



Performance Based Standards  
Past, Present, Future  
Les Bruzsa

IRTenZ  
TRANSPORT INNOVATION  
2017 OCT

# News of the day



"To satisfy PBS requirements, LINX opted for Hendrickson running gear," said Law.

Home Magazine Industry News Featured Stories Trailer Builder Profiles Fleet Innovation Product Resources

Advertise Subscribe

## LINX orders 31 PBS-approved B-double trailer combinations from Vawdrey

Posted on Wednesday 25th, October 2017.

[Share](#) | [f](#) [t](#) [e](#)



Diversified logistics infrastructure and solutions provider, LINX Cargo Care Group, has placed its biggest order to date with trailer manufacturer, Vawdrey Australia.

LINX has invested in 31 Performance-Based Standards (PBS) approved B-double combinations fitted with Hendrickson running gear to bolster its national fleet.

LINX National Asset and Compliance Manager, Bill Law, has said that the company's key mandate is to embrace "top of the range" safety

options for its specialised heavy vehicle equipment.

"A significant portion of the fleet needed to be refreshed and upgraded contracts," said Law. "This was the perfect opportunity to align the in the market."

Safety technology in the new equipment is compliant with the strict vehicle stability.

"To satisfy PBS requirements, LINX opted for Hendrickson running

"Specifically, we requested INTRAAX AAT250 and AAL250 11.3 as HXL7 wheel-ends.



Ron Finemore Transport has ordered two Performance-Based Standards (PBS) approved Cartwright refrigerated trailers – the first from the UK-based manufacturer to be sold in Australia.

Cartwright Transport General Manager, Howard Hansen, told *Trailer Magazine* the first trailers for Ron Finemore are PBS-approved 26-pallet refrigerated trailers are due for delivery in mid-December.

ADVERTISEMENT

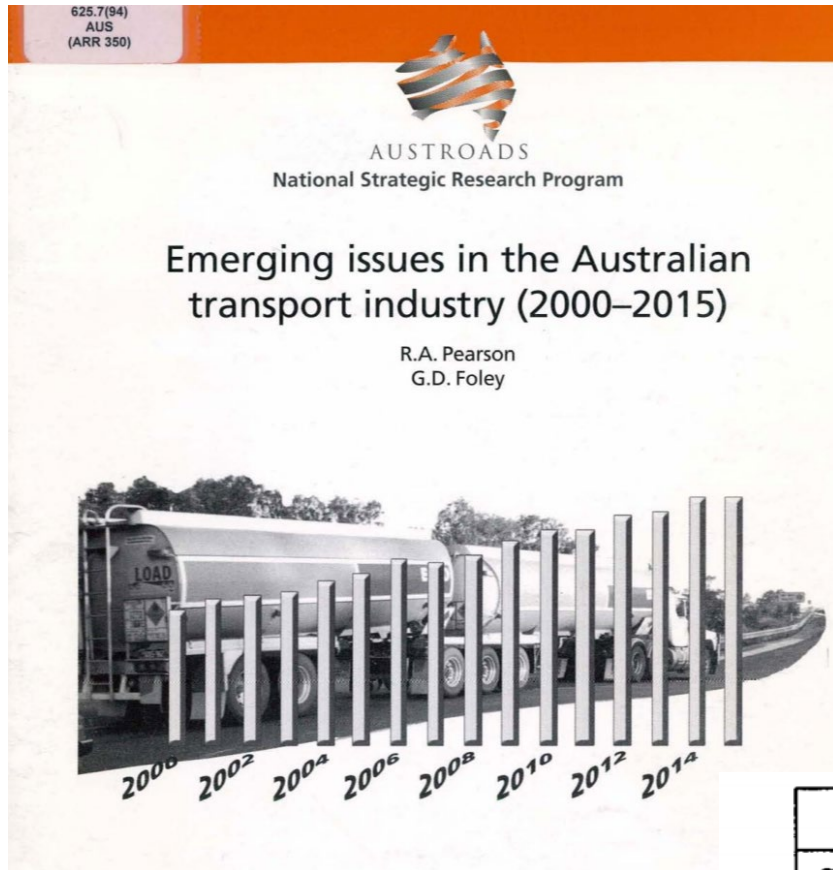
**DRIVEN BY QUALITY**  
Explore world class quality tanker and trailer design and manufacturing.

[WWW.GRW.CO.ZA](http://WWW.GRW.CO.ZA) [DRIVE WITH US >](#)

[Click here to join the CRT network today](#)

[Search](#)

# Difficulties in predicting the future

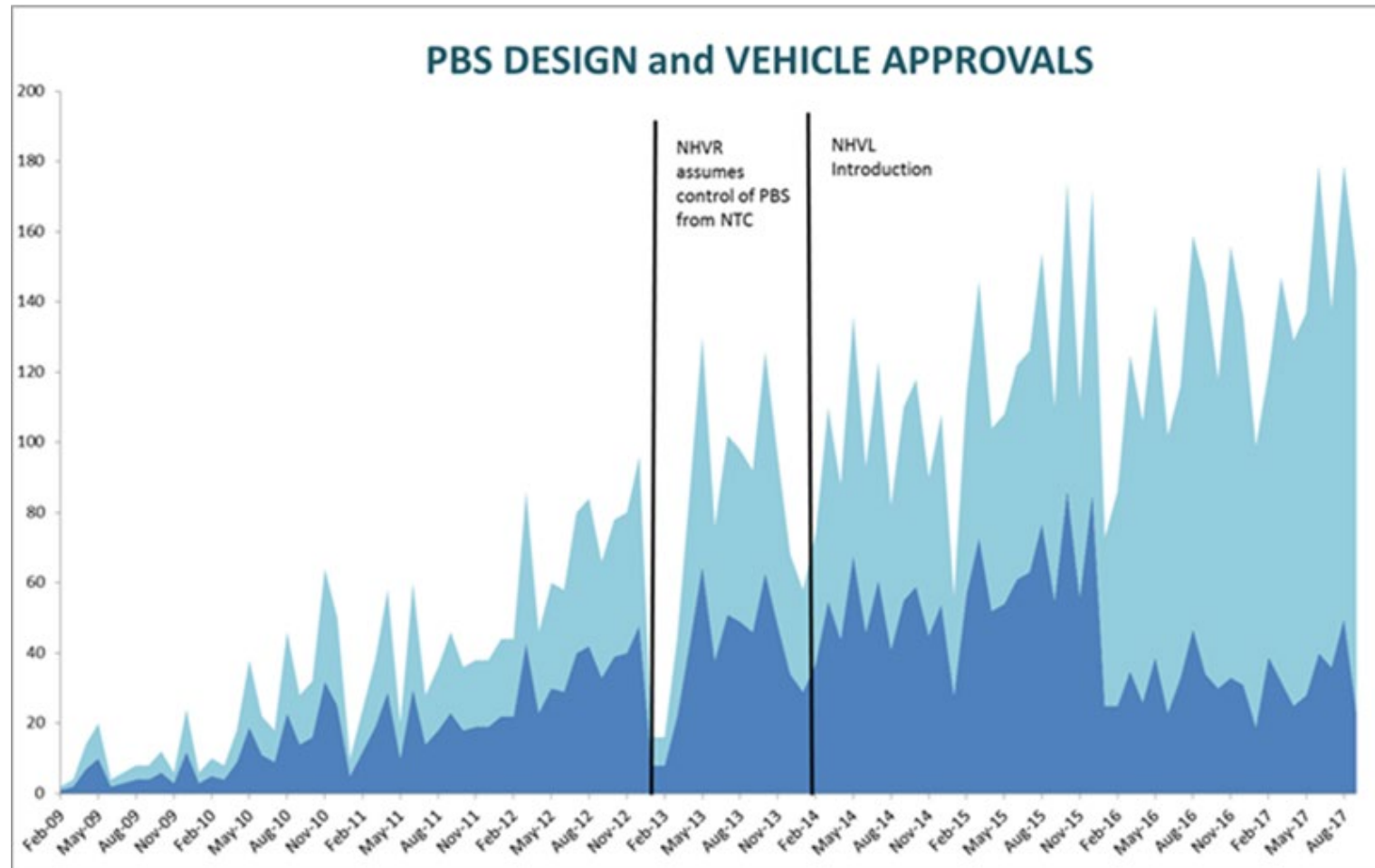


Allowable axle loads by 2015 or 2020

Load Type	Load (t)
Single axle, single tyres	7
Single axle, dual tyres	10-13
Tandem axle, dual tyres	19-20
Triaxle, dual tyres	26-27
Gross mass, 6 axle articulated vehicles	50-53

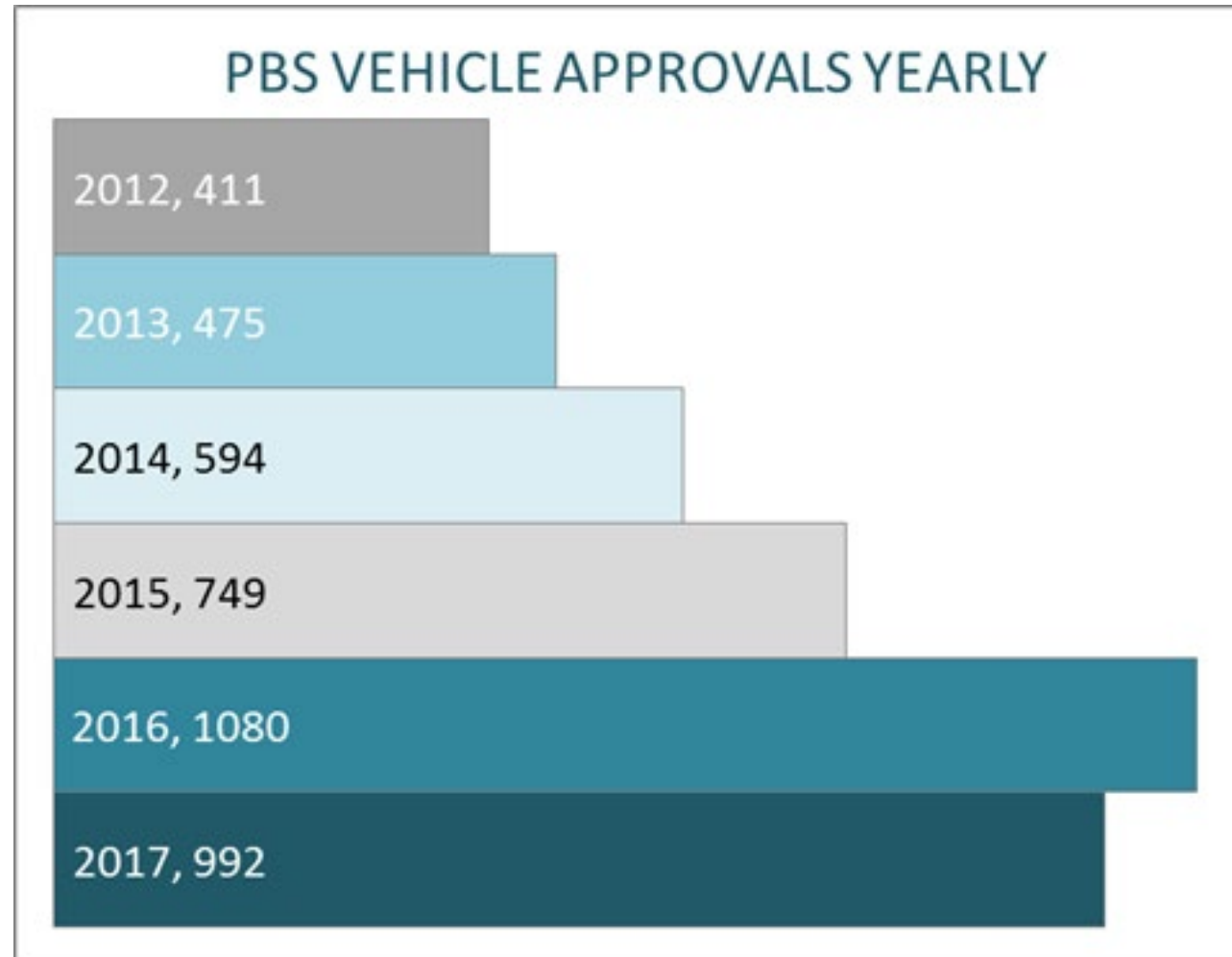
# PBS Activities

- Exponential growth in PBS applications and approvals



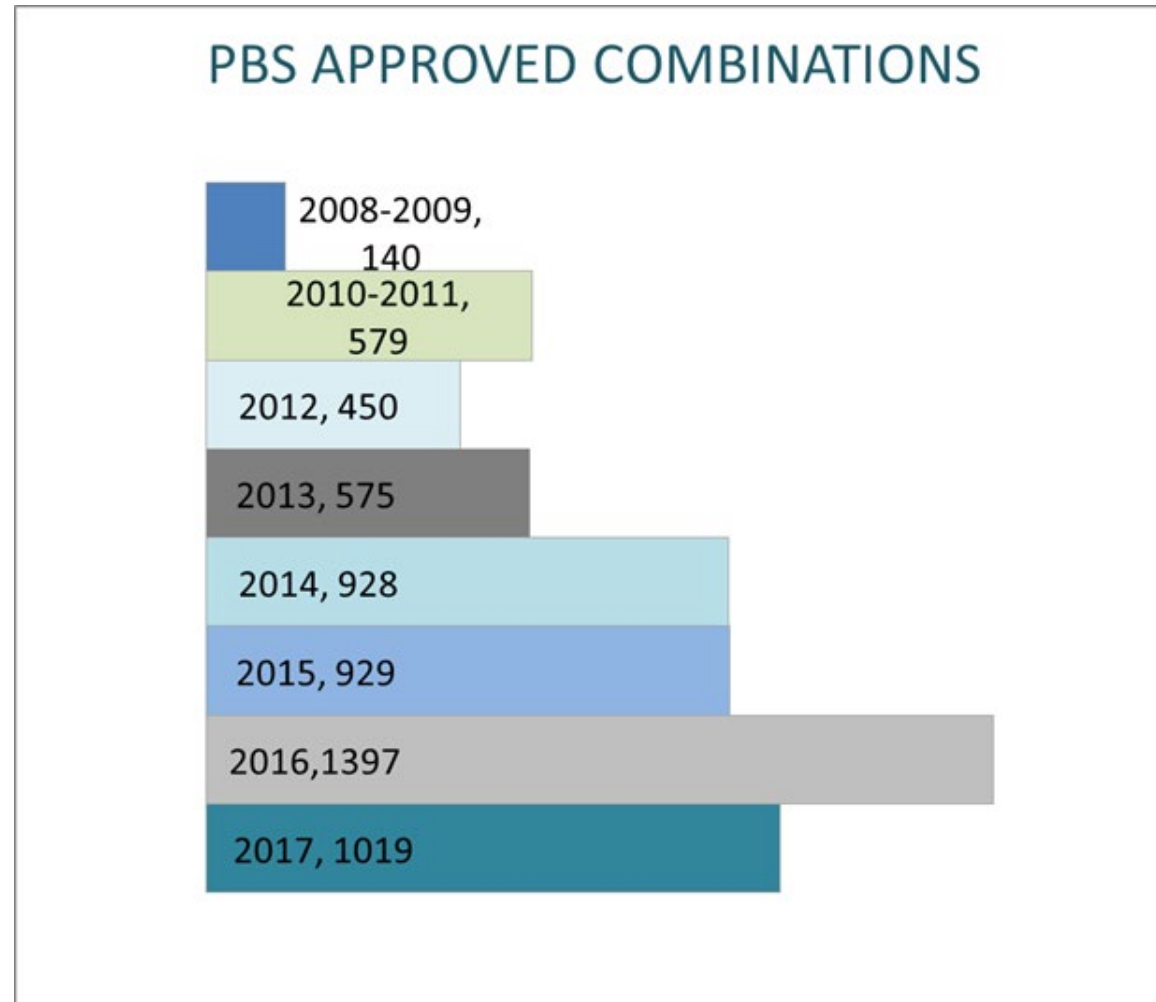
# PBS Vehicle Approvals

- 20-30% increase year by year



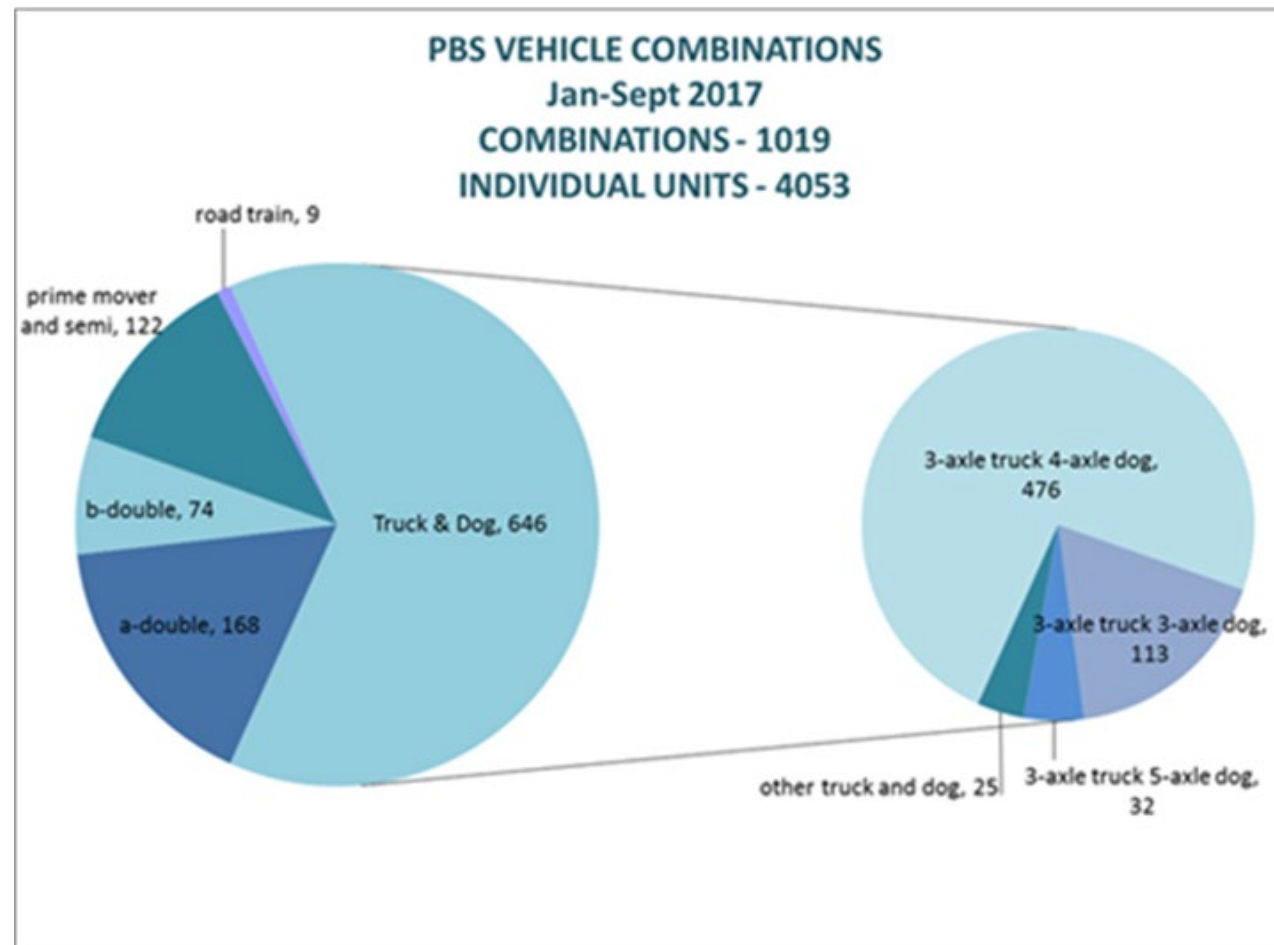
# PBS Combinations

- 6017 approved PBS combinations on register (30/09/2017)



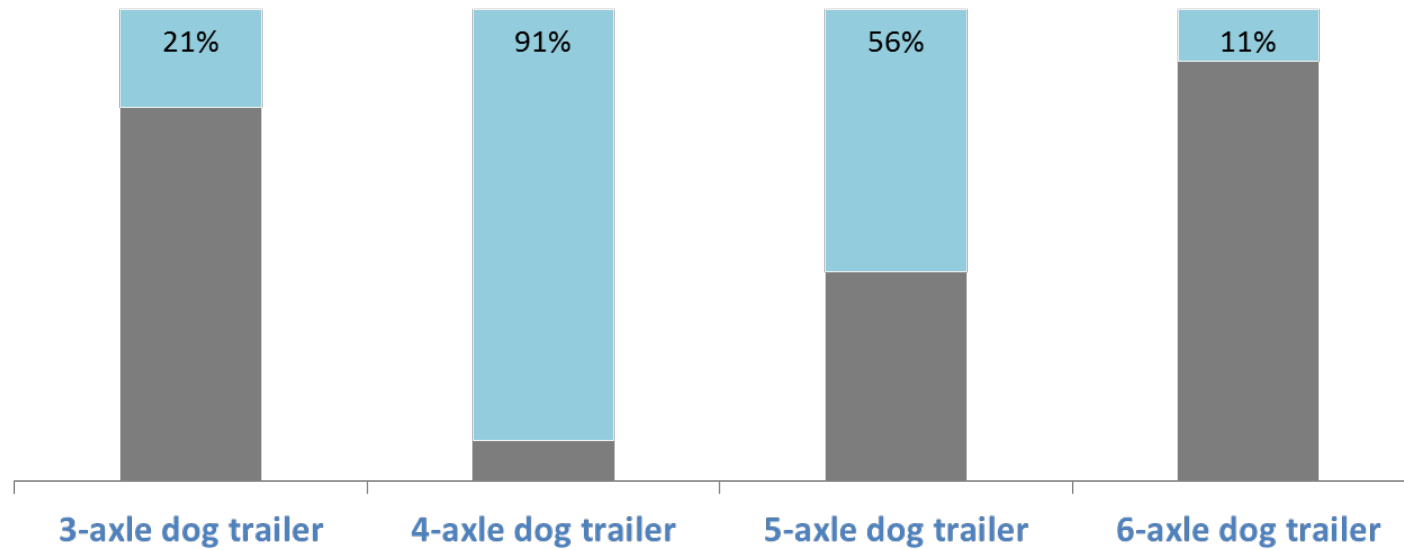
# PBS Combinations

- Based on ARTSA/NHVR estimates, more than 25% of **all new equipment** registered in 2017 would be PBS approved



# PBS Approved Combinations

PBS Approved dog trailers  
as % of new registrations in 2017

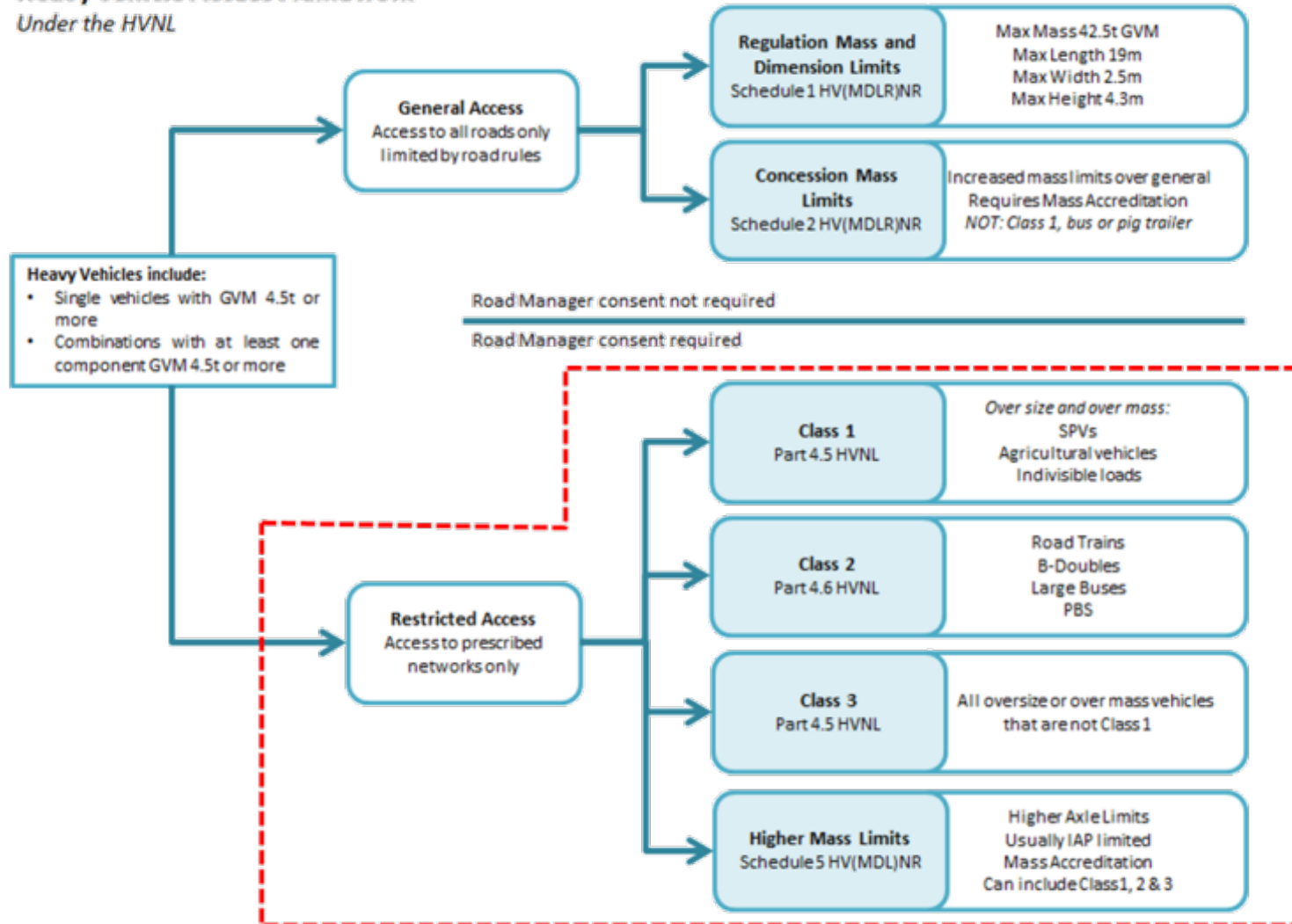




# Network access

## Heavy Vehicle Access Framework

Under the HVNL



# PBS Access Statistics

- 2016-2017

<b>Class 2</b>	<b>8,751</b>
B-Double Permit	1,569
CAB (Controlled Access Buses) Permit	51
PBS Permit	5,903
Road Train Permit	1,228

Q1 FY 16-17

Permit Type	1 Lodge [NHVR]	2 Assess [NHVR]	2 Assess [Customer]	3 Consent [NHVR - RM]	4 Finalise [NHVR]	4 Finalise [Customer]
<b>Class 2</b>	3.01	1.93	3.14	23.44	2.24	1.35
PBS Permit	3.01	1.93	3.14	23.44	2.24	1.35
<b>Amend/Renew/Cancel</b>	2.75	2.19	19.81	52.18	1.33	2.75
PBS In-Principle	2.75	2.19	19.81	52.18	1.33	2.75
<b>Grand Total</b>	2.98	1.96	5.01	26.66	2.14	1.51

# PBS Marketplace (NTC): findings

- Safety – 46% less major crashes per km travelled
- Productivity – range from 15% to 30% compared to conventional vehicles
- Road wear – reduced number of trips has saved an estimated \$65 million in road maintenance in 2016
- Environmental – in 2016, 94 million litres of fuel saved which equates to 250,000 tonnes of CO<sub>2</sub>

# PBS Marketplace (NTC): findings

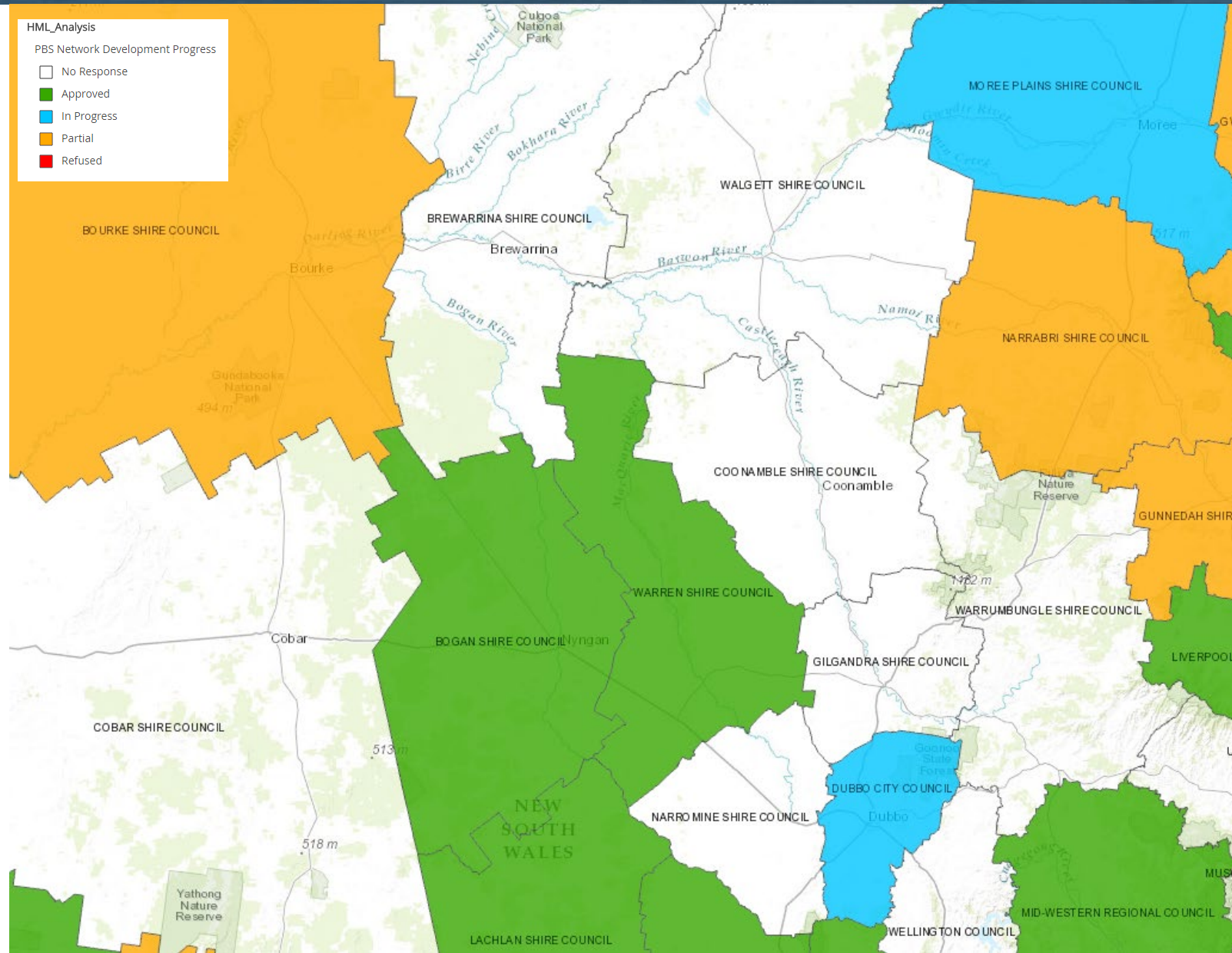
<b>Commodity</b>	<b>Proportion</b>
Quarry/sand/gravel	34%
General freight	13%
Tankers (Dangerous Goods and non-Dangerous Goods)	11%
Grain	8%
Minerals	8%
Building materials	7%
Containers	6%
Groceries	5%
Parcels	3%
Livestock	2%
Others	3%

# PBS Marketplace (NTC): major barriers

- Access uncertainty is the major single barrier
  - Lack of declared PBS networks
  - Complexity of dealing with road managers
  - Inconsistent operating conditions
  - Low conversion rate of In Principle approvals to permits
- Complexity and cost of the vehicle approval process
- Innovative vehicles are often put in a 'too hard' basket



# Map of sign-up to PBS networks



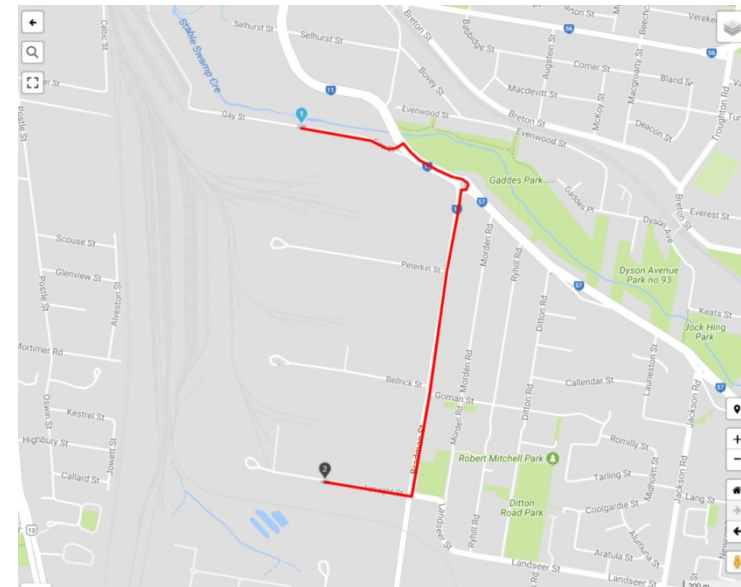
# PBS Marketplace (NTC): findings

State	Level 1	Level 2	Level 3	Level 4
QLD	General access network	B-Double network (930km for 2B)	Type 1 Road Train network (340km for 3B)	Type 2 Road Train network (1,113km for 4B)
NSW	108,548km or 60% of NSW state roads	56,582km or 30% of NSW state roads	6,654km or 4% of state roads	Only one road section of 130km
VIC	110,340 km or 47% of all roads	64,064km or 27% of all roads (45,838km for 2B)	Currently unavailable	
SA	23,303km or 8.3% of all roads	15,565km or 5.5% of all roads	9,142km or 3.3% of all roads	1,019km or 0.4% of all roads
TAS	26km (one section only)*	26km (one section only)	Currently unavailable	
NT/WA	Provides open road train access to most areas			

\* TAS provides wider access to truck and dogs via Class 3 notice.

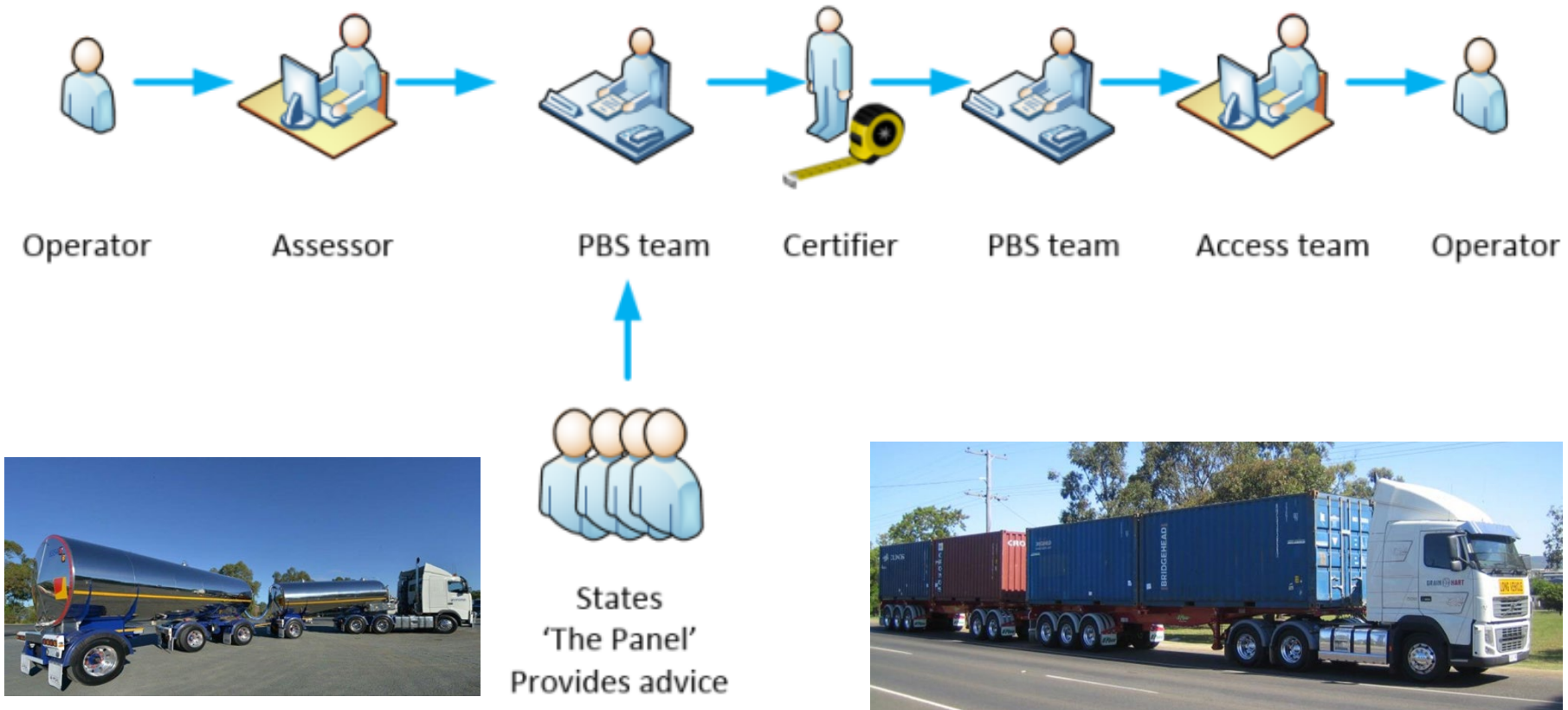
# PBS Access Issues

- PBS A-double application
- Local council was concerned about the ability of the combination
  - to safely navigate around the round about
  - to make a safe turn in and out of Lysaght and Gay Street
- Following a successful test access was approved



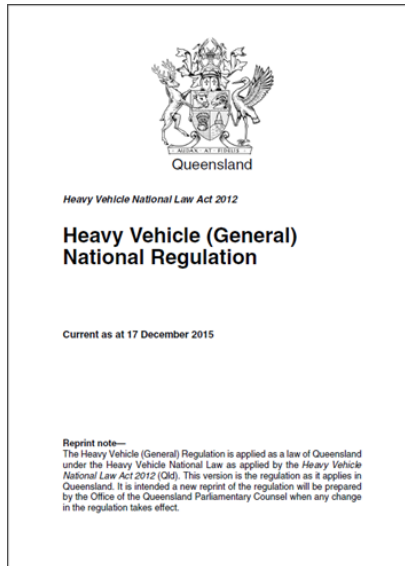


# How does the scheme normally operate?



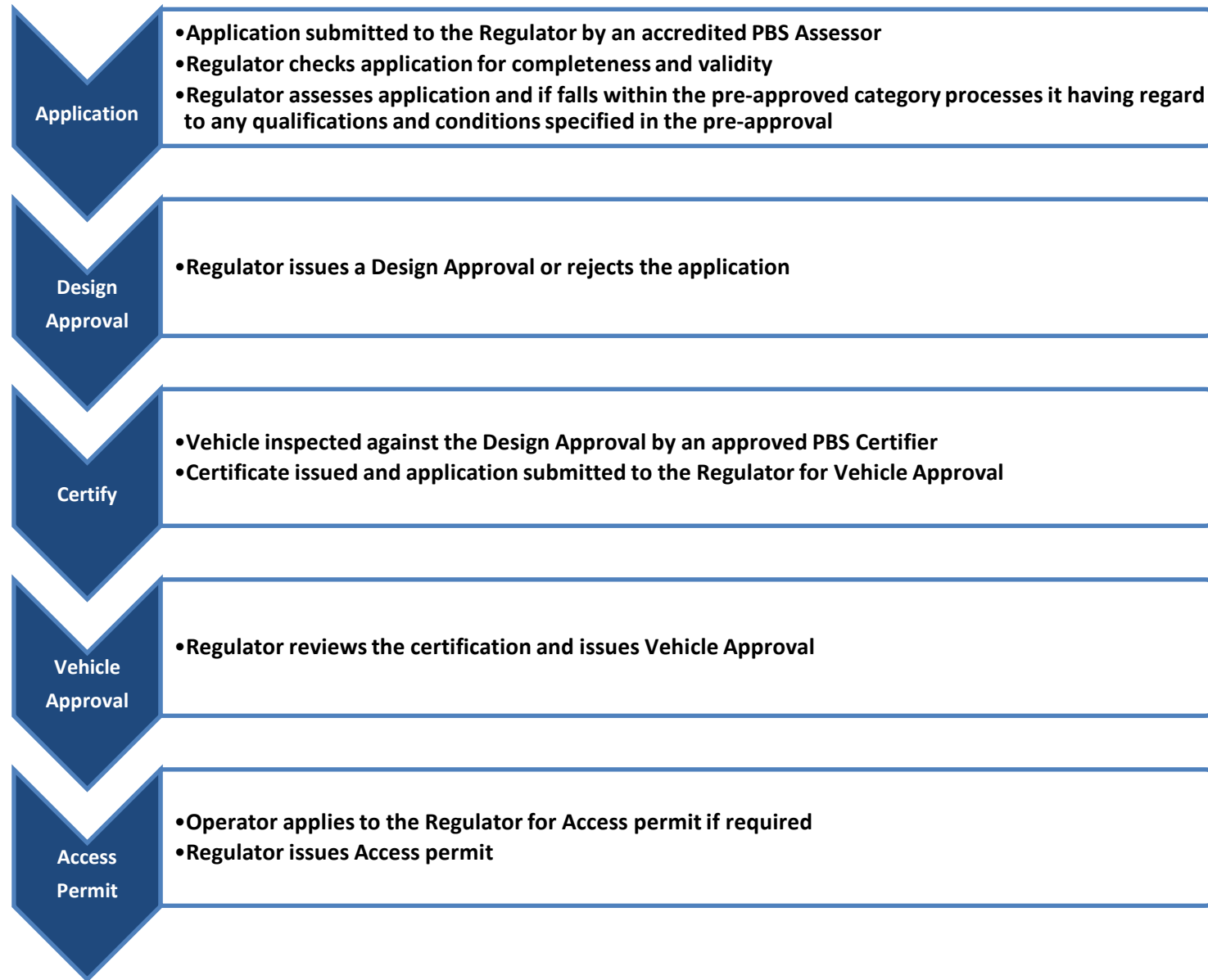
# PBS scheme improvements

## Pre-advice approval process



- Improvements in the process initiated by NHVR
- HVNL requires that PBS applications are sent to the PRP
- The Panel has approved an alternative process for truck and dog combinations
- PBS applications that comply with pre-approved specifications are approved by NHVR
- Significant operational changes, quality assurance systems introduced including PBS Business Rules
- Introduced for truck and dog combinations in March/April 2017
- 37 combinations have been approved
- PBS Design Approvals have been issued within 3 business days compared to average 25 days

# Pre-advised approval process



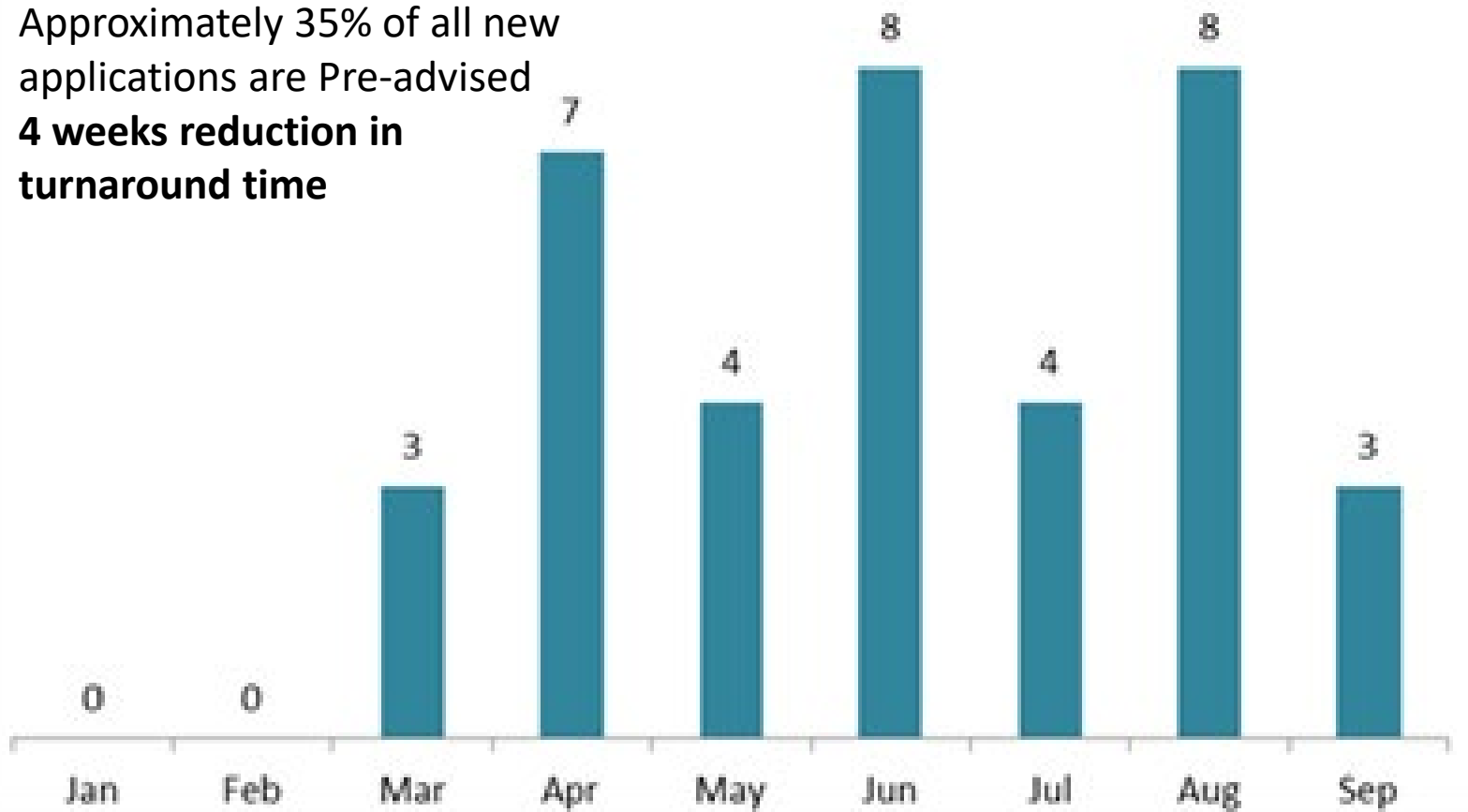
# Pre-advised vehicle specifications

Truck	
Single steer axle <sup>o</sup>	
Tandem drive axles <sup>o</sup>	
Bin type load area	
Dog trailer	
Single or tandem front axle <sup>o</sup>	
Tandem rear axle <sup>o</sup>	
Bin type load area	
Combination	
Maximum length	20.0m
Maximum height	4.3m
Maximum width	2.5m
Maximum steer axle mass	6.0/6.5t*
Maximum drive axle mass	16.5/17.0**
Maximum single axle mass	9.0t
Maximum tandem axle mass	16.5/17.0**
Maximum 6-axle truck and dog Level 1 GCM	48.0/48.5t*
Maximum 6-axle truck and dog Level 2 GCM	49.0**/49.5t* **
Maximum 7-axle truck and dog Level 1 GCM	50.0/50.5t*
Maximum 7-axle truck and dog Level 2 GCM	57.0**/57.5t* **
Level 1 and Level 2 PBS Standards	Passes
Tier 1 bridge formula	Passes at applicable axle masses

# Pre-advised truck and dog combinations

## PRE-ADVISED TRUCK AND DOG APPLICATIONS

Approximately 35% of all new applications are Pre-advised  
**4 weeks reduction in turnaround time**

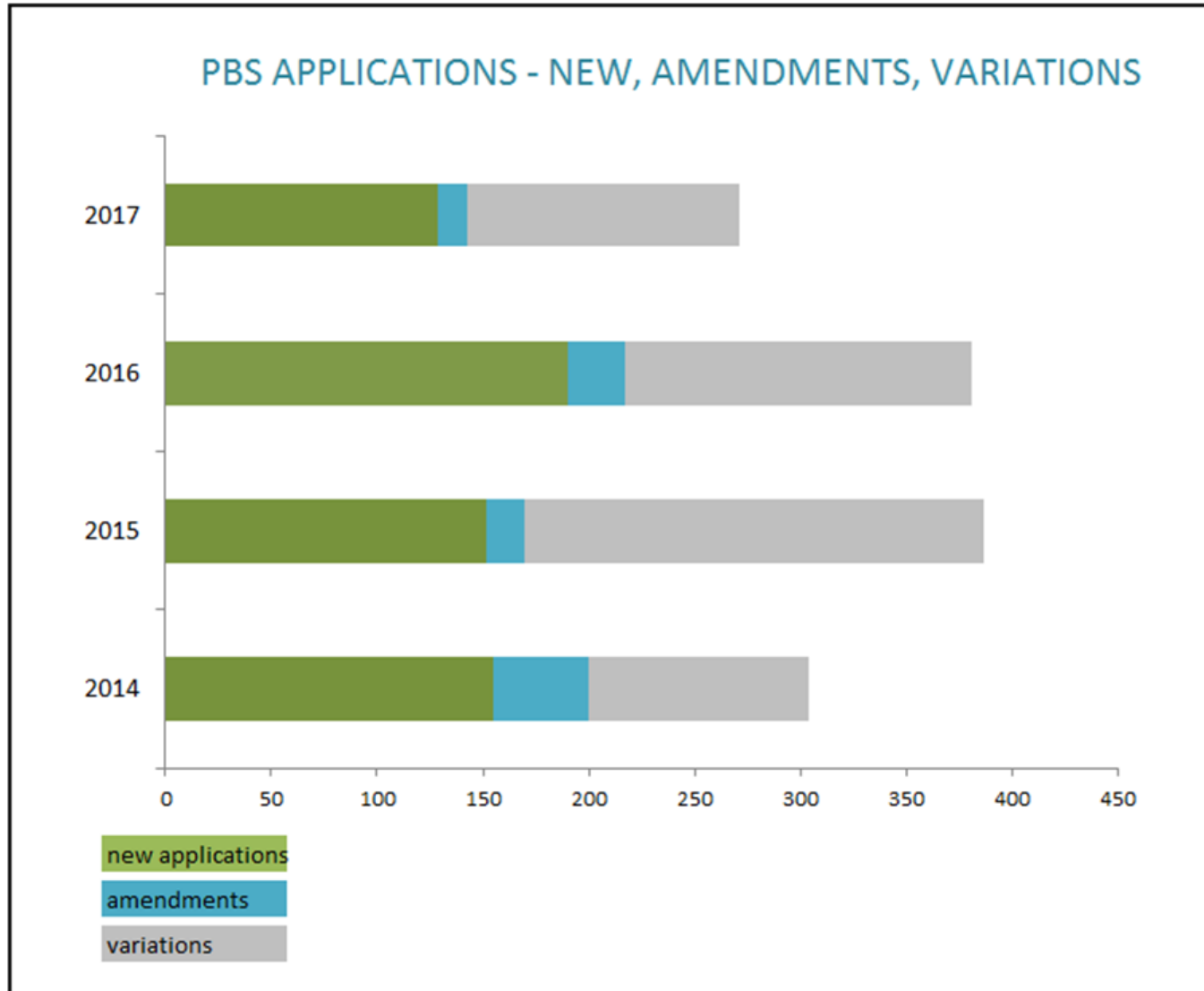


# Pre-advised approval process

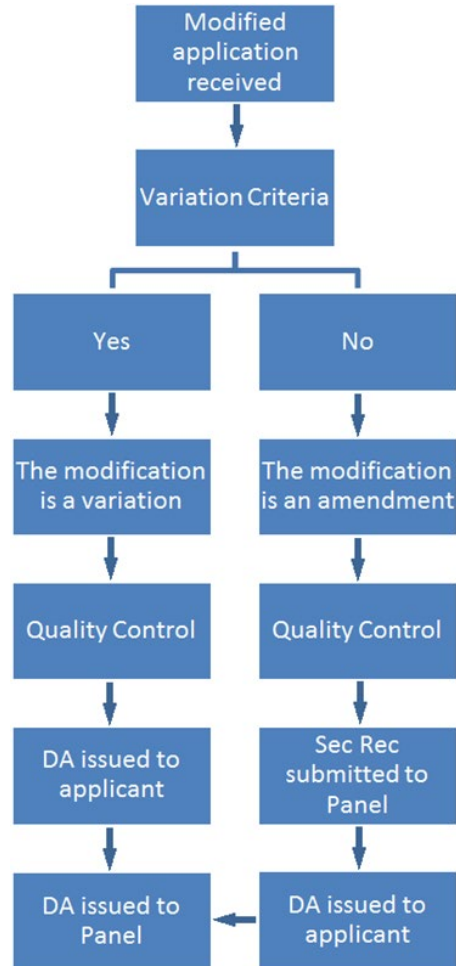
- Very positive feedback from industry
- The Panel supported the introduction of a similar process for
  - Pm-semi combinations
  - B-doubles
- Additional combination types will be included in the near future (A-doubles)



# PBS Applications



# PBS Scheme improvements – “Variations”



- Variations are minor modifications that would not require submission to the Panel
- These changes don't lower the level of PBS compliance
- All PBS DA modifications must be assessed by a PBS Assessor. These include:
  - **Dimensional changes, provided the OAL and height does not exceed the maximum for that level as per Route Classification Guidelines**
  - **Changes in component selections such as steerable axles, engines, transmissions, suspensions and tyres**
  - **Inclusion of additional prime movers**
  - **Changes to payload heights due to different component selections and/ or dimensional adjustments**
  - **Inclusion of reduced masses to achieve Tier 1 compliance**
  - **Increase in gross combination mass/ axle group masses subject to an appropriate level of bridge assessment**
- Inclusion of additional dimensional exemptions, other than for width



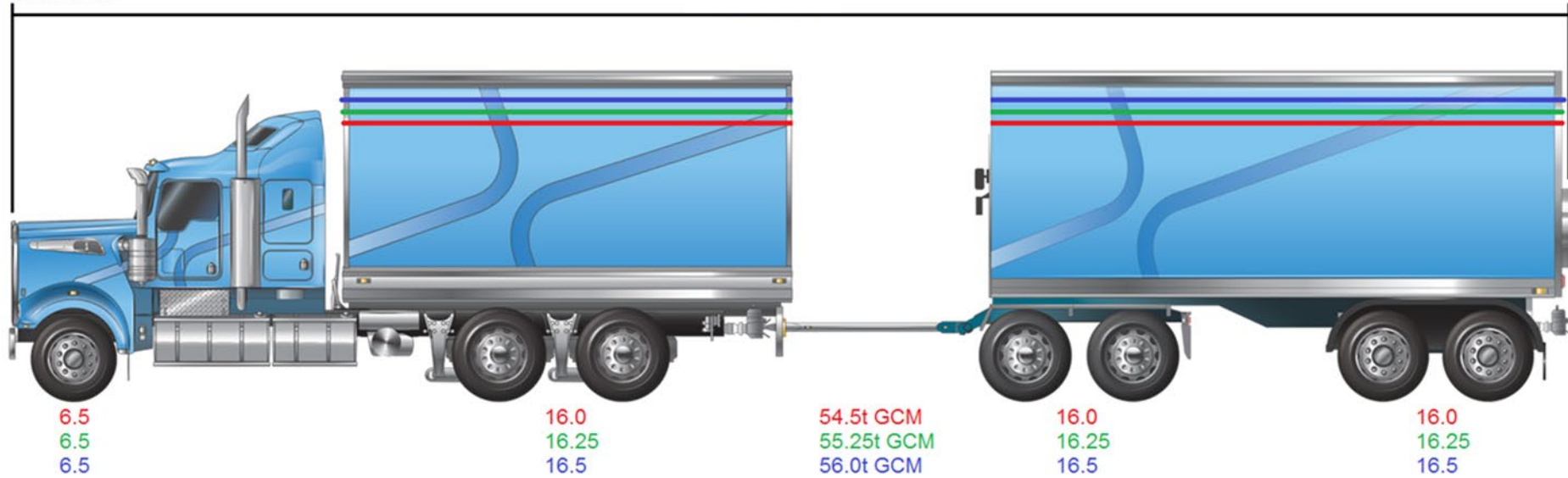
# PBS Variations example (1)

PBS Level 2

Original Design

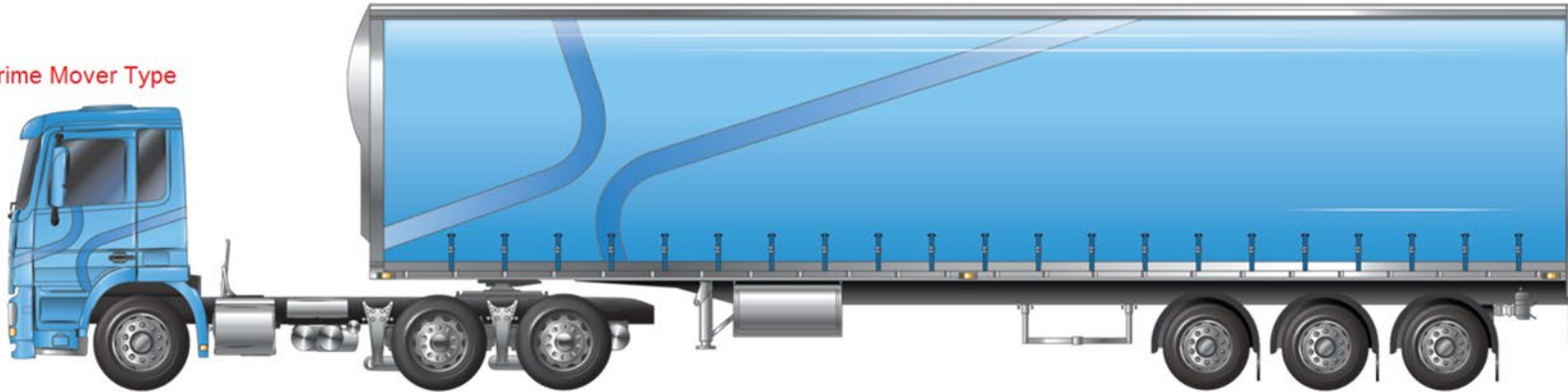
Variation 1

Variation 2



# PBS Variations example (2)

Original Prime Mover Type

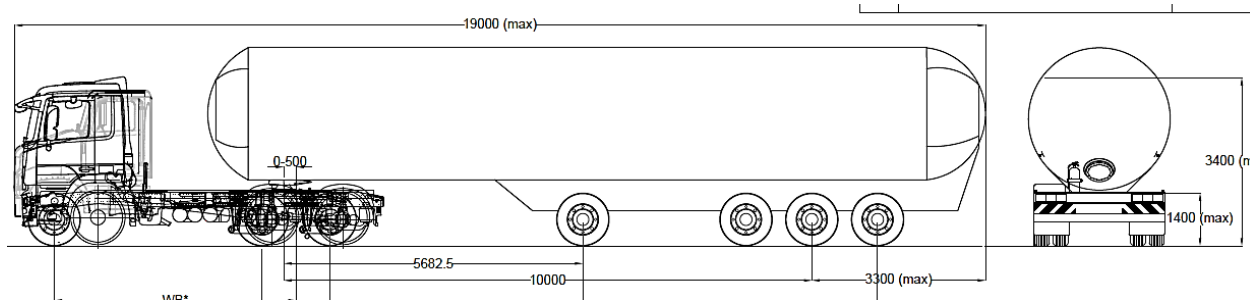


Variation Prime Mover Type

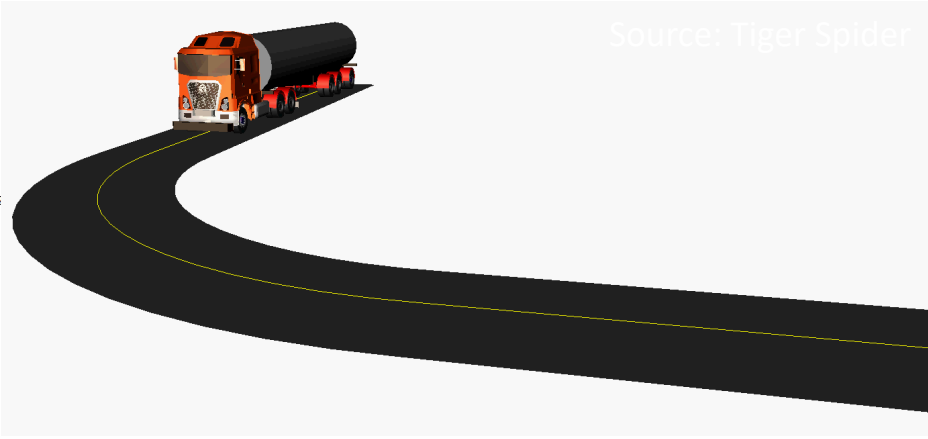
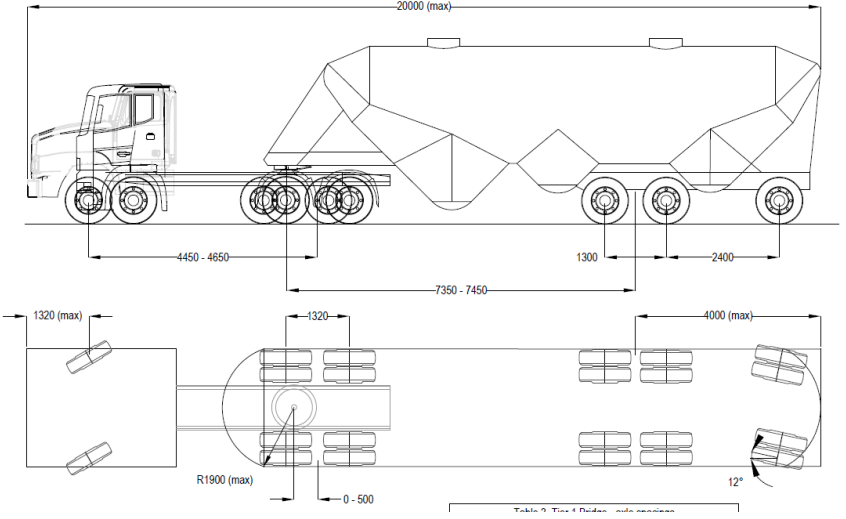
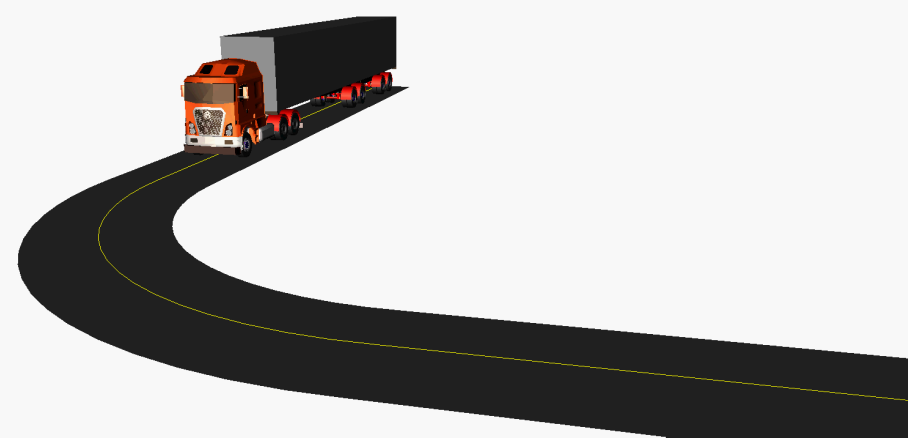
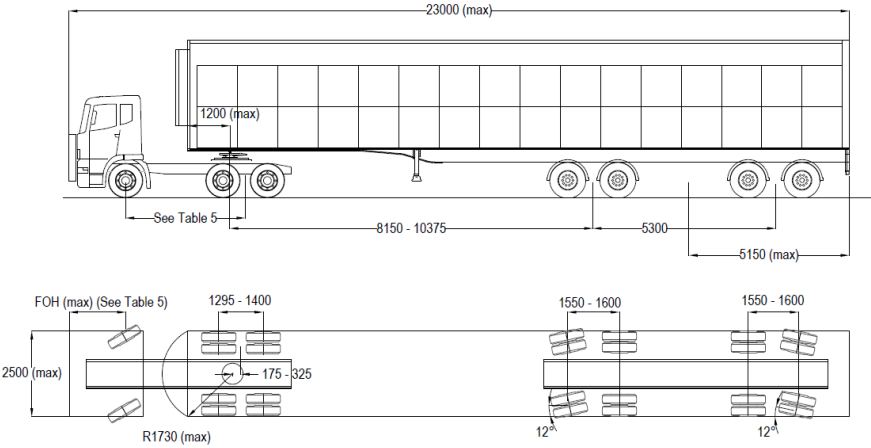


# PBS – Environment for innovation

- LPG semi with two axle groups
- 30% more payload, profitability up by 60%



# PBS – Environment for innovation



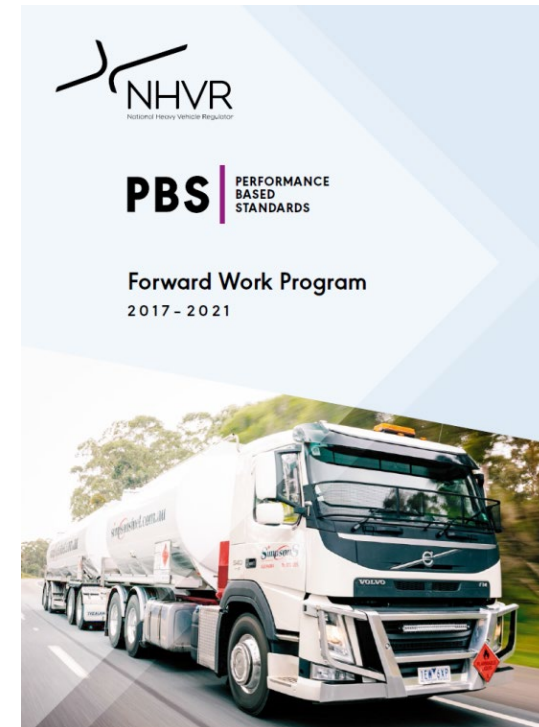
# Application of the PBS toolset

- PBS approved Level 4 combinations in WA
- Tyre carrier
- 2.7m wide, 4.6m
- Super Quad, 194.5 t of GCM, 141t of payload
- 60m long
- These combination don't comply with all PBS standards
- Additional performance measures have been used for their assessments (LTR)



# PBS FW Program

- **Most people unaware that PBS vehicles are operating within their communities**
- **This year the PBS Scheme is 10 years old, no major review or reform**
- **NHVR is developing a 5 year work program that will review and reform the PBS scheme**
- **NHVR already introduced a new, alternative PBS approval processes**
- **Program will be separated into three streams:**
  - **Standards**
  - **Certification**
  - **Access**
- **Short, medium and long term solutions**
- **Detailed consultation with industry and stakeholders**



# PBS FW Program

- Alternative approval process for mature designs
- Reviewing the operation of the PBS Review Panel (PRP)
- Review of PBS Standards
- Pathway from PBS to Regulation (type approvals)
- Increased scope for providing exemptions from ADRs under PBS
- Development of a PBS Database
- Review of PBS certification process
- Interaction between PBS, vehicle modifications and roadworthiness
- Improved auditing of the PBS process
- Streamline the current access process for PBS vehicles



# Questions

