



SUPPLY CHAIN PERSPECTIVE

OVER-SIZE OVER MASS (OSOM)



QTLC

QUEENSLAND TRANSPORT
AND LOGISTICS COUNCIL

Overview

Vehicles or cargo exceeding the Queensland standard operating envelope, of 3.5 m (width) by 4.6 m (height) are known as over-size over-mass (OSOM). Road movement by these vehicles or cargo is controlled by the Queensland Government Department of Transport and Main Roads (TMR), and other agencies as required.

Dimensions

The level of movement within Queensland for the past two years is shown in the Table 1.

Table 1: OSOM movements

	Number of movements	Volume of movement
2011/12	60,485	15,882,878m*
2012/13	70,976	17,363,998m*

*Volume calculated based on an estimated vehicle average length of 10 m

Source: Queensland Department of Transport and Main Roads OSOM Permit Data 2011/12, 2012/13

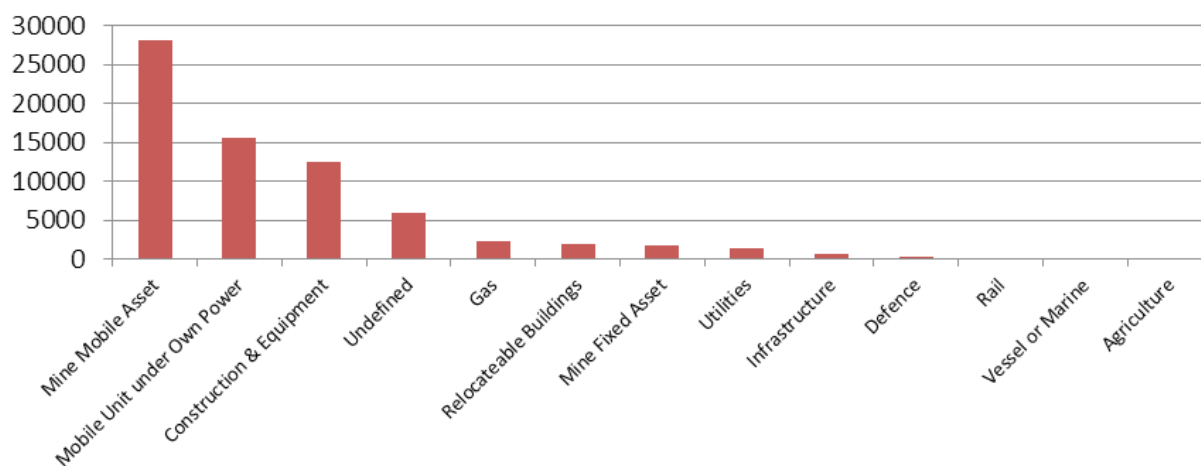
The largest volumes of over-size movements are classified as:

- mine mobile assets: including bulldozers, dump trucks, drill rigs, dragline buckets and excavators
- mobile units under own power: mobile cranes and other mobile machinery
- construction equipment: items of use for the construction industry, including various cranes, booms, pile driving rigs, frames and forklifts.

A large portion of OSOM is generated from or heading to Central Queensland and surrounding areas. This is largely driven by the delivery and servicing of mine equipment for mines operating in the Bowen Basin, Blackwater and Dawson Basin regions.

The division of OSOM movement categories in the 2012/13 financial year is displayed in Figure 1.

Figure 1: OSOM movements by category

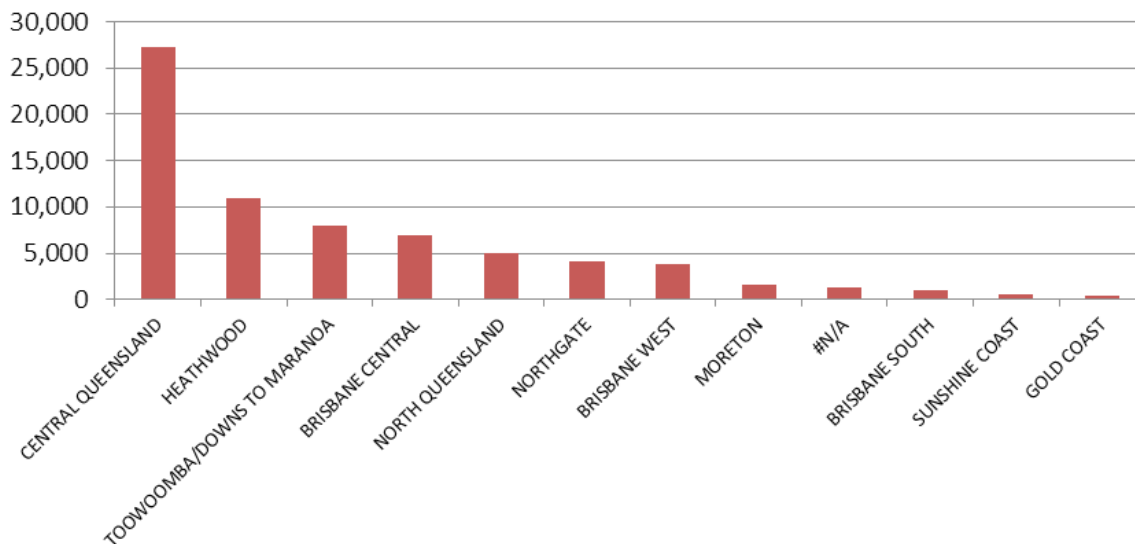


Source: Queensland Department of Transport and Main Roads OSOM Permit Data 2011/12, 2012/13

Points of origin

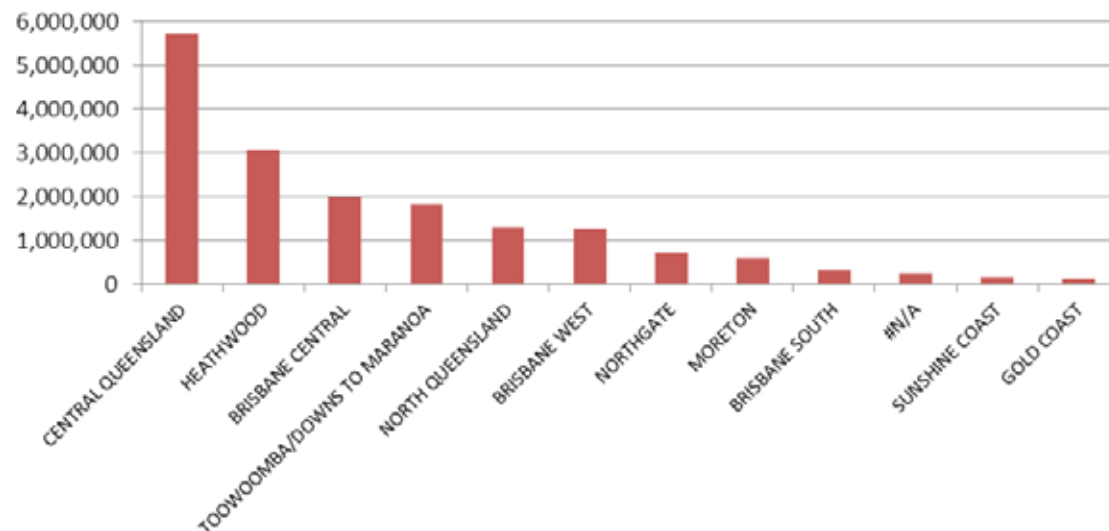
The origin of all OSOM movements has been analysed in two ways: an analysis of all movements, and then an analysis of the volume of movements by origin. The outcomes of the analysis are shown in Figures 2 and 3.

Figure 2: Origin by movements



Source: Queensland Department of Transport and Main Roads OSOM permit data 2011/12, 2012/13

Figure 3: Origin by volume

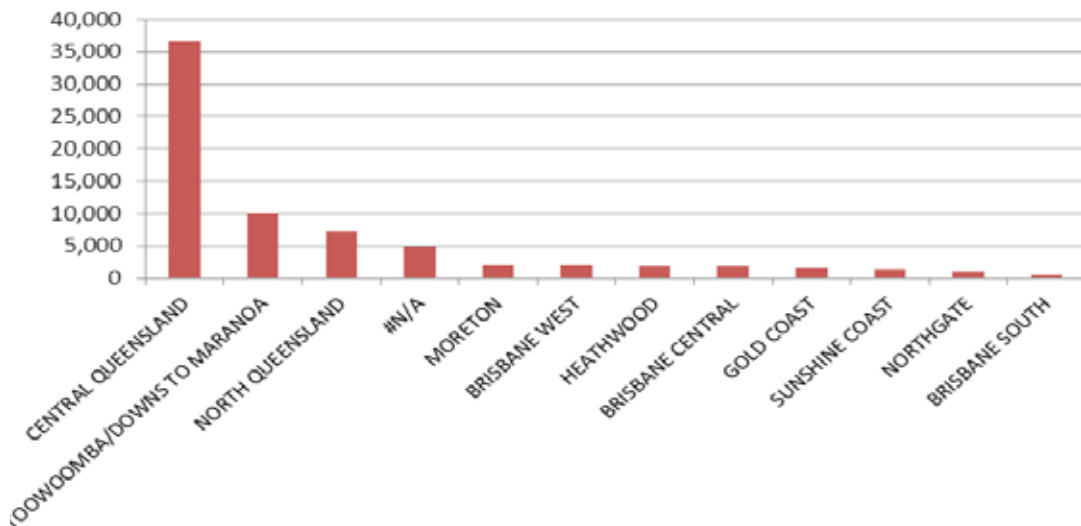


Source: Queensland Department of Transport and Main Roads OSOM permit data 2011/12, 2012/13

Points of destination

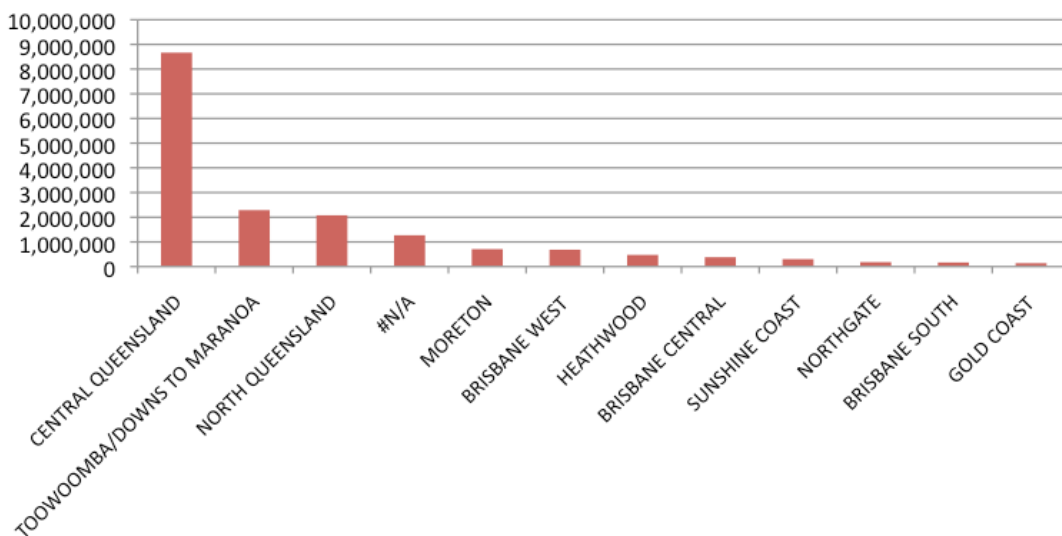
The destination of all OSOM has been analysed in two ways: analysing all movements, and analysing the volume of movements by destination. The outcome of the analysis is shown in Figures 4 and 5.

Figure 4: Destination by movements



Source: Queensland Department of Transport and Main Roads OSOM Permit Data 2011/12, 2012/13

Figure 5: Destination by volume



Source: Queensland Department of Transport and Main Roads OSOM Permit Data 2011/12, 2012/13

Freight movements

A permit is required from TMR to carry out an OSOM movement. The process for making an application is described in Form 4: Guideline for Excess Dimension in Queensland, February 2013¹.

That document outlines the signage, escort and routing requirements for these types of movements. The application submission is start of the permitting process, with a number of other authorities possibly needing to be involved, including:

- Queensland Police Service
- electrical distribution authorities
- telecommunications authorities
- Queensland Rail/Aurizon
- local/regional governments.

Tables 2 and 3 show widths and heights for OSOM movements in 2012/13, which have been mapped against the standard envelope parameters.

Table 2: Movements by load width

WIDTH	Movements	Percentage of total
<3.5m	22,329	31.46%
3.5-4.5m	10,933	15.40%
4.5-5.5m	7,348	10.35%
5.5-8.6m	23,908	33.72%
8.6-11.5m	6,419	9.1%
>11.5m	39	0.1%

Table 3: Movements by load height

HEIGHT	Movements	Percentage of total
<4.6m	6,267	11.63%
4.6-5m	12,932	24.00%
5.0-5.3m	22,636	42.01%
5.3-5.6m	7,389	13.71%
5.6-6m	2,485	4.61%
6-6.3m	1,058	1.96%
>6.3m	1,116	2.07%

Source: Queensland Department of Transport and Main Roads OSOM Permit Data 2011/12, 2012/13

The tables show that less than 70% of all loads require escorts, while 65% of loads may require an overhead high voltage electrical survey and support during transit, subject to route.

¹ Queensland Department of Transport and Main Roads, 'Heavy vehicle guidelines and class permits', www.tmr.qld.gov.au/business-industry/Heavy-vehicles/Heavy-vehicle-guidelines-and-class-permits.aspx

Transport mode

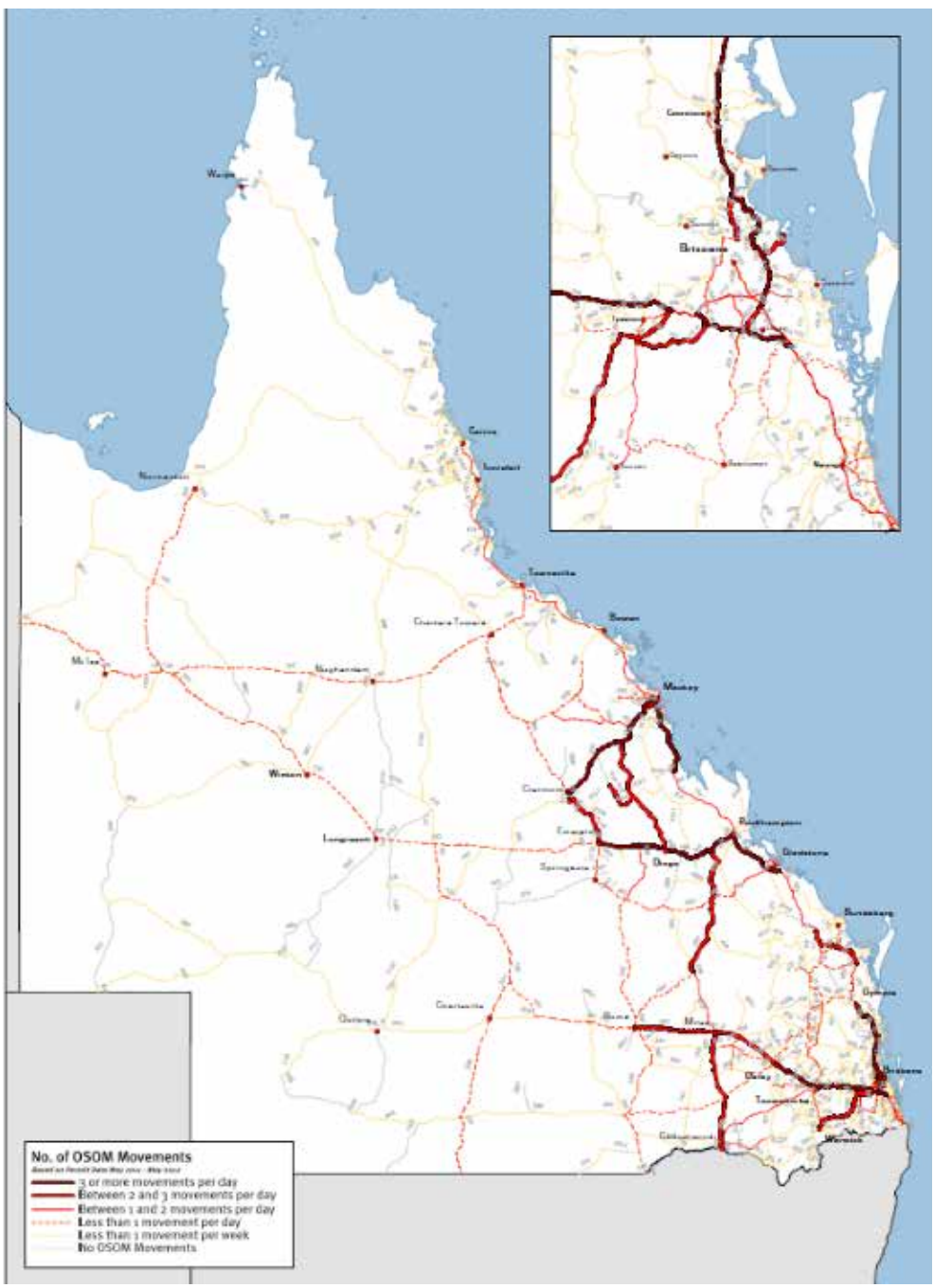
The main characteristic of vehicles used in OSOM movements are:

- high horsepower and high torque prime movers, well signed with warning lights
- multi-wheel trailers, usually with low profile decks to spread the load across numerous axles, often using an intermediate dolly to further spread loads
- prime movers capable of operating in multi-unit mode when very heavy loads and steep grades are encountered.

Pilot vehicles often play a key role in providing advance warning of the oncoming load, as well as follow vehicles to stop unsafe passing manoeuvres.

Main routes

Figure 6: OSOM movements



Source: Queensland Department of Transport and Main Roads

Key nodal infrastructure

Operators carrying out OSOM transport must ensure:

- there is sufficient land and clear access to depart the point of origin and arrive at the destination safely
- the permitted route has sufficient area for safe stopping for rest breaks, load security checks, and to allow traffic to pass (particularly if it becomes congested behind the OSOM load).

These route surveys should also consider:

- origin of transport equipment
- origin of load facility
- infrastructure capacity on the route (structures and pavement)
- rest stops on route
- decoupling yards on route
- refuelling stations on route
- passing lanes on route
- destination of load facility
- destination of transport equipment.