

GC2018 overlay for M1 Management Plan

9 November 2016

Released under RTI DTMR

The problem

- The M1 is an important route during GC2018 for:
 - Games Family access to venues and ports of entry
 - Spectators and workforce accessing the Gold Coast GC2018 venues from outside the Gold Coast
 - The economic functioning of the Gold Coast
- M1 has the risk of poor travel time reliability due to:
 - High levels of traffic demand approaching or exceeding capacity
 - High risk of incidents (breakdown or crash) disrupting traffic flow

Motorway level of service

Level of service A to D

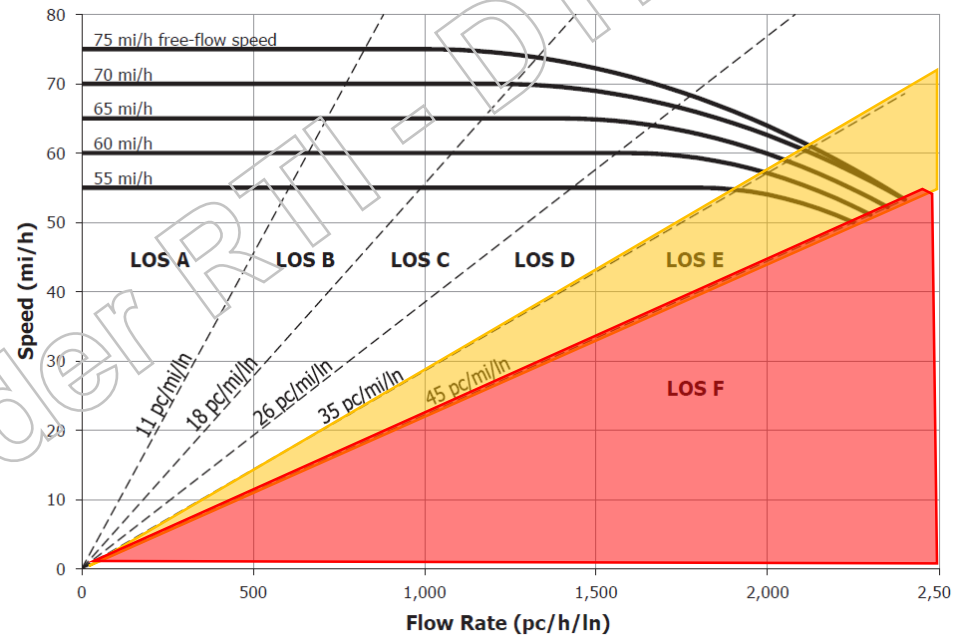
- Desirable safe operating volume
- Stable operations
- Speed largely unaffected by other traffic
- Uncongested flow conditions

Level of service E

- 85% - 100% of capacity (110km/h)
- Unstable flow conditions – high speeds but sudden speed drop likely
- Very high risk of crashes

Level of service F

- Over 100% of capacity – congested
- Low speeds, stop-start traffic flow



Motorway speed-flow relationship

Source: Highway Capacity Manual (2010)

Northbound M1 performance

North of Coomera (exit 54)

- Operates within capacity
- Congestion north of Loganholme (exit 31)

Nerang to Coomera (exit 69 to 54)

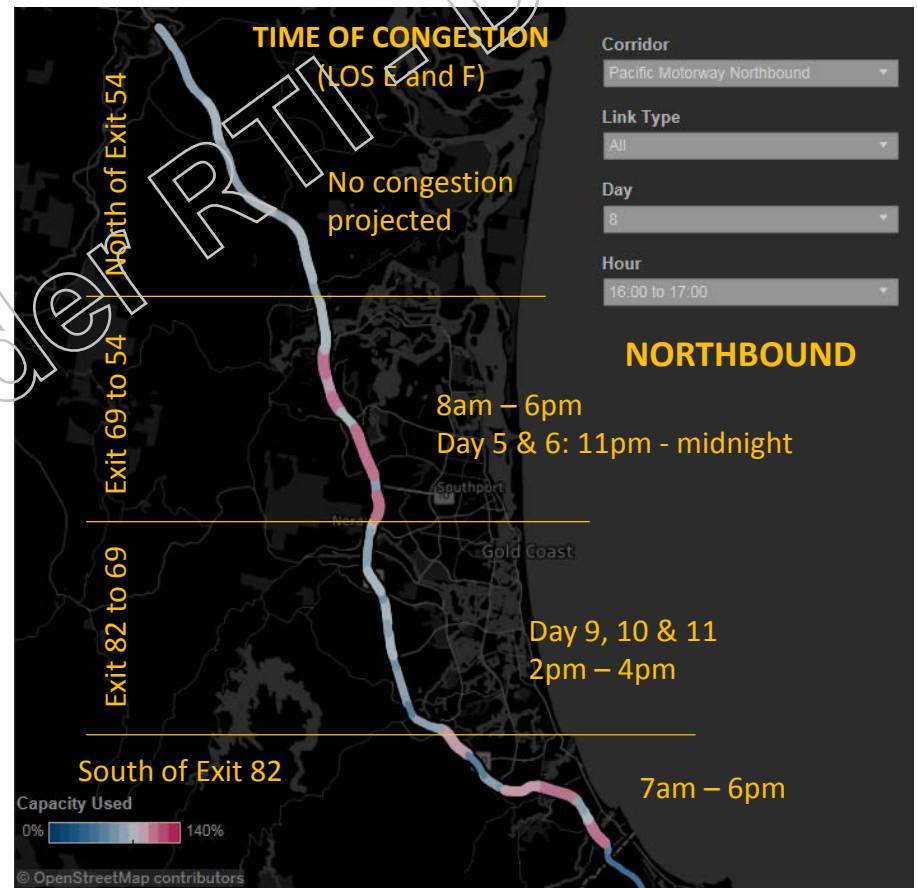
- Volumes all-day close to or exceed capacity - very high crash risk
- Congested traffic (LOS F) 4pm-6pm

Mudgeeraba to Nerang (exit 82 to 69)

- Mostly operates within capacity
- Unstable flow (LOS E) on some days

South of Mudgeeraba (exit 82)

- Volumes all-day close to or exceed capacity - very high crash risk
- Congested traffic (LOS F) 4pm-6pm



Southbound M1 performance

North of Coomera (exit 54)

- Unstable or congested flow (LOS E or F) in afternoon peak (4pm-6pm)

Coomera to Nerang (exit 54 to 69)

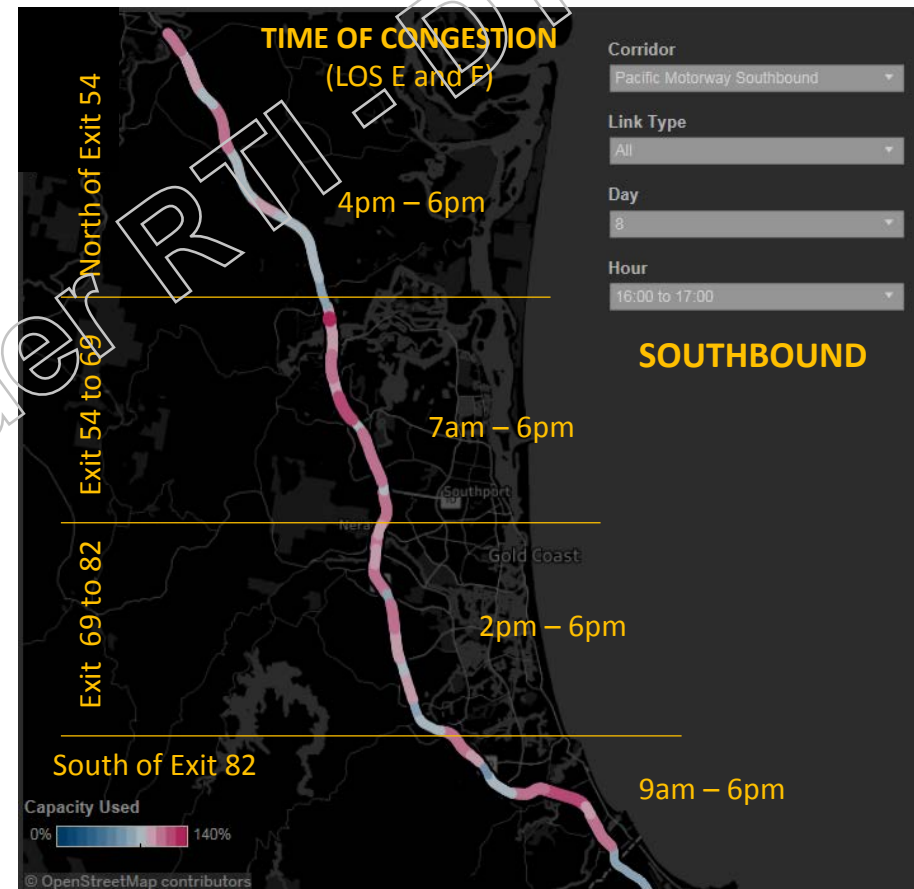
- Volumes all-day close to or exceed capacity - very high crash risk
- Stop-start traffic approaching onramps
- Congested traffic (LOS F) 4pm-6pm

Mudgeeraba to Nerang (exit 69 to 82)

- Unstable or congested flow (LOS E or F) in afternoon (2pm-6pm)

South of Mudgeeraba (exit 85)

- Volumes all-day close to or exceed capacity - very high crash risk
- Congested traffic (LOS F) 4pm-6pm
- Severe congestion on road cycling event days



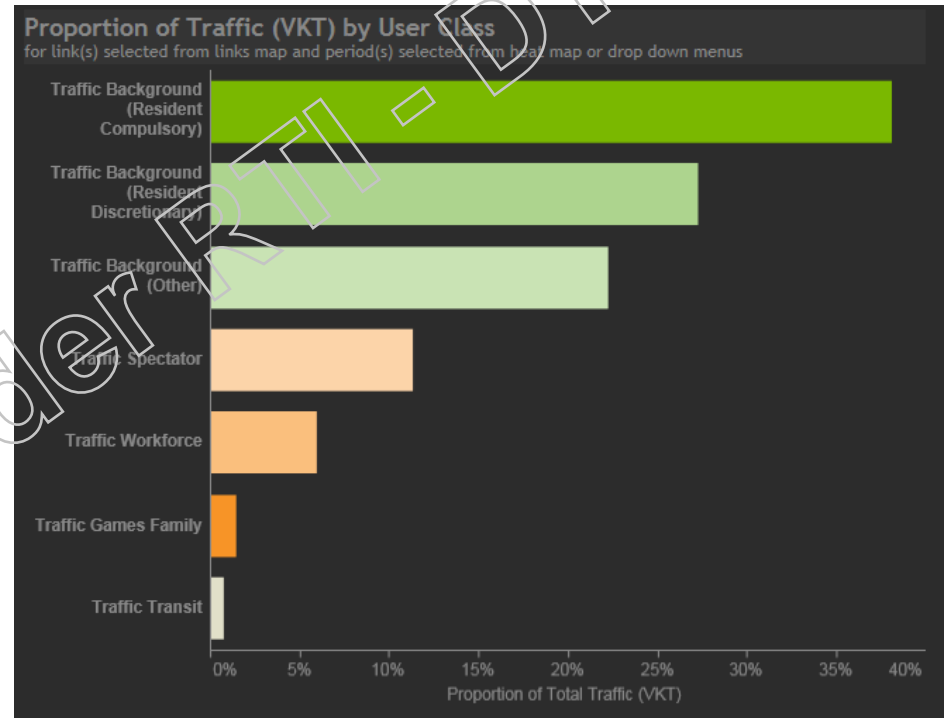
Southbound M1 performance

- All days have severe congestion in evening peak (4pm – 6pm)
- Morning peak hour congestion largely due to flow breakdown from onramps
- All-day congestion on every day from Coomera to Nerang and Mudgeeraba to Tugun



Coomera River bridge

- 38% of trips are journey to work and work trips
- 18% are Games related
- Only 15% of traffic goes to/from coastal centres
 - 62% from north of Gold Coast
 - 34% from northern Gold Coast
 - 4% for access to Games
- Less than 1% passes through Gold Coast



M1 management plan

- **reduce** traffic on the M1 using Travel Demand Management measures
- **manage** traffic flow on the M1 to reduce risk of severe congestion or incidents occurring
- implement **prompt response** to severe congestion or incidents
- **inform** Games Family drivers of issues
- use **GRN alternative routes** strategically.

2 M1 Network Operations Background

Not Relevant

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Not Relevant

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Not Relevant

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2.5 GC2018 Key hot spots and issues for M1

Commonwealth Games planning have identified potential key hot spots and issues for M1.

GC2018 will be held during the Easter school holidays. The school holidays and traffic generated by GC2018 will generate congestion on the network where demand exceeds capacity

Multi-modal transport modelling has identified key issues on the network where congestion is expected during GC2018. This is shown in the following table and figures.

M1 has a high risk of poor travel time reliability during GC2018, particularly between Coomera (exit 54) and Smith Street (Exit 69) due to:

- High levels of traffic demand approaching or exceeding capacity
- High risk of incidents (breakdown or crash) disrupting traffic flow

Southbound	Northbound
<p>Southbound TIME OF CONGESTION (LOS E and F) Corridor: Public Highway Southbound Link Type: [dropdown] Day: [dropdown] Hour: 00:00 to 23:00 SOUTHBOUND 4pm – 6pm 7am – 6pm 2pm – 6pm 9am – 6pm Capacity Used: 140%</p>	<p>Northbound TIME OF CONGESTION (LOS E and F) Corridor: Public Highway Northbound Link Type: [dropdown] Day: [dropdown] Hour: 00:00 to 23:00 NORTHBOUND Congestion north of Gold Coast 8am – 6pm Day 5 & 6: 11pm - midnight Day 9, 10 & 11 2pm – 4pm 7am – 6pm Capacity Used: 140%</p>
<p>Large traffic flows on the M1 and at onramps between Coomera and Nerang (Exit 54 to 69) will generate queues and stop/start traffic flows on the M1 for most of the day (7am – 6pm)</p>	<p>Large traffic flows on the M1 between Nerang and Coomera (Exit 69 to 54) will increase the risk of stop/start traffic flows on the M1 for most of the day (8am – 6pm).</p>
<p>High demand and limited capacity between Robina (Exit 82) and Palm Beach (Exit 92) will increase the risk of stop/start traffic flows on the M1 for most of the day (9am – 6pm)</p>	<p>Large spectator egress movements from several large venues on days 5 and 6 will potentially generate late night congestion on the M1 between Nerang and Coomera (Exit 69 to 54) between 11pm and midnight</p>
<p>North of Coomera (Exit 54) combined commuter traffic and spectator traffic accessing GC2018 results in stop/start traffic flows in some locations during the afternoon peak period (4pm – 6pm)</p>	<p>High demand and limited capacity between Palm Beach (Exit 92) and Mudgeeraba (Exit 79) will result in a high risk of stop/start traffic flows on the M1 for most of the day (7am – 6pm)</p>
<p>During the afternoon peak period (4pm – 6pm) there is a high risk that traffic exiting the M1 will queue back onto the M1 (particularly Exit 60 and 57)</p>	<p>During the morning peak period (7am – 9am) there is a high risk that traffic exiting the M1 will queue back onto the M1 at Yatala (Exit 38) and at Ormeau (Exit 41) due to traffic delays entering the interchange roundabouts</p>