



Transport for NSW

Beaches Link and Gore Hill Freeway Connection

Preferred infrastructure report

November 2021



Acknowledgment of Country

Transport for NSW acknowledges and pays respect to the Gammeraygal, Birrabirrigal and Garigal peoples of the Eora Nation, the traditional custodians of the land on which the project is proposed. We recognise their continuing connection to the land, waters and culture of this Country and pay our respects to their Elders past and present.





Transport for NSW

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November 2021





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Glossary and abbreviations

Abbreviation	Definition
AADT	Annual average daily traffic
AEP	Annual exceedance probability
AFG	Aboriginal focus group
AFL	Australian Football League
AHD	Australian height datum
AHIMS	Aboriginal Heritage Information Management System
AIS	Automatic identification system
AM peak	Time period between 8am and 9am
ANZECC	Australian and New Zealand Environment and Conservation Council
Beaches Link	The Beaches Link and Gore Hill Freeway Connection project which comprises a new tolled motorway tunnel connection across Middle Harbour from the Warringah Freeway and Gore Hill Freeway to Balgowlah and Killarney Heights and including the surface upgrade of Wakehurst Parkway from Seaforth to Frenchs Forest and upgrade and integration works to connect to the Gore Hill Freeway and Reserve Road at Artarmon
BL	Beaches Link
BTEX	Benzene, toluene, ethylbenzene and xylene
CALMET/CALPUFF	CALPUFF is an advanced non-steady-state meteorological and air quality modelling system developed by Exponent, Inc. The modelling system consists of three main components and a set of pre-processing and post-processing programs. The main components of the modelling system are CALMET (a diagnostic three-dimensional meteorological model), CALPUFF (an air quality dispersion model) and CALPOST (a post-processing package)
CBD	Central business district
CCTV	Closed circuit television
CNVG	Construction Noise and Vibration Guideline
Cofferdam	A temporary enclosure within a body of water that is constructed to allow dewatering of an enclosed area
Construction fatigue	An impact that may be experienced by receivers that are in the vicinity of concurrent or consecutive project construction activities where the activities overlap or have little or no break between the activities of one project, or multiple adjacent projects
Construction footprint	The total area required to facilitate the construction of the project
Construction support sites	Parcels of land on which temporary construction-related activities would be carried out
COVID-19	Coronavirus disease

Abbreviation	Definition
Cumulative impact	An impact that may occur when impacts from one project interact or overlap with impacts from other projects and potentially result in a larger overall effect on the environment, businesses or local communities. Cumulative impacts may also occur when projects are constructed consecutively with construction activities occurring over extended periods of time with little to no break in between
dB	Decibel
dB(A)	A-weighted decibels
DECC	Department of Environment and Climate Change (former)
DECCW	Department of Environment Climate Change and Water (former)
Dioxins	Polychlorinated dibenzo-para-dioxins
Dredging	Excavation carried out underwater or partially underwater
EPA	NSW Environment Protection Authority
EPL	Environment protection licence
Gore Hill Freeway Connection	Connection and integration works along the existing Gore Hill Freeway and surrounding roads at Artarmon
Groundwater	All waters occurring below the land surface. The upper surface of the soils saturated by groundwater in any particular area is called the water table
ICNG	Interim Construction Noise Guideline
Immersed tube tunnel	A series of steel tunnel segments placed on top, or within the top layers, of harbour rock and sediment
Infrastructure SEPP	State Environmental Planning Policy (Infrastructure) 2007
km/h	Kilometres per hour
L _{Aeq}	Sound level in decibels equivalent to the total A-weighted sound energy measured over a stated period of time.
L _{Amax}	Maximum A – weighted sound pressure level.
LoS	Level of service
m	Metre
mm	Millimetres
m ²	Square metres
m ³	Cubic metres
m ³ /s	Cubic metres per second
Mainline tunnel	Commencing at the Warringah Freeway at Cammeray, the mainline tunnels would pass under Naremburn and Northbridge, then cross Middle Harbour between Northbridge and Seaforth. The mainline tunnels would then split under Seaforth into two ramp tunnels and continue north to the Wakehurst Parkway at Killarney Heights and north-east to Balgowlah.

Abbreviation	Definition
	The mainline tunnels would also have on and off ramps from under Northbridge connecting to the Gore Hill Freeway and Reserve Road east of the existing Lane Cove Tunnel.
mg/L	Milligrams per litre
NAGD	National Assessment Guidelines for Dredging
NCA	Noise catchment area
NML	Noise management level
NSW	New South Wales
NSW Approved Methods	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW
NSROC	Northern Sydney Regional Organisation of Councils
OCP	Organochlorine pesticides
OOHW	Out of hours work
PAD	Potential archaeological deposit
PAH	Polycyclic aromatic hydrocarbons
PCB	Polychlorinated biphenyls
PCT	Plant community type
PFAS	Poly-fluoroalkyl substances
Pile	Heavy stake or post installed to support the foundations of a structure
PM peak	Time period between 5 pm and 6 pm
RAAF	Royal Australian Air Force
Roadheader	An excavation machine that has a rotating, rock-cutting head on the front, mounted to a boom
RSL	Returned & Services League of Australia
RTA	Roads and Traffic Authority of NSW (former)
SCATS	Sydney Coordinated Adaptive Traffic System
SEARs	Secretary's environmental assessment requirements
SEPP	State environmental planning policy
SHERM	Sydney Harbour Ecological Response Model
Spadable	A consistency which allows the material to be spaded or shovelled
SSD	State Significant Development
Standard construction hours	7am to 6pm Monday to Friday, 8am to 1pm Saturday and no construction works on Sundays or public holidays

Abbreviation	Definition
State and Regional Development SEPP	State Environmental Planning Policy (State and Regional Development) 2011
TAFE	Technical and Further Education
TAPM	The Air Pollution Model
TBT	Tributyltin
The project	The Beaches Link and Gore Hill Freeway Connection project
Transport for NSW	Transport for New South Wales
TRH	Total recoverable hydrocarbons
Warringah Freeway Upgrade	Upgrade and integration works along the existing Warringah Freeway, including infrastructure required for connections to the Beaches Link and Gore Hill Freeway Connection project
Western Harbour Tunnel	A new crossing of Sydney Harbour involving twin motorway tunnels connecting the M4-M5 Link at Rozelle and the existing Warringah Freeway at North Sydney.