

Crowding and congestion

Australian Infrastructure Audit

Greater Perth in 2016

Perth has grown, and so has its transport task

- Our modelling indicates the annualised cost of road congestion in Greater Perth was **\$1.5 billion** in 2016.
- Perth's most congested corridors are major north-south freeways, and the arterial roads feeding those freeways, as well as key river crossings that act as pinch points to the network.
- In 2016, Perth's most delayed road corridors were served by the Kwinana Freeway and the Mitchell Freeway.
- The completion of the Mandurah rail line in 2007 and complementary redesign of the bus network has increased demand for public transport in the last 10 years.
- However, in the last few years, patronage has declined, likely due to the end of the mining boom.
- The Mandurah and Joondalup lines carry the most passengers on Perth's railway network and are also the most crowded. However, neither would be considered as reaching crush capacity.
- Perth's busiest bus corridors are to the inner north, inner south and east of the city, with crowding occurring as buses approach the CBD. Congestion also occurs in areas not served by rail.

Perth GCCSA population 2016:
2 million



10%

increase in passenger
kilometres between
2004-05 and 2014-15



Cost of public transport crowding in
2016:

\$17 million

Perth's road network congestion 2016, AM peak



Perth's most congested roads (user experience), 2016

City rank	Corridor including origin / destination connected (direction)	Length (km)	Share of journey time due to congestion	Delay per vehicle (mins)	Cost of congestion for a car	Cost of congestion for a heavy commercial vehicle
AM peak						
1.	Mitchell Freeway corridor (S/B)	29	51%	20	\$5.52	\$23.79
2.	Nicholson Road corridor (N/B)	22	40%	12	\$3.31	\$14.28
3.	Kwinana Freeway corridor (N/B)	80	40%	32	\$8.84	\$38.07
4.	Tonkin Highway corridor (N/B)	44	36%	17	\$4.69	\$20.22
5.	Wanneroo Road corridor (S/B)	47	35%	22	\$6.08	\$26.17
6.	Marmion Avenue / West Coast Highway corridor (S/B)	61	34%	28	\$7.73	\$33.31
7.	Welshpool Road East / Orrong Road / Graham Farmer Freeway corridor (W/B)	24	34%	12	\$3.31	\$14.28
8.	Leach Highway corridor (E/B)	19	33%	9	\$2.49	\$10.71
9.	Randford Road / South Street corridor (W/B)	26	33%	13	\$3.59	\$15.47
10.	Reid Highway corridor (W/B)	25	33%	10	\$2.76	\$11.90
PM peak						
1.	Mitchell Freeway corridor (N/B)	29	41%	13	\$3.59	\$15.47
2.	Nicholson Road corridor (S/B)	22	34%	9	\$2.49	\$10.71
3.	Kwinana Freeway corridor (S/B)	80	34%	25	\$6.90	\$29.74
4.	Tonkin Highway corridor (S/B)	44	31%	14	\$3.87	\$16.66
5.	Leach Highway corridor (W/B)	19	31%	8	\$2.21	\$9.52
6.	Roe Highway corridor (N/B)	34	31%	10	\$2.76	\$11.90
7.	Reid Highway corridor (E/B)	25	30%	9	\$2.49	\$10.71
8.	Great Eastern Highway (west) / Canning Highway corridor (W/B)	30	29%	13	\$3.59	\$15.47
9.	South Street / Ranford Road corridor (E/B)	26	29%	11	\$3.04	\$13.09
10.	West Coast Highway / Marmion Road corridor (N/B)	61	29%	22	\$6.08	\$26.17



Greater Perth in 2031

Perth's transport networks are forecast to become more congested

- Our modelling indicates the annualised cost of road congestion in Greater Perth is forecast to be approximately **\$3.6 billion** in 2031, if no further investment were to occur.
- Demand for transport will increase in line with population growth, with growth occurring fastest on the urban fringe.
- Perth's current worst performing roads such as the north-south Mitchell and Kwinana freeways and their connecting routes will have more congestion and delays in 2031.
- Users of the most congested corridors are expected to spend 40-60% of their time in dense traffic, which will predominantly affect commuters travelling to and from central Perth.
- The cost of public transport crowding is expected to increase fivefold, with the majority of the increase being associated with rail crowding.
- Public transport boardings are forecast to increase by 95% for rail and 80% for buses.
- Trains are expected to cater for long-distance travel, while buses will be used for shorter trips.



**Perth GCCSA population 2031:
2.6 million**



24%

increase in car usage

Cost of public
transport
crowding in
2031:



\$159 million



42%

Increase in public
transport trips

Perth's road network congestion 2031, AM peak



Perth's most congested roads (user experience) 2031

City rank	Corridor including origin / destination connected (direction)	Length (km)	Share of journey time due to congestion	Delay per vehicle (mins)	Cost of congestion for a car	Cost of congestion for a heavy commercial vehicle
AM peak						
1.	Mitchell Freeway corridor (S/B)	29	62%	31	\$8.56	\$36.88
2.	Marmion Avenue / West Coast Highway corridor (S/B)	61	54%	64	\$17.67	\$76.14
3.	Wanneroo Road corridor (S/B)	47	53%	48	\$13.26	\$57.10
4.	Nicholson Road corridor (N/B)	22	52%	19	\$5.25	\$22.60
5.	Tonkin Highway corridor (N/B)	44	51%	30	\$8.29	\$35.69
6.	Kwinana Freeway corridor (N/B)	80	51%	50	\$13.81	\$59.48
7.	Welshpool Road East / Orrong Road / Graham Farmer Freeway corridor (W/B)	24	47%	20	\$5.52	\$23.79
8.	Roe Highway corridor (S/B)	34	44%	18	\$4.97	\$21.41
9.	Albany Highway corridor (N/B)	33	43%	24	\$6.63	\$28.55
10.	Leach Highway corridor (E/B)	19	42%	13	\$3.59	\$15.47
PM peak						
1.	Mitchell Freeway corridor (N/B)	29	56%	25	\$6.90	\$29.74
2.	West Coast Highway / Marmion Road corridor (N/B)	61	50%	53	\$14.64	\$63.05
3.	Wanneroo Road corridor (N/B)	47	48%	40	\$11.05	\$47.59
4.	Nicholson Road corridor (S/B)	22	48%	17	\$4.69	\$20.22
5.	Tonkin Highway corridor (S/B)	44	47%	27	\$7.46	\$32.12
6.	Kwinana Freeway corridor (S/B)	80	46%	42	\$11.60	\$49.97
7.	Roe Highway corridor (N/B)	34	44%	18	\$4.97	\$21.41
8.	Leach Highway corridor (W/B)	19	41%	13	\$3.59	\$15.47
9.	Canning Highway / Great Eastern Highway (west) corridor (E/B)	30	41%	21	\$5.80	\$24.98
10.	Tonkin Highway corridor (N/B)	44	40%	20	\$5.52	\$23.79