



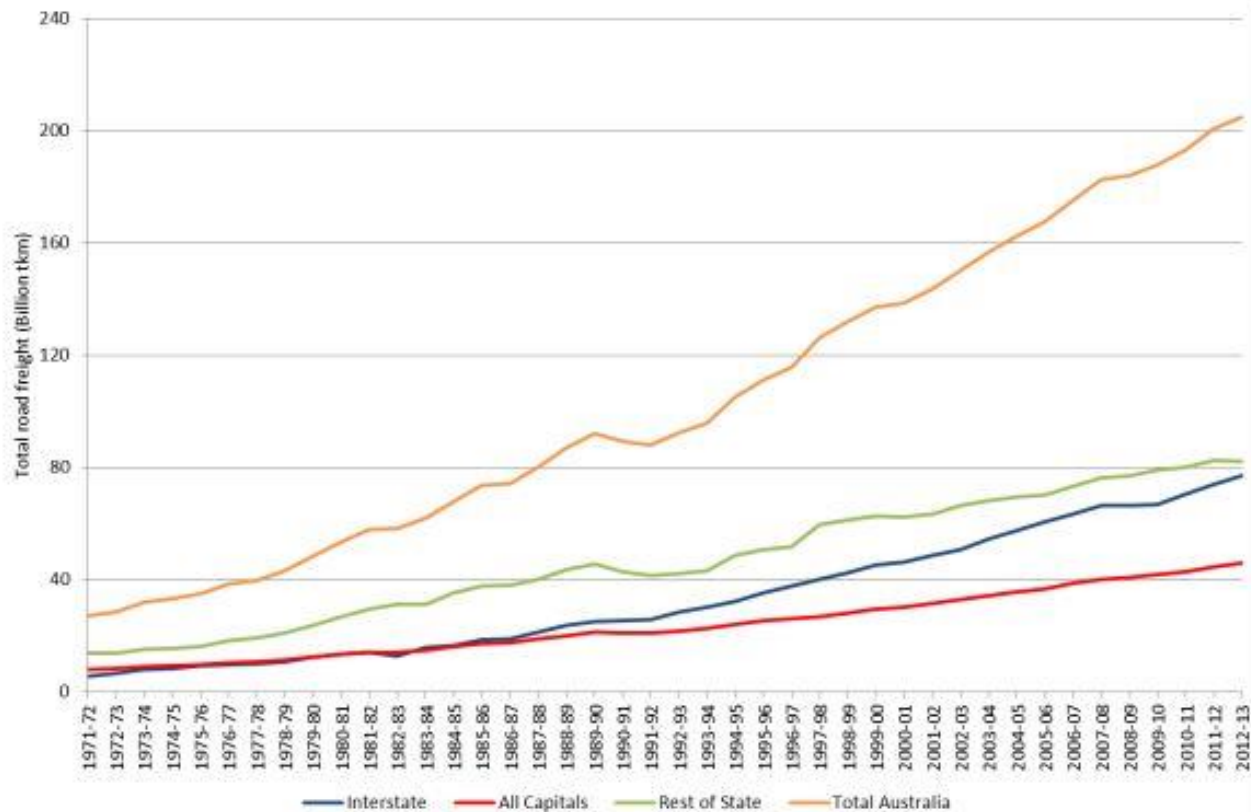
PBS in Australia Access and Operational Issues

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Demand for road freight transport

- In the period from 1971–72 to 2012–13 the total road freight estimate for Australia increased from 27.0 billion tkms in 1971-72 to 204.9 billion tkms in 2012-13



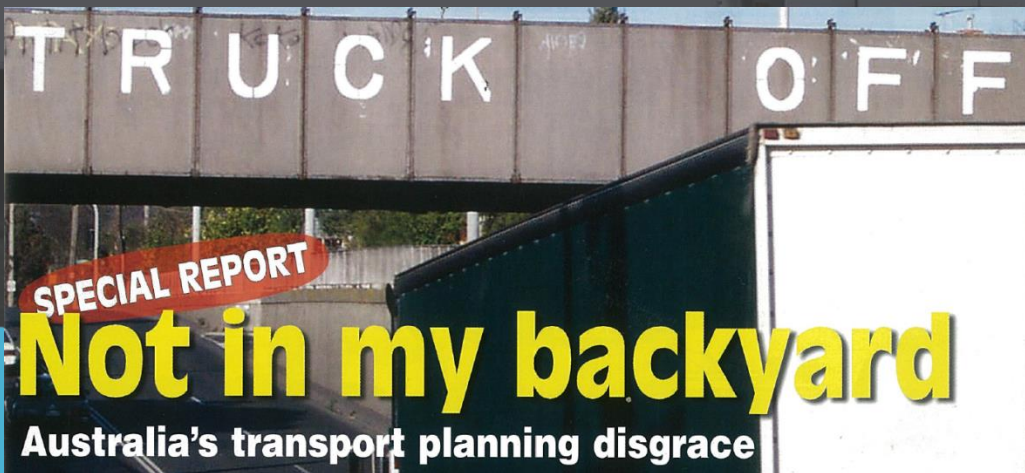
Source: BITRE estimates.

Perception Management

- Role of the media
- Education is needed

ROADS TO NOWHERE

Road freight is expensive, dirty and dangerous. Why are our governments addicted to it?



Monster trucks threaten roads



User Rating: ●○○○○ / 4

Poor ○ ○ ○ ○ ● Best

Rate

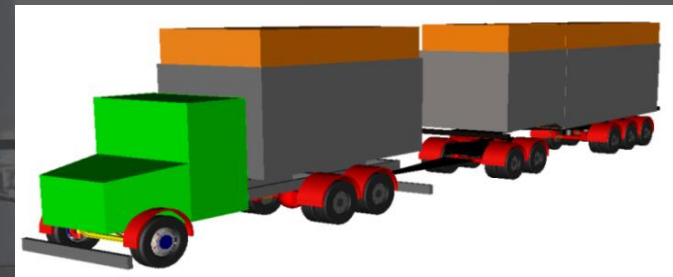


Our aim is to safely maximise road access to efficiently carry out the freight task while minimising infrastructure impacts.



Working With Road Managers

- When considering access for PBS vehicles, the NHVR must consult with the road managers
- Consent is required to be able to issue a permit
- 6 states and territories and 420 local councils
- Councils cover “last mile” access to many locations
- Education about high productivity vehicles is critical



AccessCONNECT

How the system is being improved

- National Access Management Business Model delivering consistency, improved transparency and reduced regulatory burden
- Live performance dashboard developed (pilot)
- Reporting of road manager performance in place
- Road manager portal being piloted
- Improvements in customer outcomes
- Risk smart – risk framework



Access Tools – NHVR Journey Planner

The screenshot displays the NHVR Journey Planner web application. The browser address bar shows the URL <http://gis.nhvr.gov.au/journeyplanner/>. The page title is "NHVR Journey Planner".

The interface includes a navigation menu with options: Map Contents, Journey Planner, Retrieve Journey, Satellite View, Print Map, Draw, Measure, Legend, and Show Info. A search bar is located at the top left of the map area.

The "Map Contents" panel on the left lists various road network categories and their corresponding colors:

- Boundaries
- Road Ownership
- Heavy Vehicle Routes
 - HML AB-Triples
 - HML B-Triples
 - Higher Mass Limit - SA Only
 - HML 19m Network
 - HML B-double 23m
 - HML B-double 26m
 - HML Road Train 32m
 - HML Road Train 36.5m
 - HML Road Train 53.5m
 - HML Vehicle Carrier 23m
 - HML Vehicle Carrier 25m
 - HML Road Train Converter Dolly
 - Higher Mass Limit - VIC Only
 - HML Routes
- Combination Vehicle Networks
 - PBS Level 1A
 - PBS Level 2A
 - PBS Level 2B
 - PBS Level 3A
 - PBS Level 3B
 - PBS Level 4A
 - B-double (19m) Network Over 50 tonnes (NSW Only)
 - B-double (23m) Network
 - B-double (25/26m) Network (27.5m in WA)
 - Modular B-triple Network
 - Road Train (32m) Network
 - Road Train (36.5m) Network
 - Road Train (53.5m) Network
 - High Vehicle (4.6m) Network (NSW Only)
 - AB-triple Network (NSW Only)
 - B-triple Network (NSW Only)
- B-double Commodity Routes (SA Only)
 - B-double (Grain) Network
 - B-double (Fertiliser) Network
 - B-double (Hay and Bulk Feeds) Network
 - B-double (Dairy Milk) Network
 - B-double (Livestock) Network
 - B-double (Logging/Timber) Network
 - B-double (Wine) Network
 - B-double (Wool (Baled)) Network
 - B-double (Fruit and Vegetables) Network
- Road Train Commodity Routes (SA Only)
 - Road Train (Grain) Network
 - Road Train (Fertiliser) Network
- Points of Interest

The map shows a detailed view of Adelaide, South Australia, with various road networks overlaid in different colors (green, red, blue, yellow). A scale bar at the bottom left indicates 1:268895, with 0, 3, and 6 km markers. The map data is attributed to Esri, OpenStreetMap contributors, HERE, DeLorme, and USGS.

PBS performance levels are linked to access levels

- 4 levels of PBS access
- PBS standards have been developed based on HV fleet performance

Prescriptive		PBS		
Road Access Level	Max Length	Vehicle Performance Level	Network Access by Vehicle Length, L (m)	
			Access Class	Access Class
			'A'	'B'
General	$\leq 19\text{m}$	Level 1	$L \leq 20$ (General Access*)	
B-Double	$\leq 26\text{m}$	Level 2	$L \leq 26$	$26 < L \leq 30$
Road Train 1	$\leq 36.5\text{m}$	Level 3	$L \leq 36.5$	$36.5 < L \leq 42$
Road Train 2	$\leq 53.5\text{m}$	Level 4	$L \leq 53.5$	$53.5 < L \leq 60$

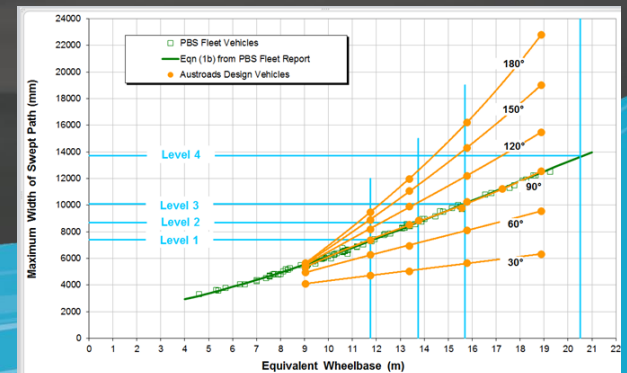
Low speed swept path (LSSP)

- Based on the performance assessment of the fleet
- ADR and AUSTRROADS requirements were considered
- “A” and “B” classes must comply with the same performance requirement (i.e.. PBS Level 2A and Level 2B combinations)
- Vehicle design could improve performance



LSSP – Considerations

- PBS vehicles would fit within the Austroads turning path templates for their rough equivalents (i.e.. PMSEmi 19m) in the critical part of the turn;
- For conventional vehicles, a single 90 degree turn is sufficient to evaluate low-speed swept path performance. Full turning path templates for a range of turn angles are considered to be not necessary;
- The PBS low-speed turn performance measures: low-speed swept path, frontal swing, tail swing, and steer tyre friction demand are sufficient and robust set of measures for evaluating low-speed turn performance of heavy vehicles;
- PBS Level 1 length limit review: 22-23m ?



PBS issues - PVLS

The Gross Combination Mass (GCM) of PBS vehicles is not limited directly

GCM may be limited by bridge loading, the PBS vehicle Safety standards or PBS Network Classification Guidelines (General Access)

There is a need for a national accepted approach to assessing pavement wear (“Green line” method has not been endorsed by Transport Ministers)

Charging methods are not available

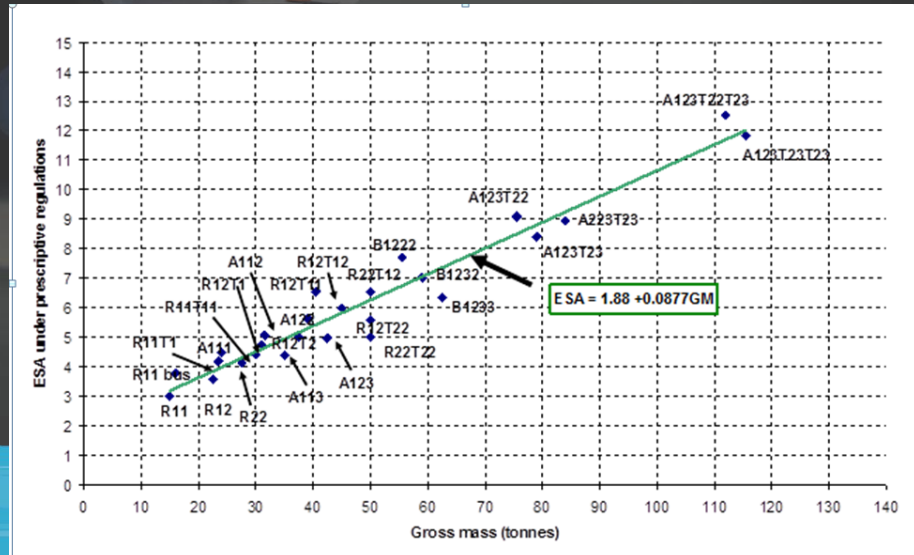
Lack of uniformity between jurisdictions

Penalties on single or tandem axle groups

Horizontal loading is not considered



	Steer	Twin Steer	Single Axle	Tandem Axle	Tri-Axle	Quad Axle
GML	6.0/6.5	10/11	9	16.5	20	20
CML	6.0/6.5	10/11	9	17	21	21
HML	6.0/6.5	10/11	9	17	22.5	27 PBS



PBS concepts – AB-double

- 2 versions with Level 1 and Level 2 masses
- Application for the dairy industry
- Significant productivity benefits
- Significant tyre savings indicating reduced pavement impacts



PBS issues - Bridge

Bridge Loading

The maximum effect on a bridge measured relative to a reference vehicle

Tier 1 – Bridge formulae (prescriptive)

Tier 2 – Network type assessment with a reference vehicle

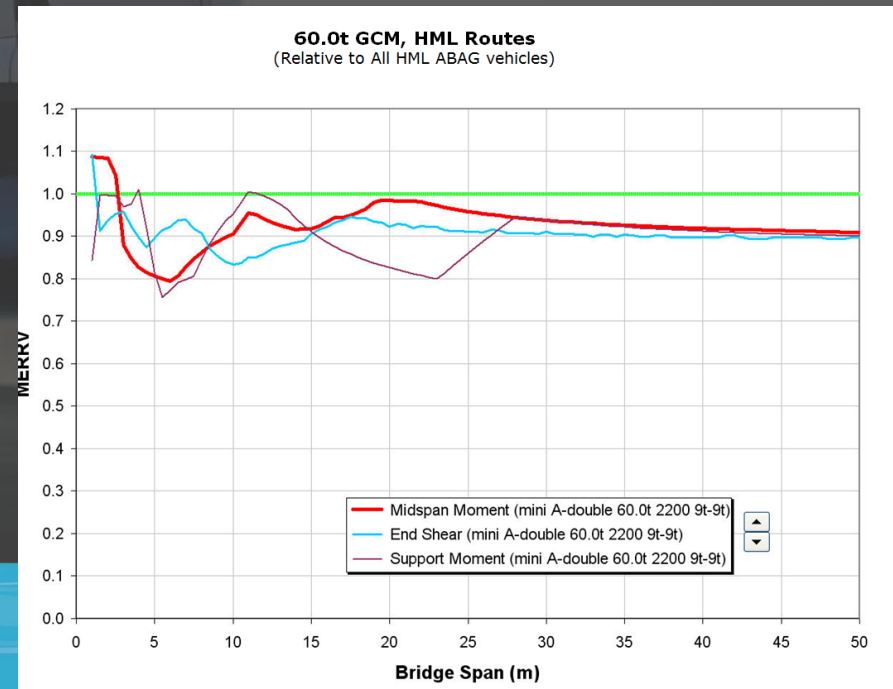
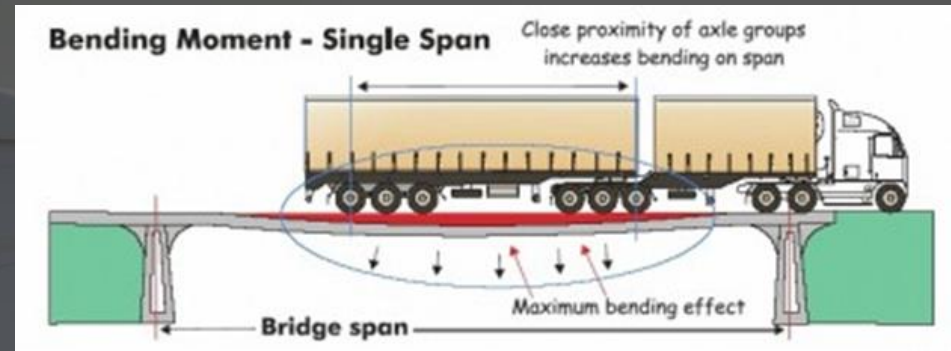
Tier 3 – Individual bridge assessment

No transparency in assessments

Lack of uniformity between jurisdictions

What is a reference vehicle?

What is the basis of applying specific operating conditions (OBM)?



PBS Examples – PBS 20m Pm semi

PBS Level 1 – 20m max overall length, 45.0t of GCM

Productivity increase: from 20-22 pallets to 26 pallets (new designs with 28 pallets)

A blueprint design is available – no assessment is required



PBS Examples

Utilisation of trucks with different axle configurations

4-axle truck and 5-axle dog

AAB-quad



PBS Examples – Road trains

PBS Level 3 – 36.5m max overall length, 113.5t (GCM is not limited)

AB-Triple



BA-Triple



PBS Examples – Special combinations

PBS provides opportunities for the development of optimised transport solutions for specific freight tasks



PBS Examples – PBS A-double

PBS Level 2B – 30m max overall length, 85.0t of GCM
Significant productivity benefits

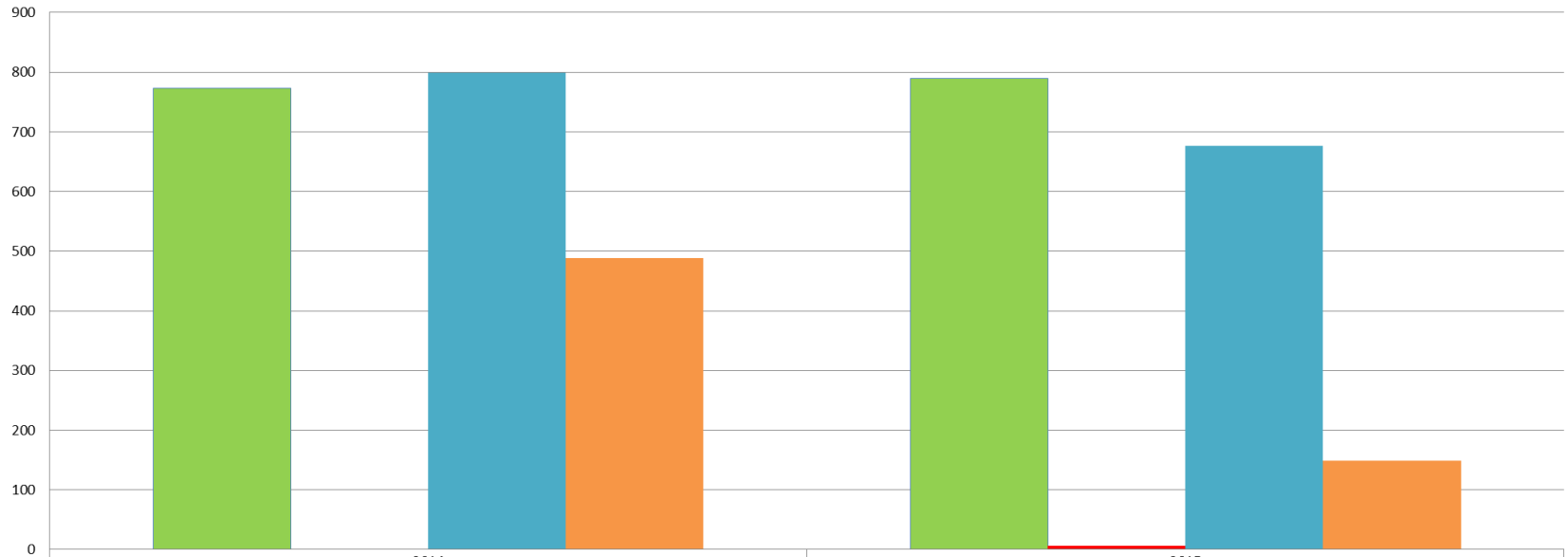


PBS Access Permits

Count of Permit Type	Column Labels				
Row Labels	Amend or Cancel Permit	General Permit	PBS Permit	Renew Permit	Grand Total
2014	773		799	488	2060
2015	789	6	677	149	1621
Grand Total	1562	6	1476	637	3681

Count of ...

Annual PBS AM Case Overview



- Amend or Cancel Permit
- General Permit
- PBS Permit
- Renew Permit

2014

773

2015

789

6

677

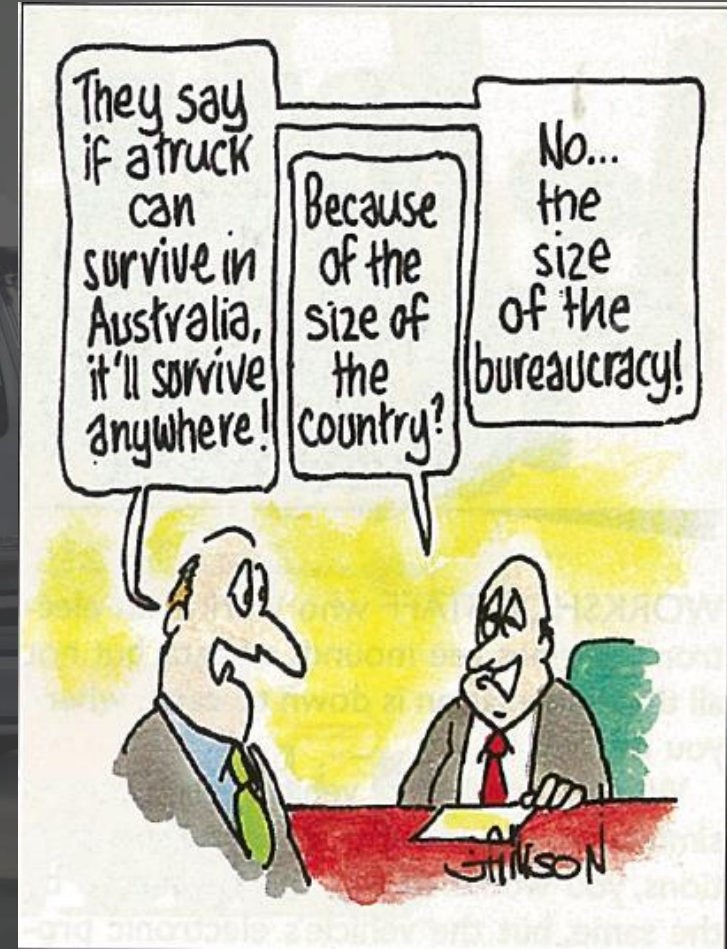
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Safety – crash rates observations per 100m km

Accident type by severity R100k		Minor	Moderate	Serious	Major	Total Accidents	Total Serious & Major Accidents
Conventional Truck	Articulated (69%)	21	22	16	13	72	29
	Rigid Trucks (31%)	42	34	19	7	102	26
Benchmark Conventional Trucks Incident Weighted Total		27.5	25.7	16.9	11.1	81.3	28
HPVs	Articulated (69%)	8	2	2	5	18	7
	Rigid Trucks (31%)	20	26	4	2	53	6
Observed HPV incident Weighted Total		11.7	9.4	2.6	4.1	27.9	6.7
Total HPV Incident Savings R100mk		15.8	16.3	14.3	7.1	53.5	21.4
Observed HPV Weighted Incident Savings %		57%	63%	85%	63%	66%	76%

Productivity

- Austroads report indicates that PBS vehicles will deliver a benefit of \$12.5b by 2030
- This requires that PBS vehicles are given more access
- Fewer heavy vehicles doing less kilometers to deliver the same freight
- Lower truck numbers will deliver a benefit in lower noise, emissions, hours of operation and accidents



The biggest challenge facilitating PBS is: Access

- The classification of PBS networks is essential;
- Local government support for the critical first and last mile of heavy vehicle journeys;
- NHVR is dealing with around 450 local governments;
- Each one of them has a statutory role to play under the NHVL;
- Working with the road authorities to better facilitate the approach;
- Success in obtaining pre-approvals for PBS Level 1 & 2A vehicles (typically truck and dog, prime mover semi and b-double combinations) from a large number of local councils;
- Lack of knowledge about PBS combinations;
- Proper engagement, not just consultation;

PBS under NHVR – Changing the Game

- Significant safety and productivity benefits expected
- 60-70% reduction of fatal and serious crashes (Austroads Report) – should be promoted more
- Around 5 lives saved / year
- Savings in vehicle kilometres (37% artics, 26% rigids), reduced road wear and emission
- Improving the approval process
- Simplify the process – “blueprints”
- Consistency in access decisions
- Improving access



Questions

