

Data summary

# Tasmanian Freight Survey 2016-17



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# Introduction

The Tasmanian Freight Survey (the survey) is a regular survey of heavy vehicle freight movements across Tasmania, undertaken by the Department of State Growth. The results of the Survey are used to inform planning for Tasmania's future freight transport system. The 2016-17 Survey is the sixth survey conducted to date. Previous surveys have been held every 3 years from 2002-03 to 2014-15.

Data collected in the survey is primarily gathered through interviews and reported data from businesses across a range of industries in Tasmania, including agriculture, construction inputs, consumer goods, forestry, and mining. Since 2002-03, the survey has collected consistent data on the operation of Tasmania's freight system, including:

- origin and destination
- commodity mass and type
- frequency of trips
- transport mode and vehicle type.

Survey data is analysed spatially, allowing for analysis of the Tasmanian freight task at state-wide, regional, intra-regional, corridor and network level.

Information from the survey is used to inform strategic freight policy and planning. For example:

- The Tasmanian Integrated Freight Strategy, Burnie to Hobart Freight Corridor Strategy and Time Sensitive Freight – understanding Tasmania's Market
- individual infrastructure projects and funding submissions
- strategic frameworks, including the State Road Hierarchy and regional integrated transport plans
- analysis and forecasting of the potential impacts of freight-related developments on Tasmania's freight network.

## 2016-17 Tasmanian Freight Survey

The 2016-17 Freight Survey is a mid-cycle update of the 2014-15 Survey. It was undertaken to provide up-to-date freight information in support of major infrastructure submissions and business cases, including under the Australian Government's Infrastructure Investment Program.

The Survey is based on approximately 60 interviews with a range of freight producers and forwarders. The freight movements of unsurveyed businesses were included based on previous Survey data, supported by supplementary reported administrative data (e.g. information from Mineral Resources Tasmania, TasPorts and Sustainable Timber Tasmania).

The 2016-17 Survey uses the following five commodity group classifications. Example commodities within each group are listed below.

### 1. Agriculture

- raw milk
- vegetables
- fertiliser
- beer
- animal feed

### 2. Construction inputs

- stone, sand and clay
- premixed concrete

### 3. Consumer goods

- petroleum and diesel
- mixed groceries
- mixed consumer goods

### 4. Forestry

- harvested logs (hardwood and softwood)
- wood products (paper and newsprint, woodchips, veneer)

### 5. Mining and bulk products

- mining ores
- cement
- basic metal products.

For the first time, the survey also targeted key emerging freight sectors, including time sensitive freight. This data is aggregated within the above commodity classifications<sup>1</sup>. The 2016-17 survey does not include any changes to the road network undertaken since the 2014-15 survey.

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<sup>1</sup> Due to the relatively small sample size of time sensitive freight data collected, and the commercial-in-confidence nature of this information, time sensitive data has been allocated to the broader commodity categories.

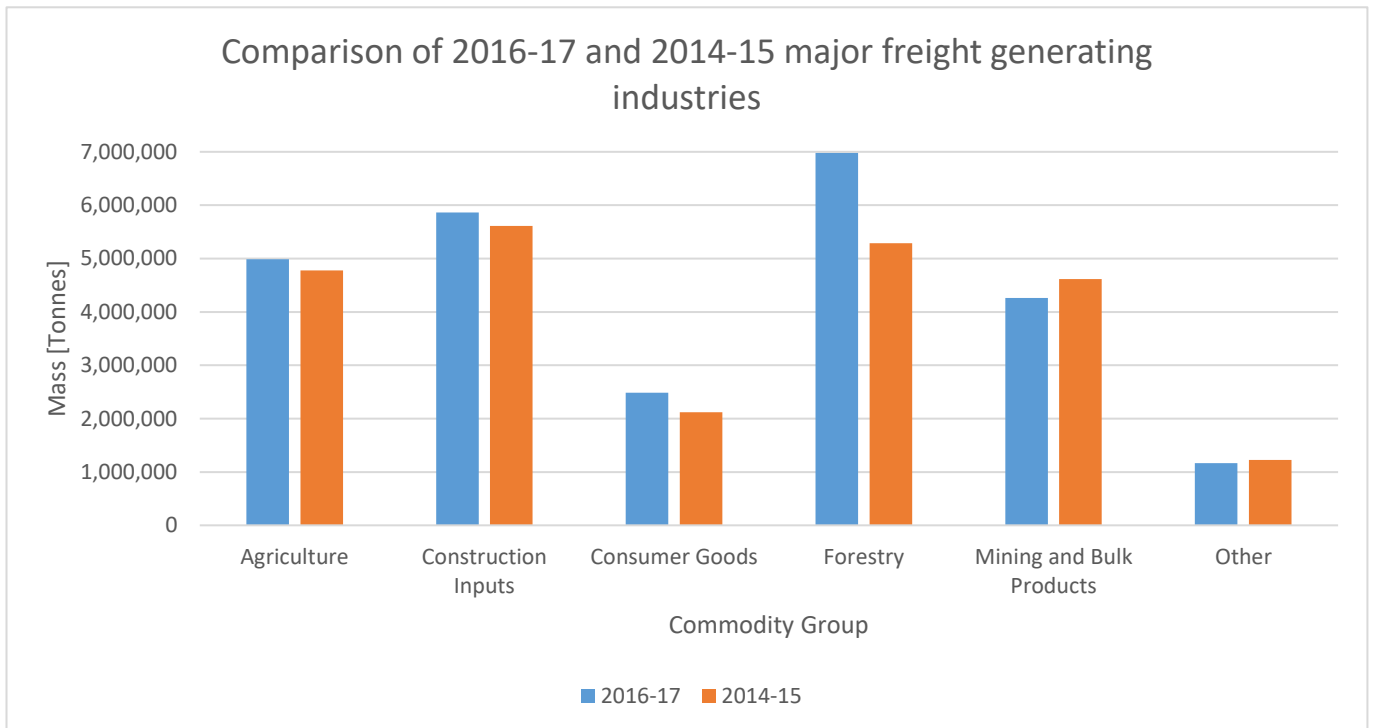
# Key results and findings

Based on the results of the 2016-17 survey, Tasmania’s freight task has increased by 8.9 per cent over the past two years, with the highest growth in the forestry, consumer goods and construction inputs sectors. Forestry was the highest growth sector, and is now Tasmania’s major commodity by tonnage. Road continues to be the dominant land transport mode across all sectors, and Burnie Port remains Tasmania’s primary freight port by tonnage.

Key results from the 2016-17 Freight Survey are as follows.

- In 2016-17, Tasmania’s total estimated freight task was 25.7 million tonnes, an increase of 8.9 per cent from 23.7 million tonnes in 2014-15.
- 23.7 million tonnes (88 per cent) of freight is transported on the road network, with three million tonnes (12 per cent) transported on rail.
- Of Tasmania’s publically owned ports, Burnie Port had the highest throughput (5.3 million tonnes), followed by Devonport (3.8 million tonnes), Bell Bay (3.6 million tonnes) and Hobart (1.5 million tonnes).
- 19.7 million (77 per cent tonnes) of freight in Tasmania is moved intra-regionally, compared to 5.9 million tonnes (23 per cent) inter-regional task.
- The North West is Tasmania’s largest freight producing region, with 11.7 million tonnes of freight originating in the region, compared to 8.3 million tonnes in the north and 5.7 million tonnes in the south.
- Forestry accounted for the largest freight task by volume (7.0 million tonnes, or 27 per cent), followed by construction inputs (5.9 million tonnes, or 23 per cent) and agriculture (5.0 million tonnes, or 19 per cent).

Figure I: Comparison of 2016-17 and 2014-15 major freight generating industries



Between 2014-15 and 2016-17, Tasmania's land freight task by mass increased by 8.9 per cent (Figure 1). The following changes in mass, by sector, were recorded.

- Forestry recorded the strongest growth of all sectors at 32 per cent.
- Consumer goods grew 17 per cent, driven by growth in the mixed groceries and consumer group tasks.
- The agricultural sector grew four per cent, driven largely by growth in dairy and aquaculture.
- Construction inputs grew four per cent, based on an increase in recorded aggregate movements, such as sand, stone and clay.
- Mining and bulk products fell by eight per cent.
- Other freight, including empty containers and manufacturing goods, fell by five per cent.



# State-wide land freight task

## Overview

In 2016-17, Tasmania's road and rail freight network carried 25.7 million tonnes, which travelled around 2.2 billion tonne-kilometres. The majority of the task moved on the road network – 88 per cent by mass and 78 per cent by tonne-kilometres, compared to 12 per cent by mass and 22 per cent by tonne-kilometres for rail<sup>1</sup>.

Table 1 - Freight movements by road owner

Road ownership	Total length (km)	Tonne-kilometres travelled	per cent of total tonne-kilometres travelled
National Land Transport Network – Road	454	913 million	42%
State Roads <sup>2</sup>	3,700	612 million	28%
Local Government Roads <sup>3</sup>	14,470	131 million	6%
Roads under other ownership <sup>4</sup>	55,448 <sup>5</sup>	42 million	2%
<b>Total Road</b>	<b>74,072</b>	<b>1.7 billion</b>	<b>78%</b>
Tasmanian Rail Network	411	473 million	22%

42 per cent of Tasmania's total freight task, in tonne-kilometres, is carried on the National Land Transport Network (National Network)<sup>6</sup>, the majority by road (Table 1). While this Network comprises only a small proportion of Tasmania's total land freight network by length, it underpins the State's land freight network,

<sup>1</sup> Tonne-kilometres are a commonly used measure for freight transport, and one tonne-kilometre represents the transport of one tonne of freight over one kilometre.

<sup>2</sup> Excludes State-owned sections of the National Network.

<sup>3</sup> Excludes local government owned sections of the National Network.

<sup>4</sup> Owners include Sustainable Timber Tasmania, TasPorts, Hydro Tasmania and private owners.

<sup>5</sup> Includes 32 000 km of authorised access or privately owned roads.

<sup>6</sup> The National Network identifies nationally-significant freight and passenger transport network across Australia. It is primarily funded by the Australian Government. In Tasmania, the Network extends from Burnie to Hobart Airport, and Launceston to Bell Bay.

connecting all major ports (Bell Bay, Burnie, Devonport and Hobart), urban centres (Hobart, Launceston, Burnie and Devonport) and key freight hubs and industrial centres.

A high proportion of heavy freight movements travel on the National Network for at least part of their journey, and most of Tasmania's highest freight volume roads are on the National Network. These include:

- the Bass Highway, a key road for freight in the North West, carried up to 3.2 million tonnes between Devonport and Illawarra Main Road, and up to 2.6 million tonnes between Burnie and Devonport
- the Midland Highway, a key link between northern and southern Tasmania, carried up to 2.3 million tonnes.
- the East Tamar Highway, a key link in northern Tasmania, carried up to 1.1 million tonnes
- key urban links, including the Brooker Highway in Hobart (2.0 million tonnes), the Southern Outlet (Midland Highway) in Launceston (2.3 million tonnes) and Bathurst-Wellington Street arterial routes (1.9 million tonnes combined)
- Bridgewater Bridge carried up to 2.3 million tonnes.

The Tasmanian Government-owned State Road Network carries a high proportion of the state-wide freight task (Table 1), and is important for sectors such as agriculture and forestry. Key links in this network, by region, include:

- Northern - Bridport Main Road, Tasman Highway (Scottsdale to Derby), Esk Main Road, Illawarra Main Road, Evandale Main Road (to Launceston Airport), Frankford Main Road/Birrree Main Road/West Tamar Highway/Batman Highway (connecting Bass and East Tamar Highways)
- North West - Ridgley Highway, Murchison Highway, Bass Highway (Burnie to Smithton), Mersey Main Road
- Southern – Macquarie-Davey Streets, Lyell Highway, Tasman Highway, Huon Highway, Southern Outlet and Boyer Secondary Road.

While local government-owned roads carry a smaller proportion of the State's overall freight task, they are important in providing 'first and last mile'<sup>7</sup> freight connections. Higher volume local roads include:

- Regional Links
  - Trowutta Road, Edith Creek
  - Irishtown Road, Irishtown
- Roads into major ports
  - Marine Terrace at Burnie
  - Mobil Road at Bell Bay
- Urban freight links
  - Macquarie and Davey Streets, Hobart
  - Bathurst and Wellington Streets, Launceston
- Urban industrial centres
  - Derwent Park, Main and Risdon Roads, Glenorchy

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<sup>7</sup> The first and last mile refers to first and final leg of freight movements, which are often made on local roads.

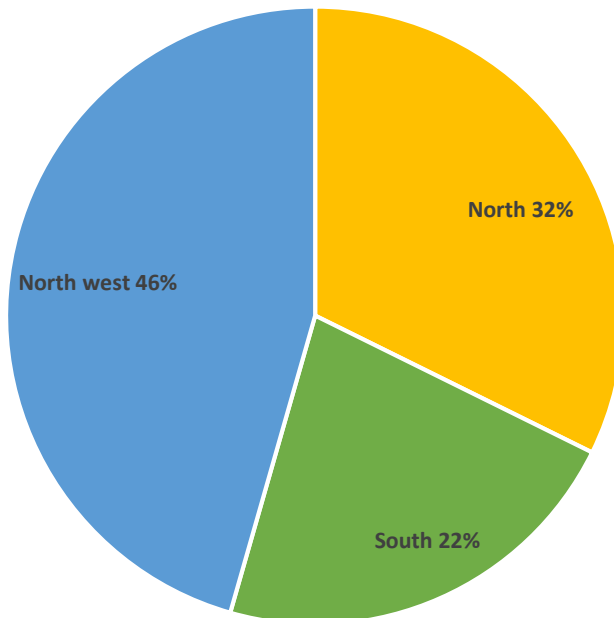
- Goderich, Cimitiere and Lower Charles Streets, Launceston
- Tarleton and Wright Streets, and Formby and Devonport Roads, Devonport.

The majority of the Tasmanian freight task moves on sealed roads, but in some areas, unsealed roads are important for freight movements, especially for forestry and agriculture.

By region, the north west was Tasmania’s largest freight producing area in 2016-17. 46 per cent of the state-wide freight task originated in the north west, by mass, followed by the north (32 per cent) and south (22 per cent). This data includes freight imported through ports as well as goods produced within the region (Figure 2).

Figure 2: Freight generating regions in Tasmania

Freight generating regions in Tasmania  
Total Task: 25.7 million tonnes



## Movements into and out of Tasmania

As an island state, access across Bass Strait is critical to Tasmanian businesses. Over 99 per cent of freight leaving and arriving in Tasmania is moved by sea. Tasmania's key strategic ports are located at Bell Bay, Devonport, Burnie and Hobart.

In 2016-17, 14.3 million tonnes of freight moved through Tasmania's publicly-owned ports; around 5.3 million tonnes of freight was imported and 9.0 million tonnes exported. Total container throughput was 475,000 twenty foot equivalent units (TEUs), split relatively evenly between imports (240,000 TEUs) and exports (235,000 TEUs). In addition, over 2 million tonnes of bulk material was moved through the privately-owned Port Latta<sup>8</sup>.

Tasmania's major ports, by tonnage and container movements, are located in the north west region.

The Port of Burnie (Figure 3) is Tasmania's largest port, handling over 5.3 million tonnes and 240,000 TEUs in 2016-17. Around 4 million tonnes were exported, with bulk products (including ores, concentrates and woodchips) and containerised goods (including newsprint, processed metal outputs, dairy products and vegetables) accounting for the majority of the task. Over 1.3 million tonnes of freight was imported via Burnie, mainly as containerised freight. Key import commodities include mixed consumer goods, groceries and other food or beverages.

The Port of Devonport (Figure 4) had the second largest freight task in 2016-17, with over 3.8 million tonnes and 210,000 TEUs moving through the port. Over 2.0 million tonnes were exported, dominated by bulk shipments of cement which were around 1.4 million tonnes. Major commodities imported into Devonport included mixed consumer goods, groceries and other food or beverages. Devonport also received the largest volume of fuel of the three northern ports. Devonport remains the State's key port for the movement of time-sensitive, fresh and processed agricultural products, and trailerised freight.

The Port of Bell Bay (Figure 5) handled over 3.6 million tonnes in 2016-17, consisting almost entirely of bulk goods such as woodchips and mineral ores. In total, 2.2 million tonnes were exported from Bell Bay, and 1.4 million tonnes were imported. The Port is closely aligned to the adjacent Bell Bay Industrial Estate, with around two-thirds of port throughput having an origin or destination in the Estate. Woodchips were the key export commodity by mass. Mineral ores, for processing within the Bell Bay industrial precinct, was the major import commodity for this Port at 460,000 tonnes (or 13 per cent of freight moved through the Port).

The Port of Hobart (Figure 6) handles lower overall freight volumes, with 1.5 million tonnes of goods moved in 2016-17. Total throughput reflects volumes across a number of locations, including Macquarie Wharf, Self's Point and Nyrstar (Lutana). Nyrstar accounts for the majority of recorded freight movements, with significant volumes of mineral concentrates into the port; and exports of sulphuric acid, fertiliser and mineral concentrates (around 250,000 tonnes). High volumes of fuel are imported into Self's Point, New Town (around 280,000 tonnes).

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<sup>8</sup> Grange Resources 2016

Figure 3: State-wide freight movements overview map

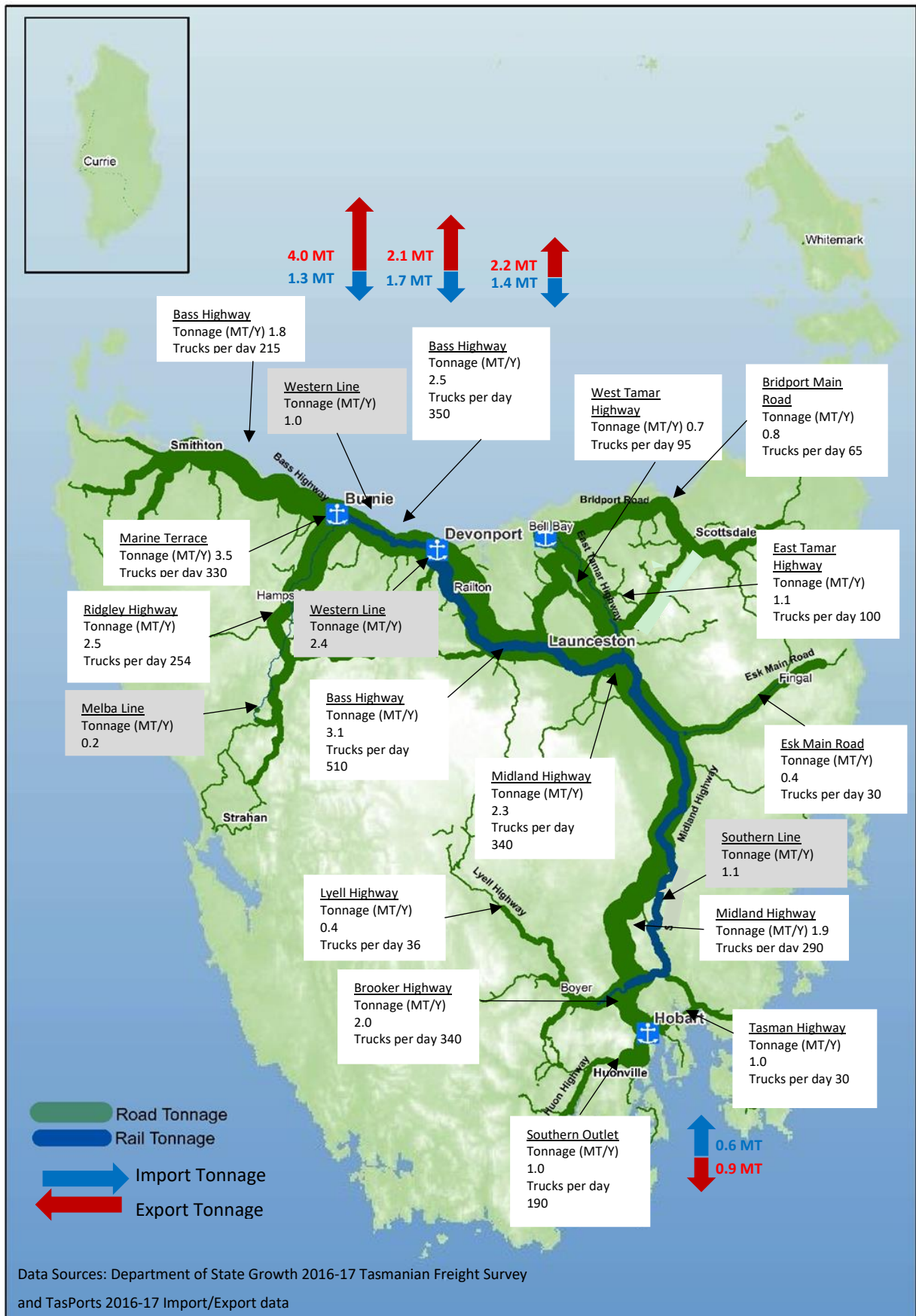


Figure 4: Port of Burnie: Land freight task

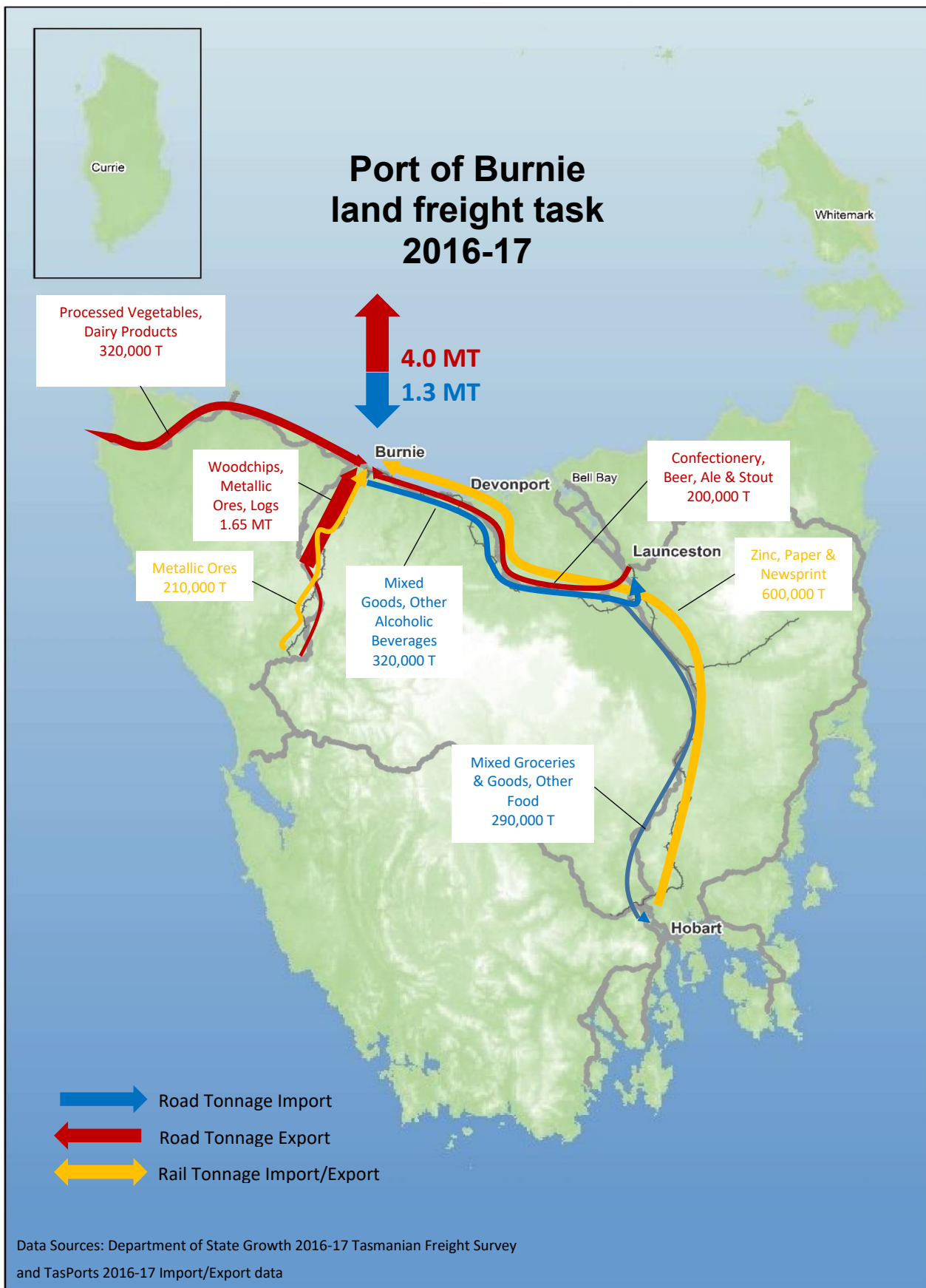


Figure 5: Port of Devonport: Land freight task

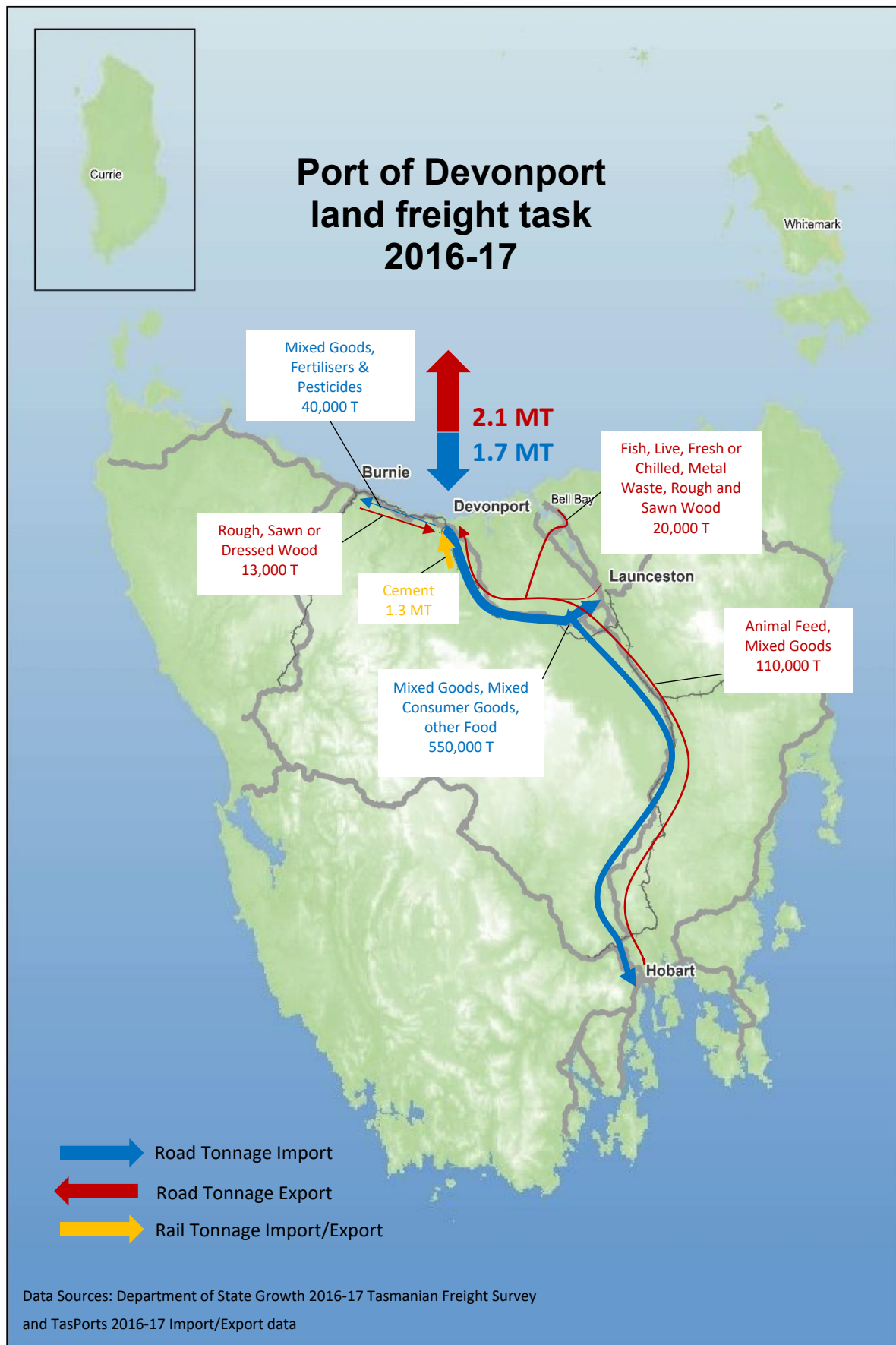


Figure 6: Port of Bell Bay: Land freight task

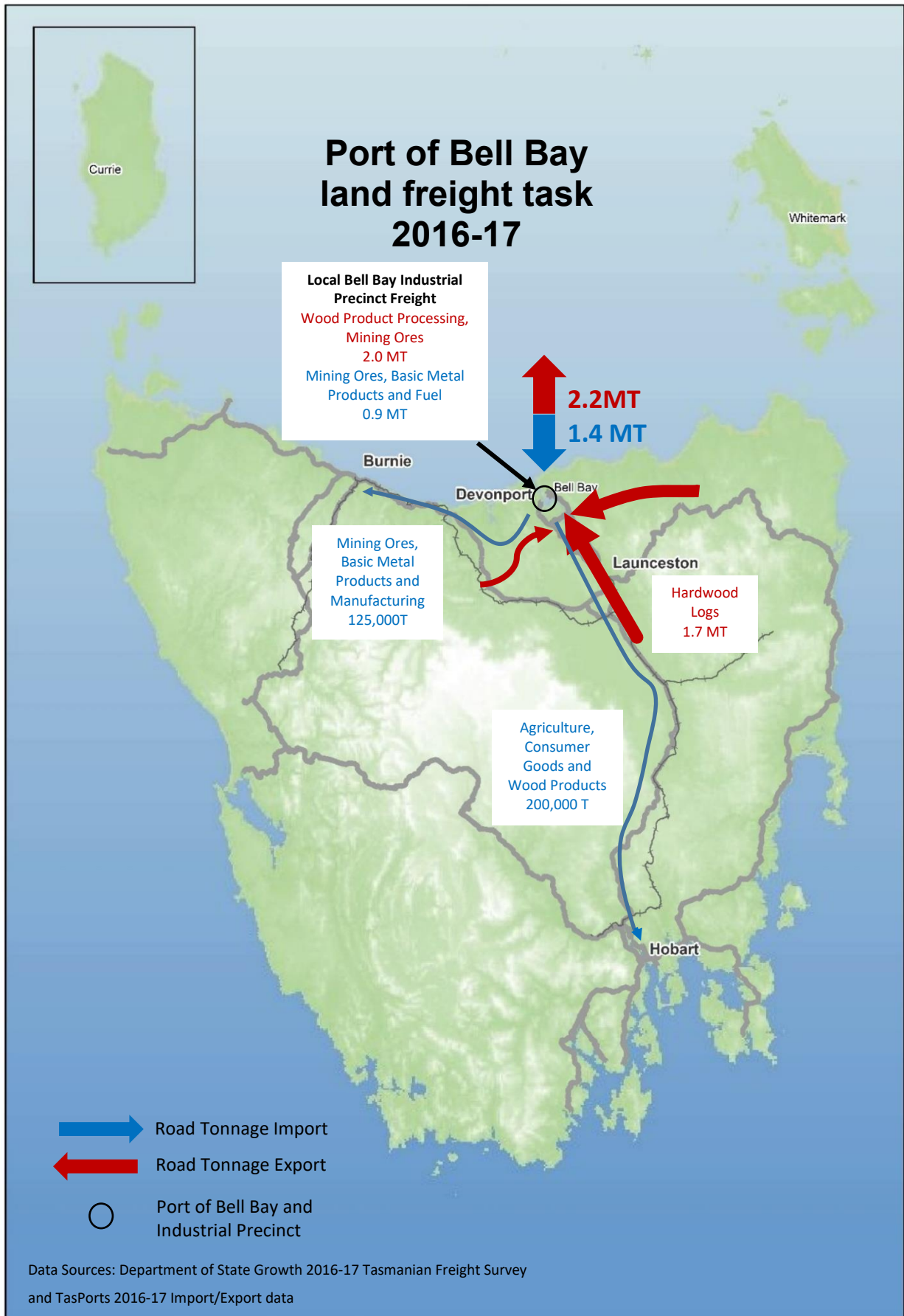
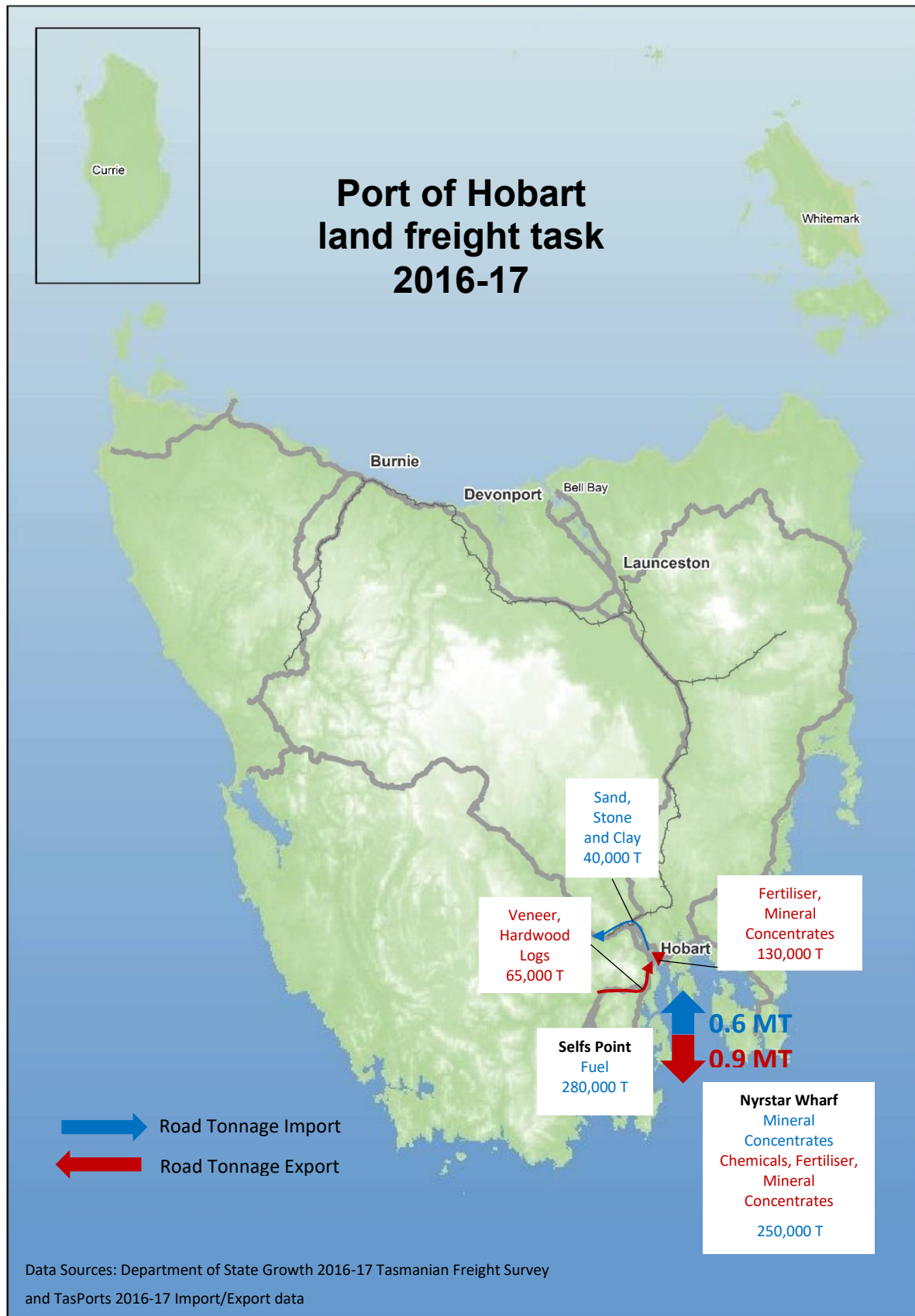




Figure 7: Port of Hobart: Land freight task

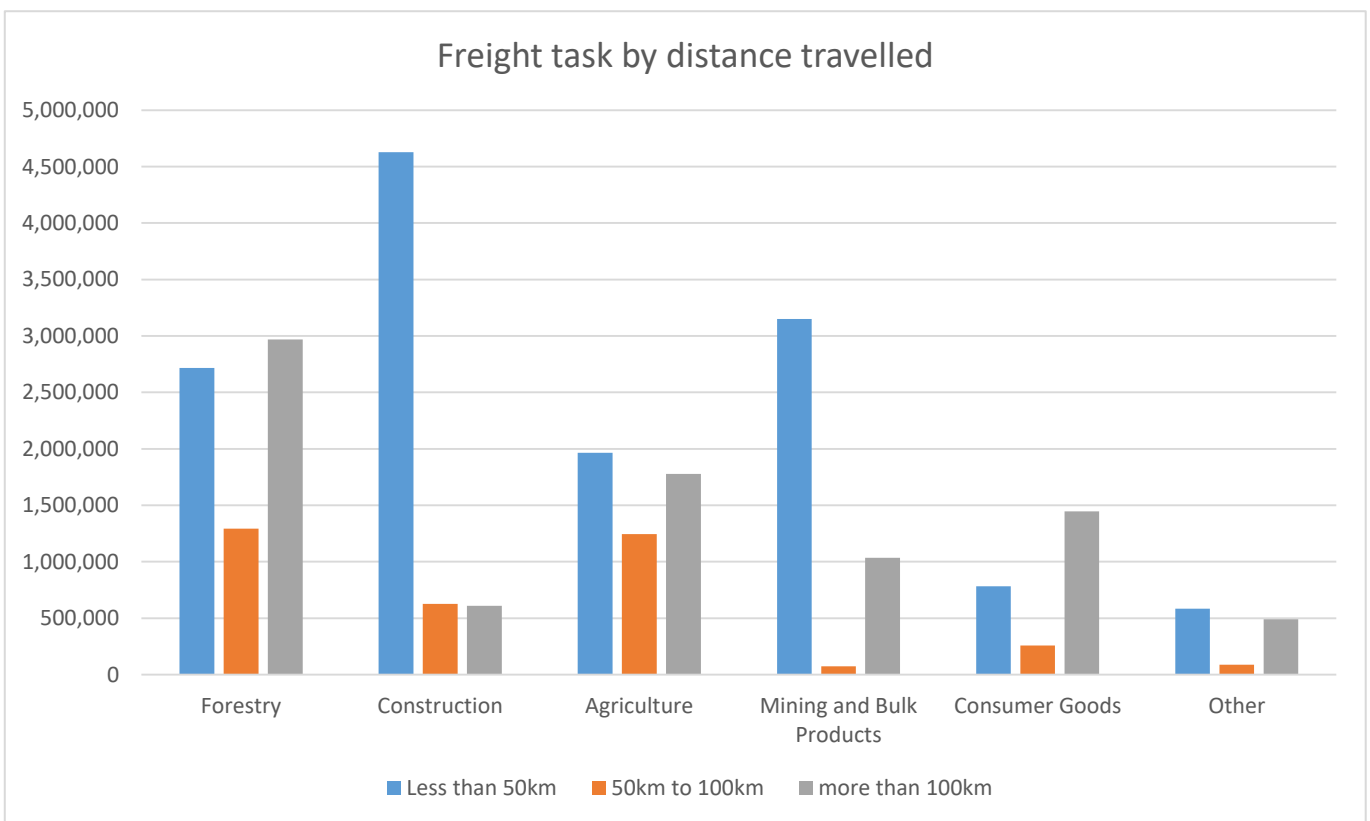


# Freight task by distance travelled

The Tasmanian freight task involves localised, intra-regional and inter-regional movements. For the purposes of this report, distances travelled by freight task were analysed as less than 50km, 50km to 100km and more than 100km.

The majority of freight movements in Tasmania occur locally, over shorter distances. In 2016-17, 13.8 million tonnes or 54 per cent of the state-wide task by mass, travelled less than 50 km. Around 3.5 million tonnes, or 14 per cent of the state-wide task by mass, travelled between 50km to 100km, and 8.3 million tonnes, or 32 per cent of the state-wide task by mass, travelled over 100 km.

Figure 8: Freight task by distance travelled



The major freight commodities travelling less than 50km were construction inputs, forestry and mining, and bulk products. Construction inputs were largely driven by movements of sand, stone and clay (3.5 million tonnes) within the southern and northern regions, while pre-mixed concrete (970,000 tonnes) was a major commodity in the northern region.

Forestry was dominated by movements of woodchips (1.5 million tonnes) within the north west and northern regions, and hardwood logs (910,000 tonnes) within the north west and southern regions. mining and bulk products was driven by mining ores (1 million tonnes) movements within the north west and northern regions.

The major freight commodities travelling between 50km and 100km were agriculture and forestry. Agriculture inputs were largely driven by movements of dairy products and raw milk (600,000 tonnes) in the north and north west regions. Forestry was dominated by hardwood (840,000 tonnes) and softwood logs (250,000 tonnes) across all regions (north west, north and south).

Agriculture and forestry were the major commodities travelling over 100km. Forestry was largely driven by movements of hardwood (1.9 million tonnes) and softwood logs (500,000 tonnes) across the north east and southern regions. The major agricultural commodities were raw milk (320,000 tonnes) movements in the north west and southern regions; beer, ale and stout (280,000 tonnes) across all regions; and vegetables (230,000 tonnes) across the northern and north west regions.

# Intra-regional freight task – north west, northern and southern regions

The intra-regional freight task involves the localised movement of freight within a region, and is a key component of Tasmania's freight task. In 2016-17, the combined intra-regional task across Tasmania's three regions was approximately 19.7 million tonnes, comprising 76 per cent of the state-wide freight task by mass. Intra-regional freight, for the purposes of this report, is defined as freight trips originating and ending within a single region. However, this also includes commodities undertaking a secondary trip distributed wholly within the region. For example, goods delivered by rail from northern Tasmania to Brighton (southern Tasmania), but subsequently distributed by truck from Brighton to destinations within the southern region.

In 2016-17, the north west was Tasmania's largest freight generating region and also had the largest intra-regional freight task. The north west region's largest driver of intra-regional freight movements were related to mining and bulk products contributing 36 per cent (3.5 million tonnes). The northern region's largest intra-regional freight movements were construction inputs contributing 30 per cent (1.7 million tonnes). Across the southern region, construction inputs were the largest driver contributing 58 per cent (2.3 million tonnes) of the intra-regional task.

## Regional profiles

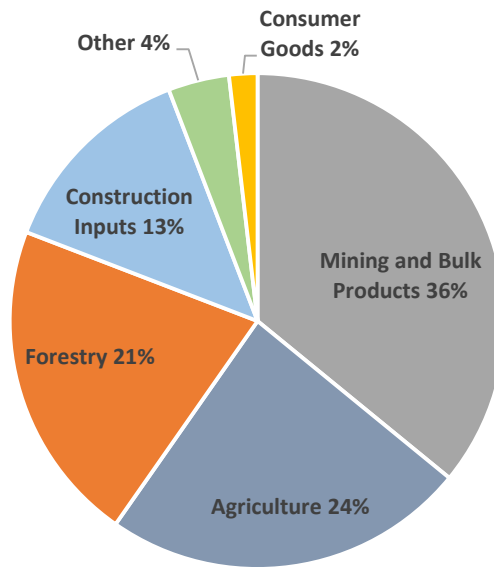
### North west region

- The north west region<sup>9</sup> had a total intra-regional freight task of 9.8 million tonnes (Figure 7).
- Forestry accounted for 2.1 million tonnes or 21 per cent of the intra-regional task. This task includes harvested logs and wood products, and is focused on movements associated with the Hampshire woodchip mill.
- Agricultural products accounted for 2.3 million tonnes or 24 per cent of the intra-regional task. Key products include raw milk, fresh vegetables and live animals. The region contains most of the State's major agricultural processors.
- Mining and bulk products comprised 36 per cent of the freight task by mass. Mining ores (a component of mining and bulk products) made up approximately 6 per cent of the freight movements in the region by mass.
- However, the significance of these movements was increased by the relatively long intra-regional distances the mining ores were transported.
- Around 1.4 million tonnes of cement is moved from Railton to Devonport Port via rail. This task was moved over a relatively short distance and therefore had a reduced task in terms of tonne-kilometres (6 per cent by tonne-kilometres, and 14 per cent by mass).

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<sup>9</sup> The North West Region includes the local government areas of Burnie, Central Coast, Circular Head, Devonport, Kentish, King Island, Latrobe, Waratah/Wynyard and West Coast.

Figure 9: North west intra-regional freight task by commodity group – total task 9.8 million tonnes

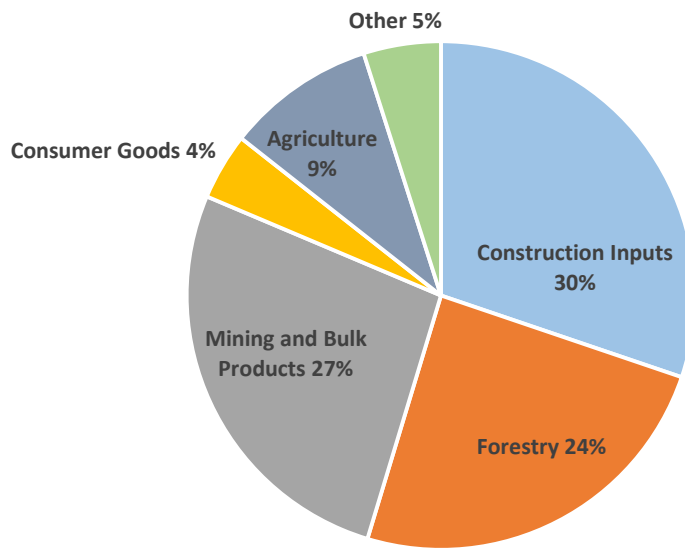


## Northern region

- The northern region<sup>10</sup> had a total intra-regional freight task of 5.8 million tonnes (Figure 10).
- Construction inputs were the region's largest intra-regional task at 30 per cent of total tonnages.
- Metal processing at Bell Bay and coal production in the Fingal Valley contributed 27 per cent of the intra-regional freight task by mass (1.5 million tonnes). However the majority of these movements occur over very short distances (e.g. from port or mine to processing facility), and account for just 3 per cent of the intra-regional task on a tonne-kilometre basis.
- Forestry related freight movements (logs and wood products) make up 24 per cent (1.4 million tonnes) of intra-regional movements. These movements tend to be over comparatively longer distances, with forestry representing 58 per cent of the intra-regional task on a tonne-kilometre basis.

<sup>10</sup> The northern region includes the local government areas of Meander Valley, West Tamar, George Town, Launceston, Dorset, Northern Midlands, Break O'Day and Flinders Island.

Figure 10: Northern intra-regional task by commodity group – total task 5.8 million tonnes

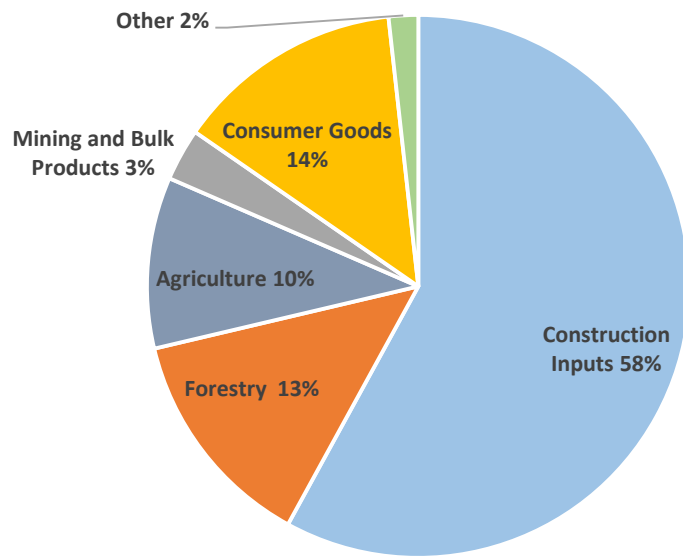


## Southern region

- The southern region<sup>11</sup> had the smallest intra-regional freight task of 4.1 million tonnes (Figure 11).
- Construction inputs accounted for 58 per cent of the Region's total freight task by tonnage.
- Consumer goods made up 14 per cent of the regions freight task by tonnage, driven by the southern region's larger population.
- A large proportion of the overall intra-regional freight task was related to forestry, with the movement of logs (440,000 tonnes) and other wood products (90,000 tonnes) together making up 13 per cent of the southern region's intra-regional tonnage or 34 per cent on a total tonne-kilometre basis.

<sup>11</sup> The southern region includes the local government areas of Central Highlands, Glamorgan-Spring Bay, Southern Midlands, Derwent Valley, Brighton, Glenorchy, Clarence, Hobart, Sorell, Tasman, Kingborough and Huon Valley.

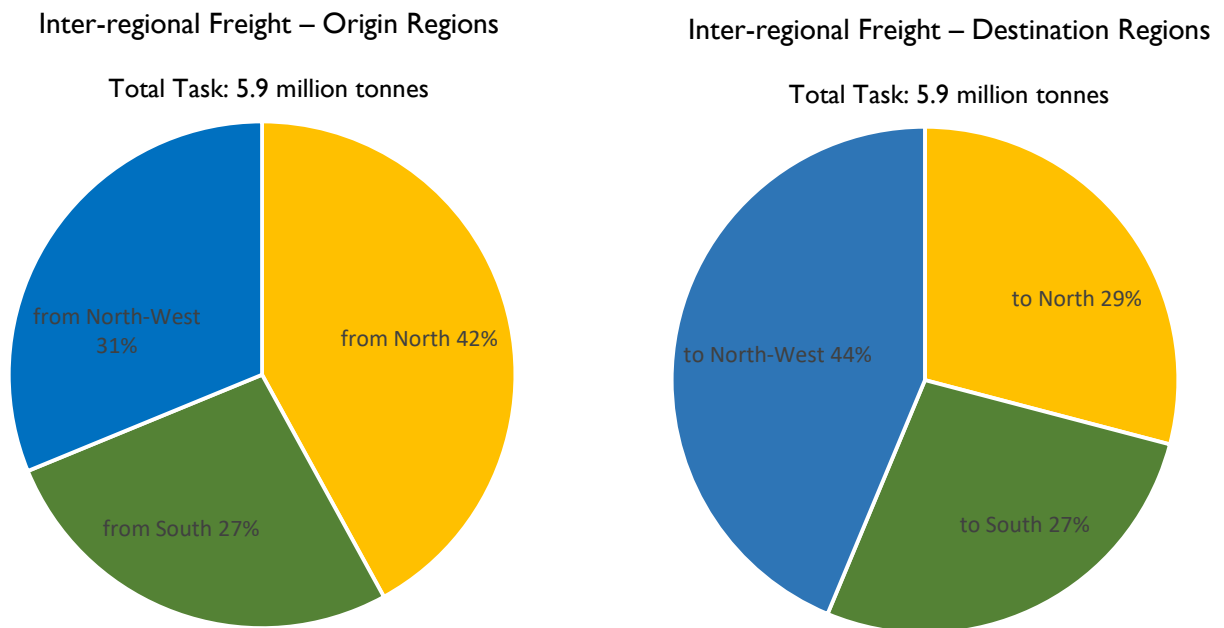
Figure 11: Southern intra-regional freight task, by commodity group, total task 4.1 million tonnes



# Inter-regional freight task

The inter-regional freight task describes freight that moves from one region to another region. Around 5.9 million tonnes (23 per cent of total freight volumes) of freight moved between Tasmania's three regions.

Figure 12: 2016-17 inter-regional task



In terms of *destination*, the north west region was the major regional destination, with over 2.6 million tonnes (44 per cent) of freight moved from the north and south. Over 1.7 million tonnes (29 per cent) was moved to the northern region and 1.6 million tonnes moved to southern Tasmania (27 per cent). A significant component of the southern inter-regional freight task was the movement of commodities to and from the northern ports.

In terms of *origin*, the northern region generated the greatest inter-regional freight task at 2.5 million tonnes (42 per cent). The north west and southern regions also generated significant inter-regional freight volumes at 1.8 million tonnes (31 per cent) and 1.6 million tonnes (27 per cent), respectively.

From the Northern region, the major movements were (Figure 13):

- agricultural freight, including raw milk and fresh vegetables, by road, and coal by both road and rail to the north west
- mixed groceries, harvested logs and coal and to the southern region.

From the North West Region, the major movements were (Figure 14):

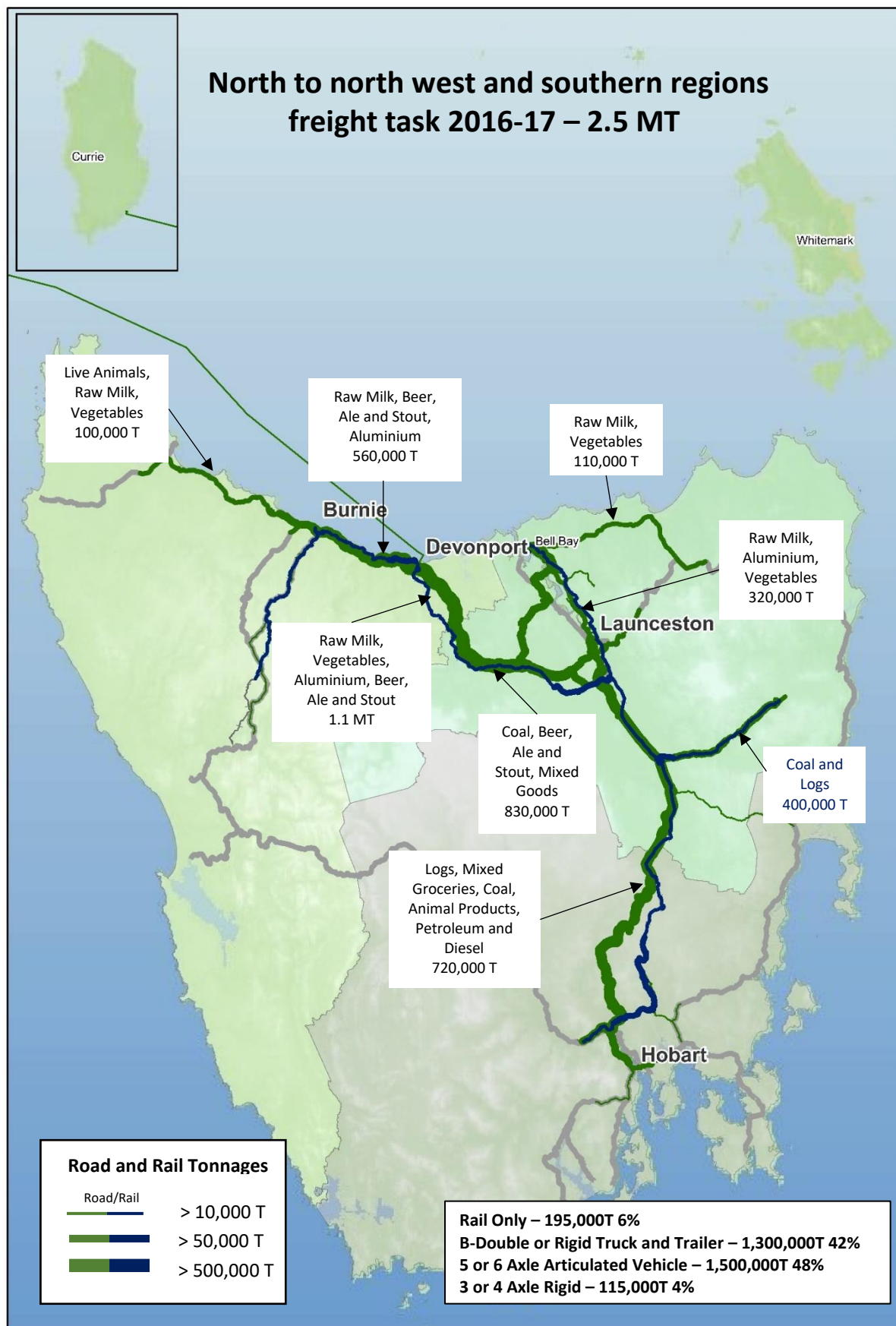
- mixed groceries, fuel, and consumer goods to the north
- movements from Burnie Port to Hobart, including mixed groceries and consumer goods (transported by road and rail)
- cement and mining ores to the southern region.



From the southern region, the major movements were (Figure 15):

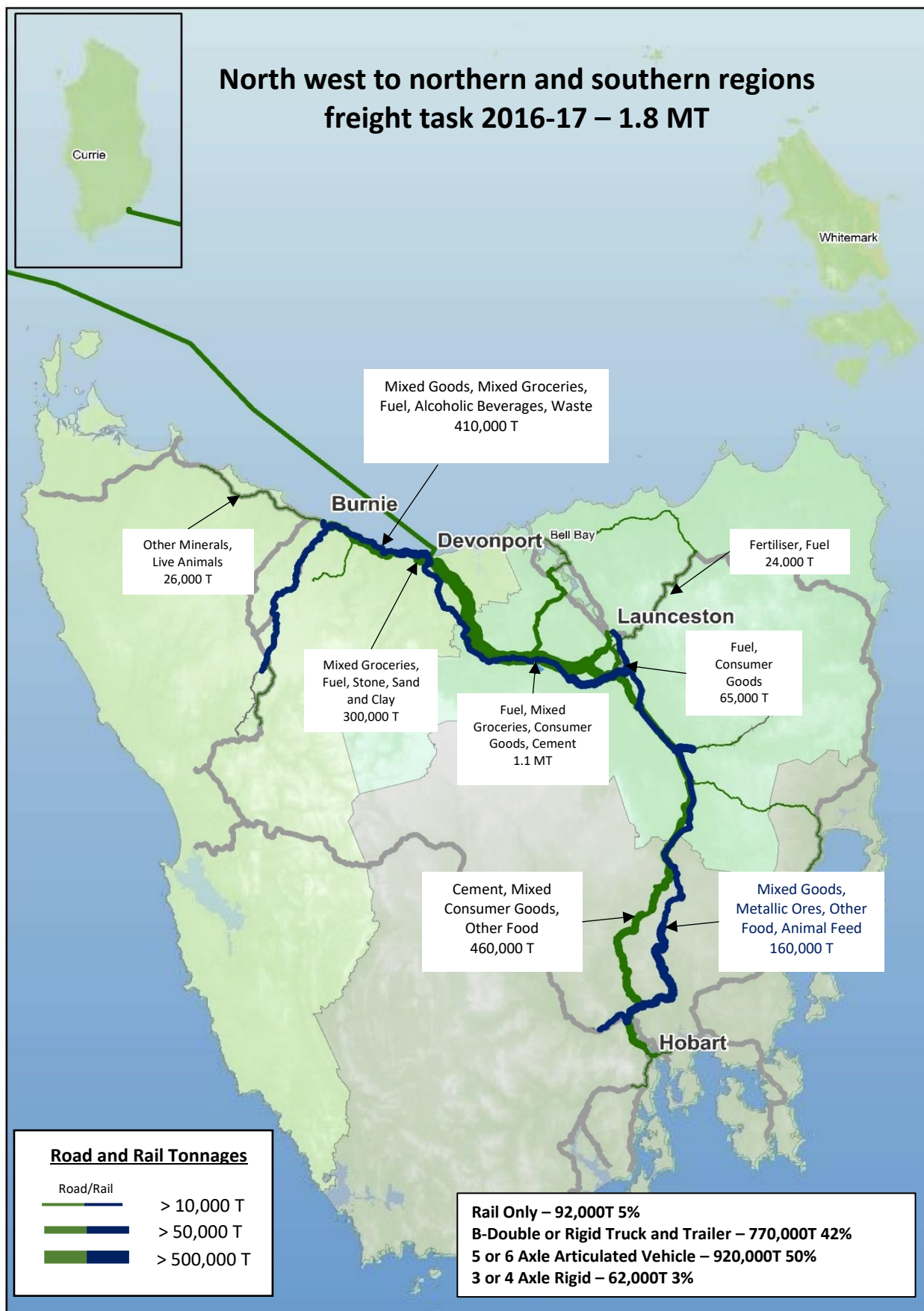
- paper, newsprint and zinc (primarily moved by rail) to the north west
- animal feed, live animals and fresh fish, also to the north west
- harvested logs, construction inputs and wood products to the northern region.

Figure 13: Northern inter-regional freight task



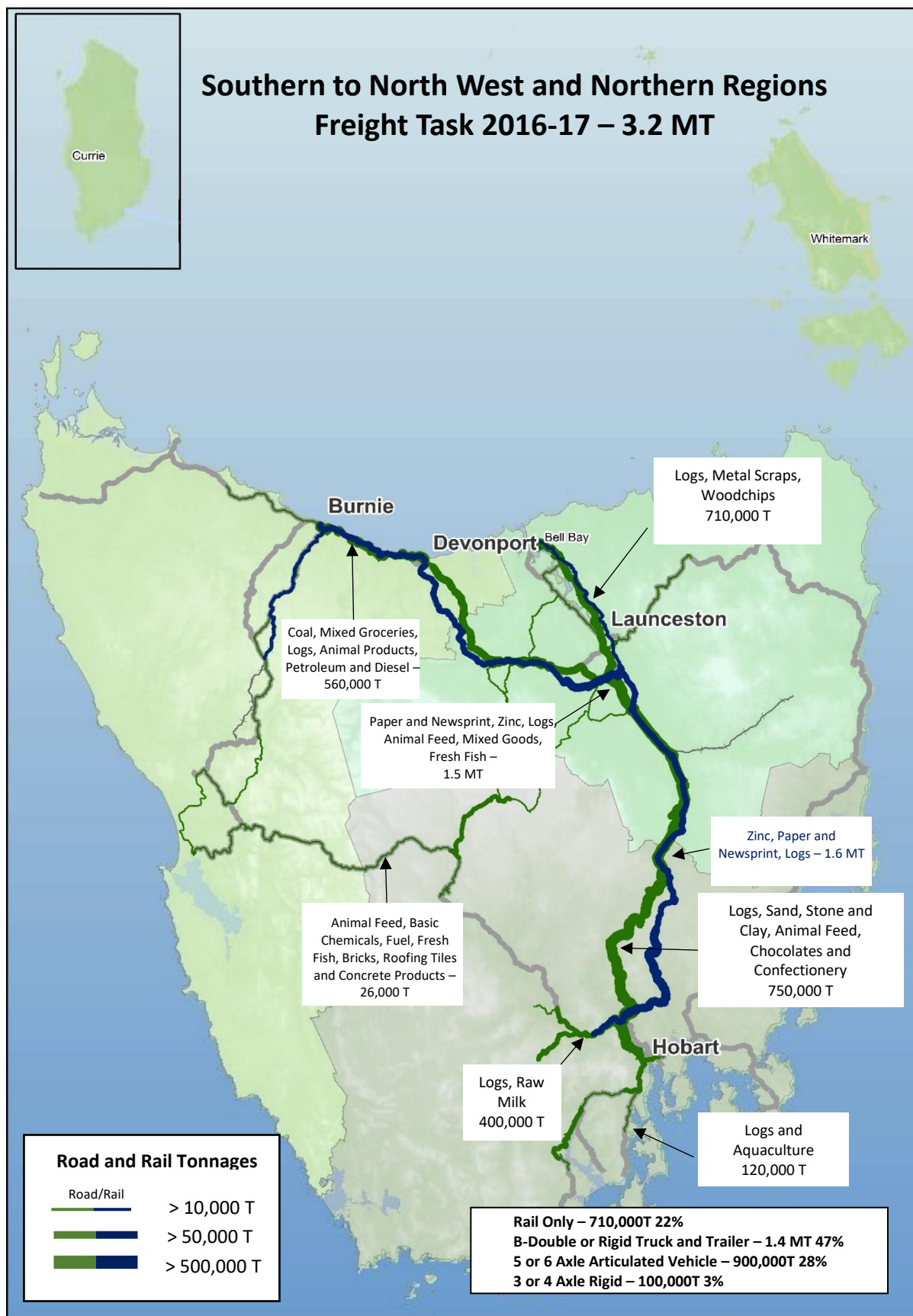
\* Rail Only tonnages refer to task that only travelled on rail – some freight tasks travel on both road and rail.

Figure 14: North west inter-regional freight task



\* Rail Only tonnages refer to task that only travelled on rail – some freight tasks travel on both road and rail.

Figure 15: Southern to north west region inter-regional freight task



\* Rail Only tonnages refer to task that only travelled on rail – some freight tasks travel on both road and rail.

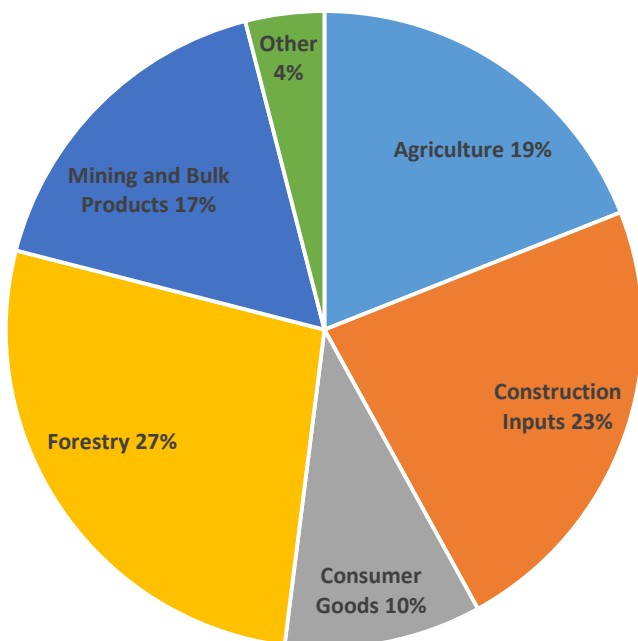
# Major freight generating industries

For the purposes of the survey, Tasmania’s freight task is categorised into five industry sectors – forestry, agriculture, construction inputs, consumer goods, and mining and bulk products. The outputs of each sector are summarised in Figure 16, and discussed further below.

Figure 16: State-wide freight generating industries

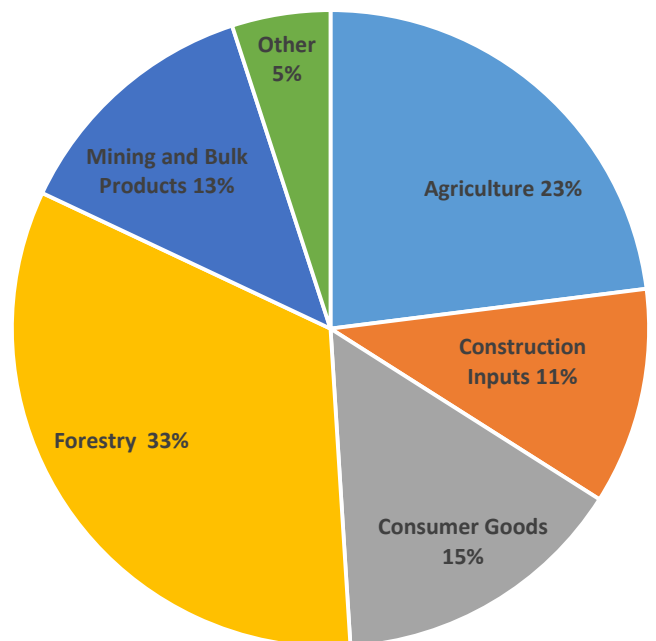
Freight generating industries – Mass

Total Task: 25.7 million tonnes



Freight generating industries – Tonne-Kilometres

Total Task: 2.2 billion tonne-kilometres



## Forestry

Forestry includes both hardwood and softwood harvested logs, and processed wood products, such as sawn timber, woodchips and paper.

To ensure the survey accurately reflects current and likely future forestry freight volumes, administrative data from 2016-17 has been used. This data, in terms of road network use, has changed little from the 2014-15 survey, however, production volumes have been updated to reflect the full 2016-17 period of production for major forest processors.

In 2016-17, Tasmania’s total forestry task was almost 7 million tonnes, representing an increase of 32 per cent in mass, between 2014-15 and 2016-17. The forestry task accounted for 27 per cent of Tasmania’s total freight task by mass and 33 per cent by tonne-kilometres (Figure 18).

The sector has a high intra-regional task, with 86 per cent (by mass) of harvested logs processed or exported from within the region in which they were harvested.

In 2016-17, the transport of harvested logs to processing and export sites represented approximately 68 per cent of the total forestry task (4.7 million tonnes). The hardwood log freight task exceeded the softwood log task, with approximately 3.8 million tonnes of hardwood compared to a relatively unchanged 970,000 tonnes for softwood.

The north west region harvested the highest volume of logs of each of the three regions (2.1 million tonnes), with 97 per cent moved intra-regionally.

The Bass Highway is the key road in the north west for both inter- and intra-regional forestry freight, including for the processed task of veneer and sawn timber travelling from Smithton to the Ports of Burnie and Devonport. The Hampshire woodchip mill supports a consistent forestry freight task along Ridgley Main Road between Burnie and Hampshire.

The northern region harvested the second highest volume of logs (1.6 million tonnes), but also received some inter-regional inputs, primarily from the southern region. The main destination for the log task in the northern region is Bell Bay, with over 1.5 million tonnes of logs transported for chipping, prior to export.

In 2016-17, around 920,000 tonnes of logs were harvested in the southern region, of which 59 per cent was processed within the region. The southern region also had a significant inter-regional log task of around 300,000 tonnes, the majority of which was harvested in the Central Highlands and Derwent Valley, and transported to the Bell Bay Industrial Estate.

The major destination for processed forest products from the southern region is the Port of Burnie, with around 310,000 tonnes of paper/newsprint transported by rail in 2016-17. Sawn timber was either sold locally or transported to the Port of Burnie or Devonport. Veneer produced in the south was transported to Hobart Port for direct export.

## Agriculture

Agricultural freight is a major component of Tasmania's freight task at around 5 million tonnes. The agriculture freight task represents 19 per cent of the state-wide freight task in terms of mass, and 23 per cent in terms of tonne-kilometres (Figure 15). The task increased 4 per cent by mass, compared to the 2014-15 Freight Survey.

The majority of the agricultural freight task involves movements of commodities to and from farms, including raw milk (830,000 tonnes), vegetables (760,000 tonnes), fertilisers and pesticides (450,000 tonnes), live animals (400,000 tonnes) and animal feed (200,000 tonnes) (Figure 19).

Major processed agricultural products by mass were beer, ale and stout (470,000 tonnes), dairy products (420,000 tonnes), prepared and preserved vegetables (280,000 tonnes), and meat and meat products (170,000 tonnes).

The north west is Tasmania's key region for agricultural products. The region contains major vegetable, dairy and meat processors, large areas of highly productive agricultural land, and key export ports. 56 per cent (2.7 million tonnes) of Tasmania's total agriculture freight task originates in the north west, with a further 19 per cent transported inter-regionally from the north and south of the state. Around 87 per cent of the north west agricultural task remains within the region. Major commodities include raw milk, vegetables, processed vegetables and dairy products.

The northern region produced 30 per cent of the state's agricultural task (1.6 million tonnes). Major commodities transported from farms included raw milk, vegetables and live animals. Over 64 per cent of the northern region's agricultural task was transported to the north west and southern regions for processing, or to Burnie or Devonport ports for export. The northern region also produced high tonnages of beer, ale and stout and meat products from processing sites in Launceston and the Northern Midlands, and is also a major source of agricultural lime.

The southern region had a smaller agricultural freight task of 750,000 tonnes. The region contains several major manufacturing facilities, producing beer, chocolate, dairy products, fertiliser and animal feed. The major farm outputs were live animals and fresh/chilled fish.

Generally, the highest volumes of agricultural freight move on the state's key inter-regional links, such as the Bass and Midland Highways. However, regional and local roads are critical in moving agricultural products from farms to processing centres and ports, and for the transport of agricultural inputs. Key roads include Trowutta Road, and Montagu Road in the far north west, and Devonport Road, Mersey Main Road and Sheffield Road south of Devonport.

Key roads in the north include Mole Creek Road and the road network connecting the productive far north east to the north west, which includes the Tasman Highway, Bridport Main Road, East Tamar Highway, Frankford Road and Birralee Road.

In the southern region, key regional roads include the Lyell Highway, Tea Tree Road, Fingerpost Road, Southern Outlet, Huon Highway and Brooker Highway (Figure 19).

## Construction inputs

In 2016-17, over 5.8 million tonnes of construction inputs were moved across the freight network, representing 23 per cent of Tasmania's total freight task by mass (Figure 20). Construction inputs included aggregates (4,600,000 tonnes), premixed concrete (1.0 million tonnes), bricks, tiles and concrete products (160,000 tonnes) and bitumen (65,000 tonnes).

Generally, construction inputs are transported relatively short distances by road using either a 3-axle rigid truck or a rigid truck and trailer combination. In 2016-17, 93 per cent of construction movements were intra-regional. The task accounted for 11 per cent of the State's freight task in tonne-kilometres, considerably lower when compared to the task in terms of mass (Figure 20).

The southern region had the largest construction material task (2.5 million tonnes), followed by the northern region (2 million tonnes), and around 1.4 million tonnes moved around the north west (Figure 18) in 2016-17.

The majority of construction materials are moved by road, with the highest tonnages carried on major highways. Key roads include the Bass Highway in the north west; the East and West Tamar Highways and Midland Highway in the north; and the Midland Highway-Brooker Highway corridor, the Tasman Highway, Southern Outlet and Huon Highway in the south.

## Consumer goods

The movement of consumer goods is an important part of the state-wide freight task. Consumer goods include petroleum and diesel, mixed groceries, other food, mixed consumer goods, other alcoholic beverages, grain mill products, motor vehicles and parts, and petroleum gases.

In 2016-17, 2.5 million tonnes of consumer goods were transported on the Tasmanian road and rail network, equivalent to 10 per cent of Tasmania's total task by mass and 15 per cent by tonne-kilometres (Figure 21). The majority of consumer goods are imported through Burnie or Devonport ports, with less than 65,000 tonnes exported out of Tasmania.

Petroleum and diesel represented 27 per cent (670,000 tonnes) of the consumer task, with shipments made direct to major ports in each region. The Port of Hobart (Selfs Point) received the largest volume of diesel and petroleum into the state, 95 per cent of which was distributed within the southern region. In the north west, petroleum and diesel was shipped into the Ports of Devonport and Burnie. From the north west region, around 32 per cent of petroleum and diesel was transported to sites within this region and 68 per cent was transported to sites in the northern region. Shipments of petroleum and diesel into the Port of Launceston were lower than in other regions. 25 per cent of this fuel was transported to sites in southern Tasmania, while 75 per cent to the north west and northern regions.

The majority of the remaining consumer goods task was shipped into Burnie and Devonport from interstate or overseas via Melbourne. Approximately 500,000 tonnes (55 per cent) of the north west non-fuel consumer task is transported to the northern region, a further 370,000 tonnes (40 per cent) to the southern region. Only around 5 per cent is transported intra-regionally within the north west.

The consumer goods task generally makes a higher number of trips on the network compared to other freight sectors, as consumer goods are generally moved from a port to a distribution centre, then onto retailers. The large inter-regional movement of consumer goods from the north west to the northern region reflects the location of several major distribution centres in or just south of Launceston<sup>12</sup>.

Approximately 505,000 tonnes of the non-fuel consumer goods freight task originated in the northern region, 43 per cent of which was transported within the northern region, 40 per cent to the South and 17 per cent to the north west. Around 365,000 tonnes of non-fuel consumer goods are distributed from the southern region. Of this, 78 per cent is transported to sites within the southern region.

Consumer freight is highly reliant on the Burnie to Hobart freight corridor (including the Bass, Midland and Brooker Highways and parallel rail network), with most distribution centres located within close proximity to this corridor. The Bass Highway (between Devonport and Launceston) carries the highest mass of consumer goods (peaking at just under 900,000 tonnes), with the Midland Highway carrying the second highest mass (peaking at over 470,000 tonnes, south of Perth). From the major distribution centres, consumer goods move on regional and urban roads to major shopping centres, industrial parks, businesses and town centres (Figure 21).

## Mining and bulk products

In 2016-17, Tasmania extracted approximately 4.3 million tonnes of metal ores, concentrates and coal. The majority of Tasmania's mines are located in the West Coast and Fingal Valley regions. Over 2 million tonnes of ores and concentrates were transported to the privately-owned Port Latta via pipeline from the Savage River mine site. The iron ore freight task is not included in the road and rail task recorded in the survey.

Most mining and bulk products continue to be used or processed interstate or overseas, with the exception of zinc concentrates, which are processed in Hobart. There are two major metal processors located at Bell Bay.

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<sup>12</sup> When goods are transported via a distribution point those goods are effectively captured twice in the Freight Survey. A large proportion of consumer goods originating in the northern region fall into this category, having been originally transported from a port in the north-west region to a distribution centre in the northern region and finally on to a retailer.



Most metal concentrates, processed at the three processing sites in Tasmania, were sourced from outside Tasmania and imported to ports adjacent to the processing plants.

The majority of Tasmanian coal extraction occurred in the Fingal Valley, supplemented with coal from the Derwent Valley. The processed (washed) coal amounted to around 210,000 tonnes and was used by manufacturing facilities within Tasmania, predominantly in the north west, with smaller tonnages transported to southern Tasmania. Approximately 31 per cent of processed coal was transported using rail.

In 2016-17, Tasmania's metal processors had an output of around 800,000 tonnes of basic metal products. The vast majority of this output was destined for export or interstate consumption, with over 95 per cent shipped out of ports in north or north west. Processed metal from southern Tasmania was transported a short distance via road to the Brighton Hub for transport by rail to Burnie Port.

Metal production out of Bell Bay (including aluminium, ferro-and-silico manganese and sinter) was shipped from multiple ports; with around 400,000 tonnes from the Port of Launceston and 420,000 tonnes from the Port of Burnie.

Tasmania has a major cement manufacturing plant at Railton. Most of the production is transported in bulk via rail to the Port of Devonport then shipped to Victoria and New South Wales (Figure 20).

Figure 17: State-wide hardwood and softwood log task

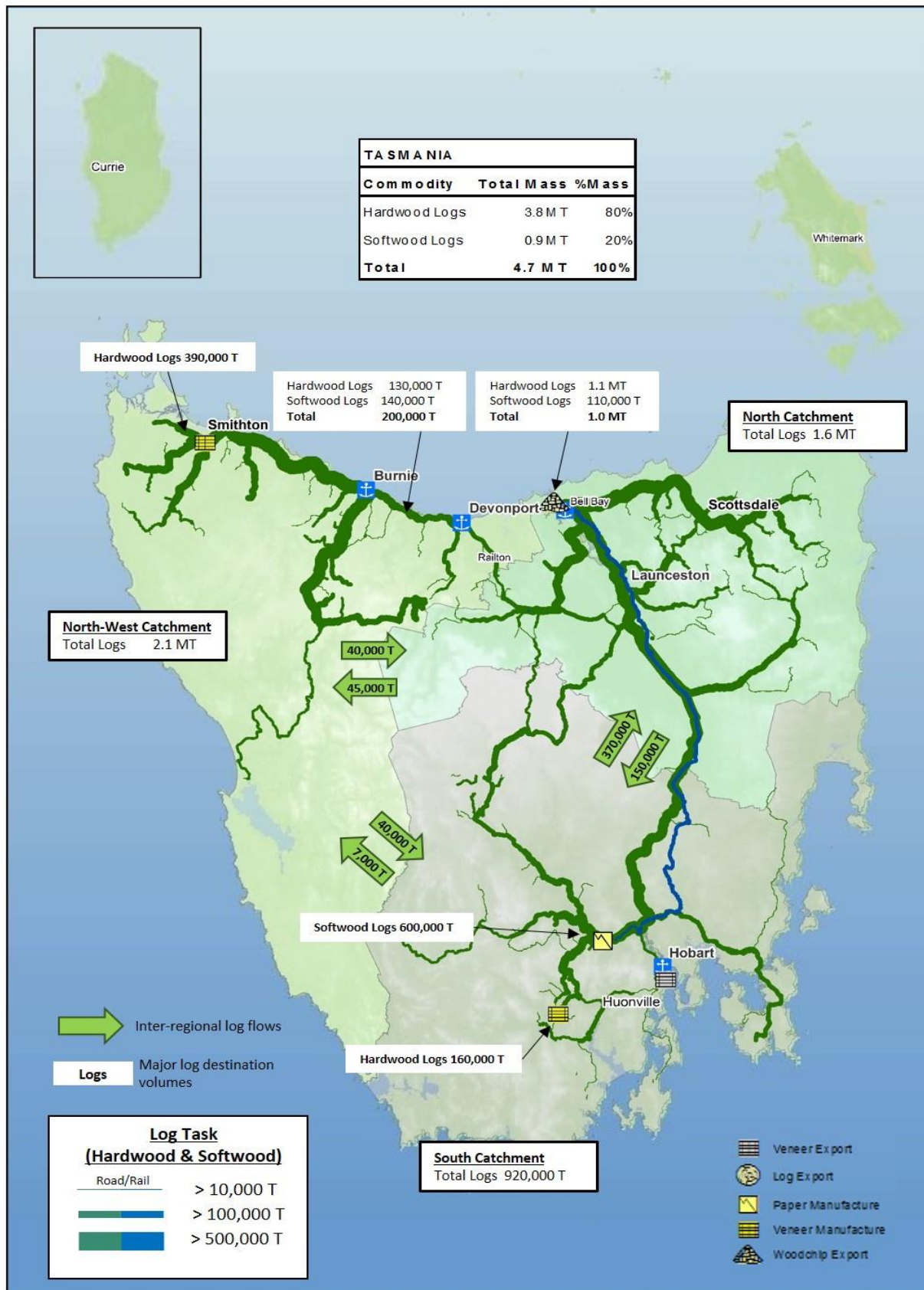


Figure 18: State-wide forestry processing task

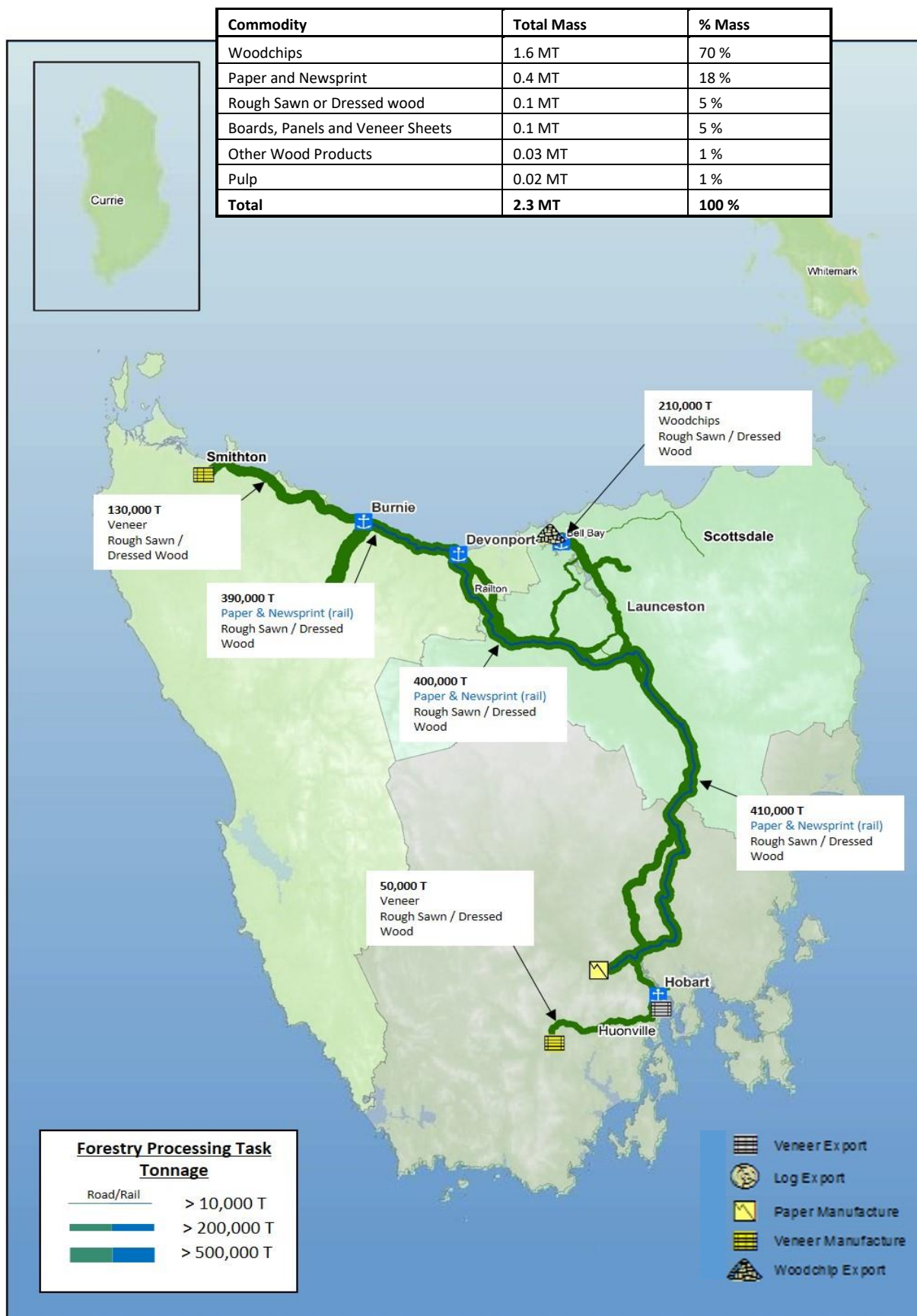


Figure 19: State-wide construction inputs freight task

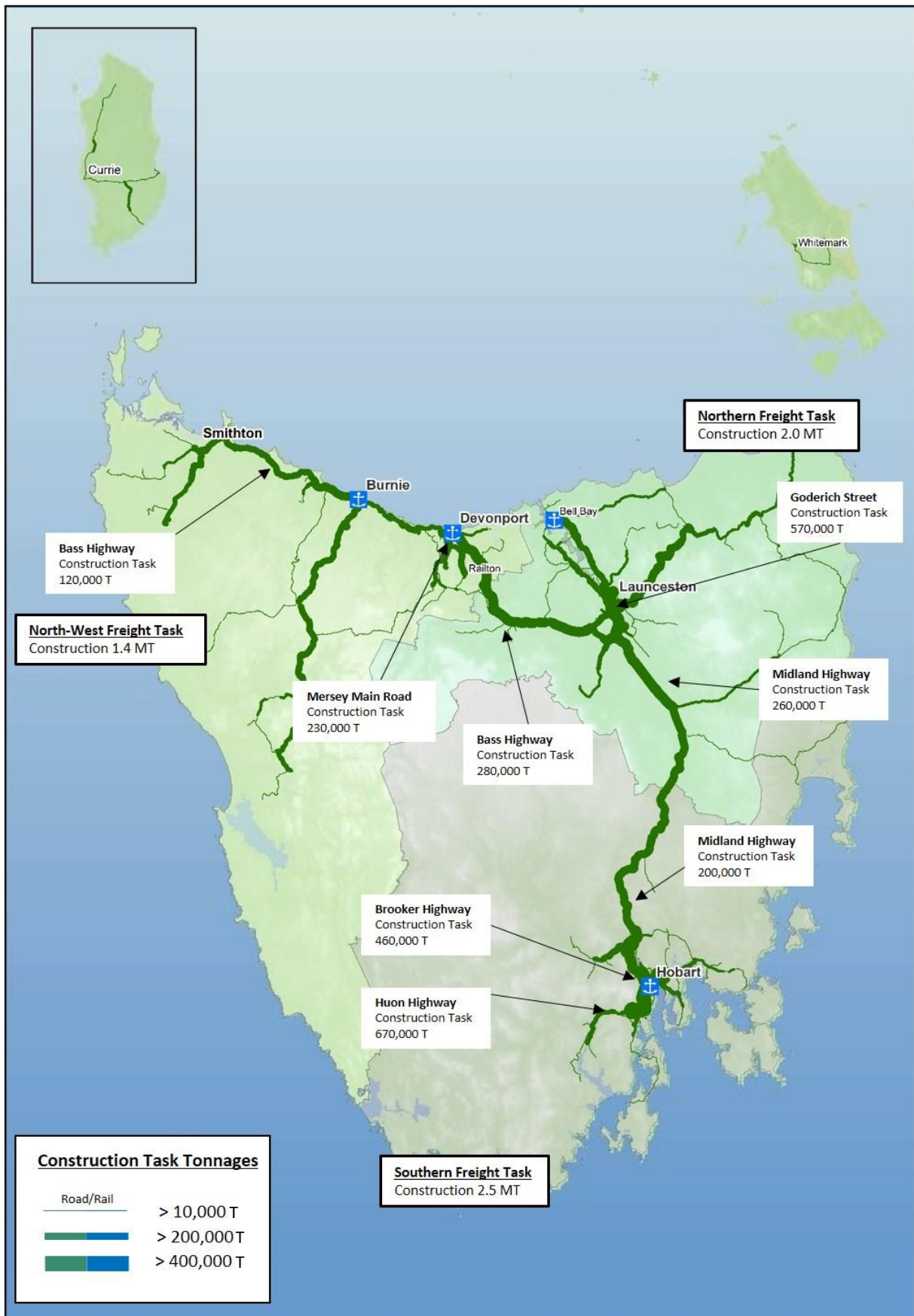


Figure 20: State-wide agriculture freight task

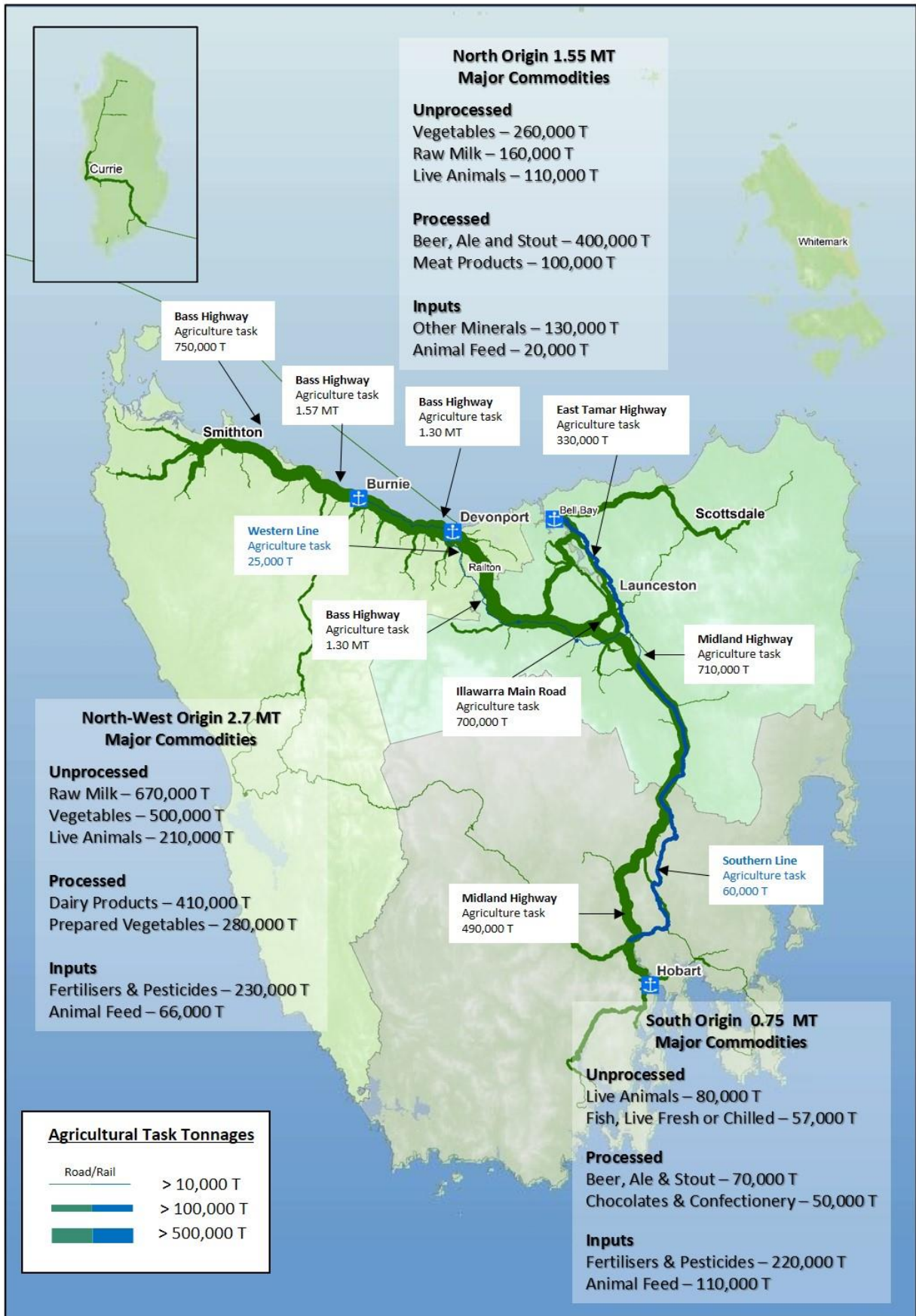


Figure 21: State-wide consumer freight task

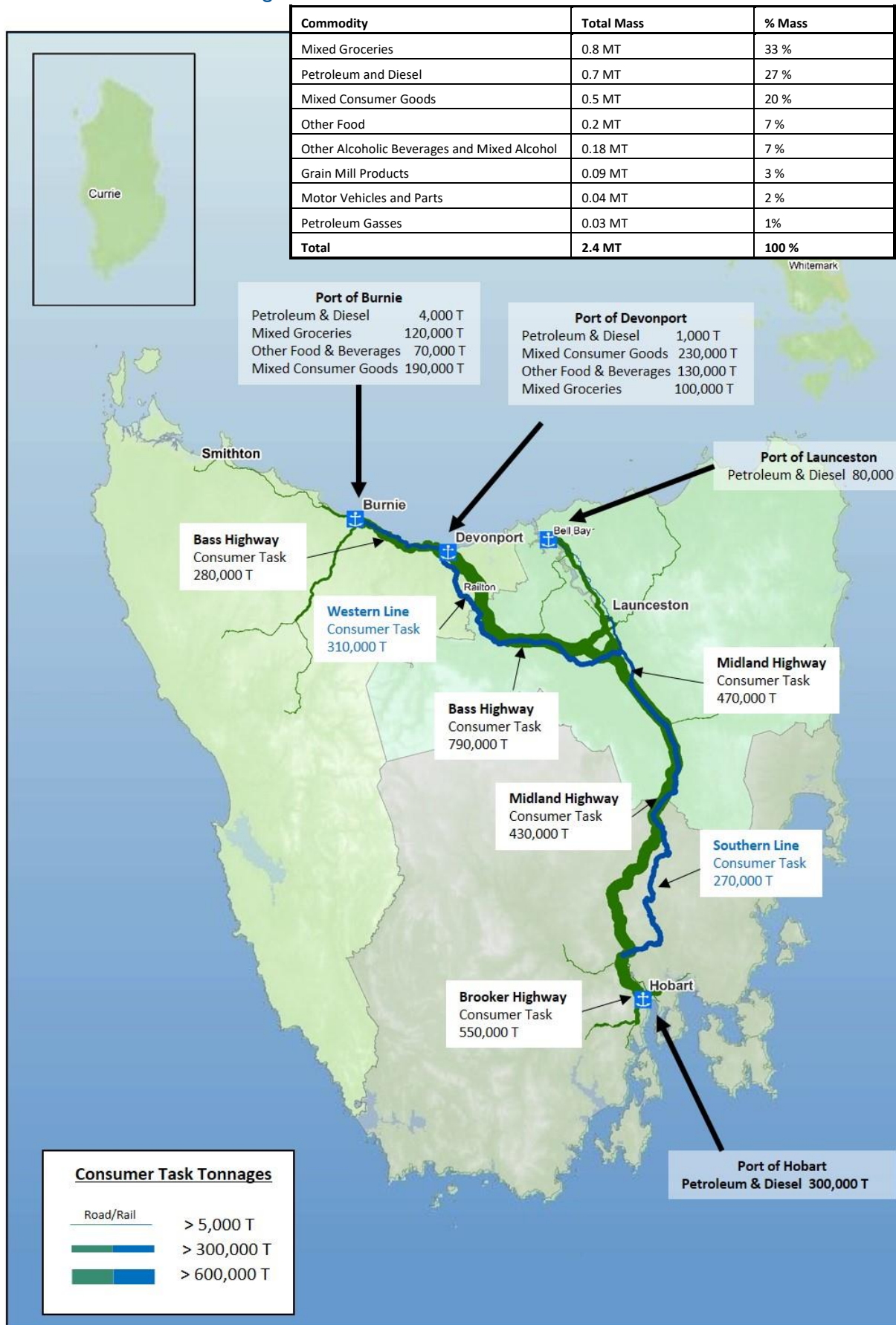
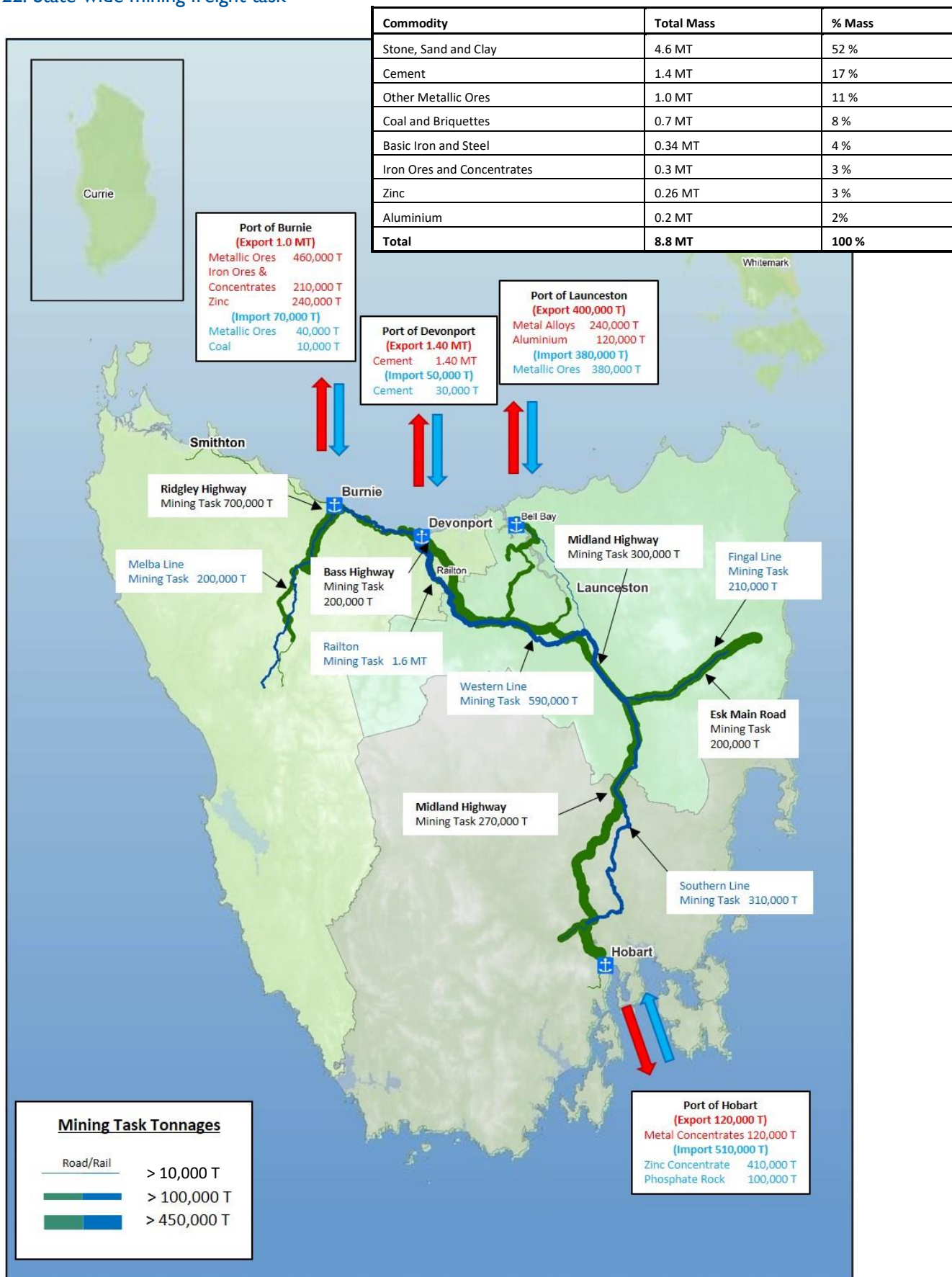


Figure 22: State-wide mining freight task



Data Sources: Department of State Growth 2016-17 Tasmanian Freight Survey and TasPorts 2016-17

# Freight volumes by mode

Trucks carry the majority of Tasmania's land freight task by both mass (89 per cent) and tonne-kilometres<sup>13</sup> (80 per cent). Heavier trucks, including B-doubles, rigid truck and trailer combinations and semi-trailers<sup>14</sup>, carry a large proportion of the state-wide task – 89 per cent of overall tonnage and 88 per cent of tonne-kilometres travelled (Table 2).

Table 2: Freight Volumes by Vehicle Type

Vehicle class	Total state-wide mass (tonnes)	per cent Total task (by mass)	Total state-wide (tonne-kms)	per cent Total task (by tonne-kms)
<b>Rigid trucks</b>	2,500,000	10%	80 million	3%
<b>GA articulated trucks</b>	6,500,000	25%	614 million	28%
<b>B-double or rigid truck &amp; trailer</b>	13,800,000	53%	1.0 billion	47%
<b>Rail (rail only)<sup>15</sup></b>	3,000,000	12%	473 million	22%
<b>Total freight task</b>	<b>25,700,000</b>		<b>2.20 billion</b>	

Table 2 and shows the proportion of the state-wide freight task that is carried by B-doubles and rigid truck and trailer combination vehicles. On Tasmania's major road corridors, including the Bass and Midland Highways, around half of the freight task by mass is carried by these vehicles.

General Access (GA) articulated trucks carry around 25 per cent of the state-wide freight task, and also carry a significant proportion of freight on regionally significant routes, including the East Tamar Highway in the north, and Frankford Road in the north west.

<sup>13</sup> Tonne-kilometres are a commonly used measure for freight transport, and one tonne-kilometre represents the transport of one tonne of freight over one kilometre.

<sup>14</sup> Many of these vehicles are High Productivity Vehicles (HPVs), that is, specialised truck and trailer combinations that provide the ability to shift more freight per vehicle trip. B-doubles are an example of a high productivity vehicle.

<sup>15</sup> Some freight tasks that use rail also use trucks on the road network for short parts, primarily for last mile access to access the rail network and to reach the final destination. These additional components are not considered in the truck totals presented in the above table.



Rail is an important part of Tasmania's freight system, and while it only carries around 12 per cent of the state-wide freight task in terms of volume, it carries around 22 per cent of the total task in terms of tonne-kilometres travelled. Freight tasks carried by rail are generally moved over a longer distance compared to road.



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