

NSW Draft Freight and Ports Plan Aurecon Submission

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Aurecon's Intent

The NSW Freight and Ports Plan provides a vital strategic plan for an improved transport system in NSW and is important for optimising the safe, efficient and reliable movement of goods. As stated in Future Transport 2056, New South Wales' freight and ports network is fundamental to our economy with the freight sector contributing \$13 billion in Gross Value annually, conveying 280 million tonnes of road freight, 192 million tonnes of bulk cargo and 150 million tonnes of rail freight.

Aurecon has a growing state, national and international presence in the transport sector and prides itself on a great track record of having a positive impact on society. Given this position, the release of the Draft Freight and Port Strategy is of great interest to Aurecon across the entire business.

With Future Transport actively seeking feedback from industry stakeholders, the chance to provide a submission on the draft Freight and Ports plan is seen as an important opportunity to contribute to the states future economic growth and overall prosperity. In providing this response, Aurecon have identified 4 key focus areas of interest for further consideration by Future Transport when finalising the Draft. These key areas of focus include:

- Technology innovation
- Safety
- CO2
- Policy, Taxation and Efficiency

As will become evident, the focus areas identified in the submission by Aurecon are highly interrelated. The ideas proposed aim to compliment those presented in the Freight and Ports Plan, and align with Future Transport Strategy 2056.

For too long, our heavy vehicle safety record in Australia has performed poorly in comparison to the rest of the western world. We are at a cross roads with a wealth of new, emerging and existing technologies available often used extensively or on-trial in other countries already. With this new plan, we have a wonderful opportunity to exploit this, using existing levers that currently drive industry to enact meaningful change and reform to make **our heavy vehicle fleet, safer, more efficient and statistically world leading.**



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1 Technology innovation

To achieve successful outcomes, technological innovation is recognised as a key driver of efficiency and competitive advantage. Productivity and accessibility to goods and services in response to supply and demand has long been the primary focus of freight transportation. However, logistics structures have evolved over time as the degree of customisation, responsiveness, accessibility and technology has changed. Demand for freight and increased connectivity within the supply chain has led to the need to implement recent and emerging technology.

The integration of technology into the freight network would need to be focused on what drives the industry. The current climate of the freight industry is driven by capacity, availability and cost of transport. Synergy between key stakeholders in the freight industry inclusive of haulage companies, government and the community, has the potential to uncover benefits across modes and logistics chains. The way the industry can invest in technology to support services and infrastructure could see improvements in efficiency for the freight network.

Transitioning Heavy Vehicles

The industry is currently dominated by the use of multi combination prime movers in the form of B-doubles and B-triples, to provide high volumes of freight at high speeds. As an alternative, the use of a series of short combination prime movers would reduce the stress to road infrastructure, bridges and culverts resulting in less maintenance, costs and traffic incidents.

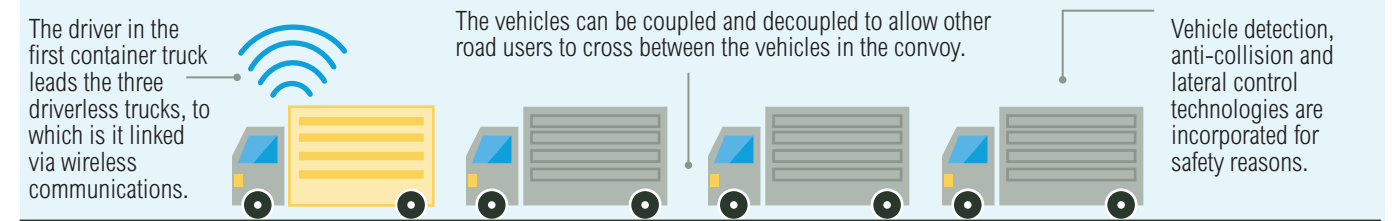
The use of short combination prime movers in association with autonomous vehicle technology unleashes the opportunity to reverse the emphasis on the need for power and size of heavy mass vehicles to achieve a competitive advantage in the market whilst reversing the stress on our aging infrastructure.

Autonomous vehicles

Autonomous vehicle technology has been trialled in Western Europe with success, as truck platoons comprised of two or three short combination prime movers connected via wireless technology travel in a convoy, with the leading truck determining the route and speed. Benefits of this freight layout include:

1. Haul safety from safe travel distances and speeds
2. Reduction in driver hours to reduce fatigue and alleviates issues of freight demand exceeding driver supply
3. Reduction maintenance of road assets - a convoy can 'platoon' to increase the distance between vehicles, effectively spreading the weight load on bridge structures - reducing damage.

How truck platooning works

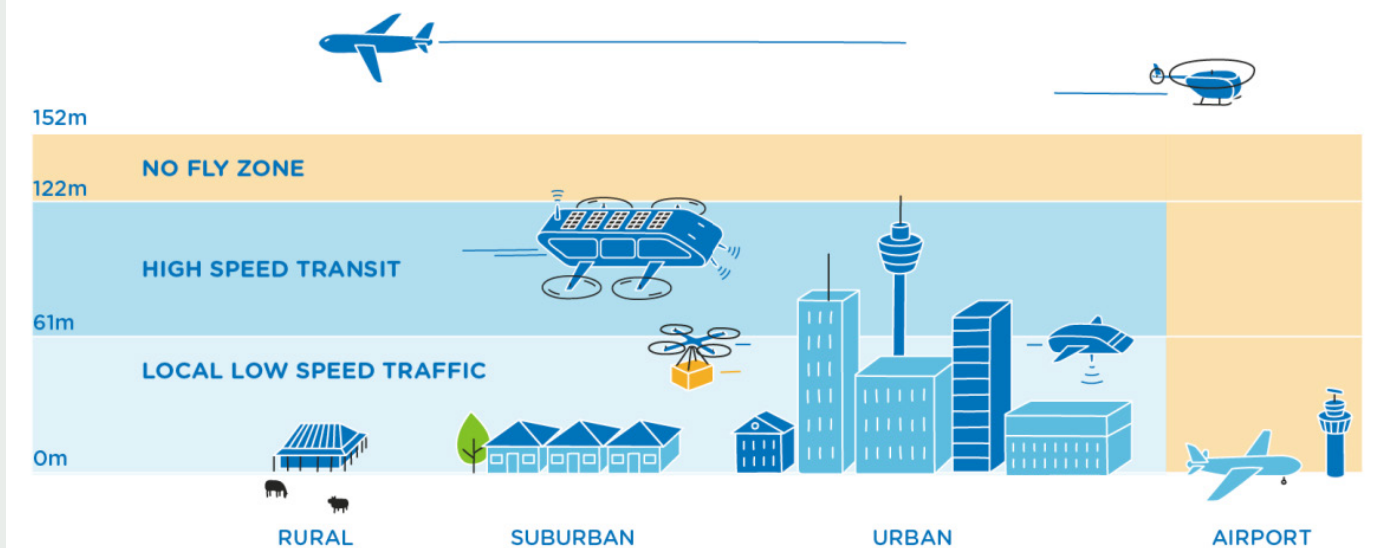


Drone technology

Freight investment in rural and regional areas can involve the deployment of technology-enabled and innovative service models such as drone use for small goods and medical supplies. Using drones to support future transport has safety, efficiency and maintenance benefits, and would be less difficult to facilitate in rural areas than in cities and urban areas. Last mile freight delivery and the establishment of 'drone highways' mentioned in the Draft Future Transport 2056 Strategy could be effectively employed and provide safer modes of enabling freight transportation in rural areas.

This would separate freight from the road network in the form of airspace corridors which would improve both efficiency and safety. The cost of moving small amounts of light weight freight in our rural areas is often subsidised by the broader supply chain. With less airspace regulations and a greater appetite from communities for this service, we have an opportunity to exploit this technology to move low value light weight freight or high social value time critical freight i.e crucial medical supplies.

PROPOSED AIRSPACE CORRIDORS FOR DRONE SERVICES



Source: Future Transport Strategy 2056

Digital tachographs and smart cards

Digital tachographs and smart cards in truck driver licences have been implemented within the freight network of Western Europe for over a decade. The successful operation of similar technologies can be recognised within our own transport network in NSW. As an automated metro system, the Opal card has allowed for data sharing and collaboration between industry and government, targeting consumer behaviour and responding to the market more effectively. Analysis of Opal card data has assisted with network planning and mitigation of costs, and there is no reason why this could not also occur with NSW freight and ports customers.

Vehicles have the capability to track movement and activity, with vehicular tracking systems already installed (however, deactivated) within existing car units. Enabling smart card systems would be easy, to replace log books and improve journey planning. GPS tracking of the smart card, truck speed and distance travelled can be precisely measured. It can help police time and distance remotely and more accurately, reduce fatigue and prevent speed related incidents.

Driving aids

It is understood that Electric (Enhanced) Stability Control (ESC) systems/Roll Stability Control (RSC) systems will be mandated for trucks and trailers in mid/late 2019 to reduce truck roll-over. This is a welcome progression forward to mandate safety equipment in the freight industry. In addition to these systems, there are many other technologies that exist that are in line with best practice in other countries, including:

- Advanced Emergency Brakes (AEB) – to assist in unavoidable situations or lapse of concentration
- Lane Departure Warnings (LDW) – to help prevent vehicle run off or head on collisions through poor lane discipline
- Tyre Pressure Monitoring (TPM) – to ensure all tyres are inflated correctly for maximum effectiveness
- Alcolock – To ensure drivers are below the legal blood alcohol limit
- Vehicle proximity Sensors (VPS) - to eliminate blind spots

“....the most valuable outcome from enabling new technology is data”

It is remarkable to consider how the freight industry and NSW government could utilise the data that would be collected every time a vehicle detects a safety feature being enabled. This could also provide real time benefits for drivers completing a shift. For example, drivers could receive advice or recommendations on their driving style, how to improve journey safety and how to travel more efficiently. An operator could get a monthly report on all its drivers and vehicles to highlight any areas of concern, interventions or opportunities for further training.

The most compelling opportunity from implementation of such technology is the benefits this would provide to road asset owners. As data is captured and shared in a geo-spatial environment, “issues heat maps” would be generated that highlight potential or emerging issues on the network where equipment has been activated or deployed. This would enable asset owners to investigate and intervene accordingly. Detection could reveal issues down to poor line marking, missing signage, surface cross drainage issues or sunken pit lids.

The power of capturing and sharing data is endless as is the benefit of displaying this data to transport customers and asset owners.

Recommended inputs

- The trialling of emerging technologies on a smaller scale should be a mechanism employed to investigate what is most relevant to improving our freight network.
- Further explanation of how existing methods for the trialling of technology have been developed for application into the freight network, such as heavy vehicle charging. This would provide framework for the integration of additional emerging technology
- To harness the data and analytics required to improve the freight network, the implementation of digital tachographs and smart cards at the initial stage of technological integration would provide the foundation for what the freight network requires.
- To incentivise and promote the use of all safety features available, linked to current incentives, thus, to de-incentivise users who do not wish to reform.

2 Safety

Regulations ensure that safety, consistency and economic productivity are safeguarded within the freight industry. Transport for NSW is committed to improving safety, and continues to promote safety at the fore of planning for future infrastructure and development. In saying this, road infrastructure is designed to protect road users, with features including but not limited to, islands, chicanes, road humps, rumble devices, speed limits and shared use zones. If the same design considerations were applied to the freight industry, simple additions to vehicles themselves could improve safety, as well as efficiency. This would be an opportunity for collaboration between the freight industry and the government, if incentives were provided for the implementation of safety mechanisms and practices for haulage carriers.

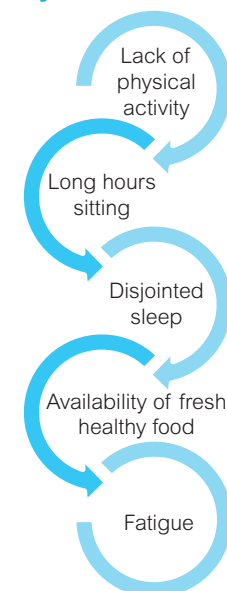
Simple vehicle safety technologies, such front, side and rear underrun protection systems on Trucks and Trailers can prevent errant vehicles travelling under a truck in an accident.

Coupled with the Draft Future Transport 2056 Strategy and Road Safety Plan 2021, vehicular safety features for freight vehicles would be consistent with the aim to have safety built into the transport network, protecting all road users.

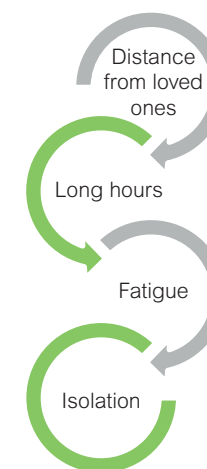
Another aspect of safety that should be a focus for the future landscape of freight is culture. When reflecting on what is considered common practice in the freight industry, the culture of long shift work has an impact on both driver welfare and the welfare of other vehicle users. Over 80 per cent of major freight incidents have fatigue as a factor.

Driver welfare

Physical



Mental



Another aspect to consider is how we can separate the freight and the local road network. Separating the freight network from the local road network is not entirely feasible due to the existing relationship of freight movements between origins and destinations. Eighty per cent of freight containers that arrive at Port Botany are delivered within a 40-kilometre radius of the port, with this forecast to continue for the next 30 years. Planning for increased connectivity and use of rail so the freight task can better separate freight movements from the bulk of passenger travel has been established, however, most of freight will continue to use a shared road network in the future.

Given that separation of freight and local traffic will persist in NSW, the speed differential between vehicle classes which directly creates conflict on the road network should be explored. Existing infrastructure including overtaking lanes and single carriageways in rural areas often exacerbate this conflict.

Australia’s current heavy vehicle speed limits are typically 100 to 110 kilometers per hour (kph). Consideration for the review of maximum vehicle speeds on high speed dual carriageway roads for each vehicle class could aim to resolve conflict. If maximum heavy vehicle speeds were capped at 90kph in line with Europe, and light vehicles have a higher speed limit of up to 130kph on controlled access dual carriageways (motorways), this could lead to a reduction in dissonance on the road network. The change in maximum speed limits has the potential to create the right environment for quality service provision for all road users. Strict qualifications would be required regarding vehicle type, class and standard subject to increased limit.

Recommended inputs

- It is suggested the finalised plan provides a framework to allow for the development of incentives that will enhance safety the safety of the network.
- The finalised plan provides a more succinct address of how cultural reform impacts the freight industry and local road network, and methods of how this can be improved safety to all road users.
- The finalised plan should elaborate on how heavy vehicle freight movements can be separated from general traffic whilst still maintaining efficiency, particularly if road freight will continue to be the main method of freight for the next 30 years.
- To achieve improved safety across the freight network, further exploration and identification of safety risks should be included in the Plan.

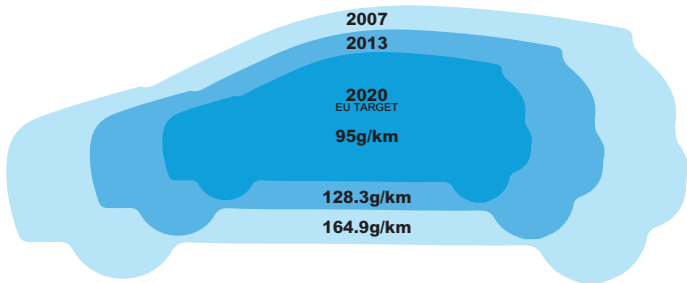
3 CO₂ Emissions and noise

Maintaining freight efficiency through higher loads and larger vehicles is the current target of the freight industry, however, environmental impacts should also be a key focus. Consumer demand and the economic activities that are associated with the movement of freight should be based on utilisation of vehicle capacity, the requirement for size, rising transport costs and maintenance.

Freight operations should include inter-governmental department and industry collaboration to incentivise the reduction of CO2 emissions. Awareness of fuel efficiency and reducing the focus on loading rates could be the basis of transformation within the freight industry. Investment in energy efficient vehicles provides benefits to the consumer including, with the primary focus of cost efficiency.

The European Automobile Manufacturers Association has developed CO2 based motor vehicle taxation, often applied upon the first purchase/registration of a vehicle. This is an example of how annual taxation can influence purchasing decisions and essentially change people's behaviour to reduce environmental impacts.

Similarly, with noise, technology exist with quieter engines and braking systems that could be incentivised. Electromagnetic braking systems have been around for over fifty years are common place in fleets across western Europe, yet in Australia we don't have a great take up of these systems and tend to favour compression brake systems which are cheaper to install yet cause misery to residents near major roads and highways, especially were there are declines and low ambient background noise.



Source: <http://garagewire.co.uk/news/associations/smmf/uk-2013-co2-emissions-fall-and-meet-eu-target/>

Recommended inputs

- An examination of international freight transport models should be undertaken to inform how the decisions of freight customers can be influenced to result in better outcomes in relation to CO2 emissions and noise.
- Collaboration across government and industry should be encouraged to address issues related to emissions and noise.
- The final plan should provide a framework for exploring ways in which the impact of freight movements can be reduced on other road users and sensitive receivers. The implementation of simple regulatory mechanisms has the potential to improve the amenity of areas near arterial roads and freight routes.

4 Policy, Taxation and Efficiency

The NSW Freight and Ports Plan is desired to be a document that will guide how government, industry and the community will work together and provide a framework for all levels of government to guide freight and ports policy, planning, regulation and investments.

While the Draft Plan introduces many ways on how the new framework will enhance freight and ports to address the needs of the future, it is limited regarding how taxation could play a role in improving the future of our freight and ports network. It is proposed that the final plan should make more explicit reference to how taxation policy could be used to incentivise NSW freight and port customers to drive positive reform in their industries.

While it is expected that freight and port customers may view taxation policy as disruptive to their current operating models, instead preferring the focus be on reducing the regulatory burden on industry, taxation policy has the potential to encourage innovation and improve efficiency in the long term.

A long-term framework which enables taxation policy to be considered for freight and ports customers would provide benefits to NSW, as it incentivises changes in consumer behaviour towards the vision of transport across the state.

Australia has one of the oldest fleet of heavy vehicles in the western world with an average age of around 13 years, to this avail, we could expect to only see tangible results to this policy introduction by around 2035 unless we incentivise industry to act faster.

Using policy to promoting heavy vehicle combination autonomous convoys and reversing b-double b-triple policy and increase single vehicle mass rates will go a long way to preserving the infrastructure whilst maintaining or improving efficiency.

A phased reduction in mandated driver hours across the board would improve conditions for drivers and reduce fatigue.

Mandating safety technologies sharing of data to inform us of issues on the network and improve driver behaviour.

Incentivising the industry to switch to a modern safer fleet to drive Australia to a world leading position is a challenge and NSW could lead the way to drive a uniform approach across the states.

It is suggested that exploring taxation should not be limited in application at a state level, rather the final plan should encourage collaboration between the states and national regulators.

Recommended inputs

- Expand text within 2.7 Transport Regulation and Reform to explore how taxation and policy could be used to drive positive reform for freight customers in NSW
- Include information explaining how taxation and policy can be harnessed to drive desired technological reforms that will otherwise not be realised until 2035.
- Further develop the plan to clearly highlight the importance of inter-state collaboration to the future of the freight and ports industry
- Highlight safety for other transport customers as another reason why regulatory reform is needed, particularly taxation incentives. Priority action area 5 does not mention the importance of regulatory reform in improving the condition of roads and safety.





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