mainroads
WESTERN AUSTRALIA

Enquiries: Martine Scheltema 9323 4614
Our Ref: 05/2458
Your Ref: EPA Assessment 2215

16 June 2020

Dr Tom Hatton
Chairman
Environmental Protection Authority
Locked Bag 10
JOONDALUP DC WA 6919

Attention: Pip Marshall

Dear Dr Hatton

BUNBURY OUTER RING ROAD NORTHERN AND CENTRAL SECTION (EPA ASSESSMENT 2215): REQUEST FOR GREENHOUSE GAS INFORMATION

I write in response to a recent request from the Department of Water and Environmental Regulation's EPA Services, in regards to the Bunbury Outer Ring Road (BORR) Northern and Central Section (the Project), seeking Main Roads Western Australia (Main Roads) to provide information regarding Greenhouse Gas (GHG) emissions from the construction and use of the Project. In response Main Roads provides the following advice.

Main Roads has conducted high level modelling of GHG emissions for the construction and operation of the Project using the Carbon Gauge Tool. The attached memo provides a description of the Carbon Gauge Tool and the outcome of the assessment for the Scope 1, 2 and 3 GHG emissions for the construction and operation of the Project.

As detailed in the attached memo the estimated GHG emissions do not exceed 100,000 tCO_2-e annually. This annual 100,000 tCO_2-e criteria is defined in the EPA Environmental Factor Guideline – Greenhouse Gas Emissions (2020), as when GHG emissions from a proposal will generally be assessed.

Main Roads has not quantitatively assessed GHG emissions from the operational use of the Project, however provides the following qualitative advice.

Regional traffic volumes will increase in the coming years. These increases in regional traffic volumes are the result of increased social and economic activity in the region. The projected regional increase in traffic volumes is not directly linked to the construction of the proposed BORR. However BORR will allow more efficient movement of these traffic volumes in the region.

Most GHG emissions from transport come from fossil fuels combustion (Climate Change Authority, 2019). One way to reduce transportation GHG gas emissions is to reduce fuel consumption (Hayworth and Symmons, 2001). This can be achieved through improved traffic efficiency (Barth and Boriboonsomsin, 2009). According to Barth and Boriboonsomsin (2009) improving traffic efficiency can be achieved by a number of measures including:

- Congestion mitigation strategies that reduce severe congestion;
- Traffic smoothing strategies that reduce the number and intensity of acceleration and deceleration events.

The construction of the Project will reduce congestion and smooth speeds by allowing regional freight and tourist traffic to bypass Bunbury. The removal of regional traffic from Bunbury will also reduce congestion within the local Bunbury traffic network.

Using the above traffic management principles a comparison of the existing highway network from Paris Road (Eaton) to Lilydale Road (North Boyanup) via the existing highway network (Forrest Highway, Roberson Drive and South Western Highway) and the proposed Project, including the Willinge Drive extension, is summarised in the Table 1 below.

Table 1 Comparison of Existing Network and Proposed BORR

	Proposed BORR/Willinge Dr Extension	Existing Network (Forrest Hwy, Robertson Dr and South Western Highway)
Approx. length	21.0 km	21.5 km
No. of traffic lights – northbound	0	10
No. of traffic lights – southbound	0	4
Speed zoning	1 (100km/h)	4 (60km/h, 70km/h, 80km/h, 100km/h and 110km/h)

The existing network route and proposed BORR route are similar lengths, but vary in free flow nature and speed zonings. The BORR / Willinge Extension route will be free flowing with grade separated interchanges and large roundabouts designed for heavy vehicles. The existing network requires vehicles to travel through numerous traffic lights, speed zone changes and mix with local traffic.

Based on the expected improvement in traffic efficiency when comparing BORR to the existing through route, Main Roads expects that the Project will result in a net reduction in Scope 3 operational GHG emissions on the regional road network as a result of construction of the Project.

Detailed modelling of GHG operational emissions has not been conducted by Main Roads for this Project. GHG emissions were not identified by either Main Roads or the EPA as a potentially significant environmental factor until after the public comment period on the Environmental Review Document (ERD) and the release of the EPA's GHG guideline in April 2020.

Should you wish to discuss this matter further or require additional information please contact me by telephone on 9323 4614 or by email at Martine.Scheltema@MainRoads.wa.gov.au.

Yours sincerely

Martine Scheltema
Manager Environment

Attachments

Bunbury Outer Ring Road – Northern and Central Section (EPA Assessment 2215): Request for Greenhouse Gas Information

References

Barth, M., Boriboonsomsin, K. (2009). Traffic Congestion and Greenhouse Gasses. ACCESS Magazine, 1(35). University of California, Riverside

Climate Change Authority (2019), Opportunity to reduce light vehicle emissions in Australia. Retrieved June 2020, from http://www.climatechangeauthority.gov.au/reviews/light-vehicle-emissions-standards-australia/opportunities-reduce-light-vehicle-emissions

EPA. (2020). Environmental Factor Guideline: Greenhouse Gas Emissions. Prepared for the Government of Western Australia. Retrieved May 2020, from http://www.epa.wa.gov.au/policiesguidance/environmental-factor-guideline-inland-waters

Hayworth, N., Symmons, M. (2001). The Relationship Between Fuel Economy and Safety Outcomes. Report No. 188. Monash University Accident Research Centre

Transport Authorities Greenhouse Group (2013), Greenhouse Gas Assessment Workbook for Road Projects. Retrieved May 2020 from https://www.rms.nsw.gov.au/documents/about/environment/greenhouse-gas-assessmentworkbook-road-projects.pdf