

Proposed introduction of 50MAX HPMV (Formerly known as Lower Bound HPMV)

A joint freight initiative
between the NZTA, Road
Transport Forum, and RCA
Forum Research &
Guidelines Group



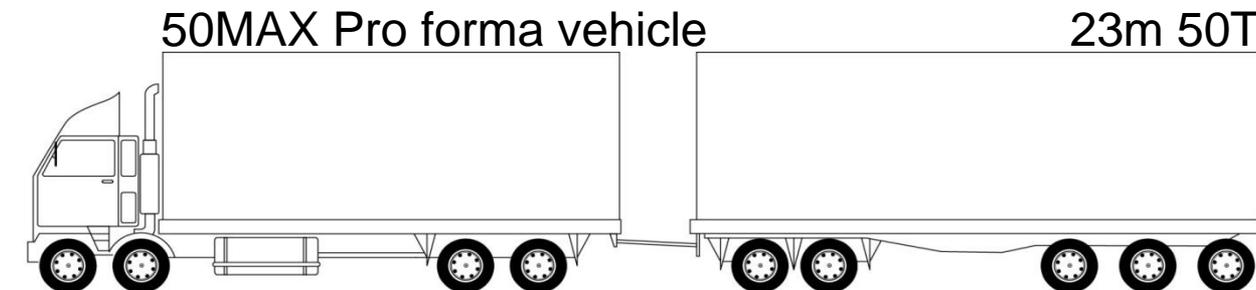
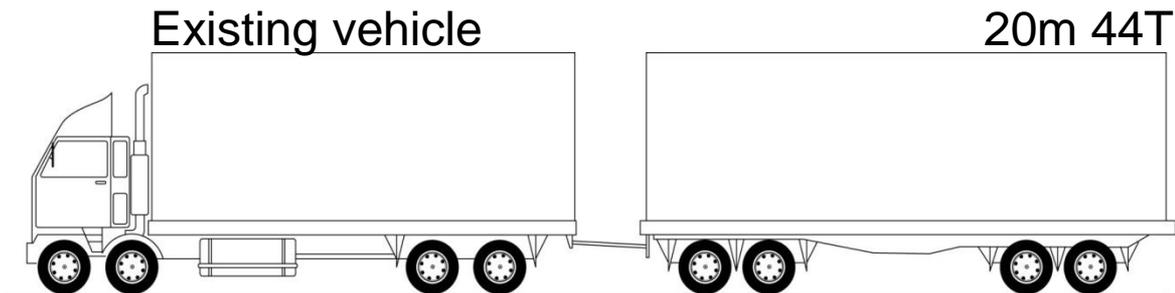
Prepared for the RCA Forum, Wellington, 19 April 2013

50MAX HPMV - overview

Aim:

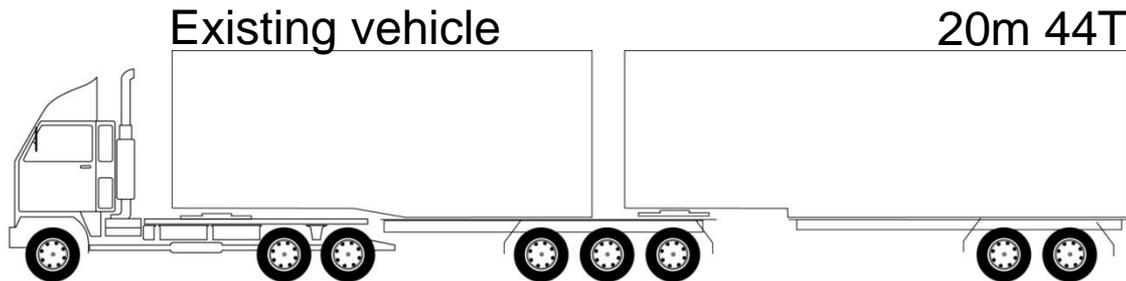
- Moving more freight with less trucks
- Bigger returns for producers and communities
- Increase allowable weight to 50T, cost neutral impacts on bridges and pavements, and pro forma vehicle designs that conform to VDM
- Unleash freight productivity with no investment and alleviate asset management concerns
- NZTA issues permits for all roads in a region with list of excluded bridges

Limited to new vehicle types – Pro forma 23m truck and trailer

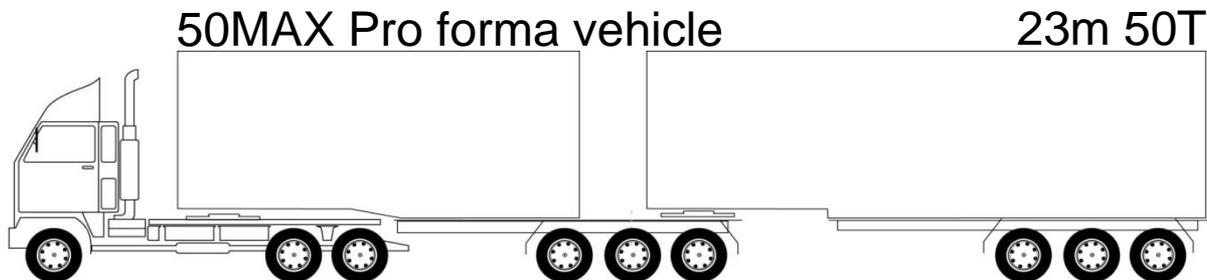


- Same swept path as quad semi truck
- Additional axle to disperse loads and prevent pavement wear

Limited to new vehicle types – Pro forma 23m B-Train



- Same swept path as quad semi truck
- Additional axle to disperse loads and prevent pavement wear

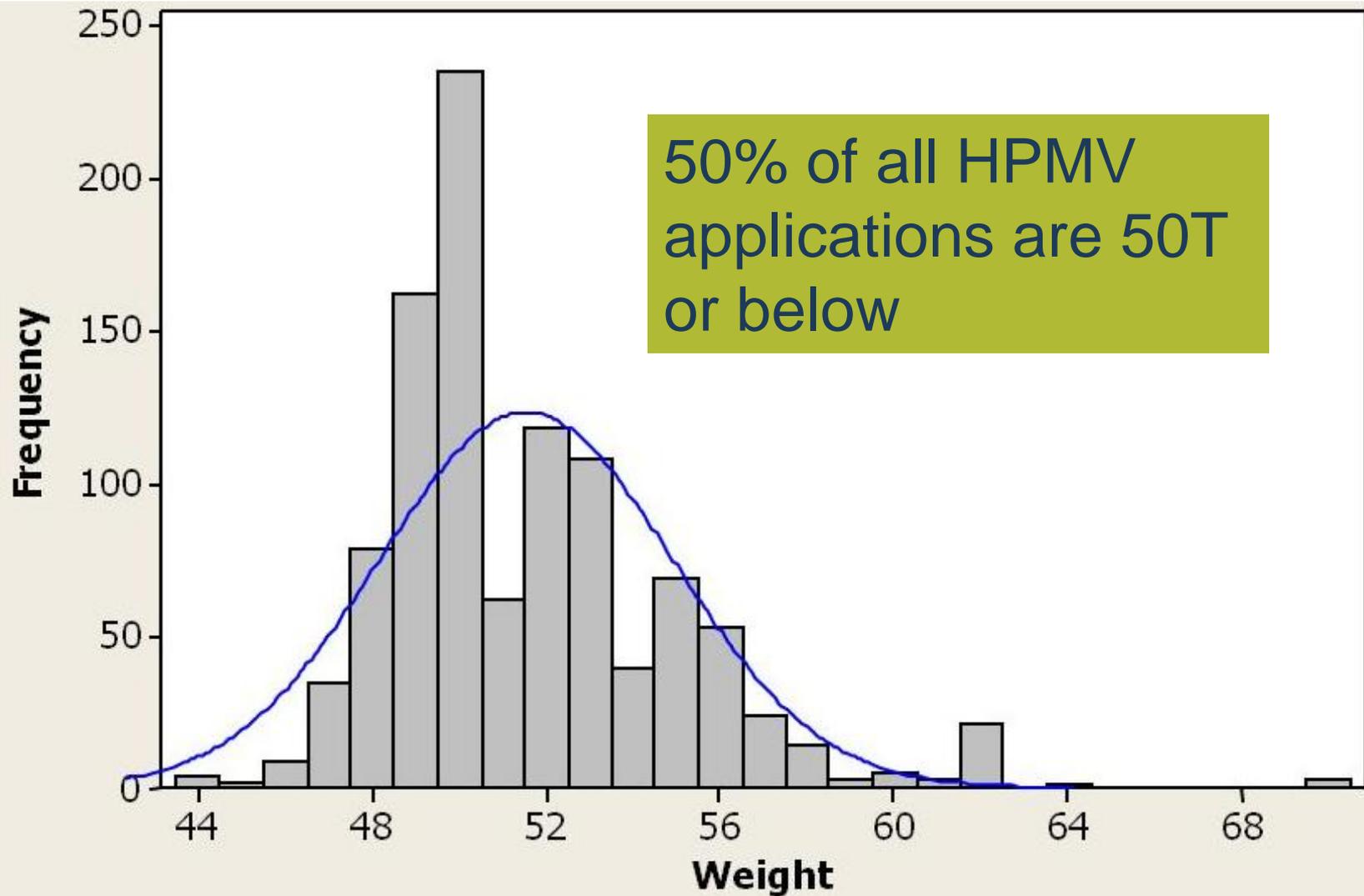


HPMV Route investment 2012-15

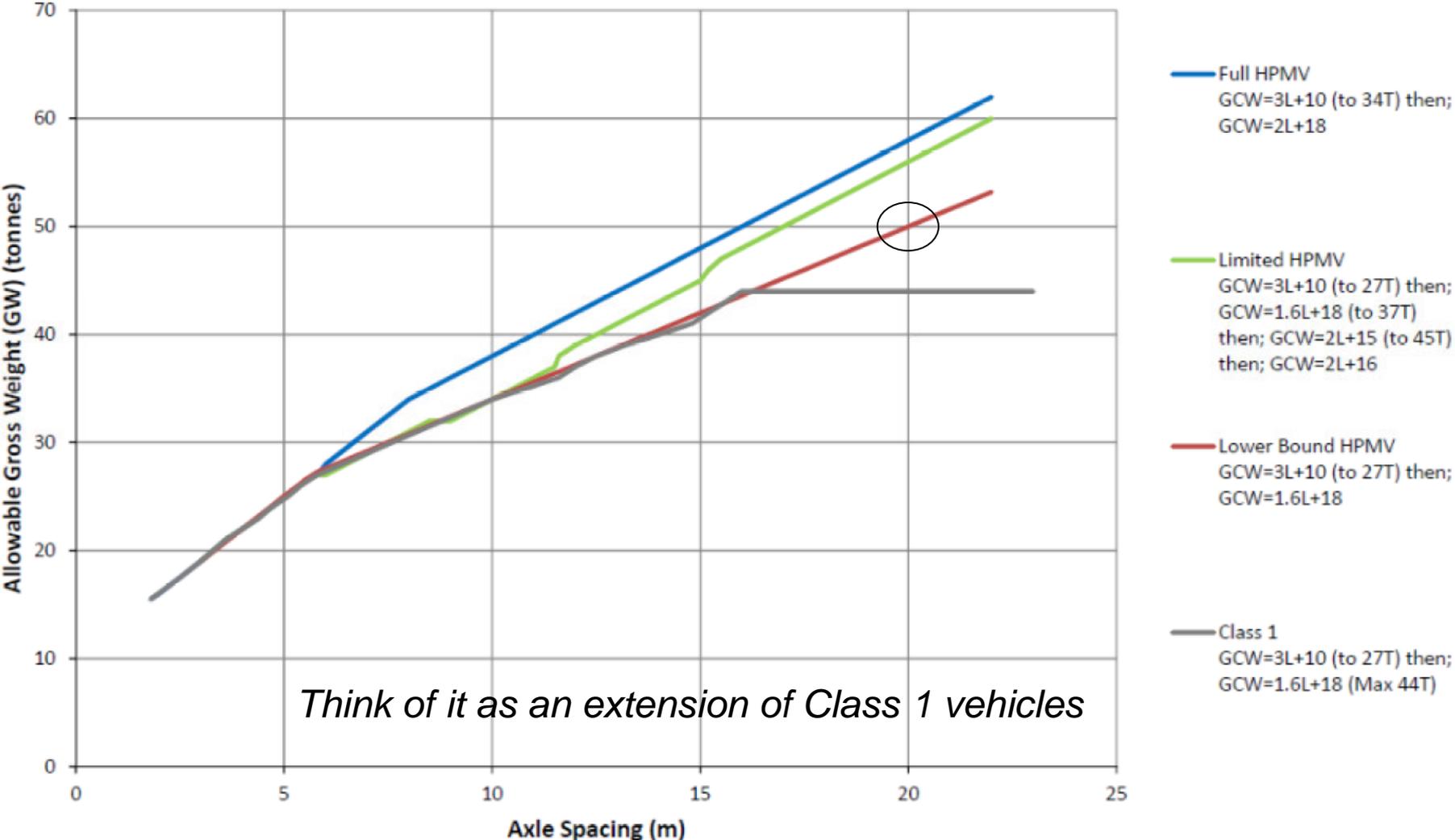
- 50% of the total freight task is carried on 95% of network. 50MAX vehicles provides an economically viable solution without upgrading local roads
- The strategic freight network (HPMV investment routes) opens up 4500 km of most productive corridors to 62T vehicles. This is 5% of total road network carrying 50% of freight



HPMV mass applied for



50MAX HPMV replicates Class 1 load curve beyond 44 tonnes for wheelbases >16m



50MAX HPMV – Bridge Capacity

The table should only be used by experienced civil/structural engineers, in conjunction with a review of the structures condition, structural form and failure mechanisms. The table should not be relied on for a structure that contains any critical structural weaknesses that could create a non-ductile failure mechanism under live loading.

Design Loading	Construction Date	Acceptable Span Range		
		Lower Bound HPMV (with Class 1 AWF)	Ltd. HPMV (with Class 1 AWF)	Full HPMV (with Class 1 or HPMV AWF)
HN-HO-72	1972-	All spans	All spans	All spans
H20-S16-T16	1961-1971	All spans	0 - 50m	0 - 45m
H20-S16-44	1944-1960	0 - 30m	0 - 25m	0 - 20m
H20-S16-41	1943	All spans	0 - 25m	0 - 20m
Traction Engine	1933-1942	0 - 25m*	0 - 17m*	-

* Provided bridge is unposted and is assessed as being able to safely support Class 1 vehicles.

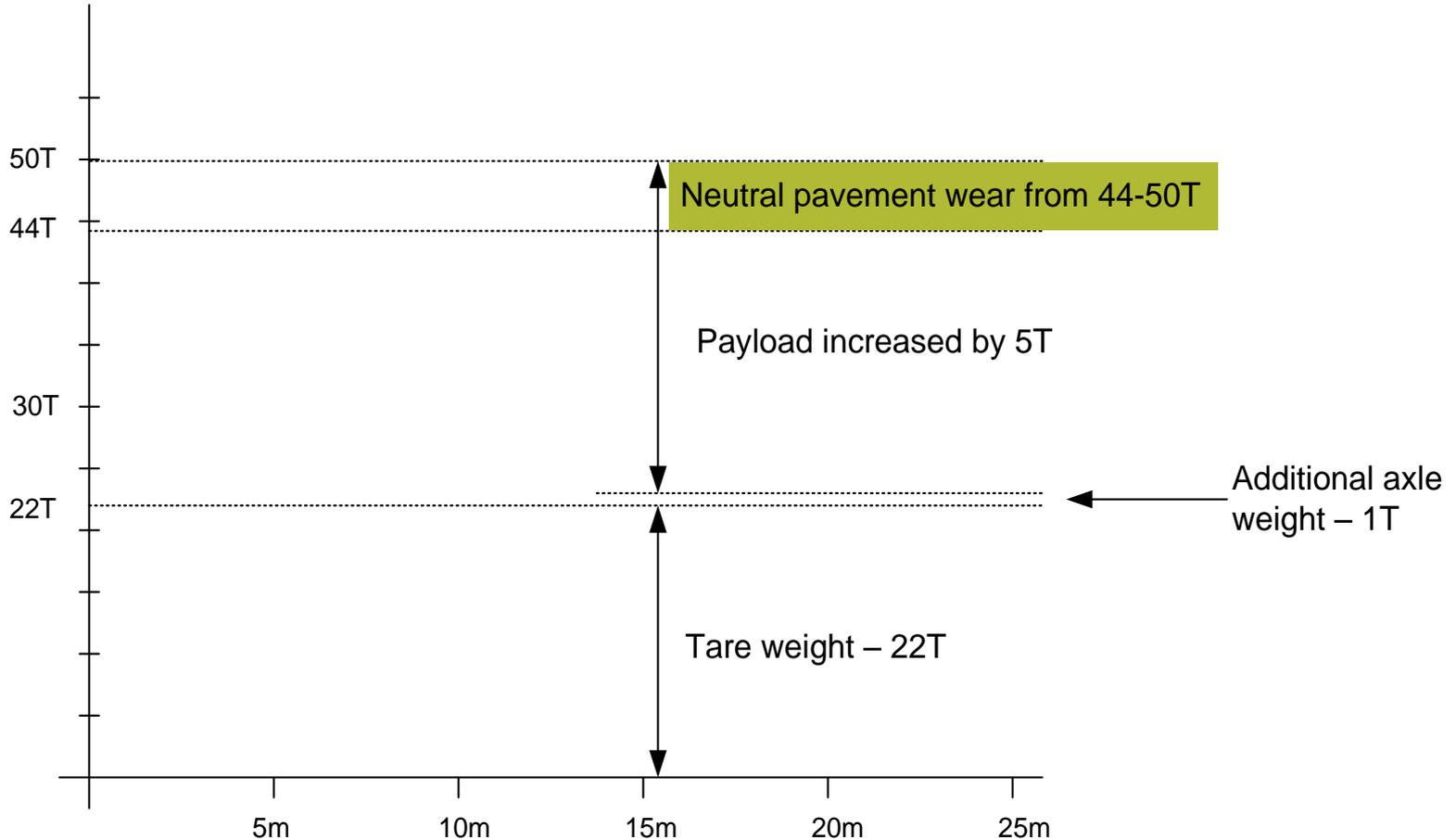
Table 4.2: Acceptable Span Ranges for Limited and Full HPMV's for Various Design Loadings

Bridge capacity

- In theory, all “Unposted bridges” up to about 25m span should be able to carry 50MAX HPMV’s
- The initial approach for bridges with spans greater than 25m is to post with a Class 1 limit
- Over time, there may be a desire by RCAs to open up some posted bridges on strategic routes after re-analysis, or by strengthening or replacing



Neutral impact on pavements



Reviewed by the RCA Forum Research & Guidelines Group

- 50MAX HPMV pro-formas have a neutral impact on pavement loading
- Access to almost all of the network, excluding posted bridge locations
- Viable business case shows \$100M net reduction in transport costs by year 4
- Reduction in transport costs will increase the return to the producer and hence the community with greater opportunities for economic growth

Our activities

- Present to various forums for roading managers, CEs & Mayors, NZTA through their Regional Directors (Apr-May)
- Screening of SH bridges and providing guidance to local authorities (Mar-Apr)
- Tech reports, factsheets, & bridge guidance on web. www.nzta.govt.nz/HPMV
- Simplified permitting of pro formas done by NZTA on behalf of LAs. No bridge checks (June)



Project needs from local authorities, if accepted for implementation

- Identify your problem bridges with >25m spans (they may become 'do not cross' as permit condition)
- NZTA seeks 'letter of delegation' with your approval for NZTA to issue permits for pro forma vehicles on behalf of RCAs



The perspective of the road transport sector

Ken Shirley, CEO
Road Transport Forum NZ

Road Transport sector – perspective

1. The road freight sector accepts that road assets must be managed by Road Controlling Authorities to ensure that the impact imposed by users is within an affordable rate of consumption of the asset
2. We accept that roads are funded largely on a user pay basis through the FED, RUC, Motor Registration and local property taxes. To this end we support local Road Controlling Authorities receiving a fair share of the revenue gathered from road users



Road Transport sector – perspective

3. We accept that under the Cost Allocation Model, the charges to individual users are roughly proportional to the cost imposed from pavement wear and impacts on structures
4. The 44T gross mass limit for general access has meant that the network asset has been conservatively managed to the lowest common denominator



Road Transport sector – perspective

5. The Government's recent policy for allowing HPMV permitted vehicles allows higher payloads in circumstances where the asset has sufficient resilience to accommodate the additional impact. This has greatly enhanced efficiency and productivity but requires the permitting of a specific vehicle configuration on a specified route

Typical weights

- A max payload increase of some 5T can be achieved with the 50MAX policy
- This provides a 15-20% payload gain and fewer trucks accomplishing the same freight task
- The general HPMV policy largely supports productivity gains from factories and processing facilities to ports
- The 50MAX derivative largely supports productivity gain in the transport of products from farms, forests and quarries to processing facilities but also the transport of inputs to production units in the rural economy



Questions

- Who's up for it?
- What have we missed?
- Any other technical issues?
- What can we do better to make it happen?

