week for the duration of construction.

4.1.2 Construction program

Construction of the project is expected to occur over a period of 13 months. The construction program would be phased to allow for work to be carried out concurrently in different areas of the project site whilst retaining sufficient parking for the Sydney Dragway at all times.

An indicative construction programme is shown in Figure 4-1.

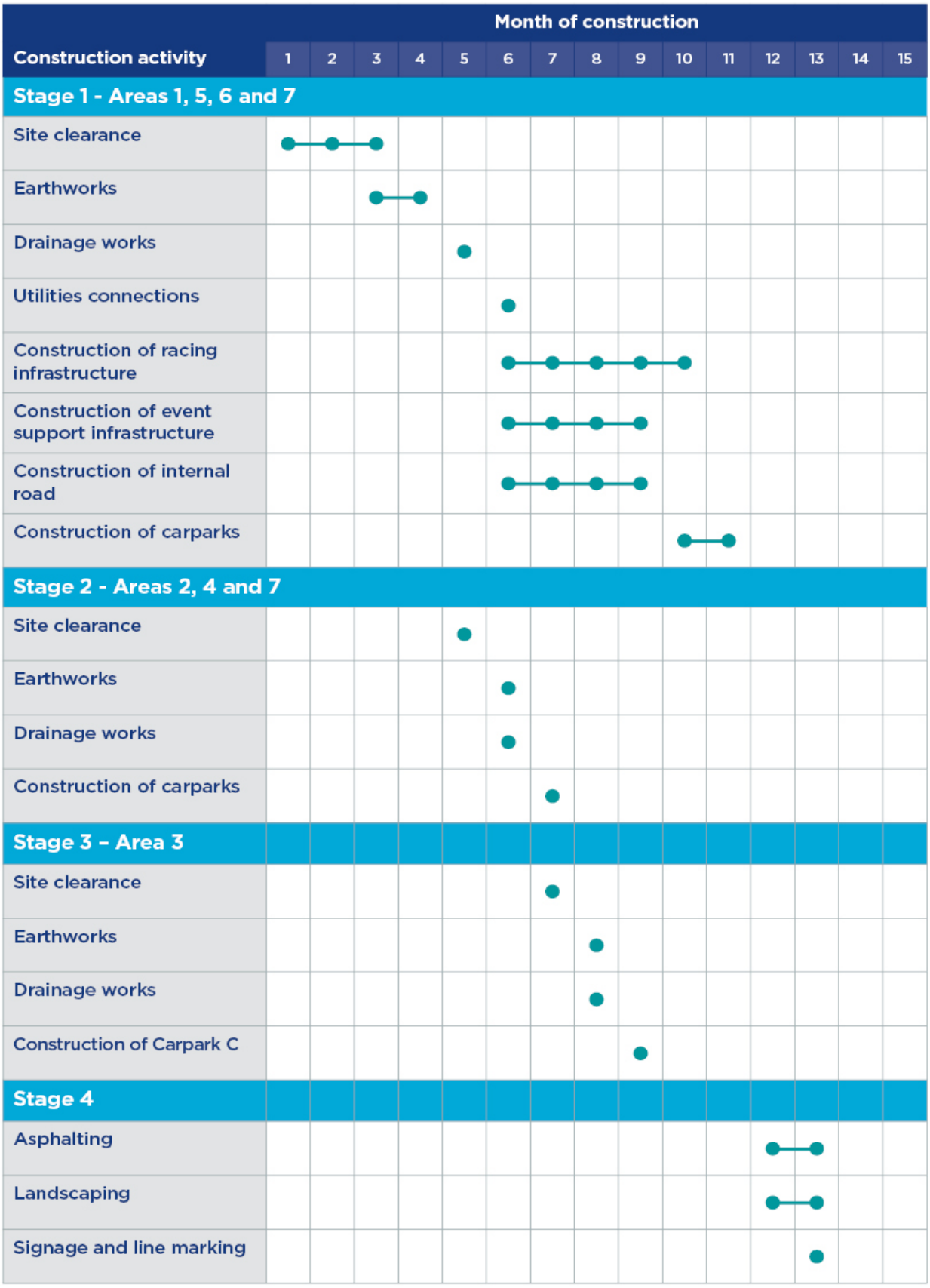

Figure 4-1: Indicative construction program

4.1.3 Construction assessment year

Construction of the project is proposed to commence in late 2020 with completion in 2021. Therefore, the peak construction year that has been assessed is 2021.

4.1.4 Construction site location and access

The construction footprint is the total area required to construct the project and comprises four sites as shown in Figure 4-2. Sites A and D are both subdivided to allow for the provision of temporary car parking throughout the construction period.

A construction compound would be located in construction area 4 as shown on Figure 4-2. The construction compounds would be used for laydown of plant and equipment, temporary stockpiling of materials and waste management.

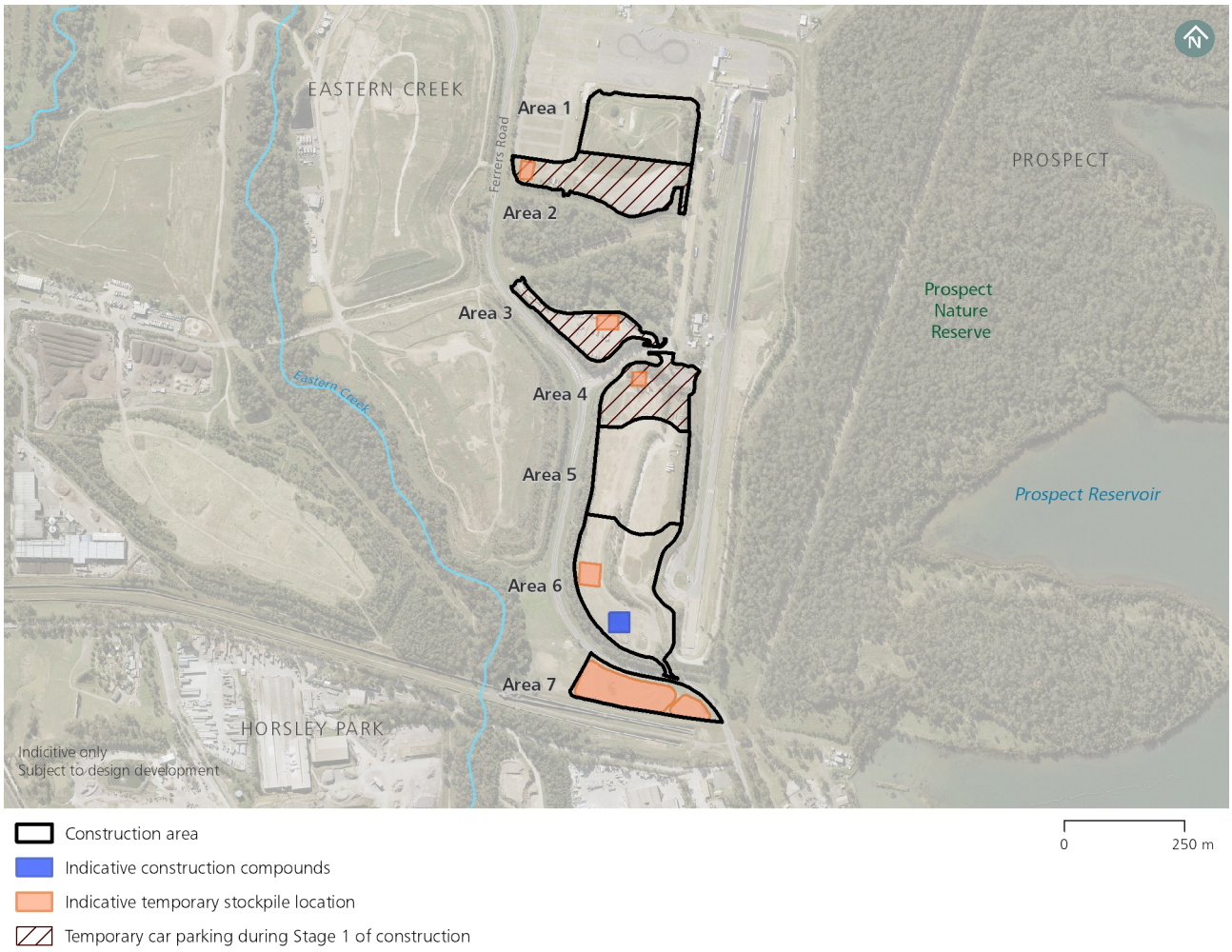

Figure 4-2: Indicative locations of construction sites

Proposed access and egress for construction traffic would be via the existing intersection with Ferrers Road. This would allow vehicle movements to and from both the north (along Ferrers Road and Brabham Drive to the Great Western Highway) and the south (along Ferrers Road to The Horsley Drive).

Heavy vehicles transporting excavated material between areas of the project site would travel out of the main site access and egress (at the northern end of the speedway site) and south along Ferrers Road before turning right into the area south of Ferrers Road.

These routes are shown in Figure 4-3.

Figure 4-3: Proposed access and egress routes

4.1.5 Construction worker parking

As described in Section 4.1.4, Sites A and D are both subdivided to allow for the provision of temporary car parking throughout the construction period. Therefore, all staff parking would be accommodated on-site and not on surrounding local streets.

4.1.6 Construction vehicles

Construction vehicles would access and egress the project site during standard construction hours. The number of construction vehicles to and from the project site per hour are:

- Light vehicles: 90 vehicles between 6am and 7am for construction worker travel to the site, and 90 vehicles between 5pm to 6pm for construction worker travel from the site
- Heavy vehicles: eight vehicles spread throughout the day.

As described in Section 4.1.4, heavy vehicles would transport excavated material between areas of the project site. There would be 37 heavy vehicles making this return trip per hour between 7am and 3pm.

The total daily number of construction vehicle movements is summarised in Table 4-1.

Table 4-1: Daily construction vehicle movements

Activity	Total movements per day		
	Light vehicles	Heavy vehicles	Total
Construction worker travel to and from site	180	-	180
Delivery of materials	-	16	16
Transport of excavated material between areas of project site	-	592	592

Oversize vehicles would be required to transport prefabricated elements of the stadium. Given their size, these deliveries would occur outside of standard construction hours.

4.2 Intersection performance

Intersection performance results in the 2021 'without project' (without construction vehicles) and 2021 'with project' (with construction vehicles) scenarios are summarised in Table 4-2 for the weekday morning and evening peak periods.

Modelled intersection performance with construction traffic indicates that most intersections forming part of the construction vehicle route would perform at the same Level of Service compared to the scenario without construction traffic. The exception is the Great Western Highway/Doonside Road/Brabham Drive intersection in the modelled evening hour, where the Level of Service would decrease from D to E with an associated increase in average delay of one second. It is considered this would not substantially change the operational performance of the intersection, and therefore the impact would be minor.

The number of heavy vehicle movements associated with the delivery of materials to and from the project site (16 per day) is considered low and within the range of daily variations in traffic volumes on the road network when compared to background traffic. Therefore, the impact on road network performance would be minor.

In addition to the 16 movements per day, the transport of excavated material between areas of the project site would involve up to 592 movements per day. This would result in a minor impact on road network performance given the number of heavy vehicle movements is relatively low (74 movements per hour, which equates to an average of one movement every 49 seconds) and would occur mostly outside of peak traffic periods. In addition, vehicle movements would occur on a short length of Ferrers Road (about 500 metres), meaning interactions with existing traffic would be minimal.

Table 4-2: Modelled intersection performance during construction (2021)

Intersection and hourly period	2021 without project					2021 with project				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Great Western Highway/Doonside Road/Brabham Drive										
Weekday morning	3890	53	D	NB	75	3940	54	D	NB	75
				EB	135				EB	140
				SB	215				SB	220
				WB	40				WB	40
Weekday evening	4220	56	D	NB	185	4270	57	E	NB	205
				EB	65				EB	65
				SB	125				SB	125
				WB	145				WB	145
Brabham Drive/Huntingwood Drive										
Weekday morning	2070	9	A	NB	10	2110	9	A	NB	15
				EB	10				EB	10
				SB	20				SB	20
				WB	10				WB	10
Weekday evening	2230	13	A	NB	20	2280	13	A	NB	25
				EB	10				EB	10
				SB	10				SB	10
				WB	55				WB	55

Intersection and hourly period	2021 without project					2021 with project				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Brabham Drive/Ferrers Road/Peter Brock Drive										
Weekday morning	1570	11	A	NB	-	1610	11	A	NB	-
				EB	10				EB	10
				SB	20				SB	20
				WB	< 5				WB	< 5
Weekday evening	1660	11	A	NB	-	1700	11	A	NB	-
				EB	10				EB	15
				SB	20				SB	20
				WB	5				WB	5
Ferrers Road/Chandos Road										
Weekday morning	1900	17	B	NB	40	1950	20	B	NB	45
				EB	50				EB	55
				SB	55				SB	55
				WB	15				WB	15
Weekday evening	1830	19	B	NB	30	1870	22	B	NB	30
				EB	10				EB	10
				SB	50				SB	55
				WB	50				WB	55

Intersection and hourly period	2021 without project					2021 with project				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Ferrers Road/The Horsley Drive										
Weekday morning	2540	23	B	NB	-	2580	26	B	NB	-
				EB	175				EB	195
				SB	50				SB	55
				WB	145				WB	160
Weekday evening	3270	19	B	NB	-	3320	20	B	NB	-
				EB	135				EB	135
				SB	95				SB	105
				WB	115				WB	120

4.3 Impacts on parking and access

Temporary offset parking for Sydney Dragway would be established prior to commencement of construction. This would include a total of about 2400 dedicated parking spaces for Sydney Dragway comprising of:

- Retention of about 800 existing spaces in the existing P2 Dragway car park outside of the project footprint
- A minimum of 1600 spaces within the project site for use by Dragway visitors during events.

For larger major events at Sydney Dragway, a total of 3,400 parking spaces are to be provided which would include additional parking spaces within the Sydney Motorsports Park (operated by the Australian Racing Drivers Club). During these major events, a shuttle bus service would be provided between this parking and the Sydney Dragway.

Construction worker parking would be provided within the project construction site.

Access to other properties within Western Sydney Parklands Precinct 5; Eastern Creek Motor Sports for emergency vehicles would be maintained at all times.

4.4 Impacts on the public transport network

Brabham Drive is used by route 724 which also forms part of the construction access and egress route. Minimal impacts to buses are expected and would be limited to a potential minor increase in travel time due to the addition of construction vehicles on the road network. No impacts are anticipated on the operation of bus stops.

4.5 Impacts on the active transport network

No impacts to pedestrians and cyclists are anticipated given that footpaths, pedestrian crossings and cycle routes near the project would remain open during construction.

4.6 Pedestrian, cyclist and motorist safety

Access and egress arrangements at construction sites have been developed with consideration of pedestrian, cyclist and motorist safety. There are no pedestrian footpaths along Ferrers Road in the vicinity of the site and, as such, construction vehicles would not be required to cross footpaths to access the project site and potential safety risks are low. Road safety reviews or audits would be carried out at the construction site and would include consideration of high pedestrian levels during events at nearby motorsport facilities. Appropriate mitigation measures would be identified and implemented based on the road safety reviews or audits.

4.7 Cumulative construction impacts

Projects occurring near the project site include:

- Horsley Park Brickworks Plant 2 Upgrade
- Light Horse Interchange Business Hub, Eastern Creek
- Western Sydney Energy and Resource Recovery Centre.

A cumulative construction transport and traffic impact assessment has not been undertaken as information pertaining to transport and traffic for these projects is not available or the number of construction vehicles generated would be low and would unlikely alter the outcomes of this assessment.

5. Operational assessment – project only

5.1 Key assumptions

Key assumptions included in the analysis of operational impacts are outlined as follows.

5.1.1 Operational assessment years

The following assessment years were assumed for the operational assessment:

- 2022 – first full year of operation of the project
- 2032 – 10 years after the first full year of operation of the project.

5.1.2 Traffic generation and distribution

Operational regime

The operational regime and event coordination are described in Chapter 5 (Project description) and includes:

- Sydney Dragway operator would have the right to nominate up to five major dragway events (7-13 days) per year where the dragway operator would have exclusive use of the speedway car park and pit area, and the speedway operator would not be permitted to hold a concurrent speedway event, unless with the agreement of the dragway operator
- The Sydney International Speedway operator would have the reciprocal right that, from 26 December to the third Saturday in January, the speedway operator would have exclusive use of the dragway car park and the dragway operator would not be permitted to hold a concurrent dragway event, unless with the agreement of the speedway operator.

As concurrent major events can only occur with the agreement of the respective operators, the operational traffic impact assessment considers a major Speedway event operating on a Saturday evening, and a concurrent minor Speedway and minor Dragway event on a Friday evening.

Although concurrent major events may occur with agreement, these would be infrequent and the operators would be required to agree on additional operational measures to manage the events such as traffic management and car park sharing in accordance with the Major Events Operation Plan. An event specific Traffic Management Plan would also be required to be developed for major events in consultation with relevant part of Transport for NSW including the Transport Management Centre, NSW Police and other relevant stakeholders.

Traffic generation

Sydney International Speedway events are assumed to be held from 3pm to 10.30pm on a Saturday. It is assumed that 100 per cent of spectators would arrive and depart by private vehicle due to the limited public and active transport links to the site. It is assumed that Sydney International Speedway competitors would arrive and leave the project site outside of the peak spectator arrival and departure periods

Spectator numbers, assumed vehicle occupancy and associated trip generation for relevant Sydney International Speedway events, are shown in Table 5-1.

Table 5-1: Assumed Sydney International Speedway trip generation during relevant events

Event	Sydney International Speedway		
	Spectators	Vehicle occupancy	Trip generation
Friday evening concurrent minor events	1200	2.5	480
Saturday evening major speedway event	4500	4.0	1125

The worst-case scenario that has been assessed is based on a Sydney International Speedway 'major' event (1125 vehicles) held on a Saturday.

Trip distribution

As shown in Appendix A, the arrival and departure peak hours for a Sydney International Speedway 'major' event are 5pm to 6pm and 9pm to 10pm, respectively. During the arrival peak hour, 788 vehicles would travel to the site. During the departure peak hour, 900 vehicles would travel from the site. These arrival and departure volumes have been included in the assessment.

The trip distribution of spectators on the road network is based on intersection counts undertaken on Saturday 25 January 2020 at the Gate D entrance as well as intersection counts undertaken on Saturday 8 February 2020 at the intersections listed in Section 2.3. Spectators are assumed to travel to and from the project site via the following routes, which are shown in Figure 5-1:

- North – to and from Doonside Road via Ferrers Road and Brabham Drive
- East – to and from Great Western Highway via Ferrers Road and Brabham Drive
- South – to and from The Horsley Drive via Ferrers Road
- West – to and from Great Western Highway via Ferrers Road and Brabham Drive.

Figure 5-1: Spectator access and egress routes

5.1.3 Parking and access

Parking

Two types of parking would be provided as part of the project:

- Carparks A and B would be dedicated parking for the Sydney International Speedway within the main operational site, which would primarily cater for project specific vehicle parking during operation but would be available for use by other motorsport operators by agreement.
- Carparks C and D would be dedicated parking for Sydney Dragway to replace the existing spectator parking areas that would form part of the Sydney International Speedway project site. The New Dragway Parking would be available for use by other motorsport operators, including Sydney International Speedway by agreement.

The number of parking spaces within each car parking area is shown in Table 5-2. Parking spaces would be distributed across the following four car parking areas:

- Area A: Sydney International Speedway spectator parking
- Area B: Sydney International Speedway competitor parking for competitor vehicles and trucks
- Areas C and D: New Sydney Dragway spectator parking to account for the loss of existing parking areas to accommodate the project site. These areas may also be used by Sydney International Speedway spectators when the capacity of Area A is exceeded, subject to consultation and agreement with Sydney Dragway.

Table 5-2: Proposed provision of additional car parking

Car parking area	Competitor parking spaces	Spectator parking spaces
A	-	600
B	150	-
C	-	460
D	-	1760
Total car parking spaces	150	2820

Access

Entry to the project site would during operation would be via the site access road, from Ferrers Road. The site access road would be used by all vehicles parking in all carparks.

Access to the main operational site and Carpark C from the existing roundabout on the site access road would be formalised with kerbs and signage. The site access road would be used to access Carpark D.

Competitor vehicles that park in Carpark B would exit the project site via a new, left-only T-intersection at the south of the project site onto Ferrers Road.

Vehicles parked in Carparks A, C and D would exit via the site access road and then onto Ferrers Road using the existing unsignalised T-intersection. Vehicles would be able to turn left or right onto Ferrers Road from the site access road.

Signposting with wayfinding infrastructure would be provided along Ferrers Road to provide project site entry and exit information.

5.2 Intersection performance

Intersection performance results for the Saturday pre-event and post-event peak hours are summarised as follows:

- 2022 'without project' and 2022 'with project' (first full year of operation) in Table 5-3
- 2032 'without project' and 2032 'with project' (10 years after the first full year of operation) in Table 5-4

Operation of the project on a Saturday evening would not impact the level of service at any of the intersections modelled in either 2022 or 2032. In the 2022 'without project' scenario, all intersections would operate at an acceptable Level of Service (D or better). In the 2022 'with project' scenario, most intersections would perform at the same Level of Service compared to the 'without project' scenario. The exception is Ferrers Road/The Horsley Drive intersection in the pre-event and post-event peak hours, where the Level of Service would decrease from A to B with an associated increase in average delay of four seconds in the pre-event peak hour and 10 seconds in the post-event peak hour. It is considered this would not substantially change the operational performance of the intersection, and therefore the impact would be minor.

Similarly, in the 2032 'without project' scenario, all intersections would operate at an acceptable Level of Service (D or better). In the 2032 'with project' scenario, most intersections would perform at the same Level of Service compared to the 'without project' scenario. Again, the exception is Ferrers Road/The Horsley Drive intersection in the pre-event and post-event peak hours, where the Level of Service would decrease from A to B with an associated increase in average delay of six seconds in the pre-event peak hour and 11 seconds in the post-event peak hour. It is considered this would not substantially change the operational performance of the intersection, and therefore the impact would be minor.

Table 5-3: Modelled intersection performance during operation (project only) – first full year of operation (2022)

Intersection and hourly period	2022 without project					2022 with project				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Great Western Highway/Doonside Road/Brabham Drive										
Saturday pre-event	1810	47	D	NB	30	2330	45	D	NB	25
				EB	45				EB	45
				SB	65				SB	115
				WB	50				WB	55
Saturday post-event	930	34	C	NB	15	1520	35	C	NB	70
				EB	15				EB	15
				SB	25				SB	20
				WB	15				WB	15
Brabham Drive/Huntingwood Drive										
Saturday pre-event	520	7	A	NB	5	1040	8	A	NB	5
				EB	< 5				EB	< 5
				SB	< 5				SB	10
				WB	< 5				WB	< 5
Saturday post-event	270	7	A	NB	< 5	870	8	A	NB	10
				EB	< 5				EB	< 5
				SB	< 5				SB	< 5
				WB	< 5				WB	< 5

Intersection and hourly period	2022 without project					2022 with project				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Brabham Drive/Ferrers Road/Peter Brock Drive										
Saturday pre-event	750	9	A	NB	-	1270	11	A	NB	-
				EB	5				EB	5
				SB	5				SB	20
				WB	< 5				WB	< 5
Saturday post-event	260	9	A	NB	-	850	9	A	NB	-
				EB	< 5				EB	5
				SB	< 5				SB	< 5
				WB	< 5				WB	< 5
Ferrers Road/Chandos Road										
Saturday pre-event	460	7	A	NB	5	760	9	A	NB	15
				EB	< 5				EB	< 5
				SB	5				SB	5
				WB	< 5				WB	< 5
Saturday post-event	270	7	A	NB	5	620	8	A	NB	5
				EB	< 5				EB	< 5
				SB	5				SB	15
				WB	< 5				WB	< 5

Intersection and hourly period	2022 without project					2022 with project				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Ferrers Road/The Horsley Drive										
Saturday pre-event	1160	14	A	NB	-	1460	18	B	NB	-
				EB	45				EB	60
				SB	5				SB	10
				WB	40				WB	95
Saturday post-event	580	13	A	NB	-	930	23	B	NB	-
				EB	20				EB	25
				SB	5				SB	55
				WB	20				WB	25

Table 5-4: Modelled intersection performance during operation (project only) – 10 years after the first full year of operation (2032)

Intersection and hourly period	2032 without project					2032 with project				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Great Western Highway/Doonside Road/Brabham Drive										
Saturday pre-event	1930	47	D	NB	30	2450	46	D	NB	25
				EB	50				EB	55
				SB	70				SB	120
				WB	55				WB	60
Saturday post-event	980	34	C	NB	15	1580	35	C	NB	70
				EB	15				EB	20
				SB	25				SB	20
				WB	15				WB	20
Brabham Drive/Huntingwood Drive										
Saturday pre-event	520	7	A	NB	5	1040	8	A	NB	5
				EB	< 5				EB	< 5
				SB	< 5				SB	10
				WB	< 5				WB	< 5
Saturday post-event	270	7	A	NB	< 5	870	9	A	NB	10
				EB	< 5				EB	< 5
				SB	< 5				SB	< 5
				WB	< 5				WB	< 5

Intersection and hourly period	2032 without project					2032 with project				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Brabham Drive/Ferrers Road/Peter Brock Drive										
Saturday pre-event	750	9	A	NB	-	1280	11	A	NB	-
				EB	5				EB	5
				SB	5				SB	20
				WB	< 5				WB	< 5
Saturday post-event	260	9	A	NB	-	850	9	A	NB	-
				EB	< 5				EB	10
				SB	< 5				SB	< 5
				WB	< 5				WB	< 5
Ferrers Road/Chandos Road										
Saturday pre-event	500	8	A	NB	5	810	9	A	NB	15
				EB	< 5				EB	5
				SB	5				SB	5
				WB	< 5				WB	< 5
Saturday post-event	290	7	A	NB	5	640	9	A	NB	5
				EB	< 5				EB	< 5
				SB	5				SB	15
				WB	< 5				WB	< 5

Intersection and hourly period	2032 without project					2032 with project				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Ferrers Road/The Horsley Drive										
Saturday pre-event	1490	14	A	NB	-	1780	20	B	NB	-
				EB	75				EB	95
				SB	10				SB	10
				WB	45				WB	110
Saturday post-event	710	13	A	NB	-	1060	24	B	NB	-
				EB	25				EB	35
				SB	5				SB	60
				WB	20				WB	30

5.3 Impacts on parking and access

As described in Section 5.1.3, 600 spaces are proposed for use by spectators for Sydney International Speedway events. As shown in Table 5-5, based on the forecast vehicle generation and arrival and departure profiles described in Section 5.1.2, the peak parking demand would be 1125 vehicles during a Sydney International Speedway 'major' event on a Saturday.

Table 5-5 Sydney International Speedway 'major' event parking demand – Saturday

Hour commencing	Vehicles entering per hour	Vehicles exiting per hour	Cumulative parking demand
3pm	55	-	55
4pm	169	-	224
5pm	788	-	1012
6pm	113	-	1125
7pm	-	-	1125
8pm	-	112	1013
9pm	-	900	113
10pm	-	113	0

This parking demand would exceed the capacity of Carpark A, which is intended for use by Sydney International Speedway spectators only. However, the use of Areas C and D as overflow parking for use by Sydney International Speedway spectators would allow for a combined capacity of 2840 parking spaces. Therefore, parking demand for a Sydney International Speedway 'major' event on a Saturday would be adequately serviced with a parking occupancy of 40 per cent. This scenario is expected to occur up to three times per year.

As described in Section 5.1.3, during Sydney International Speedway 'major' events, spectator entry and exist would be via Gate D and competitor exit, and if required, some spectator exit, would be via a proposed new exit-only driveway onto Ferrers Road, which is located south of the site. Traffic modelling undertaken by Sydney Metro shows that the existing intersection of Ferrers Road and Gate D and the proposed exit-only driveway would be able to accommodate traffic generated from a Sydney International Speedway 'major' event.

Therefore, parking and access would be adequately serviced during operation of the project. All parking would be accommodated on-site and not on surrounding local streets.

5.4 Impacts on the public transport network

Brabham Drive is used by route 724 which also forms part of the operational access and egress route. Minimal impacts to buses are expected and would be limited to a potential minor increase in travel time due to additional vehicles on the road network. No impacts are anticipated on the operation of bus stops.

The transport and traffic assessment conservatively assumes that 100 per cent of spectators would arrive and depart by private vehicle due to the limited public and active transport links to the project site (refer to Section 5.1.2). Opportunities to enhance public transport accessibility to the project would be investigated, including the provision of bus services and bus stop infrastructure to service major events.

5.5 Impacts on the active transport network

Pedestrian connectivity between carpark C and carpark D and the main operational site would continue to be via the existing pedestrian footpath along the north-south link road. Carparks would include the provision of pedestrian connectivity features, including pedestrian crossings, footpaths, signage and wayfinding to allow for the safe movement of users of the carparks to access both the project, and the Sydney Dragway.

No impacts to existing pedestrian and cyclist infrastructure are anticipated during operation of the project.

6. Operational assessment – project and Sydney Dragway

6.1 Key assumptions

Key assumptions included in the analysis of operational impacts of the operation of the project and Sydney Dragway are outlined as follows.

6.1.1 Assessment scenario

The assessment scenario considers concurrent operation of a Sydney International Speedway 'minor' event and a Sydney Dragway 'minor' event (refer to Section 6.1.4). For the purpose of the transport, traffic and parking assessment, this is considered to be a worst-case scenario.

6.1.2 Operational assessment years

Similar to the project only scenario, the following assessment years were assumed for the project and Sydney Dragway assessment:

- 2022 – first full year of operation of the project
- 2032 – 10 years after the first full year of operation of the project.

6.1.3 Traffic generation and distribution

Sydney International Speedway events are assumed to be held from 3pm to 10.30pm and Sydney Dragway events are assumed to be held from 6.30pm to 9pm on a Friday. It is assumed that 100 per cent of spectators would arrive and depart by private vehicle due to the absence of public and active transport links to the site. It is assumed that Sydney International Speedway and Sydney Dragway competitors would arrive prior to the spectator peak arrival periods.

Spectator numbers, assumed vehicle occupancy and associated trip generation for Sydney International Speedway and Sydney Dragway events are shown in Table 6-1.

Table 6-1: Sydney International Speedway and Sydney Dragway trip generation

Event	Sydney International Speedway			Sydney Dragway		
	Spectators	Vehicle occupancy	Trip generation	Spectators	Vehicle occupancy	Trip generation
Club	500	2.0	250	500	2.0	250
Minor	1200	2.5	480	2000	2.5	800
Main	2500	3.5	714	3500	3.5	1000
Major	4500	4.0	1125	7500	4.0	1875

The worst case scenario that has been assessed is based on a Sydney International Speedway 'minor' event (480 vehicles) and Sydney Dragway 'minor' event (800 vehicles) held on a Friday.

As shown in Appendix A, the arrival and departure peak hours for both events occurring concurrently are 5pm to 6pm and 9pm to 10pm, respectively. During the arrival peak hour, 457 vehicles would travel to the project site and 59 vehicles would travel from the project site. During the departure peak hour, five vehicles would travel to the project site and 456 vehicles would travel from the project site. These arrival and departure volumes have been included in the assessment of the project with Sydney Dragway.

The trip distribution of spectators on the road network is as described in Section 5.1.2.

6.1.4 Parking and access

Parking

Dedicated and shared car parking arrangements have been agreed with Sydney Dragway. The operational car parking design has been developed in consultation with Sydney Dragway to provide adequate parking for visitors to Sydney Dragway (refer to Chapter 4 (Stakeholder and community engagement) of the Environmental Impact Statement for more information about consultation undertaken to date). The project includes provision of the following car parking:

- Two areas of new dedicated parking for Sydney Dragway (Carpark C and Carpark D), providing about 2220 car parking spaces
- New dedicated spectator parking for Sydney International Speedway (Carpark A), providing about 600 car parking spaces. There is also the potential to provide another 200 car parking spaces within the speedway pit area.

During Sydney Dragway exclusive events (when the Sydney International Speedway would not operate), Sydney Dragway would also have exclusive use to the 600 dedicated Sydney International Speedway parking spaces, providing a total of about 2820 car parking spaces. Additional spaces may also be made available in the Sydney International Speedway pit area. This represents an increase in vehicle spaces available to Sydney Dragway during large events compared to the current operations.

Likewise, during the Sydney International Speedway exclusive events (when Sydney Dragway would not operate) Sydney International Speedway would have exclusive use to the southern dragway parking area (around 460 spaces). This would provide a total of about 1060 car parking spaces with additional spaces potentially available in the speedway pit area.

Parking arrangements during concurrent operations would be as described in Section 5.1.3.

Access

During concurrent events, Sydney Dragway competitors and staff would enter and exit the Western Sydney Parklands Precinct 5: Eastern Creek Motor Sports via the Sydney Dragway gate A (north of the project site).

Visitors to the Sydney Dragway and competitors and visitors of the Sydney International Speedway would access car parking areas within the project site using the site access road.

Competitor vehicles for Sydney International Speedway that park in Carpark B would exit the project site via a new, left-only T-intersection at the south of the project site onto Ferrers Road, south of the main operational site.

Vehicles parked in Carparks A, C and D would exit via the site access road and then onto Ferrers Road using the existing unsignalised T-intersection. Vehicles would be able to turn left or right onto Ferrers Road from the site access road.

6.2 Intersection performance

Intersection performance results for the Saturday pre-event and post-event peak hours are summarised as follows:

- 2022 'without project' and 2022 'with concurrent operation' (first full year of operation) in Table 6-2
- 2032 'without project' and 2032 'with concurrent operation' (10 years after the first full year of operation) in Table 6-3.

Overall, the concurrent operations on a Friday evening would have a minor impact on road network performance. Operation of the project with the concurrent operation of Sydney Dragway on a Friday evening would not impact the level of service at the majority of intersections modelled in either 2022 or 2032. All intersections would continue to operate at acceptable levels of service.

In the 2022 'with concurrent operation' scenario, most intersections would perform at the same Level of Service compared to the 'without project' scenario. The exceptions are:

- Brabham Drive/Huntingwood Drive in the Friday pre-event peak hour, where the Level of Service would decrease from A to B with an associated increase in average delay of 10 seconds
- Brabham Drive/Ferrers Road/Peter Brock Drive in the Friday pre-event peak hour, where the Level of Service would decrease from A to B with an associated increase in average delay of five seconds.

It is considered there would be negligible impact to road network performance resulting from the concurrent operation of both events.

Similarly, in the 2032 'with concurrent operation' scenario, most intersections would perform at the same Level of Service compared to the 'without project' scenario. The exception is:

- Brabham Drive/Huntingwood Drive in the Friday pre-event peak hour, where the Level of Service would decrease from A to B with an associated increase in average delay of 11 seconds.
- Ferrers Road/ The Horsley Drive in the Friday pre-event peak hour where the Level of Service would decrease from B to D, with an associated increase in average delay of 22 seconds.

Again, it is considered there would be negligible impact to road network performance resulting from the concurrent operation of both events.

Table 6-2: Modelled intersection performance during operation (cumulative) – first full year of operation (2022)

Intersection and hourly period	2022 without project					2022 with concurrent operation				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Great Western Highway/Doonside Road/Brabham Drive										
Friday pre-event	4230	58	E	NB	220	4590	61	E	NB	220
				EB	75				EB	75
				SB	155				SB	250
				WB	165				WB	170
Friday post-event	900	36	C	NB	15	1200	36	C	NB	45
				EB	20				EB	20
				SB	20				SB	15
				WB	20				WB	20
Brabham Drive/Huntingwood Drive										
Friday pre-event	2230	13	A	NB	20	2590	23	B	NB	25
				EB	10				EB	10
				SB	10				SB	15
				WB	55				WB	95
Friday post-event	380	8	A	NB	< 5	670	9	A	NB	5
				EB	< 5				EB	< 5
				SB	< 5				SB	< 5
				WB	< 5				WB	< 5

Intersection and hourly period	2022 without project					2022 with concurrent operation				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Brabham Drive/Ferrers Road/Peter Brock Drive										
Friday pre-event	1650	11	A	NB	-	2010	16	B	NB	-
				EB	10				EB	15
				SB	20				SB	40
				WB	5				WB	10
Friday post-event	290	9	A	NB	-	590	9	A	NB	-
				EB	< 5				EB	5
				SB	< 5				SB	< 5
				WB	< 5				WB	< 5
Ferrers Road/Chandos Road										
Friday pre-event	1950	25	B	NB	40	2130	28	B	NB	70
				EB	15				EB	20
				SB	55				SB	60
				WB	70				WB	80
Friday post-event	260	7	A	NB	< 5	450	8	A	NB	< 5
				EB	< 5				EB	< 5
				SB	5				SB	10
				WB	< 5				WB	< 5

Intersection and hourly period	2022 without project					2022 with concurrent operation				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Ferrers Road/The Horsley Drive										
Friday pre-event	3330	20	B	NB	-	3510	22	B	NB	-
				EB	145				EB	160
				SB	100				SB	105
				WB	115				WB	140
Friday post-event	530	12	A	NB	-	720	12	A	NB	-
				EB	15				EB	20
				SB	5				SB	10
				WB	15				WB	15

Table 6-3: Modelled intersection performance during operation (cumulative) – 10 years after the first full year of operation (2032)

Intersection and hourly period	2032 without project					2032 with concurrent operation				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Great Western Highway/Doonside Road/Brabham Drive										
Friday pre-event	4460	60	E	NB	225	4820	64	E	NB	225
				EB	90				EB	90
				SB	170				SB	285
				WB	180				WB	190
Friday post-event	970	36	C	NB	15	1260	36	C	NB	45
				EB	20				EB	25
				SB	20				SB	15
				WB	20				WB	20
Brabham Drive/Huntingwood Drive										
Friday pre-event	2260	13	A	NB	20	2620	24	B	NB	25
				EB	15				EB	20
				SB	10				SB	15
				WB	55				WB	100
Friday post-event	390	8	A	NB	< 5	680	9	A	NB	5
				EB	< 5				EB	< 5
				SB	< 5				SB	< 5
				WB	< 5				WB	< 5

Intersection and hourly period	2032 without project					2032 with concurrent operation				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Brabham Drive/Ferrers Road/Peter Brock Drive										
Friday pre-event	1660	11	A	NB	-	2020	16	B	NB	-
				EB	10				EB	15
				SB	20				SB	40
				WB	< 5				WB	10
Friday post-event	300	9	A	NB	-	590	9	A	NB	-
				EB	< 5				EB	5
				SB	< 5				SB	< 5
				WB	< 5				WB	< 5
Ferrers Road/Chandos Road										
Friday pre-event	2230	> 100	F	NB	50	2420	> 100	F	NB	90
				EB	35				EB	55
				SB	100				SB	110
				WB	350				WB	440
Friday post-event	300	7	A	NB	< 5	490	8	A	NB	5
				EB	< 5				EB	< 5
				SB	5				SB	10
				WB	< 5				WB	< 5

Intersection and hourly period	2032 without project					2032 with concurrent operation				
	Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)		Intersection throughput (vehicles/hour)	Average delay (seconds/ vehicle)	Level of Service	Maximum queue length by directional approach (metres)	
Ferrers Road/The Horsley Drive										
Friday pre-event	3920	28	B	NB	-	4100	50	D	NB	-
				EB	295				EB	400
				SB	165				SB	140
				WB	140				WB	300
Friday post-event	680	11	A	NB	-	870	11	A	NB	-
				EB	25				EB	25
				SB	5				SB	10
				WB	15				WB	15

6.3 Impacts on parking and access

6.3.1 Parking

Parking and access would be adequately serviced during a Sydney International Speedway 'minor' event and Sydney Dragway 'minor' event occurring concurrently. All parking would be accommodated on-site and not on surrounding local streets.

As described in Section 5.1.3, the project includes provision of the following car parking:

- Two areas of new dedicated parking for Sydney Dragway (Carpark C and Carpark D), providing about 2220 car parking spaces
- New dedicated parking for Sydney International Speedway (Carpark A), providing about 600 car parking spaces. There is also the potential to provide another 200 car parking spaces within the speedway pit area.

During Sydney Dragway exclusive events (when the Sydney International Speedway would not operate), Sydney Dragway would also have exclusive use to the 600 dedicated Sydney International Speedway parking spaces, providing a total of about 2820 car parking spaces. Additional spaces may also be made available in the Sydney International Speedway pit area. This represents an increase in vehicle spaces available to Sydney Dragway during large events compared to the current operations.

Likewise, during the Sydney International Speedway exclusive events (when Sydney Dragway would not operate) Sydney International Speedway would have exclusive use to the southern dragway parking area (around 460 spaces). This would provide a total of about 1060 car parking spaces with additional spaces potentially available in the speedway pit area.

The parking demand during concurrent minor events is provided in Table 6-4. Based on the forecast vehicle generation and arrival and departure profiles described in Section 5.1.2, the peak parking demand during a concurrent minor event as shown in Table 6-4 would be 955 vehicles. Parking demand for a Sydney International Speedway 'minor' event and Sydney Dragway 'minor' event occurring concurrently on a Friday would be adequately serviced with a parking occupancy of 34 per cent.

Table 6-4: Sydney International Speedway and Sydney Dragway concurrent 'minor' event parking demand – Friday

Hour commencing	Vehicles entering per hour	Vehicles exiting per hour	Cumulative parking demand
3pm	104	25	324[1]
4pm	163	15	472
5pm	457	59	870
6pm	136	51	955
7pm	52	226	781
8pm	27	272	536
9pm	5	456	85
10pm	2	78	9

[1] The cumulative parking demand at 3pm includes the net number of vehicles entering and exiting the project site between 12am and 3pm.

6.3.2 Access

During concurrent events, Sydney Dragway competitors and staff would enter and exit the Western Sydney Parklands Precinct 5: Eastern Creek Motor Sports via the Sydney Dragway gate A (north of the project site).

Visitors to the Sydney Dragway and competitors and visitors of the Sydney International Speedway would access car parking areas within the project site using the site access road.

Competitor vehicles for Sydney International Speedway that park in Carpark B would exit the project site via a new, left-only T-intersection at the south of the project site onto Ferrers Road, south of the main operational site.

Vehicles parked in Carparks A, C and D would exit via the site access road and then onto Ferrers Road using the existing unsignalised T-intersection. Vehicles would be able to turn left or right onto Ferrers Road from the site access road.

6.4 Impacts on the public transport network

Brabham Drive is used by route 724 which also forms part of the operational access and egress route. Minimal impacts to buses are expected and would be limited to a potential minor increase in travel time due to additional vehicles on the road network. No impacts are anticipated on the operation of bus stops.

The transport and traffic assessment conservatively assumes that 100 per cent of spectators would arrive and depart by private vehicle due to the limited public and active transport links to the project site (refer to Section 6.1.3). Opportunities to enhance public transport accessibility to the project would be investigated, including the provision of bus services and bus stop infrastructure to service concurrent events.

6.5 Impacts on the active transport network

No impacts to pedestrians and cyclists are anticipated during concurrent operation of both events.

7. Mitigation and management measures

Planning of the project and the arrangements of the construction sites and methodology have been developed to avoid and minimise transport, traffic and parking related impacts where possible.

The approach to transport and traffic management during the construction phase, including the process for the development of Traffic Management Plans, is outlined in the Construction Environmental Management Framework (CEMF), included at Appendix D of the Environmental Impact Statement. The CEMF is a Sydney Metro framework which sets out the management measures to be adopted for construction, including construction traffic management. It provides a linking document between the planning approval documentation and the construction traffic management documentation to be developed by the Principal Contractors relevant to their scope of works. Construction Traffic Management Plans would be prepared in consultation with the relevant road authority, Transport Coordination and other relevant parts of Transport for NSW. The Construction Traffic Management Plan and would be endorsed by Transport Coordination (part of Transport for NSW) and approved by Transport for NSW.

Residual impacts of the project that arise from engineering constraints or from construction activities, and which cannot be removed through the design, are considered manageable. The mitigation measures would be reconfirmed as the design development progresses, and as more detailed construction management plans are developed. A summary of mitigation and management measures identified for the project is provided in Table 7-1. These would be supplemented by mitigation measures detailed in Chapter 25 (Synthesis and conclusion of the Environmental Impact Statement) of the Environmental Impact Statement with respect to cumulative impacts.

An Operational Environmental Management Plan (OEMP) would be prepared by the operator of the Sydney International Speedway once appointed. The Operational Environmental Management Plan would include an operational traffic management plan which would include traffic measures to minimise impacts to road network performance during peak event times. The operational traffic management plan would consider measures to be implemented to manage the arrival and exit of vehicles to the project site, including traffic marshalling and the use of temporary traffic signals when events are scheduled at the same time as Sydney Dragway.

Event specific Traffic Management Plans would be prepared for any major events. These Traffic Management Plans would be prepared in consultation with the Transport Management Centre, NSW Police and other relevant stakeholders and would consider (as relevant):

- All major modes of transport
- Car parking arrangements
- Pedestrian routes and access
- Public transport considerations
- The need for temporary road closures and associated detours
- Temporary taxi and shuttle bus zones
- Temporary drop off and pick up zones
- Loading vehicle arrangements during events.

Table 7-1: Summary of transport, traffic and parking mitigation and management measures

Reference	Impact/ issue	Management/mitigation measure	Applicable location(s)
Construction			
TTP1	Traffic-related incidents	In the event of a traffic-related incident, coordination would be carried out with Transport Coordination and/or the Transport Management Centre's Operations Manager.	All
TTP2	Property access for emergency vehicles	Access to properties within Western Sydney Parklands Precinct 5; Eastern Creek Motor Sports for emergency vehicles would be provided at all times.	All
TTP3	Construction site access and egress	All trucks would enter and exit the project site in a forward direction, where feasible and reasonable.	All
TTP4	Road network performance	Construction site traffic would be managed to minimise movements along Ferrers Road and the surrounding road network during peak periods.	All
TTP5	Parking availability for construction personnel	Parking for construction personnel would be provided on-site and not on surrounding local streets.	All
TTP6	Construction traffic during major events	During major events at Sydney Dragway, impacts to the transport and traffic network would be reduced by (as necessary): ▪ Avoiding the use of the spectator access road by construction traffic during Sydney Dragway major events ▪ Minimising the level and nature of construction activity pre, during and post events ▪ Maintaining appropriate access to all areas within the Western Sydney Parklands Precinct 5: Eastern Creek Motor Sports ▪ Scheduling deliveries to the project site outside of event periods, when possible.	All
TTP7	Parking for events at Sydney Dragway during construction	Temporary offset parking for Sydney Dragway would be established prior to commencement of construction. This would include a total of around 2400 dedicated parking spaces for Sydney Dragway comprising of: ▪ Retention of about 800 existing spaces in the existing P2 Dragway car park outside of the project footprint ▪ A minimum of 1600 spaces within the project site for use by visitors to Sydney Dragway during events.	All

Reference	Impact/ issue	Management/mitigation measure	Applicable location(s)
		For larger events at Sydney Dragway, additional parking spaces within the Sydney Motorsports Park (operated by the Australian Racing Drivers Club) would also be made available. During these events, a shuttle bus service would be provided between this parking and the Sydney Dragway.	
Operation			
TTP8	Public transport accessibility during major events	Opportunities to enhance public transport accessibility to the project would be investigated, including the provision of bus services and bus stop infrastructure to service major events.	All
TTP9	Property access for emergency vehicles	Access to other properties within Western Sydney Parklands Precinct 5; Eastern Creek Motor Sports for emergency vehicles would be provided at all times.	All
TTP10	Impacts to road network performance during events at the project site (including concurrent operations)	An operational traffic management plan would be developed by the operator of Sydney International Speedway and would include traffic measures to minimise impacts to road network performance during peak event times. The traffic management plan would consider measures to be implemented to manage the arrival and exit of vehicles to the project site, including traffic marshalling and the use of temporary traffic signals when major events are scheduled at the same time as Sydney Dragway.	All

8. References

Austroads (2017). *Guide to Traffic Management – Part 3 Traffic Studies and Analysis*

Roads and Maritime Services (2013). *Traffic Modelling Guidelines*

Roads and Maritime Services (2019). *Cycleway Finder*, available online: http://www.rms.nsw.gov.au/maps/cycleway_finder

Roads and Traffic Authority (2002). *Guide to Traffic Generating Developments*

Appendix A. Sydney Dragway and Sydney International Speedway traffic profiles

Ferrer's Road Capacity Analysis Summary

Entry / Exit Profiles – Major Event Scenario

Dragway Profile

Hour Starting	Fri EB 24-Jan	Sat EB 25-Jan	Fri WB 24-Jan	Sat WB 25-Jan
AM Peak				
PM Peak				
0:00	0.1%	0.0%	0.1%	0.1%
1:00	0.0%	0.0%	0.0%	0.0%
2:00	0.0%	0.0%	0.0%	0.0%
3:00	0.1%	0.0%	0.0%	0.0%
4:00	0.2%	0.3%	0.0%	0.2%
5:00	0.7%	0.5%	0.1%	0.1%
6:00	2.0%	3.9%	0.6%	0.8%
7:00	5.0%	6.6%	1.1%	1.1%
8:00	6.3%	9.7%	1.4%	1.5%
9:00	5.4%	8.6%	2.2%	1.3%
10:00	4.3%	9.4%	0.9%	2.2%
11:00	3.5%	8.7%	0.1%	3.0%
12:00	3.7%	9.6%	0.6%	2.9%
13:00	4.5%	10.1%	2.2%	4.6%
14:00	5.7%	8.5%	1.5%	3.5%
15:00	10.0%	6.3%	3.1%	6.7%
16:00	11.4%	6.1%	1.9%	5.8%
17:00	15.1%	4.1%	7.4%	9.0%
18:00	11.0%	3.0%	6.4%	6.5%
19:00	6.5%	2.2%	28.3%	11.5%
20:00	3.4%	1.4%	28.0%	27.3%
21:00	0.6%	0.3%	9.0%	6.2%
22:00	0.3%	0.2%	3.8%	4.1%
23:00	0.1%	0.4%	1.3%	1.8%
Total	100%	100%	100%	100%

Speedway Profile

Hour Starting	Fri EB 24-Jan	Sat EB 25-Jan	Fri WB 24-Jan	Sat WB 25-Jan
AM Peak				
PM Peak				
0:00	0.0%	0.0%	0.0%	0.0%
1:00	0.0%	0.0%	0.0%	0.0%
2:00	0.0%	0.0%	0.0%	0.0%
3:00	0.0%	0.0%	0.0%	0.0%
4:00	0.0%	0.0%	0.0%	0.0%
5:00	0.0%	0.0%	0.0%	0.0%
6:00	0.0%	0.0%	0.0%	0.0%
7:00	0.0%	0.0%	0.0%	0.0%
8:00	0.0%	0.0%	0.0%	0.0%
9:00	0.0%	0.0%	0.0%	0.0%
10:00	0.0%	0.0%	0.0%	0.0%
11:00	0.0%	0.0%	0.0%	0.0%
12:00	0.0%	0.0%	0.0%	0.0%
13:00	0.0%	0.0%	0.0%	0.0%
14:00	0.0%	0.0%	0.0%	0.0%
15:00	5.0%	5.0%	0.0%	0.0%
16:00	15.0%	15.0%	0.0%	0.0%
17:00	70.0%	70.0%	0.0%	0.0%
18:00	10.0%	10.0%	0.0%	0.0%
19:00	0.0%	0.0%	0.0%	0.0%
20:00	0.0%	0.0%	10.0%	10.0%
21:00	0.0%	0.0%	80.0%	80.0%
22:00	0.0%	0.0%	10.0%	10.0%
23:00	0.0%	0.0%	0.0%	0.0%
Total	100%	100%	100%	100%