

= Tonkin Highway =

Tonkin Highway is a 44 kilometre long ( 27 mi ) north-south highway in Perth , Western Australia , linking Perth Airport and Kewdale with the city's north-eastern and south-eastern suburbs . The northern terminus is at Reid Highway in Malaga , and the southern terminus is at Thomas Road in Oakford . It forms the entire length of State Route 4 , and connects to several major roads , including Great Eastern Highway , Leach Highway , Roe Highway , and Albany Highway .

Planning for the route began in the 1950s , but the first segment between Wattle Grove and Cloverdale was not opened until 1980 . Over the next five years , the highway was extended north to Great Eastern Highway and south to Albany Highway , and a discontinuous section was constructed north of the Swan River . In 1988 the Redcliffe Bridge linked these sections , and three years later , Reid Highway became the northern terminus . The next major works on the highway , between 2003 and 2005 , extended the highway south to Thomas Road .

The Gateway WA project plans to improve the road network around Perth Airport , including upgrading the central section of Tonkin Highway to a six-lane freeway-standard road . Construction began in 2013 , and completion is scheduled for 2017 . Further extensions to both the northern and southern extents of the highway are planned , which would connect the highway to the proposed Perth Darwin National Highway near Ballajura , and to South Western Highway south of Byford .

= = Route description = =

Tonkin Highway forms the entire length of State Route 4 . It is maintained by Main Roads Western Australia , and subject to control of access along its entire length . Some sections of the highway are freeway-standard , with grade-separated interchanges ; however , most junctions on the highway are at grade and traffic light controlled . The highway is a dual carriageway , primarily four lanes wide , though near some junctions the width briefly increases to six lanes . The speed limit is 80 kilometres per hour ( 50 mph ) near intersections , and 90 or 100 km / h ( 55 or 60 mph ) along the stretches in between . A shared pedestrian and bicycle path is built alongside part of Tonkin Highway , between Collier Road and Great Eastern Highway , as well as south of Mills Road East . In most other sections , the highway's sealed shoulders also function as bicycle lanes .

Main Roads Western Australia monitors traffic volume across the state's road network , including several locations along Tonkin Highway . The section near Perth Airport , south of Great Eastern Highway , is the busiest , averaging over 56,000 vehicles per weekday in 2007-08 , and over 57,000 in 2008-09 . North of the Swan River , the traffic volume gradually decreased to under 40,000 vehicles per weekday near the northern terminus , in 2007-08 . Measurements in 2008-09 showed the lowest volume to be under 10,000 vehicles per weekday near the southern terminus , north of Thomas Road .

As of 2013 , intersections in and around Kewdale , Forrestfield and Perth Airport carry traffic volumes beyond their capacity during peak periods . Average peak period traffic speeds in this part of Tonkin Highway were measured as 20 km / h ( 12 mph ) or less in 2013 . The slowest section was from Leach Highway to Horrie Miller Drive , which recorded an average of 14 km / h ( 9 mph ) during the afternoon peak period . Traffic volume , exceeding 50,000 vehicles per day in 2012 , is forecast to almost double by 2031 . Traffic modelling has shown that leaving the current network of traffic light controlled intersections in place would result in gridlock by 2021 . An upgraded road network , after the Gateway WA project is completed , is expected to have an average speed in peak periods of between 55 and 75 km / h ( 35 and 45 mph ) in 2021 .

= = = North of the Swan River = = =

Tonkin Highway begins at a traffic light controlled T junction with Reid Highway , at the southern edge of Malaga , eastern edge of Noranda , and western edge of Beechboro , within the City of

Swan local government area ( LGA ) . Tonkin Highway is the southern leg of the T junction , while Reid Highway forms both the northern and eastern legs . The highway heads south forming the border between the residential suburbs of Beechboro and Noranda . The Lightning Park sporting reserve is located immediately west of Tonkin Highway , and can be accessed from a northbound exit ramp 400 metres ( 0 @. @ 25 mi ) south of the T junction . After 150 metres ( 490 ft ) , the highway enters the City of Bayswater LGA . East of the highway , the LGA boundary is also the boundary between the suburbs of Beechboro and Morley . The highway travels south for 400 metres ( 0 @. @ 25 mi ) to the traffic lights at Benara Road . The south @- @ eastern corner of Noranda is 400 metres ( 0 @. @ 25 mi ) south of the intersection , leaving the highway entirely within Morley . Tonkin Highway continues south through the residential area for 1 @. @ 1 kilometres ( 0 @. @ 68 mi ) , and reaches another set of traffic lights , with Morley Drive and Morley Drive East .

Tonkin Highway continues southwards through a narrow S curve that realigns the highway further east . Partway through the curve , 800 metres ( 0 @. @ 50 mi ) south of Morley Drive , the highway passes under Broun Avenue , though there is no access between the roads . At this point the highway enters the north @- @ eastern corner of Embleton , travels through it for 400 metres ( 0 @. @ 25 mi ) , and then enters Bayswater . The border between Embleton and Bayswater follows Beechboro Road , which is discontinuous either side of Tonkin Highway . The highway continues through Bayswater , between residential housing to the north @- @ east and an industrial area to the south @- @ west . After 500 metres ( 0 @. @ 31 mi ) the S curve ends , with the highway now travelling between industrial and commercial properties . There is another set of traffic lights 400 metres ( 1 @, @ 300 ft ) further south , with Collier Road . The next major road the highway meets is Guildford Road , 1 @. @ 7 kilometres ( 1 @. @ 1 mi ) further south . It is connected via a grade @- @ separated interchange folded diamond interchange , with all the ramps located south of Guildford Road ; to the north is the Midland railway line , and the parallel road Railway Parade , which the highway passes over . From here the highway turns south @- @ easterly , perpendicular to the Swan River , and travels through another residential part of Bayswater for 1 @. @ 2 kilometres ( 0 @. @ 75 mi ) . Tonkin Highway crosses the river via the 270 @- @ metre @- @ long ( 890 ft ) Redcliffe Bridge , which takes the highway into Ascot , in the City of Belmont LGA .

== = Perth Airport == =

A grade @- @ separated interchange with Great Eastern Highway is located 350 metres ( 1 @, @ 150 ft ) south @- @ east of the Redcliffe Bridge . It is a diamond interchange , with an additional north @- @ eastbound to south @- @ eastbound loop ramp . Additionally , Great Eastern Highway 's intersection with the south @- @ eastbound exit ramp also connects to Brearley Avenue , one of the main access roads to Perth Airport 's domestic terminal . Beyond this interchange , Tonkin Highway , now six lanes and freeway standard , is within Redcliffe 's residential areas . A further 750 metres ( 0 @. @ 47 mi ) takes the highway to the edge of the suburb of Perth Airport , where it becomes the border between Redcliffe to the south @- @ west and Perth Airport to the north @- @ east . Five hundred metres ( 0 @. @ 31 mi ) later , the highway approaches the interchange with Dunreath Drive . A dogbone interchange , Dunreath Drive replaced the Brearley Avenue entrance as the main access road from Tonkin Highway to Perth Airport 's domestic terminal in 2015 .

After 0 @. @ 5 kilometres ( 0 @. @ 31 mi ) , the highway turns south , travelling in that direction for 1 @. @ 1 kilometres ( 0 @. @ 68 mi ) before reaching Cloverdale and curving back to the south @- @ east , meeting Leach Highway and Airport Drive . Known as the Grand Gateway interchange , it is the primary access to Perth Airport 's international terminal ( replacing Horrie Miller Drive in 2015 ) . It is a modified three @- @ level cloverstack interchange with two loop ramps ( Airport Drive west to Tonkin Highway north and Leach Highway east to Tonkin Highway south ) . These movements , along with another five of the eight available between the three roads are free @- @ flowing . Only Tonkin Highway north to Leach Highway west is controlled by traffic lights at the subsequent Leach Highway / Abernethy Road interchange before entering the highway itself to minimise the danger posed by weaving . The interchange is only 13 @. @ 9 metres high , its height limited by the airport runway to its north with tunnelling not possible due to the high water table in

the vicinity . It is located at the borders between three suburbs : Cloverdale to the west , Kewdale to the south , and the Perth Airport to the north @-@ east .

Beyond Leach Highway , Tonkin Highway continues past industrial properties for 1 @.@ 3 kilometres ( 0 @.@ 81 mi ) , reaching the interchange with Kewdale Road to the south @-@ west , and Horrie Miller Drive to the north @-@ east . Now a single @-@ point urban interchange , the initial signalised intersection was the original primary access road for Perth Airport 's international terminals . After another 1 @.@ 4 kilometres ( 0 @.@ 87 mi ) , the highway reaches Abernethy Road . The only connections are a north @-@ westbound looped exit ramp that merges with a local road , McDowell Street , north of Abernethy Road and a south @-@ eastbound entrance ramp built in 2014 . Beyond this intersection , the highway enters the Shire of Kalamunda LGA , and is the location of the border between the suburbs of Kewdale to the south @-@ east and Forrestfield to the north @-@ east . It continues along the border for 900 metres ( 0 @.@ 56 mi ) , until it reaches Roe Highway , which marks the border between Kewdale and Wattle Grove , on the south @-@ western side of Tonkin Highway . Initially built as a signalised diamond interchange favouring Tonkin Highway , the Gateway WA project has since modified the connection into a hybrid diamond @-@ stack interchange , with all Tonkin Highway southbound movements free @-@ flowing , along with both left turns from Roe to Tonkin Highway .

= = = Forrestfield to Oakford = = =

Tonkin Highway travels in a south @-@ easterly direction between residential areas in Forrestfield and Wattle Grove , reaching Hale Road after 1 @.@ 2 kilometres ( 0 @.@ 75 mi ) . Over the next 1 @.@ 5 kilometres ( 0 @.@ 93 mi ) , the highway curves back to the south . At this point it intersects Welshpool Road East , and is entirely within the suburb of Wattle Grove . Beyond this intersection , Tonkin Highway continues south @-@ east as the border between the semi @-@ rural areas of Kenwick to the west , and Wattle Grove to the east . This is also the border between the City of Gosnells and Shire of Kalamunda LGAs , which the highway follows for 1 @.@ 9 kilometres ( 1 @.@ 2 mi ) . It then reaches the suburbs of Maddington , located west of the highway , and Orange Grove , east of the highway , and from this point on , is entirely within the City of Gosnells . After 750 metres ( 0 @.@ 47 mi ) , the highway crosses Kelvin Road , and continues south @-@ east for a further 2 @.@ 8 kilometres ( 1 @.@ 7 mi ) . It briefly passes the industrial part of Maddington , before curving slightly around an urban development to reach intersections with Gosnells Road East , and subsequently Gosnells Road West . These are a pair of T @-@ junctions , 260 metres ( 850 ft ) apart , which are not traffic @-@ light controlled . Tonkin Highway follows a gentle reverse curve southwards through Martin for 2 @.@ 1 kilometres ( 1 @.@ 3 mi ) , once more within a semi @-@ rural environment , before reaching a set of traffic lights with Mills Road East and West . Tonkin Highway crosses the Canning River 1 @.@ 4 kilometres ( 0 @.@ 87 mi ) further south , entering Gosnells . It then curves south @-@ west towards Albany Highway , 650 metres ( 0 @.@ 40 mi ) away .

Tonkin Highway meets Albany Highway at a folded diamond interchange . The highway splits into local and express lanes on approach to this interchange , and continues in this configuration for 600 metres ( 0 @.@ 37 mi ) . At this point there is a dogbone interchange with Corfield Street , with the highway now marking the boundary between the suburbs of Gosnells and Champion Lakes , as well as the City of Gosnells and City of Armadale LGAs . It continues south @-@ westbound , passing between Champion Lakes to the south @-@ east , and undeveloped land to the north @-@ west . After 3 @.@ 3 kilometres ( 2 @.@ 1 mi ) , there is a T junction with Champion Drive . The highway continues southwest for another 2 @.@ 7 kilometres ( 1 @.@ 7 mi ) until it reaches a set of traffic lights with Ranford Road . Afterwards it is entirely within the City of Armadale LGA , and the suburb of Forrestdale . Tonkin Highway turns south , along a two @-@ kilometre @-@ long ( 1 @.@ 2 mi ) curve , and meets Armadale Road at another set of traffic lights . The highway continues south through rural land , between Forrestfield to the west , and Haynes and Hilbert to the east . It passes Forrest Road after 1 @.@ 5 kilometres ( 0 @.@ 93 mi ) , only connecting to the eastern leg at a T junction , and 2 @.@ 2 kilometres ( 1 @.@ 4 mi ) further on , reaches Rowley Road . Following this

traffic controlled intersection , Tonkin Highway is within the Shire of Serpentine @-@ Jarrahdale LGA . The highway follows the eastern edge of Oakford for 3 @. @ 2 kilometres ( 2 @. @ 0 mi ) , past low density residential lots . Tonkin Highway ends at Thomas Road , which connects traffic to Kwinana Freeway and South Western Highway .

= = History = =

A proposal for a highway along a similar alignment was first proposed in 1955 , as part of a network of arterial roads under a metropolitan @-@ wide plan produced for the Western Australian government by Gordon Stephenson and Alastair Hepburn . The road reservation was formally gazetted in the 1963 Metropolitan Region Scheme . It was first named " Beechboro @-@ Gosnells Highway " , the name coming from the two suburbs it was originally planned to link . Like most Perth arterial road projects , the highway was built in stages . It was initially constructed as a 3 @. @ 3 @-@ kilometre @-@ long ( 2 @. @ 1 mi ) dual carriageway , from Welshpool Road , Wattle Grove to Hardey Road in Cloverdale , which opened on 16 June 1980 . A further 12 @. @ 2 kilometres ( 7 @. @ 6 mi ) , that linked the new highway to Albany Highway in Gosnells , was completed in December 1980 . This \$ 6 @. @ 1 million section , which officially opened on 22 December 1980 , was the start of a new route between Gosnells and Bellevue , and reduced traffic volume and congestion on Albany Highway .

The third segment to be constructed was a 3 @. @ 6 @-@ kilometre @-@ long ( 2 @. @ 2 mi ) section north of the Swan River , from Railway Parade in Bayswater to Morley Drive , which opened on 11 July 1984 . This # 3 @. @ 5 million section was constructed by Thiess Contractors Pty Ltd , with Taylor Woodrow International Ltd responsible for constructing the Broun Avenue bridge . Stage 4 linked Hardey Road and Great Eastern Highway , and included the construction of four bridges over the Forrestfield railway marshalling yards , the first bridges in Australia to be constructed using the incremental launch technique . Upon opening on 1 May 1985 , Beechboro @-@ Gosnells Highway was renamed " Tonkin Highway " , in honour of former Western Australian premier John Tonkin . Tonkin had also been the Minister for Works during the planning and construction of the Narrows Bridge and Kwinana Freeway in the 1950s . A ceremony was held at Redcliffe on 1 May by the Premier Mr Brian Burke , who unveiled a plaque . Mr Tonkin , who at the time was aged 83 , cut the ribbon at the ceremony to officially open the new Forrestfield to Redcliffe section of the highway . A grade @-@ separated interchange was constructed at Great Eastern Highway in 1986 , which included a six lane road bridge over Tonkin Highway and a pedestrian subway . It was constructed earlier than initially planned , as heavy traffic from Perth Airport was expected during the 1987 America 's Cup .

Construction on a link between the northern and southern sections of Tonkin Highway began in 1988 . Included in this \$ 48 million stage was the Redcliffe Bridge over the Swan River , and an interchange with Guildford Road , north of the bridge . The 270 @-@ metre @-@ long ( 890 ft ) Redcliffe Bridge , also built using the incremental launching technique , was designed to carry six traffic lanes , as well as pedestrian and cycle paths that could be converted into traffic lanes when required . The bridge deck is supported by a narrow central section with cantilever extensions on each side , as a " big heavy bridge would have looked out of place " at a relatively narrow section of the river . The bridge opened on 16 April 1988 , and received awards for engineering excellence from both the national and state branches of the Institute of Engineers , Australia .

The highway was then extended northwards , reaching Benara Road on 18 December 1989 , and Reid Highway on 11 November 1991 . Tonkin Highway spent a decade remaining largely unchanged , linking Reid Highway in Malaga with Albany Highway in Gosnells . In 2003 , construction of a new southern extension commenced . Planning and Infrastructure Minister Alannah MacTiernan and the Member for Roleystone , Martin Whitely , participated in a sod turning ceremony on 27 June 2003 , to mark the start of the project . At the time , the \$ 140 million extension was the largest single road project in Western Australia . The project was completed in two stages , with Armadale Road as the midpoint . The first 11 @-@ kilometre @-@ long ( 6 @. @ 8 mi ) section , including a new interchange at Albany Highway , was opened by Premier Geoff Gallop

and Alannah MacTiernan on 2 April 2005 . The original connection to Albany Highway was renamed Ferres Drive . The Forrestdale Business Park and the Champion Lakes precinct were constructed concurrently with the project , to encourage industrial and residential development alongside the new highway section . The remaining seven kilometres ( 4 @. @ 3 mi ) , from Armadale Road through to Thomas Road , opened a year ahead of schedule on 16 December 2005 . The new extension improved links with Kwinana , Armadale , Rockingham and Byford . It also provided a new freight route , diverting heavy vehicle traffic away from the existing road network and residential areas .

On 16 April 2012 , an intersection with Dunreath Drive was opened . This traffic light controlled at @- @ grade intersection allowed access to and from the international terminal of Perth Airport , bypassing Tonkin Highway 's intersections with Leach Highway and Kewdale Road / Horrie Miller Drive . The intersection was later removed on 16 July 2015 upon the commissioning of two nearby interchanges as part of Gateway WA .

= = Future works = =

A number of improvement works are planned for Tonkin Highway , which will see most of the central and northern sections upgraded to a freeway @- @ standard road with grade separated interchanges . Extensions are also planned at both ends of the highway , which would see the southern end extended to South Western Highway south of Byford , and link the northern end to the future Perth Darwin National Highway near Ballajura .

= = Gateway WA = =

The Gateway WA Perth Airport and Freight Access Project is a \$ 1 billion project that will upgrade the road network around Perth Airport . It is the largest project Main Roads Western Australia has ever undertaken , covering the upgrade of Tonkin and Leach highways , and the construction of four new interchanges . The project is jointly funded by state and federal governments , which are providing \$ 317 @. @ 5 million and \$ 686 @. @ 4 million respectively .

As part of the project , Tonkin Highway will be expanded from two to three lanes in both directions , between Great Eastern Highway and Roe Highway , and the existing intersections in this section will be grade separated . A new diamond interchange will be constructed at Boud Avenue ( since renamed the Dunreath Drive Interchange ) , to provide access to the domestic terminal precinct . International terminal access will be provided via a new freeway @- @ to @- @ freeway cloverstack interchange at Leach Highway , and a single @- @ point urban interchange to be constructed at Tonkin Highway 's intersection with Horrie Miller Drive and Kewdale Road . The existing diamond interchange with Roe Highway will only be upgraded to a partial freeway @- @ to @- @ freeway interchange , but with plans to further upgrade it to a completely free @- @ flowing interchange in the future .

In January 2013 , works was undertaken to protect or relocate sections of the Canning Trunk water main and the Dampier to Bunbury Natural Gas Pipeline in the vicinity of the project . Construction on the Gateway WA project officially began on 1 February 2013 with a groundbreaking ceremony attended by the state and federal transport ministers , Troy Buswell and Anthony Albanese . The first section being constructed is an entrance ramp from Abernethy Road to Tonkin Highway southbound . Work on the Leach Highway interchange is expected to commence at the end of 2013 , with construction of the other interchanges scheduled to start at the end of 2014 . The whole project was due to be completed by 2017 . However it was moved to March 2016 , due to construction moving faster than expected .

= = Southern extension = =

Tonkin Highway reaches past the edge of suburbia at its southern extent . Planning provides for it to be extended when required . The initial plans indicated the extension would continue south

through undeveloped or semi @-@ rural areas such as Mundijong , Cardup & Jarrahdale . South of Mundijong , the planned route would deviate east to terminate at South Western Highway near Jarrahdale Road , which would then be upgraded . Following the 2001 state election , the new government abandoned the Jarrahdale Road option , preferring a shorter route that deviated to South Western Highway near Orton Street , closer to Byford . In July 2012 , seven years after the previous extension was completed , the Minister for Transport announced the formation of a community working group to investigate an extension of Tonkin Highway beyond Thomas Road . The group met several times to identify and evaluate possible solutions to traffic congestion in the area , and prepare a strategic business case for the next extension . As of 19 February 2013 , the preferred options are to extend the highway to South Western Highway , at a location either south of Lakes Road or south of Mundijong Road .

= = = NorthLink WA = = =

NorthLink WA is a project that will see both the northern section of Tonkin Highway upgraded , and the road extended northwards to bypass Great Northern Highway within Perth . These two component projects are separately funded , with both the state and federal governments contributing to each project . Construction is expected to begin in 2016 , and be completed by 2019 .

= = = Northern extension = = =

Planning is in place for a future extension north . Such an extension would bring the highway to Hepburn Avenue , near the north @-@ eastern corner of Ballajura . These plans see the extension linking to the proposed new Perth Darwin National Highway ( PDNH ) Swan Valley Bypass , which would continue north towards Ellenbrook . The previously planned route of the PDNH , prior to 2012 , followed Lord Street , east of Whiteman Park . While still in the planning stages , the state and federal governments have allocated funding to the project , with construction scheduled to start in 2016 .

= = = Intersection upgrades = = =

The federal government has allocated \$ 140 @.@ 6 million to grade @-@ separate Tonkin Highway 's intersections with Benara Road , Morley Drive and Collier Road . The funding is part of the next five @-@ year phase of the Nation Building Program , from 2014 ? 15 to 2018 ? 19 . The upgrades are intended to improve freight transportation along the highway . The total cost is expected to be \$ 281 @.@ 2 million . In the lead up to the 2013 Australian federal election , which resulted in a change a government , Labor candidate for Perth , Alannah MacTiernan , accused the then @-@ opposition 's candidate of lying to the electorate over their commitment to the upgrade . The official policy costings did not contain specific funding for the project . However , an opposition spokesperson claimed it was " in the current forward estimates " , and not in the costing , as the upgrade was neither a " new and accelerated " project , nor a project that would definitely not be funded .

= = Interchanges and intersections = =