December 2019

Pacific Motorway (M1)

Varsity Lakes (Exit 85) to Tugun (Exit 95) upgrade

Frequently Asked Questions

How will the upgrade cater to population growth?

The Pacific Motorway (M1) is one of Australia's busiest highways and is a national freight route. The section between Varsity Lakes (Exit 85) and Tugun (Exit 95) carries around 90,000 vehicles per day on average and is consistently congested during peak periods and when traffic incidents occur. Traffic demand for this section of the motorway is growing and expected to exceed 100,000 vehicles per day by 2026.

As part of a wider Pacific Motorway (M1) Nerang to Tugun Master Plan, the Department of Transport and Main Roads (TMR) has been progressively upgrading the M1 over the last decade. Various interchange improvements were carried out between 2008 and 2010 and motorway widening to six lanes between Nerang (Exit 73) and Worongary (Exit 77) was completed in 2010 and Worongary (Exit 77) to Mudgeeraba (Exit 79) six-laning in 2014. The Mudgeeraba to Varsity Lakes section is currently in construction and is tracking for completion by mid-2020, construction and weather conditions permitting.

Planning for the Varsity Lakes to Tugun upgrade aligned with the State Government's South East Queensland (SEQ) Regional Plan 2017, Shaping SEQ. This plan provides a framework for managing growth, based on land use and employment demand forecasts to 2041. It informs local planning across the Gold Coast and guides future infrastructure planning and investment. Traffic models used for planning the VL2T upgrade were developed to ascertain the required infrastructure based on this 2041 forecast. What does the upgrade include?

The Pacific Motorway (M1) Varsity Lakes (Exit 85) to Tugun (Exit 95) upgrade – known as VL2T – includes:

- widening 10 kilometres of the M1 in both directions between Varsity Lakes (Exit 85) and Tugun (Exit 95), including improvements to the road alignment where possible
- a minimum of three lanes in each direction and some areas there will be up to four and five lanes, particularly in locations where entry and exit ramps are close together
- extending all entry and exit ramps between Varsity Lakes (Exit 85) and Tugun (Exit 95), with significant improvements made to:
  - Burleigh Heads (Exit 87)
  - Tallebudgera (Exit 89)
  - Palm Beach (Exit 92)
- widening the Tallebudgera Creek and Currumbin Creek bridges
- constructing a new two-way western service road between Tallebudgera (Exit 89) and Palm Beach (Exit 92), and a new bridge over Tallebudgera Creek connecting the new western service road

- installing smart motorway technologies to improve travel time reliability between Nerang and Tugun
- installing bike and pedestrian paths to improve active transport connectivity
- preserving the corridor for a possible future rail extension from Varsity Lakes to Tugun.

When will construction start?

The upgrade and widening of the motorway between Varsity Lakes and Tugun is being delivered in packages. The Varsity Lakes to Burleigh section will begin construction once the Mudgeeraba to Varsity Lakes upgrade is completed by mid-2020.

What are the key milestones?

2006–2008	Community consultation and feedback received on the Pacific Motorway Nerang to Tugun Master Plan, which included a whole-of-government approach to road, rail and power in this Pacific Motorway (M1) corridor.
Late 2017	Options analysis and preliminary evaluation for the VL2T upgrade completed by TMR.
Early 2018	TMR partnered with Building Queensland to develop a detailed business case for the project. Design consultant engaged to develop the reference design. Consultation with stakeholders affected by land resumption.
Late 2018	The completed business case referred to Infrastructure Australia for assessment, and the Australian Government for funding consideration and approval to allow the project to proceed to detailed design. Ongoing consultation with stakeholders affected by land resumption.
Early to mid-2019	VL2T upgrade packaged into four sections and contracted out for design. • Industry briefing held in May 2019 to advise local industry of construction packages and estimated timeframes for tendering.
Late 2019	Consultation began with key stakeholder groups (schools, elected representatives, community centres). Community information sessions held in November 2019 for Package A Varsity Lakes to Burleigh.
Early 2020	Some early works to start for relocating services located above and below ground. Consultation continuing with key stakeholder groups and residents directly adjacent to the motorway. Community information sessions scheduled for Package B Burleigh to Palm Beach and Package C Palm Beach to Tugun.
Mid–2020	Construction to start on the Varsity Lakes to Burleigh section.
End 2023	Construction complete on full 10km upgrade.

Who is funding the upgrade and what will it cost?

$1.03 billion has been outlined in the *Queensland Transport and Roads Investment Program 2019–20 to 2022–23* (QTRIP*)* to progress the VL2T upgrade to construction, based on joint funding from the Australian and Queensland governments.

Why is the project being delivered in packages?

The VL2T upgrade stretches over 10 kilometres of the Pacific Motorway (M1) with multiple technical design and construction elements throughout, such as interchange upgrades, bridge widening, smart motorway initiatives and ramp extensions, making it more efficient to separate and deliver in packages.

Designing the packages this way will make sure construction work can roll on as soon as the current upgrade between Mudgeeraba and Varsity Lakes is completed by mid-2020. By 2021, all motorway widening works (packages A, B and C) will be in construction at the same time. This ensures the full benefits of each package will be realised simultaneously,

removing the potential to push congestion hot-spots further down the line, as sometimes happens with a staged approach. Package D smart motorway technologies between Nerang and Mudgeeraba will be delivered at a later date.

Delivering it this way also benefits the construction industry, in that multiple contracts in the design and construction packages are available for tendering.

The project packages are:

- Package A Varsity Lakes (Exit 85) to Burleigh (Exit 87)
- Package B Burleigh (Exit 87) to Palm Beach (19th Avenue)
- Package C Palm Beach (19th Avenue) to Tugun (Exit 95)
- Package D smart motorway technologies between Nerang and Mudgeeraba.

What are early works?

Early works include aspects of construction that need to be completed before main road widening can begin. These include public utility service relocations, for example a major telecommunication cable needs to be moved out of the way of the upgrade alignment. Other service relocation works include water, sewer and power.

Survey works are also required to assist with informing the design and this is currently underway along and adjacent to the 10km route. Survey includes geotechnical investigations to understand soil and rock types, pavement testing and bridge inspections to establish current conditions, as well as flora, fauna and waterway surveys to map endangered species and current habitats.

How does the project benefit road users?

The VL2T upgrade will improve overall safety for road users, and benefit the national freight network, tourism operators, and commuters by:

- reducing congestion and providing more efficient traffic flows
- improving travel time reliability
- minimising the potential for traffic crashes
- increasing ability to monitor and respond to traffic incidents
- changing access to and from the motorway.

It will also better connect local communities with improved active transport facilities by adding new and upgrading some existing pedestrian paths and bike lanes in the majority of the 10-kilometre alignment.

What community consultation has been carried out to date?

2006-2008: Consultation on the Pacific Motorway (M1) Nerang to Tugun Master Plan, 35,000 newsletters and information sheets were delivered to households and businesses within one kilometre of the project corridor. Key stakeholders and the community were invited to complete a survey highlighting key issues and provide feedback about the interchanges along the motorway.

Early 2008: Consultation began on the southern section from Varsity Lakes to Tugun. Consultation activities included:

- newsletter distributed to adjacent corridor residents and businesses
- media release
- public displays
- print media advertising

- TMR webpage update
- a dedicated free call telephone number and email address for direct queries.

March 2018: Consultation with landowners identified as being impacted by the preferred design for the Varsity Lakes to Tugun upgrade. Consultation with these directly affected landowners has continued throughout 2018 and 2019.

August 2018: Consultation began with key stakeholder groups (schools, elected representatives, community groups)

November 2019: Community information sessions for Package A Varsity Lakes to Burleigh, with more than 200 residents, businesses and motorists having their say.

Early 2020: Consultation with key stakeholder groups and residents directly adjacent to the motorway continues.

February 2020: Community information sessions scheduled for Package B Burleigh to Palm Beach and Package C Palm Beach to Tugun.

What is a smart motorway system?

Smart motorway technologies help to reduce 'stop-start' travel, improve safety and provide more predictable travel times for motorists.

Smart motorway initiatives planned for the VL2T upgrade include:

- ramp signal metering
- variable speed limit signs (VSLS)
- additional CCTV cameras
- vehicle detection equipment to measure and calculate traffic flow speed and consistency.

These initiatives allow the proactive, real-time management of the Pacific Motorway (M1) and connecting local roads, with benefits including:

- keeping the motorway traffic moving and delaying the onset of congestion by managing the volume traffic entering the motorway at congestion points
- providing safer merging conditions for motorists entering the motorway
- reducing ‘stop-start’ travel for motorists and helping to improve travel time reliability
- allowing a proactive and responsive approach to managing road network conditions and responding to congestion, incidents or bad weather in real time.
- optimising the performance of the motorway and maximising the existing capacity until future upgrades can take place.

How will traffic conditions change during construction?

To ensure the safety of roadwork crews and road users, road alignments will change from time to time during construction. This means that road conditions will frequently change, including:

- narrow lanes
- ‘switches’ between traffic lanes
- altered lane merges
- full lane closures
- detours at key locations
- reduced speed limits

- partial on-ramp/off-ramp closures.

All road users are reminded that roadwork speed limits are enforceable. Keeping a safe distance between you and other vehicles; and from traffic barriers, construction equipment and roadwork crews is recommended. While there may be times when there are no works near the motorway lanes, reduced speed limits will remain in place because of narrowed lanes and shoulders, or an uneven or changed road surface. If you cannot see works happening, it does not mean you can increase your speed – there may still be hazards.

Road users should subscribe to the free SMS text message service to get regular updates on changing traffic conditions for this project. Alternatively, you can receive traffic alerts to your email address.

Register for either or both services at VL2T@tmr.qld.gov.au or call the project team on 1800 799 824, which is a free call from any landline.

When will the rail line be extended south of Varsity Lakes?

In 2005, TMR identified a possible corridor to extend heavy rail south of Robina to Tugun, with the first stage between Robina and Varsity Lakes constructed in 2009. Further investigations were conducted in 2009 as part of a wider Robina to Tugun Rail Impact Assessment Study that considered technical, environmental, social and economic impacts on a preferred rail alignment. As a result of the 2009 study, the current alignment was protected from future development.

It is important to note there is currently no funding to construct the rail extension at this stage, and the extension will not be constructed as part of the VL2T upgrade. The scope of the VL2T project includes continuing to protect the future rail corridor – this means that any construction works completed as part of the upgrade between Varsity Lakes and Tugun must consider the possible future rail extension.

For further information on the passenger railway corridor, the TMR Rail Planning team can be contacted on:

Email: RailPlanning@tmr.qld.gov.au
Web: https://www.tmr.qld.gov.au/Projects/Name/R/Robina-to-Tugun-Rail-Impact-Assessment-Study

What can residents expect during construction?

This is an immense program of work and construction will be carried out in packages over the coming years. Roadwork crews will be working in various locations at any given time.

While the project team will make every effort to minimise noise and disruptions, aspects of this upgrade will involve night works to shorten the construction timeframe and minimise impacts to peak travel periods.

Noise: Reversing beepers and flashing light beacons on machinery and vehicles are a safety requirement and will be used during early works and construction for all night time activities.

Dust: Water carts will be frequently used to minimise dust.

Vibration: Heavy machinery will be used during early works and throughout the upgrade. When construction activities are likely to cause vibration, the project team will contact residents in close proximity prior to works starting. Some properties close to the motorway may be offered in-house building inspections to determine the current building condition prior to any relevant works taking place.

Lighting: Lighting towers will be required during night works but will be directed away from properties wherever possible.

The project team is committed to keeping everyone informed with timely and accurate information and will endeavour to minimise disruption as much as possible to neighbouring communities. Residents will be advised prior to high impact works via letterbox flyers or face-to-face meetings, email and SMS traffic alerts.

Residents are urged to register their interest in receiving electronic quarterly project updates detailing milestones, timeframes, progress and upcoming works. Alternatively, a free SMS text message service is available for updates on

traffic conditions during construction. Register for either or both services at VL2T@tmr.qld.gov.au or call the project team on 1800 799 824 (during business hours, 9am–5pm, Monday to Friday), which is a free call from any landline.

How are pedestrians and bike riders benefited by the upgrade?

Bike riding and pedestrian provisions are a central feature of the VL2T upgrade:

- A dedicated 3-metre wide bike and pedestrian path will be built adjacent to the northbound motorway lanes. This path, separated by a concrete safety barrier, will start at the new northbound off-ramp at Reedy Creek and continue to Tallebudgera Interchange at Exit 89. *(Refer to Package A Varsity Lakes to Burleigh web page for further information on the changed off-ramp)*.
- Additional active transport facilities will be included along the new two-way western service road between Tallebudgera and Palm Beach interchanges.
- A bike and pedestrian path will also be installed from the Palm Beach Interchange to the northbound off-ramp at Exit 93 (KP McGrath Drive) and continue as a shared path and on-road bike lane down to Guineas Creek Road.
- All intersections at interchanges will include modifications or enhancements to improve the amenity for both pedestrians and bike riders.

These improvements will help encourage more people to ride and use other modes of active transport more often. Every trip made with active transport is a win for everyone, as it shifts people towards healthier, more efficient and sustainable choices, reduces congestion and leaves room on our roads for freight, business and other trips.

What road surface will be applied?

The pavement surface will consist of Stone Mastic Asphalt (SMA), which is a gap graded asphalt surface mix. The mix is filled with a mastic (or binder) of bitumen and fillers, with fibres added in to provide adequate stability to the binder and prevent drainage of the binder during transport and placement of the product.

In addition to its structural capabilities, other benefits of SMA include:

- good skid resistance and longer service life than dense open graded asphalt
- suitable for heavy vehicles and higher traffic volumes
- road noise improvement, lower than concrete surfaces
- stable and durable under a range of weather conditions
- economical in the long term, improving rehabilitation options with the ability to extend its overall service life.

What happens to the current road surface that will be replaced?

One of the innovative pavement techniques that will be applied to the VL2T upgrade is rubbelisation, which is a method for rehabilitating old concrete pavements and minimising waste. The process involves fracturing an existing concrete pavement into small, interconnected pieces that serve as a base course for a new asphalt overlay on top.

Breaking the concrete involves a machine fracturing the slabs, which will generate noise. The project team will keep the community well informed and a step ahead of any noisy works.

Are more noise barriers being installed?

The Transport Noise Management Code of Practice

Road traffic noise is managed under the *Transport Noise Management Code of Practice Volume 1, Nov 2013 (*the Code) (https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Transport-noise-management-code-of-

practice.aspx) and implementation of the Code is a legislative requirement under the *Transport Infrastructure Act 1994*.. For residential properties to qualify for a noise barrier the results of noise monitoring and noise assessment needs to indicate that the area is above the Code's road traffic noise criteria of 68dB(A) L_{A10} (18 hour).

Noise barriers do not suit all locations, and in many instances, there are visual amenity, topographical, geological and constructability issues.

Noise modelling

When constructing major road upgrades the design life of that upgrade is considered, and noise modelling predicts what the road traffic noise levels may reach by the end of that lifespan. The VL2T upgrade has been designed in accordance with the State Government's South East Queensland (SEQ) Regional Plan 2017, Shaping SEQ, which is 2041.

Acoustic engineers have modelled the road traffic noise levels to 2041, taking into account the upcoming changes in the road surface, vertical and horizontal road alignment, surrounding buildings, increased general and heavy vehicle traffic volumes.

All road traffic modelling predictions are conducted in accordance with the Code, which ensures that a prescriptive process is followed for all road traffic noise assessments.

The VL2T project team is currently communicating with those impacted landowners at locations where the noise modelling has identified a higher than 68dB(A) L_{A10} (18 hour) road traffic noise level.

Noise monitoring pre-construction

Before construction starts, noise monitoring is typically conducted to understand the existing noise environment and provide road traffic model verification points. These locations are also typically selected to be representative of a cluster of houses for a particular area. Selecting suitable sites for noise monitoring has to consider externalities such as animals, plant and other external features that have the potential to affect the measurements.

The locations selected for noise monitoring on the VL2T upgrade were considered to best represent the properties most exposed to road traffic noise in a particular area. This monitoring was undertaken in May and November 2018 during normal traffic flow conditions, that is, outside of school and public holidays.

Noise monitoring post-construction

Once the upgrade is complete and traffic patterns have returned to 'normal', post-construction noise monitoring will be carried out at the same or similar locations as the pre-construction noise monitoring. This post-construction noise monitoring will help to verify the noise modelling and confirm that any noise mitigation measures undertaken as part of the VL2T upgrade have performed appropriately.

In the unlikely event that these measures exceed TMR's criterion level, additional noise reducing measures will then be considered in accordance with the Code.

Heavy vehicle noise

TMR acknowledges there can be a perceived increase in the overall noise level generated by intermittent truck engine breaking, motorbikes, modified vehicles and emergency sirens. Noise barriers are not capable of addressing this type of intermittent or isolated noise events, for example engine breaking is generally too short to affect long-term noise readings.

TMR is unable to provide strategies to reduce noise events generated by heavy vehicles, as they are usually due to driver behaviour or vehicle maintenance.

It is also relevant to note that engine braking processes significantly reduce brake wear and prevent heat induced brake fade or failure, it is also a safety mechanism to help heavy trucks to slow down. Due to safety implications, engine braking cannot be prohibited and signs requesting drivers to limit engine braking are not legally enforceable. TMR has found that these signs do not have a measurable effect in limiting exhaust braking noise in the immediate vicinity, and because the

Pacific Motorway (M1) on the Gold Coast has many closely spaced exits and a high number of road signs already, TMR will not be installing such signage as part of the VL2T upgrade.

Will you be removing trees and clearing vegetation?

Vegetation and tree removal is often required to make way for new infrastructure, access existing infrastructure, visibility to signage and CCTV cameras, and for improving line of sight for road users. In order to widen the M1 within the existing constrained corridor, tree clearing will be required, particularly within Package B Burleigh to Palm Beach and Package C Palm Beach to Tugun.

However, when it comes to noise, there is a common misconception that trees reduce noise levels. The *Transport Noise Management Code of Practice Volume 1, Nov 2013* outlines there needs to be a dense planting of trees with an understory of shrubs at least 30-metres in width before there is an appreciable noise reduction. Effectively, a 30-metre width of shrubs may result in a decibel reduction of 3dB(A).

What environmental regulations are in place?

TMR is committed to meeting Federal and State governments' legislative requirements, while enhancing environmental and social outcomes as much as possible within the constraints of road upgrades. The department undertakes detailed environmental assessments utilising specialist consultants to develop site specific mitigation and management in order to fulfil legislative requirements.

At the construction phase, an Environmental Management Plan (EMP) is developed and implemented by the contractor. The EMP addresses specific environmental aspects of the project such as the management of native flora and fauna, as well as measures to minimise construction impacts such as noise and dust. This plan ensures contractors working on this project comply with current environmental legislation and industry best-practice.

What are you doing to recognise and mitigate the environmental effects of construction?

Prior to construction, there are a number of assessments carried out to ensure there is a robust understanding of the environment, ecosystems, wildlife and cultural significance in the project area, such as:

- wildlife surveys to determine habitat values for native fauna including koala, grey-headed flying-fox, and short-beaked echidna
- flora surveys to determine the presence of protected plants
- water quality monitoring before, during and after construction
- cultural heritage assessments in conjunction with Traditional Owners
- implementation of erosion and sediment control measures to manage site runoff
- fish passage in waterways and through culverts
- pre-construction assessment of noise and the development of a Noise and Vibration Management Plan
- fauna sensitive infrastructure requirements and improvements.

How will Koalas be protected?

TMR recognises the koala is of both cultural and ecological importance. It is listed as a vulnerable species in Queensland under the *State Government Nature Conservation Act 1992* and the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999.*

The current planning for the VL2T upgrade includes areas of koala habitat that will be impacted during the construction phases of the project.

To mitigate impacts to the koala habitat, the upgrade will:

- engage licenced koala spotters to conduct pre-clearing surveys and oversee all vegetation clearing
- manage vegetation clearing in known koala habitats to ensure it is completed in sections
- where practicable, safely relocate any koalas to an area of similar habitat adjoining the project area
- construct a dedicated fauna connection underneath the motorway to encourage safe koala movements through the Burleigh to Springbrook biodiversity wildlife corridor
- install koala fencing along the alignment to reduce the risk of vehicle strike, while also guiding koalas to a safe crossing point near Wonga Park
- offset the removal of non-juvenile koala habitat trees in accordance with the *Queensland Environmental Offsets Act 2014*
- engage with environmental and koala groups.

What is being done to assist with sustainability?

The Australian and Queensland governments are committed to managing the design and construction of the VL2T upgrade that considers environmental and social outcomes and supports ecologically sustainable infrastructure development.

Infrastructure Sustainability Council of Australia (ISCA) is a mechanism for driving sustainability outcomes in infrastructure during the planning, design, construction and operation of infrastructure assets. TMR has partnered with ISCA to identify sustainable opportunities and the project will submit a formal sustainability verification by ISCA at the completion of the design and construction phases.

The VL2T project team will report on the level of sustainable practice embedded within the project works and is working towards an overall rating of ‘excellent’.

Are land resumptions required?

In order to provide an improved and safer road network for the community, it is sometimes necessary for the department to acquire additional land for construction purposes.

TMR tries to avoid impacting private property wherever possible, however resumptions cannot be avoided in all cases. Since March 2018, the VL2T project team has been talking with property owners and tenants who have been identified as potentially being impacted by land resumption. TMR will continue to liaise closely with these landowners throughout the resumption process.

Can I claim compensation for lost trade or reduced property value?

As a state government department, TMR is lawfully authorised to carry out roadworks to improve the road network for the benefit of the whole community.

These road network upgrades are necessary to improve the efficiency of vital transport routes for the state of Queensland and the national transport freight network. The VL2T upgrade will improve road safety, reduce traffic congestion and provide additional travel options which will benefit local communities, including business operators and residents in the area.

TMR is mindful of the impacts of roadworks and does everything reasonably practicable to minimise inconvenience and impacts on adjacent residences and businesses, however the department does not compensate businesses for loss of trade or property values resulting from roadworks.

The project team is committed to keeping local businesses, residents and motorists up to date and informed of disruptions with timely and accurate information. Advanced notice of disruptive works to directly impacted business operators and residents will be provided via flyers and face-to-face meetings.

TMR recommends that business operators and landowners register their interest in receiving electronic quarterly project updates detailing milestones, timeframes, progress and upcoming works. Alternatively, a free SMS text message service is available for updates on traffic conditions during construction. Register for either or both services at VL2T@tmr.qld.gov.au or call the project team on 1800 799 824 (during business hours, 9am–5pm, Monday to Friday), which is a free call from any landline.

How can I get more information?

Residents and motorists are encouraged to subscribe to the free SMS and email traffic alert service to keep up-to-date on the Pacific Motorway (M1) Varsity Lakes to Tugun upgrade.

To register, contact the project team on the details below:

Phone: 1800 799 824 – free call from any landline (during business hours, 9am–5pm, Monday to Friday)
Email: VL2T@tmr.qld.gov.au
Web: www.tmr.qld.gov.au
Post: Department of Transport and Main Roads
PO Box 442, Nerang QLD 4211